ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
RIV-10 Blythe Pavement Rehab (08-1C083)

Resolution SHOPP-P-2021-02B
(will be completed by CTC)

1. FUNDING PROGRAM

- ☐ Active Transportation Program
- ☐ Local Partnership Program (Competitive)
- ☐ Solutions for Congested Corridors Program
- ☒ State Highway Operation and Protection Program
- ☐ Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *RIV-10 Blythe Pavement Rehab (08-1C083)*, effective on, October 21, 2020 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Caltrans*, and the Implementing Agency, *Caltrans*, sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas at its May 13, 2020 meeting the Commission approved the State Highway Operation and Protection Program, and included in this program of projects the *RIV-10 Blythe Pavement Rehab (08-1C083)*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.

4.2 To adhere, as applicable, to the provisions of the Commission:

- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Local Partnership Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
- ☒ Resolution G-20-40, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated May 13, 2020
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

4.3 All signatories agree to adhere to the Commission's State Highway Operation and Protection Program, Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.

4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.

4.5 Caltrans agrees to secure funds for any additional costs of the project.

4.6 Caltrans agrees to report on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.

4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.

4.8 Caltrans agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.

5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.

5.3 Other Project Specific Provisions and Conditions

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

RIV 10 BLYTHE PAVEMENT REHAB: MAINLINE, SHOULDERS, RAMPS
(08-1C083)

Resolution SHOPP-P-2021-02B

Michael D. Beauchamp
District Director
California Department of Transportation

8/28/2020
Date

Toks Omishakin
Director
California Department of Transportation

9.28.2020
Date

Mitch Weiss
Executive Director
California Transportation Commission

Date

Baseline agreement information was extracted from Caltrans' project data systems. Project description, funding and performance measures are from CTIPS. Project delivery milestones are from PRSM. All information is current and accurate.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

BASELINE AGREEMENT

Date:	09/14/20 04:45:53 PM

District	EA	Project ID	PPNO	Project Manager
08	1C083	0816000090	3009K	OCHOA, WILFREDO

County	Route	Begin Postmile	End Postmile	Implementing Agency	
RIV	10	R 134.0	R 156.5	PA&ED	Caltrans
				PS&E	Caltrans
				Right of Way	Caltrans
				Construction	Caltrans

Project Nickname

Riv 10 Blythe Pavement Rehab: mainline, shoulders, ramps

Location/Description

In and near Blythe, from Teed Ditch Bridge to Arizona State line. Cold plane mainline pavement and overlay with concrete pavement. The shoulders and ramps will be milled and overlaid with asphalt pavement. A two lane temporary detour will be constructed in the median for traffic handling. (G13 Contingency)

Legislative Districts

Assembly:	56	Senate:	28	Congressional:	36

PERFORMANCE MEASURES

	Primary Asset	Good	Fair	Poor	New	Total	Units
Existing Condition	Pavement	30.5	57.7			88.2	Lane-miles
Programmed Condition	Pavement	88.2				88.2	Lane-miles

Project Milestone	Actual	Planned
Project Approval and Environmental Document Milestone	08/28/20	
Right of Way Certification Milestone		04/01/22
Ready to List for Advertisement Milestone		05/02/22
Begin Construction Milestone (Approve Contract)		04/03/23

FUNDING (Allocated amounts are shaded)

Component	Fiscal Year	SHOPP					Total
PA&ED	17/18	9,000					9,000
PS&E	20/21	10,000					10,000
RW Support	20/21	117					117
Const Support	21/22	29,000					29,000
RW Capital	21/22	9,258					9,258
Const Capital	21/22	207,000					207,000
Total		264,375					264,375

08-Riv-10 PM R134.0/R156.5
EA 1C083
Project No. 0816000090
PPNO 3009K
201.122 (HA22)
August 2020

Project Report
For Project Approval

On Route 10

From 1.1 miles w/o Wiley's Well Road Overcrossing

To California/Arizona State Line

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

Rebecca Guirado
CS REBECCA GUIRADO, Deputy District Director, Right of Way

APPROVAL RECOMMENDED:

MF Wil Ochoa
WIL OCHOA, Project Manager

Craig Wentworth For
DAVID BRICKER, Deputy District Director, Environmental Planning

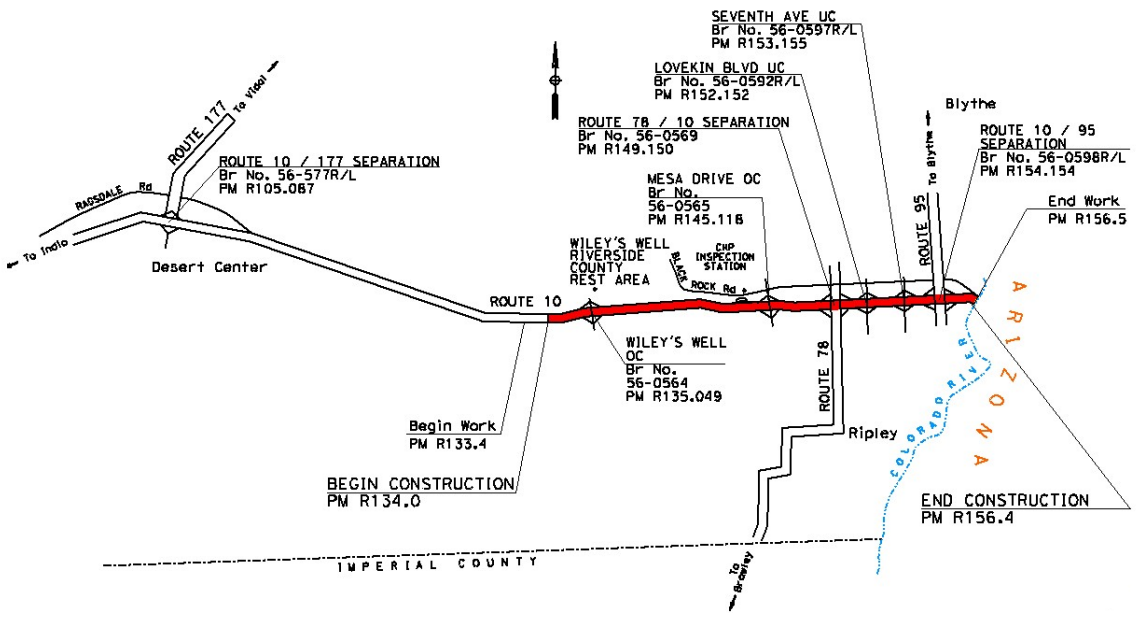
Jamal Elsaleh
MA JAMAL ELSALEH, Deputy District Director, Design

HG CATALINO A. PINING III, Deputy District Director, Traffic Operations

APPROVED:

Michael D. Beauchamp 8/28/2020
MICHAEL D. BEAUCHAMP, DISTRICT DIRECTOR DATE

Vicinity Map



On Route 10

From 1.1 miles w/o Wiley's Well Road Overcrossing at PM R134.0

To California/Arizona State Line

This 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.

Diboro Kanabolo 7/20/2020

DIBORO KANABOLO, REGISTERED CIVIL ENGINEER DATE

Prepared By:

Fred Asef

Fred Asef
Project Engineer
Design O

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1. INTRODUCTION

Project Description:

It is recommended to rehabilitate a portion of Interstate 10 (I-10), in Riverside County, from 1.1 miles west of Wiley's Well Road Overcrossing (OC) to California/Arizona State Line (Attachment A). The scope of work primarily consists of rehabilitation of existing Asphalt Concrete (AC) pavement using the following construction strategy:

- Cold plane existing AC pavements on the mainline and shoulders 0.3 feet. The resulting surface will be overlaid with 0.2 feet Hot Mix Asphalt (HMA) and one-foot Jointed Plain Concrete Pavement (JPCP) [also known as Concrete Overlay Over Asphalt (COOA)] on the mainline and shoulders. COOA will result in raising the profile grade by at least one foot (Attachment B).

- To maintain existing traffic during construction, a temporary detour with crossovers in the existing median will be constructed. All associated bridges as listed in Table 5-12 will be widened in the median to accommodate the proposed detour. There is no viable alternate detour route for this segment of I-10.

- The various rehabilitation strategies considered are shown below in Table 1:

Table 1

Rehabilitation Strategies with Detour (Widen on Both EB and WB Roadbeds)

Strategy ID	I-10 Roadbed	Rehabilitation Strategy	Cost ($1000)		Total ($1000)
			Roadway	Structures	
A*	EB	JPCP (COOA) (40-Yr)	72,705	18,310	145,410
	WB	JPCP (COOA) (40-Yr)	72,705	18,310	
B	EB	CRCP (COOA) (40-Yr)	111,320	18,310	259,260
	WB	CRCP (COOA) (40-Yr)	111,320	18,310	
C	EB	JPCP Reconstruction (40-Yr)	106,070	18,310	248,760
	WB	JPCP Reconstruction (40-Yr)	106,070	18,310	
D	EB	JPCP (COOA) (40-Yr)	120,294	18,310	200,320
	WB	HMA (20-Year)	42,776	18,310	
E	EB	CRCP (COOA) (40-Yr)	132,937	18,310	212,400
	WB	HMA (20-Year)	42,8831	18,310	
F**	EB	HMA (20-Year)	50,905	0	101,810
	WB	HMA (20-Year)	50,905	0	
G	EB	CRCP Reconstruction (40-Yr)	115,952	18,310	252,640
	WB	JPCP (COOA) (40-Yr)	100,068	18,310	

EB = Eastbound **10 Page Cost Estimate is attached*

WB = Westbound

CRCP = Continuous Reinforced Concrete Pavement ***No detour required*

This project will also cold plane and overlay all the ramps at Wiley's Well Road OC, Mesa Drive OC, Route 78/10 separation, Lovekin Boulevard Undercrossing (UC), Seventh Ave UC and Route 10/95 Separation with Rubberized Hot Mix Asphalt (RHMA-G). The paved parking lot area at Wiley's Well Road Rest Area as well as the ramps at the Weight Station, Hobsonway and Inspection Station will be cold planed and overlaid with RHMA-G. Pedestrian facilities and Americans with Disabilities Act (ADA) ramps at Lovekin Boulevard Interchange (IC) and Seventh Avenue UC will be upgraded to current standard design. It also includes other improvements such as, replacing and upgrading existing metal beam guardrail, extending culverts in the median, upgrading bridge railings, and repair/replace bridge abutment Rock Slope Protections (RSP) affected by the bridge widening.

This project is classified as a Category 4B project, as defined in the Project Development Procedures Manual (7th Edition, Part 2, Chapter 8, Section 5), since the proposed improvements under consideration would not require additional right of way and does not substantially increase traffic capacity (Attachment C). The current construction costs for the proposed improvements is estimated to be $182,030,000 (Attachment D).

Project Limits	08-Riv-10 PM R134.0/R156.5	
Number of Alternatives	1 Build and 1 No Build	
	Current Cost Estimate	Escalated Cost Estimate
Capital Outlay Support	$43,825,000	$48,117,000
Capital Outlay Construction	$182,030,000	$207,000,000
Capital Outlay Right of Way	$9,258,000	NA
Funding Source	20-XX-201.122	
Funding Year	2021/2022	
Type of Facility	4 Lane Freeway	
Number of Structures	11 Bridges each direction	
SHOPP Project Output	88.2 Lane Miles	
Environmental Determination or Document	Initial Study with Mitigated Negative Declaration / Environmental Assessment (IS/EA) with Finding of No Significant Impact.	
Legal Description	From 1.05 miles w/o Wiley's Well Road Overcrossing PM R134.0 to California/Arizona State Line	
Project Development Category	4B	

2. RECOMMENDATION

It is recommended that this Project Report (PR) be approved for preferred Alternative 2, Rehab Strategy A and authorization be granted to proceed with preparation of Plans, Specifications and Estimates (PS&E).

3. BACKGROUND

A. Project History

This project originated from Project Initiation Proposal (PIP) No. 3820, which was initiated and prepared by the District 8 office of Maintenance Engineering in March 2012 (Attachment E). The original scope of work included pavement rehabilitation of the mainline, shoulders, and ramps on I-10 from PM R134.0 to PM R145.2.

Subsequently, during the preparation of the Project Initiation Report (PIR) for EA 1C080, the project limits were extended westerly to PM R60.7 and easterly to PM R156.5 and divided the limits into three segments as shown in the table below:

Table 3.1 – Project Segments

Segment	EA	Status	PM	Funding Year
1	1C081	PA/ED 9/2/2020	R60.7/R74.3	2021/2022
2	1C082	RTL 6/11/2020	R104.9/R134.0	2019/2020
3	1C083	PA/ED 8/3/2020	R134.0/R156.5	2021/2022

The PIR for all three segments was approved on June 29, 2017. This PR is prepared for Segment 3. The other segments will have separate PRs. Segment 3 was originally designated for the Design-Build delivery process with funding commitment and delivery in the 2020 State Highway Operation and Protection Program (SHOPP). As of January 2019, District management decided to deliver this project conventionally through the design-bid-build process. All three segments have a similar scope of work and the PDT agreed to conduct a 0 Phase and 60% Constructability Review (CR) Joint Field Meeting for Segment 3 during 95% CR of Segment 2.

B. Community Interaction

Caltrans makes it a priority to engage the public, stakeholders, the media and others on any project that the Department is developing. This includes holding and attending public meetings, meeting with partner agencies, sending out virtual notifications via social media and email, and more.

Caltrans District 8 External Affairs will develop a comprehensive outreach plan from start to finish to ensure that the public and our partners are aware of the project and it's impacts. As stated, this will include multiple facets including social media, email campaigns, public meetings, focused meetings with partners, and more.

These efforts will ensure an equitable deliverable process by incorporating the input from those who are within the project limits.

Throughout the development of this document an emphasis has been placed on keeping the community and local stakeholders informed of the scope and potential impacts of this project. Coordination with other agencies, included Native American Heritage Commission (NAHC), US Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW).

A public notice advertising Caltrans' intent to adopt a Mitigated Negative Declaration with Opportunity for Public Hearing was published in the Palo Verde Valley Times, a newspaper of general circulation, on June 5, 2019 and in the La Prensa on June 7, 2019. Additionally, notices were sent to all entities including public agencies, interested parties, and residents within half a mile of the project boundary. City of Blythe officials, including the mayor, were also included in this distribution. The document was available for public review and comment for 30 days. Comments were received from the California Highway Patrol and the Airport Land Use Commission and have been addressed in the Final Environmental Document. There is no known opposition to the proposed project from local agencies and/or the general public.

C. Existing Facility

Interstate 10 is a major interstate freeway that begins at State Route 1 (SR-1) in the City of Santa Monica in Los Angeles County, and terminates on the east coast in the State of Florida. Within District 8, I-10 is 194.8 miles in length, beginning at the Los Angeles County line and ending at the Arizona State line, and it varies from four to ten lanes of traffic. Existing pavement on I-10 within the limits of this project is a flexible pavement section with similar shoulder pavement. Within the project limits, I-10 is a four-lane divided, controlled-access freeway with two lanes in each direction. The existing lane width is generally 12 feet throughout the corridor. Within the project limits, the outside shoulder width is 10 feet and inside shoulder width is 5 feet.

This segment of freeway generally lies on gentle rolling terrain, the EB and WB roadbeds are typically at different elevations separated by a median width that varies from 48 feet to 120 feet. The pavement of each roadbed typically has a 2.0% cross slope with the crown point located at the inside edge of travel way.

Table 3.2 – Roadway Geometric Information

		Existing	Proposed	Minimum Standards
Facility Location	Post Mile Limits	PM R134.0/R156.5	PM R134.0/R156.5	N/A
Minimum Curve Radius	Radius (ft)	6000	6000	2100
Through Traffic Lanes	Number of Lanes	4	4	N/A
	Lane Width (ft)	12	12	12
	Type (Flexible, Rigid, or Composite)	Flexible	Rigid	N/A
Paved Shoulder Width	Left (ft)	5	10	5
	Right (ft)	10	10	10
Median Width	(ft)	Varies 48-120	Varies 42-114	36

Project Interchanges

The project improvement passes through six service interchanges:

1. Wiley's Well Road Overcrossing
2. Mesa Drive Overcrossing
3. Route 78/10 Separation
4. Lovekin Boulevard
5. Seventh Avenue Undercrossing
6. Route 10/95 Separation

Existing Structures

Table 3.3 provides a list of existing structures along I-10 within the project limits from west to east.

Table 3.3 – Existing Structures

No.	Bridge Name	Direction	Bridge Number	Post Mile
1	Wiley's Well Road OC*	EB/WB	56-0564	R135.049
2	Gale Ditch	EB/WB	56-0017R/L	R136.145
3	McCoy Wash	EB/WB	56-0016R/L	R138.291
4	Isora Ditch	EB/WB	56-0015R/L	R139.172
5	Palowalla Ditch	EB/WB	56-0014R/L	R142.645
6	Mesa Drive OC*	EB/WB	56-0565	R145.118
7	Keim Access Rd UC	EB/WB	56-0604R/L	R146.898
8	Rannells Drain BR	EB/WB	56-0588R/L	R148.531
9	Junction 78/10 Separation*	EB/WB	56-0569	R149.150
10	Arrowhead Blvd OC*	EB/WB	56-0589	R150.155
11	Defrain Blvd OC*	EB/WB	56-0590	R151.149
12	Lovekin Blvd UC	EB/WB	56-0592R/L	R152.152
13	Blythe OH	EB/WB	56-0593R/L	R152.425
14	Broadway UC	EB/WB	56-0595R/L	R152.652
15	Blythe Ped OC*	EB/WB	56-0596	R152.863
16	Seventh Ave UC	EB/WB	56-0597R/L	R153.155
17	Route 10/95 Separation	EB/WB	56-0598R/L	R154.154

*No Bridge Widening

Existing Utilities

The existing utilities within the project limits are as follows:

- AT&T Transmission
- El Paso Natural Gas Company
- Ex El Pipeline Services LLC
- Imperial Irrigation
- Palo Verde Irrigation District
- Southern California Gas - Transmission
- Southern California Gas - Blythe
- Sprint
- Suddenlink Comm - Blythe
- TransCanada
- Frontier Communications
- Southern California Edison Telecom
- Southern California Edison - Blythe District

Existing Drainage

The existing offsite drainage generally flows from north to south. Culverts and bridges are used to convey the offsite runoff under the freeway between water

washes. The onsite drainage system consists of catch basins, storm drain systems, and culverts.

Existing Pavement Structural Sections

Existing pavement within the project limits is comprised of Asphalt Concrete (AC) for the traffic lanes and shoulders (Attachment B).

Pavement Condition Report / Automated Pavement Condition Survey

The Pavement Condition Report history and Automated Pavement Condition Survey obtained from Office of Pavement Management (PaveM) online website are periodically reviewed to evaluate the existing pavement condition shown below:

As of current year (2020), the existing pavement surface condition is indicated to be "fair" to "poor" with approximately 30% average Alligator A cracking. Alligator B cracking is less than 20 % and Mean Roughness Index (MRI) is less than 150 inch/mile for year 2018. For the year 2026, the predicted average Alligator A will be more than 50% and Alligator B cracking will be less than 40%. Recent physical field review shows that following winter storms in early 2019 the EB pavement conditions are significantly more deteriorated than the WB pavement. For detailed pavement condition reports refer to the Draft Materials Report (Attachment G).

Signs

Approximately 200 Information, Warning and Regulatory signs have been identified within the project limits. Signs impacted by the project median widening will be replaced.

Existing Guardrail

Existing guardrails are predominately not the Midwest Guardrail System (MGS). The limits and quantities are shown in Tables 3.4 and 3.5

Table 3.4 – Guardrail Length on Mainline

DIRECTION	From PM	To PM	Length (LF)
Eastbound	134.0	156.5	672
Westbound	134.0	156.5	662
Total			1334

Table 3.5 – Guardrail Length on Bridge Approaches

Approach Railing (DIRECTION)	Total Number of Bridges	Length (LF)
Bridges (EB)	17	3660
Bridges (WB)	17	3865
Total		7525

Pedestrian Facilities

Pedestrian facilities within the project limits are summarized in Table 3.6

Table 3.6 – Pedestrian Facilities

Facility Type & Location Curb Ramps	Meets ADA Standards?	If Facility Does Not Meet ADA Standards, What Features Are Not ADA Compliant?	Status of Each Noncompliant Location
Mesa Dr IC (no curb ramps)	N/A	N/A	N/A
SR-78 IC (no curb ramps)	N/A	N/A	N/A
Lovekin Blvd IC (8 curb ramps)	No	Does not meet ADA Standard Plan A88A or A88B	Will be corrected as part of this project
Seventh Ave IC (7 curb ramps)	No	Does not meet ADA Standard Plan A88A or A88B	Will be corrected as part of this project
US-95 IC (no curb ramps)	N/A	N/A	N/A

Bicycle Path Data

There is an existing combined-use pedestrian/bicycle path on the north side of I-10 between Hobsonway and the beginning of the Colorado River Bridge. This section of I-10 is also open to bicycle traffic along the outside shoulders.

4. PURPOSE AND NEED

Purpose:

The primary purpose of this project is to restore and extend service life of existing pavement for a minimum of 40 years, enhance trip reliability, and consequently minimize expenditures associated with future maintenance. The secondary purpose is to improve safety and mobility for the traveling public by upgrading existing features to current design standards, such as Midwest Guardrail System (MGS), bridge rails, drainage facilities, and pedestrian facilities.

Need:

Caltrans District 8, Office of Maintenance Engineering, identified the need to rehabilitate the existing pavement. This project is needed to address current and future deficiencies of the existing pavement and extend the service life within the project limits and minimize maintenance frequency and consequently worker exposure.

4A.Problem, Deficiencies, Justification

Under heavy and continuous traffic, over a period of time, existing pavement has shown signs of distress and deterioration at various locations along the freeway. As indicated in the Department's 2018 Pavement Condition Survey (PCS), there are areas of cracking, rutting, bleeding, and poor ride quality that are beyond routine maintenance repairs and treatments. By the year 2026, the predicted average Alligator A cracking would increase from 30% to more than 50% and Alligator B cracking would increase from 20% to 40%. This rehabilitation project will address further deterioration and would extend life of the existing pavement.

4B. Regional and System Planning

4B1. Identify System

Interstate 10 is a major freeway that starts in the City of Santa Monica in Los Angeles County and ends in Jacksonville, Florida. Within District 8, I-10 begins at the Los Angeles/San Bernardino County Line, west of Montclair, and ends at the California/Arizona State Line, on the Colorado River. From the Los Angeles metropolitan area into the Coachella Valley, the route provides a means for regional commuter trips. East of the Coachella Valley, most trips are interstate, along with a substantial increase of trips related to goods movement. Interstate 10 is designated among the U.S. Department of Defense (DOD) 2,610 miles network of selected Interstate System routes requiring a 16-foot minimum vertical clearance. All of the overcrossing structures along the I-10 corridor meet the minimum vertical clearance requirement standard. Interstate 10 is a critical link in the State transportation network, and is used by interstate travelers, local commuters, regional, interregional, and interstate trucks. It is also part of the National Highway System, providing access between major port, airport, public transportation facility or other intermodal transportation facility. The entire route is included in the National Network for Federal Transportation Surface Transportation Assistance Act for Oversized Trucks.

4B2. State Planning

The project is consistent with the District 8, I-10 Transportation Concept Report, dated June 20, 2017 which calls for the year 2040 concept facility to

provide four general purpose lanes. Construction duration for the adjoining project EA 1C082 is expected to end in May 1, 2024.

4B3. Regional Planning

The project is consistent with the regional planning goals. The configuration of the existing roadway facility is not affected or impacted by this project. There are no proposed major projects in the vicinity of this project.

4C. Traffic

4C.1 Current and Forecasted Traffic

Traffic Forecasting have been prepared for the project to analyze the existing (2020) and future years (2046, 2066) traffic conditions along the I-10 freeway. Traffic forecasting of the I-10 mainline, within the project study limits are summarized in the following sections and tables:

Table 4.1 Existing and Year 2066 ADT Volume

Years	2020	2026	2046	2066
Annual Average Daily Traffic (AADT)	30,000	33,400	47,500	62,600
2-way Peak Hour Volume (PHV)	3,590	4,000	5,690	7,490
One-way PHV	1,940	2,160	3,070	4,050
Directional Split	54%	54%	54%	54%
Truck % in AADT	51%	51%	51%	51%
Truck % in PHV	30%	30%	30%	30%

Table 4.2 – Traffic Index

Traffic Indices are based on Construction Completion Acceptance Year 2026		
Traffic Index Year	Travel Lanes 1 & 2	
	Mainline	Shoulder
10 Year (ESAL)	60,644,590	1,212,892
10 Year TI	14.5	9.0
20 Year (ESAL)	144,074,728	2,881,495
20 Year TI	16.0	10.0
40 Year (ESAL)	379,707,943	7,594,159
40 Year TI	18.0	11.5

4C.2 Collision Analysis

The accident data on Interstate 10 (I-10) in Riverside County were collected from post miles R134.0 to R156.5 for the latest three-year data available between February 1, 2017 to January 31, 2020.

The actual accident rates for I-10 during the three-year period were compared to the statewide average for similar type of facilities. A summary of the Caltrans Traffic Accident Surveillance and Analysis System (TSAS), Traffic Selective Accident Retrieval (TSAR), and Selective Accident Rate Calculation (Table B) for accident rates (Fatal, Fatal + Injury, Total) for the proposed project was retrieved on April 29, 2020 and are shown in the tables below:

Summary of Collision Data Tables

Table 4.3 I-10 PM R134.0/R156.5 Combined EB/WB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicle Miles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R134.0/R156.5 Combined EB/WB	0.009	0.07	0.23	0.009	0.18	0.53				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	21.0%	25.3%	1.2%	30.9%	17.3%	1.2%	3.1%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
4.3%	0.6%	1.2%	43.2%	23.5%	16.7%	0.0%	8.6%	1.9%	0.0%	0.0%

Table 4.4 I-10 PM R134.0/R156.5 EB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicle Miles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R134.0/ R156.5 EB	**0.009**	0.06	0.23	0.008	0.18	0.53				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	23.8%	25.0%	1.3%	25.0%	23.8%	0.0%	1.3%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
7.3%	0.0%	0.0%	51.3%	18.8%	13.8%	0.0%	6.3%	2.5%	0.0%	0.0%

Table 4.5 I-10 PM R134.0/R156.5 WB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicle Miles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM R134.0/ R156.5 WB	**0.009**	0.08	0.24	0.008	0.18	0.53			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	18.3%	25.6%	1.2%	36.6%	11.0%	2.4%	4.9%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
1.2%	1.2%	2.4%	35.4%	28.0%	19.5%	0.0%	11.0%	1.2%	0.0%	0.0%

HBD = Influence of Alcohol
FTC = Following Too Close
FTY = Failure to Yield
ID = Improper Driving
IT = Improper Turn
ESS = Speeding
OV = Other Violations
NS = Not Stated
OTD = Other Than Driver
UNK = Unknown
FA = Fell Asleep

As shown in Table 4.3 for combined EB and WB Mainline, the actual Fatal Fatal + Injury, and Total accident rates at this location are below the statewide average for similar facilities. The primary collision factors were Improper Turn (43.2%) and Speeding (23.6%); and the primary collision types were Hit-Object (30.9%), Rear-End (25.3%) and Sideswipe (21.0%).

Tables 4.4 and 4.5 show the EB and WB Collision Data individually. The actual Fatal accident Rates for both EB and WB Mainline are higher than the statewide average while the actual Fatal plus Injury and Total accident rates are below the statewide average. Several of the project improvements will enhance the safety of motorists along the corridor such as improved grading and relocation of existing features outside of the clear recovery zone, remove and replace all existing bridge railings, remove existing MBGR and upgrade all guardrail and crash cushion systems to current standards on the mainline and on/off ramps, remove and replace rumble strips, reconstruct the shared pedestrian and bike pathway on the north side of I-10 between Hobsonway and the beginning of the Colorado River Bridge, and installation of Information, Warning and Regulatory signs.

Table 4.6 I-10 PM R134.907 WB ON FROM WILEY'S WELL ROAD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R134.907	0.000	0.00	0.00	0.017	0.24	0.64				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.7 I-10 PM R134.914 EB OFF TO WILEY'S WELL'S ROAD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R134.914	0.000	0.00	1.04	0.012	0.49	1.35				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.8 I-10 PM R135.198 EB ON FROM WILEY'S WELL ROAD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R135.198	0.000	0.00	0.00	0.017	0.24	0.64				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.9 I-10 PM R135.216 WB OFF TO WILEY'S WELL ROAD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R135.216	0.000	0.00	0.00	0.012	0.49	1.35				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.10 I-10 PM R144.201 WB ON FR WEIGH STATION

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R144.201	0.000	0.00	0.00	0.002	0.01	0.77				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.11 I-10 PM R144.488 WB OFF TO WEIGH STATION

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10	**Actual Accident Rates**			**Average Rates**						
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**				
PM R144.488	0.000	0.00	0.35	0.009	0.22	1.74				
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.12 I-10 PM R144.948 WB ON FROM MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R144.948			0.000	0.00	0.00	0.017	0.24	0.64		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.13 I-10 PM R144.960 EB OFF TO MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R144.960			0.000	**1.71**	**2.85**	0.012	0.49	1.35		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	20.0%	40.0%	0.0%	0.0%	40.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
20.0%	0.0%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.14 I-10 PM R145.258 WB OFF TO MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R145.258			0.000	0.00	0.00	0.012	0.49	1.35		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.15 I-10 PM R145.267 EB ON FROM MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R145.267			0.000	0.00	0.00	0.017	0.24	0.64		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.16 I-10 PM R148.988 EB OFF TO NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R148.988			0.000	0.00	**1.66**	0.005	0.28	0.85		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.17 I-10 PM R149.009 WB ON FR NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R149.009			0.000	0.00	0.00	0.036	0.23	0.55		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.18 I-10 PM R149.290 EB ON FR NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R149.290		0.000	**0.70**	**0.70**	0.036	0.23	0.55		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.19 I-10 PM R149.311 WB OFF TO NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R149.311		0.000	0.00	0.00	0.005	0.28	0.85		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.20 I-10 PM R151.914 EB OFF TO LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R151.914		0.000	0.00	**0.36**	0.002	0.11	0.30		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.21 I-10 PM R151.972 WB ON FROM LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		**Actual Accident Rates**			**Average Rates**					
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM R151.972		0.000	0.00	0.00	0.002	0.23	0.63			
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.22 I-10 PM R152.330 EB ON FROM LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		**Actual Accident Rates**			**Average Rates**					
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM R152.330		0.000	0.00	0.00	0.003	0.12	0.30			
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.23 I-10 PM R152.338 WB OFF TO LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		**Actual Accident Rates**			**Average Rates**					
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM R152.338		0.000	0.00	0.00	0.002	0.11	0.30			
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.24 I-10 PM R152.981 EB OFF TO SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 152.981	0.000	0.00	0.00	0.002	0.11	0.30			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.25 I-10 PM R153.015 WB ON FROM SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 153.015	0.000	**0.76**	**0.76**	0.003	0.12	0.30			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.26 I-10 PM R153.306 EB ON FROM SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 153.306	0.000	0.00	0.00	0.002	0.23	0.63			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.27 I-10 PM R153.335 WB OFF TO SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 153.335	0.000	0.00	0.00	0.008	0.39	1.03			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.28 I-10 PM R154.007 EB OFF TO INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 154.007	0.000	0.00	**0.83**	0.004	0.29	0.80			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.29 I-10 PM R154.023 WB ON FROM INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10	**Actual Accident Rates**			**Average Rates**					
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**			
PM 154.023	0.000	**0.83**	**1.66**	0.002	0.17	0.49			
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.30 I-10 PM R154.322 EB ON FROM INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 154.322			0.000	0.00	0.00	0.002	0.17	0.49		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.31 I-10 PM R154.338 WB OFF TO INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 154.338			0.000	0.00	0.00	0.004	0.29	0.80		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.32 I-10 PM R156.024 EB OFF TO RIVIERA DR SO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 156.024			0.000	0.00	0.00	0.006	0.39	1.25		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.33 I-10 PM R156.046 WB ON FROM RIVIERA DR NO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 156.046		0.000	**4.15**	**4.15**	0.007	0.21	0.61		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.34 I-10 PM R156.132 WB OFF TO RIVIERA DR NO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 156.132		0.000	0.00	**1.58**	0.006	0.39	1.25		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 4.35 I-10 PM R156.187 EB ON FROM RIVIERA DR SO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)									
Location I-10		**Actual Accident Rates**			**Average Rates**				
		Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 156.187		0.000	0.00	0.00	0.007	0.21	0.61		
Type of Collisions									
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**	
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Primary Collision Factors									
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

HBD = Influence of Alcohol	IT = Improper Turn	OTD = Other Than Driver
FTC = Following Too Close	ESS = Speeding	UNK = Unknown
FTY = Failure to Yield	OV = Other Violations	FA = Fell Asleep
ID = Improper Driving	NS = Not Stated	

According to Caltrans Traffic Accident Surveillance and Analysis System (TASAS), Traffic Selective Accident Retrieval (TSAR), and Selective Accident Rate Calculation (Table B), the types of collisions and primary collision factors for these ramps along I-10, PM R134.0-R156.5, are tabulated above from Table 4.3 to Table 4.35. The higher than statewide average three-year traffic accident rate history are shown in bold.

4C.3 Materials

A Draft Materials Report (MR), dated March 2019, was prepared for this project. The report was prepared based on an analysis of historic data for past projects, Traffic Index and most current traffic forecasting data. The Draft MR also implemented rehabilitation strategies using pavement structural sections outlined in the Highway Design Manual (HDM) Topic 114 and Chapter 600 series (Attachment G). A final MR will be developed during the Design phase of the project. Recommendations of the Draft MR are summarized in the Rehabilitation Strategies in Section 5 of this Project Report.

5. ALTERNATIVES

5A. Alternative 1: No Build

The No Build Alternative fails to address the project purpose and need, and it provides none of the project benefits cited for Alternative 2. The No Build Alternative would maintain the existing pavement condition of I-10 within the project limits with no rehabilitation on the mainline lanes and ramps or associated improvements.

Without pavement rehabilitation the existing pavement condition will deteriorate further along the corridor resulting in operational deficiencies and will necessitate future costly maintenance measures. With no capital improvements, there is no capital cost for this alternative. There would be continued costs associated with maintenance, periodic rehabilitation, and any safety and operational improvements to the existing facility.

5B. Alternative 2: Pavement Rehabilitation

Under Alternative 2, seven rehabilitation strategies are considered for this project. Some of the features included in the project that applies to all rehabilitation strategies are listed below:

- Cold plane existing AC pavement on the mainline and shoulders.

- Raise the profile grade by approximately one foot to achieve the recommended structural section. Raising the profile by one foot requires additional grading on the outside, beyond the existing hinge point, which in turn results in a wider area of environmental impact. To minimize this environmental impact the proposed outside edge of travel way and shoulders are shifted four feet towards the median.

- In order to conform and transition to the existing structures profile grade, the existing AC pavement and base of the mainline and shoulders will be removed at approaches and departures for a length of 1000 feet, and will be replaced with a full depth structural section reconstruction (see Table 5.1A).

- Construct two temporary detour lanes and crossover lanes in the existing median for traffic handling during construction with two options:

  - Option 1: Construct one-lane temporary detour lane and cross over in the EB and WB directions.

  - Option 2: Construct both detour lanes adjacent to the EB lanes. This detour option was considered but not carried forward. Providing a two-lane 31-foot wide detour pavement and bridges on the EB with no traffic utilization, would attract motorists to park for extended length of time. Secondly, in an emergency incident on the WB roadbed, this wide unused detour pavement cannot be used to manage the WB traffic incidents. Thirdly, the existing left shoulder on all WB bridges will have to be widened to accommodate the new bridge railings and meet standard shoulder width.

- The detour lanes will remain in place after completion of the project and will be striped, signaling to the public that they are not available for use.

- Upgrade existing Americans with Disabilities Act (ADA) facilities at ramp termini to current Standards.

- Extend existing culverts in the median outside the Clear Recovery Zone.

- Remove existing AC on all bridges and treat the exposed deck.

- Remove and replace all existing bridge railings.

- Replace existing inlets in the median.

- Remove and replace existing dikes.

- Remove existing MBGR and upgrade all guardrail and crash cushion systems to current standards on the mainline and on/off ramps.

- Remove and reinstall rumble strips.

- Widen existing bridges towards the median for the sole purpose of construction traffic handling.

- Construct approach and departure slabs at all bridges.

- Remove/replace/repair existing Rock Slope Protection (RSP) under existing and widened bridges.

- Hydroseed the median for erosion control and attempted vegetation restoration as part of environmental palliative.

- Cold plane and overlay existing ramps with Rubberized Hot Mix Asphalt.

- Install Inventory Marker Signs (G-11) at both bridge approaches facing traffic. Information, Warning and Regulatory signs impacted by the project median widening will be replaced.

- Reconstruct the shared pedestrian and bike pathway on the north side of I-10 between Hobsonway and the beginning of the Colorado River Bridge.

Rehabilitation Strategies

Rehab Strategy A – (Preferred Strategy)
(COOA) with JPCP (Widen EB and WB roadbeds for Detour)

This strategy consists of placing 1.0 ft of (COOA) Jointed Plain Concrete Pavement (JPCP) on the existing two lanes of the traveled way and shoulders with a 40-year design life for rigid pavement.

Existing AC ramps will be cold planed and overlaid with Rubberized Hot Mix Asphalt (Gap Graded) RHMA-G.

Under this strategy the existing profile grade will be increased by 0.9 foot. It is recommended to cold plane the existing AC pavement 0.30-feet prior to placing of JPCP to provide a uniform base support. To provide a smooth and level grade for the construction of (COOA), 0.20-feet of HMA-A (Leveling) will be placed on the existing pavement. Estimated construction cost for this strategy is shown in Table 5.10.

For traffic handling purposes, two one-lane temporary detours will be constructed in the existing median in both the EB and WB directions. The detour will remain

in place after completion of the project. See Table 5.11 - Detour Structural Section for temporary detour.

The 40-year Traffic Index (TI) used for this rehab strategy is 18 for the mainline and the shoulders.

JPCP (COOA) Structural Section:

Table 5.1 – Mainline and Shoulders

Pavement Material	Design Life	Mainline	Shoulders
Cold Plane	40-Year	0.3’	0.3’
HMA-A		0.2’	0.2’
JPCP		1.0’	1.0’

Table 5.1A
Structural Section 1000’ before and after Bridge Approach Slabs

Pavement Material	Design Life	Mainline	Shoulders
HMA-A	40-Year	0.3’	0.3’
JPCP (Reconstruction)		1.2’	1. 2’

Table 5.2 – Ramps and Shoulders

Pavement Material	Lane	Shoulders
Cold Plane	0.20’	0.20’
RHMA-G	0.20’	0.20’

Rehab Strategy B – (COOA) with Continuous Reinforced Concrete Pavement (CRCP) Widen EB and WB roadbeds for Detour

This strategy consists of placing 1.10 feet of CRCP (COOA) on the existing two lanes of the traveled way and shoulders with a 40-year design life for rigid pavement. Existing AC ramps will be cold planed and overlaid with RHMA-G.

Under this strategy the existing profile grade will be increased by one foot. It is recommended to cold plane the existing AC pavement 0.30 feet prior to placing of CRCP to provide a uniform base support. To provide a smooth and level grade for the construction of CRCP layer, 0.20-feet of HMA-A (Leveling) will be placed on the existing pavement. Estimated construction cost for this strategy is shown in Table 5.10.

The 40-year Traffic Index (TI) used for this rehab strategy is 18 for the mainline and the shoulders.

CRCP (COOA) Structural Section:

Table 5.3 – Mainline and Shoulders

Pavement Material	Design Life	Mainline	Shoulders
Cold Plane	40-Year	0.3’	0.3’
HMA-A		0.2’	0.2’
CRCP (COOA)		1.10’	1.10’

Table 5.4 – Ramps and Shoulders

Pavement Material	Lane	Shoulders
Cold Plane	0.20’	0.20’
RHMA-G	0.20’	0.20’

Rehab Strategy C – Reconstruct with JPCP

The existing flexible pavement and base for the mainline and shoulder will be removed to full depth and replaced with a 40-year design life rigid pavement. Under this strategy the existing profile grade will not be raised. Existing AC ramps will be cold planed and overlaid with RHMA-G.

JPCP Reconstruction Structural Section:

Table 5.5 – Mainline and Shoulders

Pavement Material	Design Life	Mainline	Shoulders
JPCP (Reconstruct)	40-Year	1.2’	1.2’
HMA-A		0.3’	0.3’

Table 5.6 – Ramps and Shoulders

Pavement Material	Lane	Shoulders
Cold Plane	0.20’	0.20’
RHMA-G	0.20’	0.20’

Rehab Strategy D – (COOA) Eastbound with JPCP and HMA on the Westbound (Widen EB and WB roadbeds for Detour)

Due to heavy trucks traveling on EB I-10, pavement is in “fair” to “poor” condition. Imported goods come into Southern California ports from multiple origins around the world and are distributed to other States. These goods are transported out of California on three major routes. Interstate 10 is one of the three routes resulting in 51% of trucks in the AADT. The trucks departing EB from California on this segment of I-10 carry heavier loads compared to trucks on the WB. This may have contributed to the pavement deterioration on the EB pavement which may have been exacerbated by seasonal storms that occurred in early 2019.

This strategy uses JPCP (COOA) on the eastbound direction, and HMA overlay on the WB direction. Estimated construction cost for this strategy is shown in Table 5.10.

JPCP (COOA) and HMA Structural Section:

Table 5.7 Mainline and Shoulder Standard Section

Pavement Material	Eastbound Design Life 40-Year		Westbound Design Life 20-Year	
	Mainline	Shoulder	Mainline	Shoulder
Cold Plane	0.3’	0.3’	0.2’	0.2’
JPCP	1.0’	1.0’	NA	NA
RHMA-G	NA	NA	0.2’	0.2’
HMA-A	0.2’	0.2’	0.5’	0.5’

Rehab Strategy E – (COOA) Eastbound with CRCP and HMA on the Westbound (Widen EB and WB roadbeds for Detour)

Strategy E is the same as strategy D except pavement type will be CRCP on the EB direction. Estimated construction cost for this strategy is shown in Table 5.10.

Rehab Strategy F – Flexible Pavement – HMA overlay (No Detour)

The existing pavement is flexible, therefore overlaying the project with flexible pavement needs to be considered as a strategy for Life Cycle Cost Analysis (LCCA) purposes. This Strategy proposes to overlay the existing structural section for the mainline, ramps, and shoulders to the depth indicated in the table below. The HMA overlay operation will not apply to any bridge or bridge approach/departure slabs within the project limits. However, new approach and departure slabs will be constructed at all bridges. Under this strategy the existing profile grade will be increased by 0.50 feet. The 20-year Traffic Index (TI) for the mainline is 16. A design life of 40-year was not considered for flexible pavement strategy due to high TI value of 18. Estimated construction cost for this strategy is shown in Table 5.10.

HMA Structural Section:

Table 5.8 – Mainline and Shoulders

Pavement Material	Design Life	Mainline	Shoulders
Cold Plane	20-Years	0.2’	0.2’
RHMA-G		0.2’	0.2’
HMA - Type A		0.5’	0.5’

Table 5.9 – Ramps and Shoulders

Pavement Material	Lane	Shoulders
Cold Plane	0.2’	0.2’
RHMA-G	0.2’	0.2’

Rehab Strategy G – Continuous Reinforced Concrete Pavement (CRCP) on the EB and Joint Plane Concrete Pavement (JPCP) on the WB, Widen EB and WB roadbeds for Detour

Strategy G is the same as Strategy A except pavement type will be CRCP by reconstruction on the EB direction. The reason for the EB CRCP reconstruction is described under Strategy D.

Table 5.10 – Strategy Cost Estimate

Rehab Strategy ID	Option 1
A	$182,030,000
B	$259,260,000
C	$248,760,000
D	$200,320,000
E	$212,440,000
F	$101,810,000
G	$252,640,000

Traffic Handling Strategy

The Traffic Management Plan stipulated that it is necessary to have all freeway lanes open during construction. For traffic handling purposes, one option is being considered:

Detour Option 1 - Widen on both Eastbound and Westbound Roadbeds

Two one-lane 19.4-foot total width (paved) temporary detour will be constructed in the existing median in both EB and WB directions. For the detour lanes width in the east and west directions, see Detail "A" of Attachment B. As a result of this construction detour, all existing bridges and/or drainage crossings on the EB and WB directions will be widened towards the median. Temporary detour will remain in place after completion of the project. Both EB and WB detours will be properly delineated.

The pavement rehabilitation under this detour option 1 (Attachment H) will require construction staging as follows:

Stage 1:
Construct the median crossovers and the detour lanes with bridge widening in both the EB and WB directions.

Stage 2:
Shift the EB traffic onto the detour lanes and rehabilitate the EB roadbed while the WB traffic remains uninterrupted on the WB roadbed.

Stage 3:
Return the EB traffic back onto the newly rehabilitated EB pavement and shift the WB traffic onto the detour lanes to rehabilitate the WB roadbed.

Stage 4:
Return the WB traffic back onto the newly rehabilitated WB pavement. Final stripe of mainline and detour areas.

Detour Option 2 - Widen on Eastbound Roadbed Only (Not Carried Forward)

This detour option was considered but not carried forward for the reasons described in Section 5B of this report.

Detour Structural Section:

Soil samples obtained within the project limits showed R-Values ranged from 11 to 77. Based on laboratory test results, native materials with R-Value of 20 as listed in the table 5.11 is "Subgrade Soil Type III". If the upper four feet of subgrade within these limits have a R-Value under 20, it will be treated with cement or lime. Table 5.11 provides the detour structural section recommendation.

Table 5.11 – Detour Structural Section

Location (PM)	R-Value	Pavement Material	
		HMA - Type A	CL2 AB
R134.0/R156.5	20	0.65'	0.80'

Structures Information:

Structures listed in the following table will be widened towards the median.

Table 5.12 – Existing Bridges to be Widen

No.	Bridge Name	Direction	Bridge Number	Post Mile	Widen, Replace Bridge Rail & Approach Slabs (Y/N)
1	Gale Ditch	EB/WB	56-0017R/L	R136.145	Y
2	McCoy Wash	EB/WB	56-0016R/L	R138.291	Y
3	Isora Ditch	EB/WB	56-0015R/L	R139.172	Y
4	Palowalla Ditch	EB/WB	56-0014R/L	R142.645	Y
5	Keim Access Rd UC	EB/WB	56-0604R/L	R146.898	Y
6	Rannells Drain BR	EB/WB	56-0588R/L	R148.531	Y
7	Lovekin Blvd UC	EB/WB	56-0592R/L	R152.152	Y
8	Blythe OH	EB/WB	56-0593R/L	R152.425	Y
9	Broadway UC	EB/WB	56-0595R/L	R152.652	Y
10	Seventh Ave UC	EB/WB	56-0597R/L	R153.155	Y
11	Route 10/95Separation	EB/WB	56-0598R/L	R154.154	Y

For typical section of structure widening see Attachment I.

Nonstandard Design Features

The safety screening conducted for this project (see 2R Project Certification, Attachment R), concluded that a 2R (pavement resurfacing and restoration) strategy is appropriate for the proposed project and a Design Standard Decision Document for both Boldface and Underlined design standards will not be required for existing geometric design features. This project does not propose new nonstandard features and will not degrade the geometric features and the safety of the facility.

Nonmotorized and Pedestrian Features

This project is located in a sparsely populated area. Existing freeway is open to bicycle traffic (except from PM R145.12 to PM R156.49) and is anticipated to be maintained during construction. A Transportation Management Plan (TMP) will be prepared prior to construction to identify methods to minimize impacts to pedestrian and bicycle traffic. Existing pedestrian facilities as listed in Table 3.6 will be upgraded to current ADA standards. Existing combined-use pedestrian/bicycle path on the north side of I-10 between Hobsonway and the beginning of the Colorado River Bridge will be reconstructed to meet current standards.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

An Initial Site Assessment (ISA) Checklist (Attachment J) was completed for this project January 30, 2020. The determination for this project having potentially hazardous waste involvement was rated as "LOW RISK".

6B. Value Analysis

Per the Federal Highway Administration (FHWA) guidelines, in March 2019, a Value Analysis (VA) study was performed to evaluate the performance value of the proposed project design and develop alternate methods to improve value of the proposed improvements. Through a 5-day study, the VA team developed six ideas (or strategies) to help improve the proposed design features and reduce the environmental impacts associated with the proposed improvements.

The VA report was presented to the District Management on March 22, 2019. Of the proposed VA strategies, one alternative (described as Alternative 2 of this report) was accepted by the District Management and the Project Development Team (PDT) and will be incorporated into the final project design.

Detailed documentation of the value analysis strategies is provided in a report titled Value Analysis Study Report, dated April 2019, prepared by Value Management Strategies Inc., which is available at Caltrans District 8 under EA 1C083.

6C. Resource Conservation

It is anticipated that all excavated material for this project will be reused to build the embankments. The existing asphalt pavement that is removed as a result of the proposed improvements is expected to be recycled and reused in the construction to the extent possible. RHMA is used in this project to comply with Caltrans Recycling Program.

6D. Right of Way Issues

General

The proposed work will require additional right of way for construction of ADA ramps at Lovekin Boulevard and Seventh Street as shown in Attachment P. The Environmental Offsite Mitigation and Project Permits Fees are included in the Right of Way Data Sheet estimate (Attachment K).

Railroad

There is a set of abandoned railroad tracks at Blythe Overhead (PM R152.65) within non-functioning railroad right of way that belongs to Genesee & Wyoming (G&W). Detour widening will necessitate bridge bent construction within the existing G&W railroad right of way, which will require Temporary Construction Easement and an agreement.

Utilities

Existing utilities anticipated to be in conflict within the project limits are shown in Attachment P and as follows:

- Four (4) Southern California Edison power poles at Lovekin Boulevard
- Six (6) Southern California Edison power poles at 7th Street

Relocation of some of the above-mentioned power poles will have a domino effect on the adjacent poles. Detailed evaluation of the utility impact and conflicts due to ADA ramps will be carried out during the Plans, Specifications and Estimates (PS&E) phase of the project. For more details, refer to the Right of Way Data Sheet (Attachment K).

6E. Environmental Compliance

Under Caltrans' assumption of responsibility pursuant to 23 U.S.C. 327, an Environmental Assessment with Finding of No Significant Impact (EA-FONSI) has been prepared in compliance with NEPA. An Initial Study with Mitigated Negative Declaration (IS-MND) has been prepared, in accordance with Caltrans' environmental procedures, as well as State CEQA guidelines. The combined IS-MND/EA-FONSI was signed on 07/27/2020 (Attachment L).

6F. Air Quality Conformity

The project is located in the Mojave Desert Air Basin that is an Attainment/Unclassified for all NAAQS National Ambient Air Quality Standards (NAAQS). This project falls under one of the categories of exempt projects pavement resurfacing and/or rehabilitation, listed in Caltrans Carbon Monoxide (CO) Protocol Table 1 titled as "Projects Exempt from all Emissions Analyses" or Table 2 of 40 CFR §93.126. Therefore, the project is exempt from all project-level and regional conformity requirements, and an Air Quality Report is not required.

6G. Title VI Considerations

Implementation of the project will not result in any adverse impacts on minority or low-income neighborhoods, communities or groups, and will not have adverse effects on public transit, pedestrian traffic, or low mobility groups. This project will comply with Title VI of the Civil Rights Act of 1964. Caltrans' Title VI Policy Statement and related statutes, which ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

6H. Noise Abatement Decision Report

The project is a Type III Project under 23 CFR 772.7; therefore, Caltrans Environmental Engineering determined it is exempt from noise analysis and a noise study report was not required for the project. Per 23 CFR 772.7(f) *a highway agency is not required to complete a noise analysis or consider abatement measures.* Since a noise study report was not prepared, a noise abatement decision report is not required.

6I. Life Cycle Cost Analysis

A Life Cycle Cost Analysis (LCCA) report has been prepared in April 2019 to evaluate the pavement alternatives for the project improvements and provide a preliminary determination of the pavement structural sections for the project. The LCCA is an economic analysis that compares initial construction cost, future

maintenance cost, and user delay cost of different pavement alternatives over an analysis period of 55 years. The LCCA data forms and deterministic results are included in this document as Attachment O.

Table 6.1 – Summary of the LCCA Analysis

Option	Rehabilitation Strategy	Pavement Section	Agency Cost	User Cost	Total Life Cycle Cost
1	A	1.00’ JPCP 0.20' HMA	$189,835,000	$0	$189,835,000
2	B	1.10’ CRCP 0.20’ HMA	$215,531,000	$0	$215,531,000
3	F	0.20’ RHMA-G 0.50’ HMA	$391,410,000	$4,051,000	$395,461,000*

JPCP = Jointed Plain Concrete Pavement **for details see LCCA Attachment O*
HMA = Hot-Mixed Asphalt *RHMA-G = Rubberized Hot Mix Asphalt-Gap*
CRCP = Continuously Reinforced Concrete Pavement

Note: LCCA cost for Option 1 and 2 does not include cost of Detour and Bridge widening

The LCCA report concludes that a 40-year JPCP design would have the lowest life cycle cost for the I-10 mainline lane and shoulders.

6J. Reversible Lanes

This rehabilitation project is not increasing capacity, therefore reversible lanes as required by California Streets and Highway Code, Section 100.15, were not considered for the project.

7. OTHER CONSIDERATIONS AS APPROPRIATE

7A. Public Hearing Process

A public notice advertising Caltrans’ intent to adopt a Mitigated Negative Declaration with Opportunity for Public Hearing was published in the Palo Verde Valley Times, a newspaper of general circulation, on June 5, 2019 and in the La Prensa on June 7, 2019. The document was available for public review and comment for thirty (30) days. No request for public hearing or meeting were received. Comments were received and have been addressed in the Final Environmental Document.

7B. Route Matters

This project has no freeway agreements, route adoptions, relinquishments, no access modifications or new public road connection. Thus, route matters are not applicable to this project.

7C. Storm Water Compliance

A Storm Water Data Report (SWDR) is prepared to meet the demands of the storm water management requirements in regard to controlling pollutant discharge and meeting permits requirements. Storm Water Compliance will be updated during the PS&E phase of the project. All applicable construction activities will be reviewed in the development and preparation of the Storm Water Pollution Protection Plan. The signature front page of the SWDR prepared for the Project Approval and Environmental Document (PA&ED) phase is included in Attachment M.

7D. Permits

Permits and/or approvals required for the proposed project improvements are listed in Table 7.1

Table 7.1 – Permits

AGENCY	PERMITS
United States Army Corps of Engineers	Section 404 Permit, Clean Water Act for filling or dredging waters of the U.S.
United States Fish and Wildlife Service	Endangered Species Act, Section 7 Consultation
California Department of Fish and Wildlife	Section 1602 Lake or Streambed Alteration Agreement Incidental Take 2081 Permit
Regional Water Quality Control Board, Region 8 (Colorado River)	Section 401 Water Quality Certification
State Water Resources Control Board	Construction General Stormwater and Caltrans' Statewide NPDES Permits *

* Permits already have been issued. Construction General Storm Water Permit only requires the submittal of the Notice of Intent by Construction.

7E. Cooperative Agreements

The project will not require any cooperative agreements with other agencies. Caltrans is the sole agency involved on this project.

7F. Other Agreements

No other agreements are needed for this project.

7G. Report on Feasibility of Providing Access to Navigable Rivers

Due to the nature of this project, a report on Feasibility of Providing Access to Navigable Rivers is not required.

7H. Public Boat Ramps

This project does not involve public boat ramps.

7I. Transportation Management Plan

The proposed improvements will be constructed within the existing right of way. The total duration of construction for the project is approximately 700 working days. Conceptual Traffic Management Plan (TMP) and Lane Requirement Charts will be developed in the PS&E Phase to outline measures to minimize traffic impacts during construction. The cost of the TMP (Attachment N) has been estimated at $302,000 and is included in the cost estimate.

Contingency Plans

The following contingency plans will be developed during construction to address potential construction and traffic related issues that could arise:

- Construction Operations Contingency Plan to identify elements that could potentially fail and cause delays and provide the alternatives to ensure continuing operations and on-time opening of traffic lanes for each of the critical work operations.

- Traffic Handling Contingency Plan to identify traffic handling contingency strategies to be employed in the event of work zone incidents or late lane closure pickups.

- Public Information office will be engaged to educate the public and inform the impacted local agencies and stakeholders.

7J. Stage Construction

The project construction is envisioned to be carried out in several construction stages with construction progressing from west to east and some overlap between stages. Construction operation will not necessitate the full closures of the freeway mainline, branch connectors, and interchange ramps. Areas within the State right of way may be used as construction staging areas. For further construction staging description, see Section 5B of this report.

7K. Accommodation of Oversize Loads

The I-10 freeway is on the United States Department of Defense (DOD) 2,460 miles Priority Network of selected Interstate System routes on which a 16- foot minimum vertical clearance is required. All of the I-10 overcrossing structures along the project corridor meet the 16-foot minimum vertical clearance requirement set by the DOD. The Caltrans mandatory design standard for minimum vertical clearance over State highways is 16 feet 6 inches. A minimum vertical clearance of 16 feet will be maintained during construction.

7L. Complete Streets

Within the project limits, bicycles are allowed on the freeway shoulders except from PM R145.12 to PM R156.49. Rumble strips will be designed to be bicycle friendly. A minimum four-foot clear shoulder will be provided between rumble strip and the outer edge of shoulders. To increase public awareness about the presence of cyclists, signage along the highway will be installed.

7M. Climate Change

Implementation of the JPCP alternatives will result in a longer lasting pavement that can better withstand the excessive temperatures of the area. Increasing the longevity of pavements not only reduces the demand for new materials, but also decreases the need for maintenance and rehabilitation, which reduces Greenhouse Gas (GHG) emissions from maintenance and construction activities.

A GHG Emissions Analysis is included in the Environmental Document in the Climate Change section. The Project Adaptation Analysis covers the discussion of climate change risks for precipitation, temperature and wildfire; which are based on Caltrans' Vulnerability Assessment. This approach involves concepts and actions for exposure, consequence and prioritization. Neither construction nor operation of the project would introduce new users or structures into an area of high fire-severity concern to increase the risk of wildfire.

The scope of the project includes upgrading drainage facilities as well as installation of RSPs at all bridge abutments and piers located at washes within the

project limits that help minimize damage in case of a flood event caused by monsoons.

7N. Asset Management

There are no carry-over issues from the PIR that have not been fully vetted in this PR.

7O. Coordination with Other Projects

The scope of work of several projects was added to this project after the approval of the PIR. Replacement of one CMS sign panel under EA 1J910 at PM R155.3 and some of the Rock Slope Protection work under EA 1H210 are incorporated in this project. The post-PIR approval projects are shown in the following table:

Table 7.2 – Added Projects

Project EA	Description	WBS Construction and Support Cost Estimate
1J910	Install CMS sign at various locations	$350,000
1H210	Replace existing RSP (PM R120.7/R142.7)	$7,178,000
	TOTAL COST	$7,528,000

Loops installed under EA 1H530 currently in construction and two existing Census Stations will be replaced within the limits of this rehabilitation project.

7P. Joint Field Meeting

As per District Memorandum dated August 9, 2018 Design Field Meetings Phase 0 and Phase 1, a 60% Constructability Review joint field meeting with Design, Maintenance, Construction, Environmental, and Project Management was conducted on September 17, 2019. See Attachment Q for the joint field meeting roster.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

It has been determined that this project is eligible for federal-aid funding. It is anticipated that the funding of the proposed I-10 Corridor Project will require several sources of funds. This project is currently programmed in the 2020 SHOPP under the Capital Preventive Maintenance program 201.122-(HA22) for delivery on the 2021/2022 FY.

Programming

The programmed budgets for PA&ED support, Right of Way support, PS&E support, and Construction support phases are not adequate for the current estimated cost. The total programmed, escalated estimated cost components, and fiscal year are shown in Table 8.1.

Table 8.1 - Current Cost Estimate vs. Programmed Amounts

Fund Source	Current Estimate	Escalated Estimate				Total Escalated Estimate	Programmed Amount	Escalated Estimate Difference from Programmed
201.122		18/19	19/20	20/21	21/22			
Component	In Thousands of Dollars ($1,000)							
PA&ED	9,000	9,000				9,000	9,000	
PS&E	10,000			10,000		10,000	10,000	
ROW	117			117		117	117	
Const.	24,708				29,000	29,000	29,000	
Total Support	**43,825**	**9,000**		**10,117**	**29,000**	***48,117***	**48,117**	**0**
ROW	9,258				9,258	9,258	10	9,248*
Const.	182,030				*207,000*	***207,000***	207,000	0
Total Capital	**191,288**				**216,258**	**216,258**	**207,010**	**9,248**
Grand Total	235,113	9,000		10,117	245,258	264,375	255,127	9,248

Construction capital escalated cost is calculated according to the most current Highway & Street Construction Cost Indices and Forecast until the estimated mid-point of construction (2021).
* A PCR is being processed to fund the increase in the R/W capital cost.

Support Cost Ratio

The support to capital cost ratio is 22.2% based on a total escalated capital support cost of $48,117,000 and escalated total construction capital costs of $216,258,000.

The support to capital cost ratio of 22.2% is similar to the 20.0% statewide average for rehabilitation projects. The higher ratio is likely due to the fact that this project is more remote and more complex. The statewide average does not take this into

consideration. Also, this project includes ADA improvements, utility relocations, and railroad involvement that require additional support efforts.

Estimate

The project cost has been prepared using Caltrans cost estimating template. The Caltrans cost data was used in establishing unit prices. The total escalated combined capital outlay cost of Construction and Right of Way is $216,258,000. For cost estimate details, please refer to Attachment D.

9. DELIVERY SCHEDULE

Below is the tentative milestone schedule for this project:

Table 9.1 –Project Schedule

Project Milestones		Milestone Date (Month/Day/Year)	Milestone Designation (Target / Actual)
PROJECT INITIATION DOCUMENT	M010	06/29/2017	Actual
CIRCULATE DED	M120	06/03/2019	Actual
PA&ED	M200	08/03/2020	Target
PS&E TO DOE	M377	08/02/2021	Target
RIGHT OF WAY CERTIFICATION	M410	04/01/2022	Target
READY TO LIST	M460	05/02/2022	Target
HEADQUARTERS ADVERTISE	M480	10/03/2022	Target
AWARD	M495	02/01/2023	Target
APPROVE CONTRACT	M500	04/03/2023	Target
CONTRACT ACCEPTANCE	M600	04/01/2026	Target
END PROJECT	M800	04/03/2028	Target

10. RISKS

A Level 2 qualitative risk analysis has been performed for the project. Single Focal Point approval has been obtained to perform a Level 3 Quantitative Risk Analysis in the upcoming PS&E phase. Project risks have been identified by the PDT to include risks associated with project funding, environmental issues, design, and construction. Table 10.1 below provides a summary of identified risks. For complete Risk Register, refer to Attachment S.

Table 10.1 – Risk Register Summary

CATEGORY	TITLE	PRIORITY RATING
Environmental	Permit	Moderate
Environmental	Desert Tortoise Fencing	Low
Design	Pavement Condition	Moderate
Design	Unit Cost	Moderate
Structure Design	Rock Slope Protection	Low

11. EXTERNAL AGENCY COORDINATION

Federal Highway Administration (FHWA)

This Project Report has been reviewed by Caltrans' FHWA Liaison, Sergio Avila, on July 7, 2020, and is eligible for federal aid funding. Per the current Joint Stewardship and Oversight Agreement (Agreement) between the California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA), dated May 28, 2015, this project is considered to be a Delegated Project. However, should any future situation/circumstance arise that will potentially classify the project as a Project of Division Interest, Caltrans shall notify FHWA and reassess this project using the Project of Division Interest selection criteria outlined in the Agreement.

12. PROJECT REVIEWS

Project Report Reviews

FUNCTIONAL UNIT	NAME	DATE
District Traffic Operations	Haissam Yahya	07-15-2020
District Safety Reviewer	Kevin Chen	06-23-2020
Program Management	Denise Craig	06-23-2020
Program/Project Management	Manuel Farias	07-03-2020
District Maintenance Engineering	James Lan	07-03-2020
District Design Liaison/FHWA/ADA	Sergio Avila	07-07-2020
HQ Project Delivery Coordinator	Luis Betancourt	07-02-2020
Constructability Review	Martha Santana	07-03-2020
District 8 SHOPP Manager	Joseph Fehrenkamp	07-03-2020
Risk Management Coordinator	Md Shaheed	07-03-2020
Project Manager	Wil Ochoa	07-03-2020

13. PROJECT PERSONNEL

PERSONNEL	TITLE	PHONE
Wil Ochoa	Project Manager	(909) 806-3200
Diboro Kanabolo	Office Chief, Design O	(909) 383-7932
Fred Asef	Project Engineer, Design O	(909) 383-7508
Antonia Toledo	Branch Chief, Environmental Studies D	(909) 806-2541
Jeanine Gray	Environmental Planner	(909) 383-5941
Haissam Yahya	Traffic Operations – Capital Outlay Support	(909) 383-4065
Dean To	Traffic Design	(909)383-4635
Wendy Escobar	Associate Right of Way Agent	(909) 888-4608

14. ATTACHMENTS

A. Location Map (1)
B. Typical Cross Section (2)
C. Project Development Category Assignment (1)
D. Preliminary Cost Estimate (10)
E. Project Initiation Proposal (1)
F. Collision Analysis Report (13)
G. Draft Materials Report (20)
H. Detour Option/Stage Construction (7)
I. Typical Structure Widening (1)
J. Initial Site Assessment (1)
K. Right of Way Data Sheet (9)
L. IS-MND/EA-FONSI (3)
M. Storm Water Data Report - Signature Page (1)
N. Transportation Management Plan Cost Estimate (5)
O. Life Cycle Cost Analysis (9)
P. Utility Conflict Maps (5)
Q. Joint Field Review Roster (1)
R. 2R Project Certification (1)
S. Risk Register (6)

LOCATION MAP

Attachment A

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

STATE OF CALIFORNIA

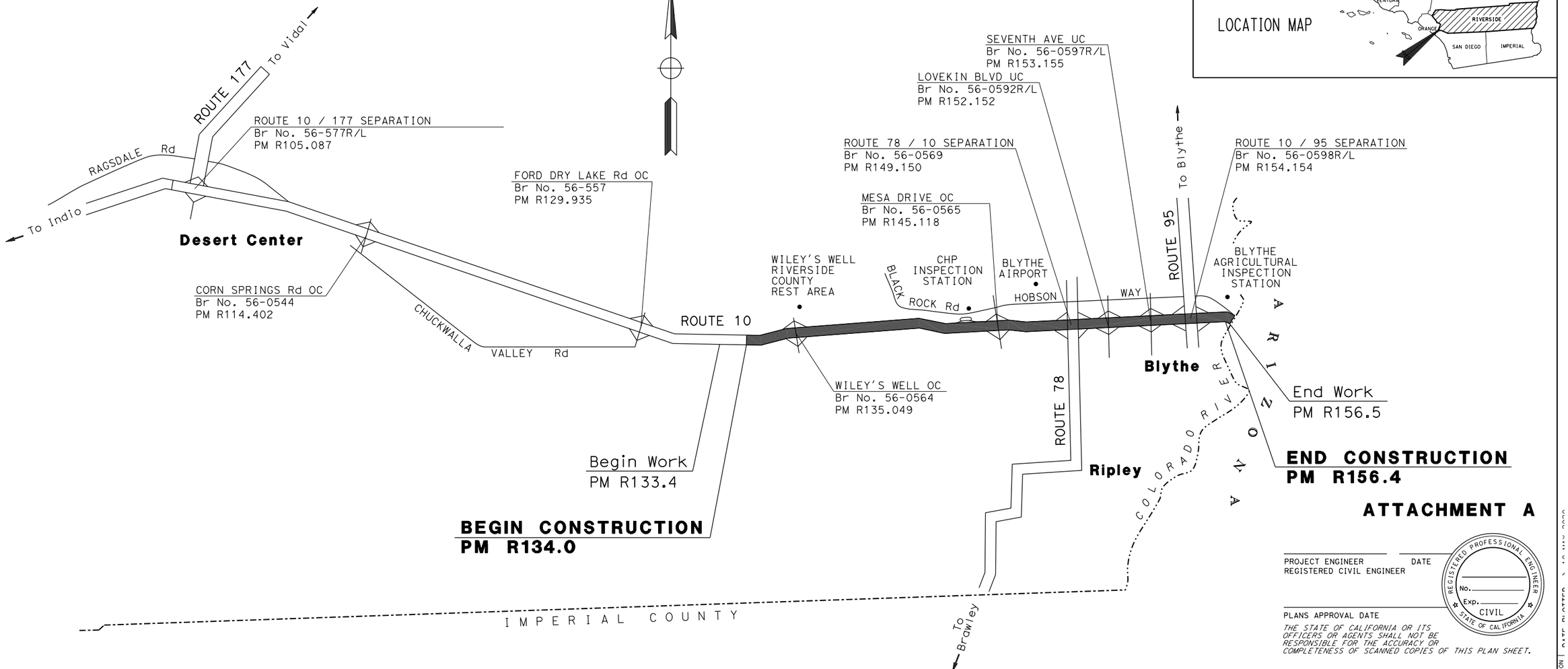
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN RIVERSIDE COUNTY
FROM 1.1 MILE WEST OF WILEY'S WELL Rd OC
TO CALIFORNIA/ARIZONA STATE LINE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2018



ATTACHMENT A

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

CONTRACT No.	08-1C0834
PROJECT ID	0816000090

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

PROJECT MANAGER

DESIGN MANAGER

LAST REVISION

TYPICAL CROSS SECTION

Attachment B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

PROPOSED STRUCTURAL SECTIONS

CONCRETE OVERLAY OVER ASPHALT

PM R134.0/R156.5*

[1]
- 1.00′ JPCP
- 0.20′ HMA-A
- COLD PLANE 0.30′AC Pvmt

*FULL DEPTH PAVEMENT RECONSTRUCTION 1000′ AT APPROACH AND DEPARTURE OF BRIDGES (SEE X-2).

EXISTING STRUCTURAL SECTIONS

PM R134.0/R144.0

[A]
- 0.80′ AC
- 0.25′ ACB
- 0.60′ AB

PM R144.0/R148.0

[B]
- 0.35′ AC
- 0.25′ ACB
- 0.60′ AB

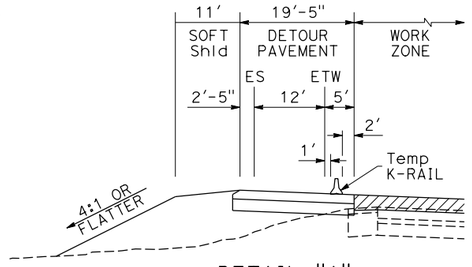
PM R148.0/R156.5

[C]
- 0.35′ AC
- 0.25′ ACB
- 0.60′ AB
- 1.90′ AS

DETOUR STRUCTURAL SECTIONS

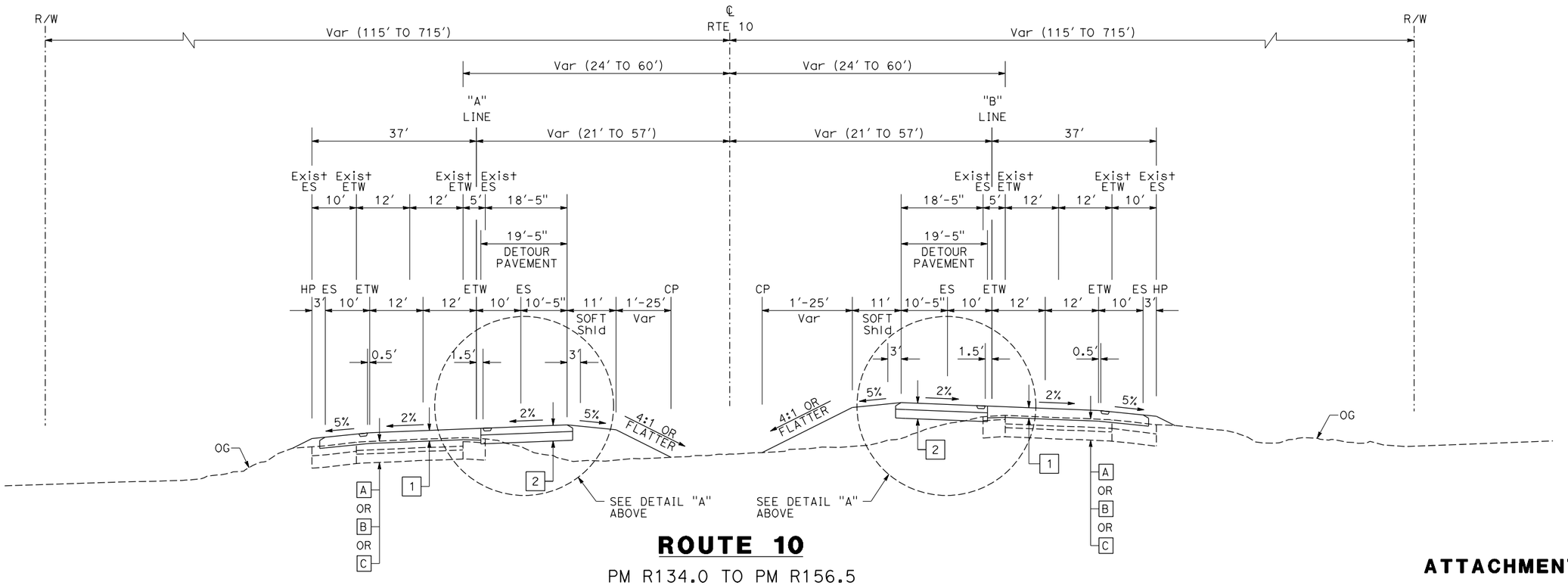
PM R134.0/R156.5

[2]
- 0.65′ HMA-A
- 0.80′ CL2 AB



DETAIL "A"

DETOUR TRAFFIC CONFIGURATION DURING MAINLINE CONSTRUCTION



ROUTE 10

PM R134.0 TO PM R156.5

CONCRETE OVERLAY OVER ASPHALT

ATTACHMENT B

TYPICAL CROSS SECTIONS

NO SCALE **X-1**

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 31-AUG-2020 | TIME PLOTTED => 10:46

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

PROPOSED STRUCTURAL SECTIONS

RECONSTRUCTION

PM R134.0/R156.5 *

3
- 1.20′ JPCP
- 0.30′ HMA-A

* RECONSTRUCTION 1000′ AT APPROACH AND DEPARTURE OF BRIDGES ON THIS LIMIT.

EXISTING STRUCTURAL SECTIONS

PM R134.0/R144.0

A
- 0.80′ AC
- 0.25′ ACB
- 0.60′ AB

PM R144.0/R148.0

B
- 0.35′ AC
- 0.25′ ACB
- 0.60′ AB

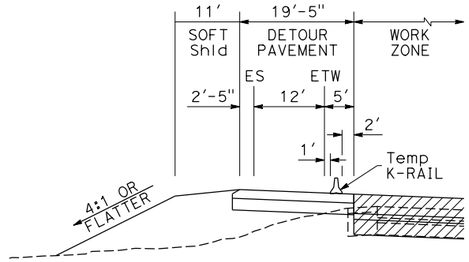
PM R148.0/R156.5

C
- 0.35′ AC
- 0.25′ ACB
- 0.60′ AB
- 1.90′ AS

DETOUR STRUCTURAL SECTIONS

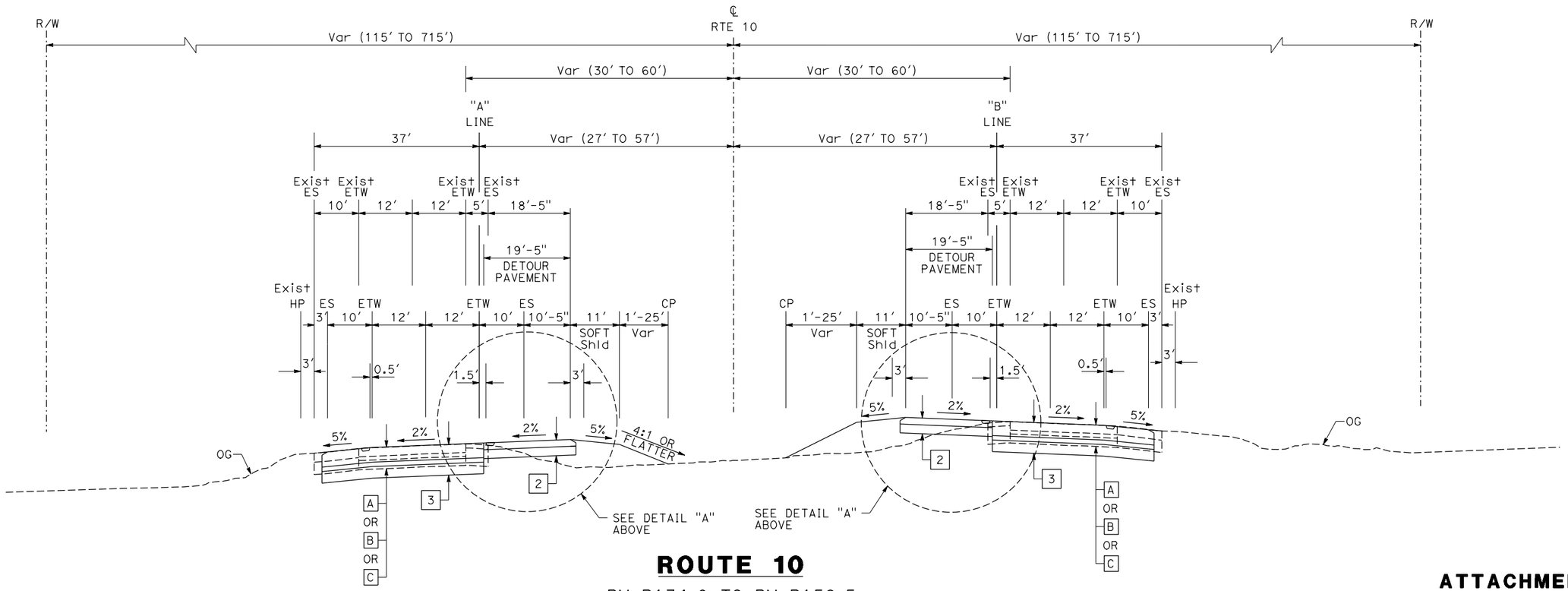
PM R134.0/R156.5

2
- 0.65′ HMA-A
- 0.80′ CL2 AB



DETAIL "A"

DETOUR TRAFFIC CONFIGURATION DURING MAINLINE CONSTRUCTION



ROUTE 10

PM R134.0 TO PM R156.5

* PAVEMENT RECONSTRUCTION

ATTACHMENT B

TYPICAL CROSS SECTIONS

NO SCALE **X-2**

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REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY | FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans®

BORDER LAST REVISED 7/2/2010 | USERNAME => s135527 | DGN FILE => Att B_Typical Cross Section 2.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2239 | PROJECT NUMBER & PHASE 08160000901

PROJECT DEVELOPMENT CATEGORY ASSIGNMENT

Attachment C

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Making Conservation a California Way of Life.

To: JAMAL ELSALEH
ACTING DEPUTY DISTRICT DIRECTOR
DESIGN

Date: April 24, 2019

File: 08-SBd-10 PM R134.0/R156.5
In/Nr Blythe from Teed Ditch Bridge to Arizona State line
Rehabilitate mainline pavement, shoulders & ramps
08 2239 / EA 1C083
Project No. 0816000090
20.xx.201.122 HA22

From: DIBORO KANABOLO
Office Chief
Design O, MS 1164

Subject: **REQUEST FOR CATEGORY 4B APPROVAL**

A Project Report is being prepared for the above-referenced project. This project consists of rehabilitation of existing Asphalt Concrete (AC) pavement. Existing AC pavements on the mainline and shoulders will be cold planed 0.2 foot and overlaid with 0.2 foot Hot Mix Asphalt (HMA) and one-foot (1.0') thick Jointed Plain Concrete Pavement [White Topping]. The existing ramp pavements will be cold planed 0.2 foot and overlaid with 0.2 foot HMA within the above-specified limits.

This project is classified as a Category 4B project, as defined in the Project Development Procedures Manual (7th Edition, Part 2, Chapter 8, Section 5), since the proposed improvements under consideration would not require substantial new right of way and does not substantially increase traffic capacity. Environmental determination for this Category 4B project is Initial Study with Negative Declaration/Environmental Assessment (IS/EA).

In accordance with Chapter 8, Section 5 of the Project Development Procedures Manual, your approval is requested to assign the above-referenced project to Category 4B.

Approved by:

JAMAL ELSALEH
Acting Deputy District Director
Design

4/26/2019
Date

Fred Asef / jl

PRELIMINARY COST ESTIMATE

Attachment D

PROJECT

PROJECT COST ESTIMATE ©

EA: 08-1C083 PID: 0816000090

EA: 08-1C083

PID: 0816000090

District-County-Route: 08-Riv-10

PM: R134.0-R156.5

Type of Estimate : Project Report

Program Code : SHOPP - 201.122 (HA-22)

Project Limits : Riv-10-PM R134/R156.5

Project Description: Rehabilitate Mainline Pavement, Shoulders and Ramps

Scope : Rehab mainline and shoulders with JPCP (40-years) - (White Topping)

Alternative : Rehabilitate Mainline Pavement, Shoulders and Ramps - EB & WB Bridge Widening Detour (19'-5") - Detour Option 1 - Strategy A

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 145,410,000	$ 165,355,286
TOTAL STRUCTURES COST	$ 36,620,000	$ 41,643,013
SUBTOTAL CONSTRUCTION COST	$ 182,030,000	$ 207,000,000
TOTAL RIGHT OF WAY COST	$ 9,258,000	$ 9,258,000
TOTAL CAPITAL OUTLAY COSTS	$ 191,288,000	$ 216,258,000
PA/ED SUPPORT	$ 9,000,000	$ 9,000,000
PS&E SUPPORT	$ 10,000,000	$ 10,000,000
RIGHT OF WAY SUPPORT	$ 117,000	$ 117,000
CONSTRUCTION SUPPORT	$ 24,708,000	$ 29,000,000
TOTAL SUPPORT COST	$ 43,825,000	$ 48,117,000
TOTAL PROJECT COST	$ 236,000,000	$ 265,000,000

Programmed Amount

	Month	/	Year
Date of Estimate (Month/Year)	8	/	2020
Estimated Construction Start (Month/Year)	2	/	2022
Number of Working Days =	700		
Estimated Mid-Point of Construction (Month/Year)	9	/	2024
Estimated Construction End (Month/Year)	4	/	2026
Number of Plant Establishment Days	NA		

Estimated Project Schedule

PID Approval	June-17
PA/ED Approval	August-20
PS&E	August-21
RTL	May-22
Begin Construction	February-23
End Construction	April-26

Reviewed by District O.E. or Cost Estimate Certifier	George Morhig	6/11/2020	(909) 383-4827
	Office Engineer / Cost Estimate Certifier	**Date**	**Phone**
Approved by Project Manager	Wil Ochoa	6/11/2020	(909) 806-3200
	Project Manager	**Date**	**Phone**

NOTE: An Updated Cost Estimate per 08/14/2020 PPM and Design Meeting conclusions; PCR may be required following Bid opening for EA 1C082

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	**Earthwork**	$	6,012,600
2	**Pavement Structural Section**	$	51,349,300
3	**Drainage**	$	4,517,000
4	**Specialty Items**	$	2,038,300
5	**Environmental**	$	4,830,600
6	**Traffic Items**	$	12,629,200
7	**Detours**	$	31,287,800
8	**Minor Items**	$	1,126,700
9	**Roadway Mobilization**	$	11,379,200
10	**Supplemental Work**	$	4,239,300
11	**State Furnished**	$	1,707,700
12	**Time-Related Overhead**	$	7,368,000
13	**Roadway Contingency**	$	6,924,300
	TOTAL ROADWAY ITEMS	**$**	**145,410,000**

Estimate Prepared By :	William Petoskey	6/11/2020	(909) 806-3211
	Name and Title	Date	Phone
Estimate Reviewed By :	Fred Asef	6/11/2020	(909) 383-7508
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	225,078	x	22.00	=	$	4,951,716
152320	Lead Compliance Plan	LS		x		=	$	-
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY		x		=	$	-
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
170106	Clearing & Grubbing	LS	1	x	200,000.00	=	$	200,000
100100	Develop Water Supply	LS	1	x	500,000.00	=	$	500,000
190185	Shoulder Backing	TON	12,028	x	30.00	=	$	360,840
210130	Duff	ACRE		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL EARTHWORK SECTION ITEMS $ 6,012,600

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY	332,610	x	110.00	=	$	36,587,100
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
414202	Joint Seal (Preformed Compression)	LF		x		=	$	-
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	191,049	x	60.00	=	$	11,462,940
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	12,631	x	120.00	=	$	1,515,720
39300X	Geosynthetic Pavement Interlayer (Type X)	SQYD		x		=	$	-
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
290201	Asphalt Treated Permeable Base	CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
390100	Prime Coat	TON	327	x	1,000.00	=	$	327,000
397005	Tack Coat	TON	233	x	750.00	=	$	174,750
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530	Minor Concrete (Textured Paving)	CY		x		=	$	-
731502	Minor Concrete (Miscellaneous Construction)	CY		x		=	$	-
394076	Place Hot Mix Asphalt Dike (Type E)	LF	46,415	x	3.00	=	$	139,245
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY		x		=	$	-
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
15312X	Remove Concrete	LF/CY/LS		x		=	$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD		x		=	$	-
153103	Cold Plane Asphalt Concrete Pavement	SQYD	571,251	x	2.00	=	$	1,142,502
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
250201	Class 2 Aggregate Subbase	CY		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS $ 51,349,300

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510092	Structural Concrete, Headwall	CY	260	x	2,000.00	=	$	520,000
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
665037	36" Corrugated Steel Pipe (0.109" Thick)	LF	4,000	x	165.00	=	$	660,000
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Th	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
703239	36" Corrugated Steel Pipe Riser (0.109" Thick)	LF	200	x	850.00	=	$	170,000
705023	36" Steel Flared End Section	EA	78	x	1,500.00	=	$	117,000
703233	Grated Line Drain	LF		x		=	$	-
723315	Concreted Rock Slope Protection (1/4T, Method B	CY	18,333	x	145.00	=	$	2,658,285
721030	Rock Slope Protection (1/2T, Method B) (CY)	CY		x		=	$	-
729012	Rock Slope Protection Fabric (Class 10)	SQYD	18,333	x	5.00	=	$	91,665
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
151509	Reconstruct Drainage Facility	LS	1	x	300,000.00	=	$	300,000

TOTAL DRAINAGE ITEMS	**$**	**4,517,000**

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS	1	x	5,000.00	=	$	5,000
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
839752	Remove Guardrail	LF	36,132	x	7.00	=	$	252,924
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832006	Midwest Guardrail System (Steel Post)	LF	22,610	x	37.50	=	$	847,875
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type CAT)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA	50	x	4,000.00	=	$	200,000
4906XX	CIDH Concrete Piling (Insert Diameter)	LF		x		=	$	-
839XXX	Crash Cushion (Insert Type)	EA		x		=	$	-
83XXXX	Concrete Barrier (Insert Type)	LF		x		=	$	-
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	SQFT		x		=	$	-
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
203070	Rock Stain	SQFT		x		=	$	-
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
839543	Transition Railing (Type WB-31)	EA	44	x	4,000.00	=	$	176,000
597601	Prepare and Stain Concrete	SQFT		x		=	$	-
832070	Vegetation Control (Minor Concrete)	SQYD	10,000	x	20.00	=	$	200,000
839561	Rail Tensioning Assembly	EA		x		=	$	-
839581	End Anchor Assembly (Type SFT)	EA	10	x	1,000.00	=	$	10,000
846051	12" Rumble Strip (Asphalt Concrete Pavement)	STA	2,386	x	30.00	=	$	71,580
846052	12" Rumble Strip (Concrete Pavement)	STA	2,291	x	120.00	=	$	274,920

TOTAL SPECIALTY ITEMS	**$**	**2,038,300**

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
146002	Biological Mitigation	LS	1	x	2,935,035.00	=	$	2,935,035		
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-		
803210	Temporary Desert Tortoise Fence	LF	9,825	x	4.00	=	$	39,300		
								Subtotal Environmental Mitigation	*$*	*2,974,335*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost		
066212	Modify Existing Irrigation System	LS	1	x	50,000.00	=	$	50,000		
100100	Develop Water Supply	LS	1	x	80,000.00	=	$	80,000		
20XXXX	Highway Planting	LS		x		=	$	-		
20XXXX	Irrigation System	LS		x		=	$	-		
202006	Soil Amendment	CY	75	x	20.00	=	$	1,500		
202037	Organic Fertilizer	LB	500	x	3.00	=	$	1,500		
204035	Plant (Group A)	EA	1,500	x	7.50	=	$	11,250		
204099	Plant Establishment Work	LS	1	x	75,000.00	=	$	75,000		
204101	Extend Plant Establishment Work	LS		x		=	$	-		
20XXXX	Follow-up Landscape Project	LS		x		=	$	-		
150685	Remove Irrigation Facility	LS		x		=	$	-		
204096	Maintain Existing (Irrigation or Planted Areas)	LS	1	x	6,000.00	=	$	6,000		
206400	Check and Test Existing Irrigation Facilities	LS	1	x	10,000.00	=	$	10,000		
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-		
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT/SQYD		x		=	$	-		
200122	Weed Germination	SQYD		x		=	$	-		
208304	Water Meter	EA		x		=	$	-		
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-		
20XXXX	Estimate is based on Earthwork Quantity	LS		x		=	$	-		
								Subtotal Landscape and Irrigation	*$*	*105,250*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost		
210010	Move In/Move Out (Erosion Control)	EA	*4*	x	800	=	$	3,200		
210121	Duff (Acre)	ACRE	269	x	1300.00	=	$	349,700		
210350	Fiber Rolls	LF		x		=	$	-		
210360	Compost Sock	LF		x		=	$	-		
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-		
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-		
210300	Hydromulch	SQFT		x		=	$	-		
210420	Straw	SQFT		x		=	$	-		
210430	Hydroseed	SQFT	11709550	x	0.05	=	$	585,478		
210610	Compost (CY)	CY	1500	x	32	=	$	48,000		
210630	Incorporate Materials	SQFT	54000	x	0.05	=	$	2,700		
210602A	Hydraulic Growth Medium	SQFT	54000	x	0.20	=	$	10,800		
								Subtotal Erosion Control	*$*	*999,878*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost		
130300	Prepare SWPPP	LS	1	x	15,100.00	=	$	15,100		
130200	Prepare WPCP	LS		x		=	$	-		
130100	Job Site Management	LS	1	x	162,000.00	=	$	162,000		
130330	Storm Water Annual Report	EA	6	x	2,000.00	=	$	12,000		
130310	Rain Event Action Plan (REAP)	EA		x		=	$	-		
130320	Storm Water Sampling and Analysis Day	EA		x		=	$	-		
130520	Temporary Hydraulic Mulch	SQYD		x		=	$	-		
130550	Temporary Hydroseed	SQYD		x		=	$	-		
130560	Temporary Soil Binder	SQYD	720,000	x	0.30	=	$	216,000		
130505	Move-In/Move-Out (Temporary Erosion Control)	EA	6	x	1,000.00	=	$	6,000		
130640	Temporary Fiber Roll	LF	45,000	x	4.00	=	$	180,000		
130900	Temporary Concrete Washout	LS	1	x	40,000.00	=	$	40,000		
130710	Temporary Construction Entrance	EA	10	x	4,000.00	=	$	40,000		
130610	Temporary Check Dam	LF		x		=	$	-		
130620	Temporary Drainage Inlet Protection	EA	100	x	300.00	=	$	30,000		
130730	Street Sweeping	LS	1	x	50,000.00	=	$	50,000		
								Subtotal NPDES	*$*	*751,100*

								TOTAL ENVIRONMENTAL	**$**	**4,830,600**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	1	x	15,100.00	=	$	15,100		
066596	Additional Water Pollution Control**	LS	1	x	6,000.00	=	$	6,000		
066597	Storm Water Sampling and Analysis***	LS		x		=	$	-		
XXXXXX	Some Item	LS		x		=	$	-		
								Subtotal Supplemental Work for NDPS	*$*	*21,100*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS		x		=	$	-
860201	Signal and Lighting	LS		x		=	$	-
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LS		x		=	$	-
5602XX	Furnish Sign Structure (Type X)	LB		x		=	$	-
5602XX	Install Sign Structure (Type X)	LB		x		=	$	-
498040	XX" CIDHC Pile (Sign Foundation)	LF		x		=	$	-
870112	Inductive Loop Detectors (LS)	LS	1	x	14,000.00	=	$	14,000
8609XX	Traffic Monitoring Station (Type X)	LS		x		=	$	-
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Ele	LS	1	x	900,000.00	=	$	900,000
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Some Item	Unit		x		=	$	-

Subtotal Traffic Electrical $ *914,000*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA	100	x	300.00	=	$	30,000
566012	Roadside Sign - Two Post	EA	20	x	500.00	=	$	10,000
5602XX	Furnish Sign	SQFT	1,920	x	25.00	=	$	48,000
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF	298,000	x	0.75	=	$	223,500
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF	237,600	x	1.00	=	$	237,600
150712	Remove Painted Pavement Marking	SQFT		x		=	$	-
150742	Remove Roadside Sign	EA	100	x	120.00	=	$	12,000
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
820107	Delineator (Class 1)	EA	500	x	50.00	=	$	25,000
820130	Object Marker	EA	20	x	150.00	=	$	3,000
120159	Temporary Traffic Stripe (Paint)	LF	950,400	x	0.40	=	$	380,160
120300	Temporary Pavement Marker	EA	5,000	x	5.00	=	$	25,000
840516	Thermoplastic Pavement Marking (Enhanced Wet	SQFT	9,000	x	6.00	=	$	54,000
846007	6" Thermoplastic Traffic Stripe (Enhanced Wet Nig	LF	950,400	x	0.40	=	$	380,160
846012	Thermoplastic Crosswalk and Pavement Marking (	SQFT	52,647	x	4.00	=	$	210,588
120090	Construction Area Signs	LS	1	x	20,000.00	=	$	20,000
810120	Remove Pavement Marker	EA	10,000	x	1.00	=	$	10,000
810230	Pavement Marker (Retroreflective)	EA	10,000	x	7.00	=	$	70,000

Subtotal Traffic Signing and Striping $ *1,739,008*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
128652	Portable Changeable Message Signs	LS	1	x	$ 200,000	=	$	200,000

Subtotal Traffic Management Plan $ *200,000*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA		x		=	$	-
120165	Channelizer (Surface Mounted)	EA	150	x	50.00	=	$	7,500
120120	Type III Barricade	EA	1	x	5,000.00	=	$	5,000
129100	Temporary Crash Cushion Module	EA	168	x	200.00	=	$	33,600
129150	Temporary Traffic Screen	LF	475,200	x	3.75	=	$	1,782,000
120100	Traffic Control System	LS	1	x	800,000.00	=	$	800,000
129110	Temporary Crash Cushion	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF	475,200	x	15.00	=	$	7,128,000
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
568046	Remove Sign Structure (LS)	LS	1	x	20,000.00	=	$	20,000

Subtotal Stage Construction and Traffic Handling $ *9,776,100*

TOTAL TRAFFIC ITEMS $ **12,629,200**

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY		x		=	$	-
198010	Imported Borrow	CY	634,250	x	20.00	=	$	12,685,000
390132	Hot Mix Asphalt (Type A)	TON	224,235	x	60.00	=	$	13,454,100
260203	Class 2 Aggregate Base	CY	139,495	x	30.00	=	$	4,184,850
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
390100	Prime Coat	TON	391	x	1,000.00	=	$	391,000
397005	Tack Coat	TON	191	x	750.00	=	$	143,250
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
128601	Temporary Signal System	LS		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
190185	Shoulder Backing	TON	12,028	x	30.00	=	$	360,840
846046	6" Rumble Strip (Asphalt Concrete Pavement	STA	2,292	x	30.00	=	$	68,760

* Includes constructing, maintaining, and removal

TOTAL DETOURS **$ 31,287,800**

SUBTOTAL SECTIONS 1 through 7 $ 112,664,800

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
	ADA Items	1.0%	$	1,126,648		
8B - Bike Path Items						
	Bike Path Items	0.0%	$	-		
8C - Other Minor Items						
	Other Minor Items	0.0%	$	-		
	Total of Section 1-7	$ 112,664,800	x	1.0%	=	$ 1,126,648

TOTAL MINOR ITEMS **$ 1,126,700**

SECTIONS 9: ROADWAY MOBILIZATION

Item code							
999990	Total Section 1-8	$ 113,791,500	x	10%	=	$	11,379,150

TOTAL ROADWAY MOBILIZATION **$ 11,379,200**

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066670	Payment Adjustments For Price Index Fluctuations	LS	1	x	2,620,190	=	$	2,620,190
066094	Value Analysis	LS	1	x	10,000	=	$	10,000
066070	Maintain Traffic	LS	1	x	200,000	=	$	200,000
066919	Dispute Resolution Board	LS	1	x	50,000	=	$	50,000
066921	Dispute Resolution Advisor	LS	1	x	50,000	=	$	50,000
066015	Federal Trainee Program	LS	1	x	50,000	=	$	50,000
066610	Partnering	LS	1	x	100,000	=	$	100,000
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-
	*Cost of **NPDES** Supplemental Work specified in Section 5D*					=	$	21,100
	Total Section 1-8	$ 113,791,500			1.0%	=	$	1,137,915

TOTAL SUPPLEMENTAL WORK **$ 4,239,300**

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	204,530.00	=	$204,530
066063	Traffic Management Plan - Public Information	LS	1	x	110,000.00	=	$110,000
066901	Water Expenses	LS		x		=	$0
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS	1	x	128,000.00	=	$128,000
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS	1	x	127,255.00	=	$127,255
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8		$ 113,791,500		1%	=	$ 1,137,915

TOTAL STATE FURNISHED **$1,707,700**

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization $147,359,833 (used to calculate TRO)

Total Construction Cost (excluding TRO and Contingency) $167,737,700 (used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **5%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	700	X	$10,526	=	$7,368,000

TOTAL TIME-RELATED OVERHEAD **$7,368,000**

SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	$	138,485,700	x	**5%**	=	$6,924,285

TOTAL CONTINGENCY **$6,924,300**

II. STRUCTURE ITEMS

	Bridge 1	Bridge 2	Bridge 3
DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Bridge Name	Gale Ditch & McCoy Wash	Isora Ditch & Palowalla Ditch	n Access Rd UC & Rannells Drai
Bridge Number	56-0017R/L & 56-0016R/L	56-0015R/L & 56-0014R/L	56-0604R/L & 56-0588R/L
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	87 LF	87 LF	87 LF
Total Bridge Length (Feet)	310 LF	220 LF	368 LF
Total Area (Square Feet)	6743 SQFT	4785 SQFT	8004 SQFT
Structure Depth (Feet)	1 LF	1 LF	1 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$470	$470	$470
COST OF EACH	**$3,169,978**	**$2,249,662**	**$3,763,071**

	Bridge 4	Bridge 5	Bridge 6
DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Bridge Name	Lovekin Blvd UC & Blythe OH	Broadway UC & Seventh Ave UC	Route 10/95 Separation
Bridge Number	56-0592R/L & 56-0593R/L	56-0595R/L & 56-0597R/L	56-0598R/L
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	87 LF	87 LF	44 LF
Total Bridge Length (Feet)	1284 LF	531 LF	271 LF
Total Area (Square Feet)	27934 SQFT	11556 SQFT	5887 SQFT
Structure Depth (Feet)	1 LF	1 LF	1 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$470	$470	$470
COST OF EACH	**$13,133,118**	**$5,433,138**	**$2,767,698**

TOTAL COST OF BRIDGES		**$30,516,666**
TOTAL COST OF BUILDINGS		**$0**
STRUCTURES MOBILIZATION	10%	**$3,051,667**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total recommended percentages includes any quantified risk based contingency from the risk register.

STRUCTURES CONTINGENCY	10%	**$3,051,667**

TOTAL COST OF STRUCTURES **$36,620,000**

Note: The total cost of all bridge structures including time related overhead, mobilization, and contingencies is $36,621,000.

Estimate Prepared By: Prem Rimal — Structural Engineer ------ Division of Structures

6/11/2020 — Date

EA: 08-1C083 PID: 0816000090

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	30,820
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	4,042,380
C)	C1)	Utility Relocation (State Share)		4,903,730
	C2)	Potholing (Design Phase)	$	22,100
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Title and Escrow Fees	$	3,000
G)		Project Permit Fees	$	245,824
H)		Environmental Review	$	0
I)		Condemnation Settlements 0%	$	10,146
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	0

L)	**TOTAL RIGHT OF WAY ESTIMATE**	**$9,258,000**
M)	**TOTAL R/W ESTIMATE: Escalated**	**$9,258,000**
N)	**RIGHT OF WAY SUPPORT**	**$117,000**

Support Cost Estimate Prepared By _____ Project Coordinator[1] _____ Phone

Utility Estimate Prepared By _____ Utility Coordinator[2] _____ Phone

R/W Acquisition Estimate Prepared By _____ Right of Way Estimator[3] _____ Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

EA 1C083
08-Riv-40 PM R134.0/R156.5

PROJECT INITIATION PROPOSAL

Attachment E

STATE OF CALIFORNIA — PROJECT INITIATION PROPOSAL (PIP) — DEPT OF TRANSPORTATION

PROGRAM MGMT. **FOR CAPITAL OUTLAY AND MAINTENANCE (HM) PROJECTS**

Revised March 2012

2012 APR -5 AM 9:30

DATE REC IN PM:

Project ID # 0817000286 E.A. 1C080 PIP NO. 3820

A. Originating Office Maintenance

Senior / Branch Chief Mike Ristic

Contact Angela Ho

Date 3/12/2012

Telephone Number 1026

Telephone Number 1490

LOCATION: Riv 10 134.0/145.2 (Co-Rte-Post Mile)

Near Blythe from Teed Ditch to Mesa Dr (Geographic)

ISSUE:

The location above has been identified as a location requiring pavement rehabilitation/preservation.

PROPOSAL/SOLUTION(S):

Rehabilitate mainline pavement , shoulders and ramps. Alternates will include PCCP.

AGREEMENT REQUIRED: YES: NO: X AGENCY:

PERFORMANCE MEASURES: NUMBER: 44.8 DESCRIPTOR: LM

EXPECTED ENVIRONMENTAL DOCUMENT: CE

PRELIMINARY ESTIMATE

CONST: Roadwork = $44,800,000 Structures = Total = $44,800,000

State Share = $44,800,000 Local Share =

R/W : Acquisition = Utilities = Total = $0

State Share = Local Share =

TOTAL PROJECT COST: (CONST + R/W): $44,800,000

B. PROGRAM MANAGEMENT ONLY: PROGRAM CODE: 201.122 PMCS CODE: HA22

Proposed Funding: SHOPP - 2014 2016 FY: 2010

Project Type: Major: X Minor: Permit: Maintenance (HM):

Project Manager: John Ashton Functional Manager: Matthew Maestas

Comments:

For Review: Ready for District review AES 4/10/12

For Approval: I recommend this PIP for approval

PID / PR TYPE: PSSR Reviewed by: R. Youssef Date: 5/3/12

C. FINAL DISPOSITION BY DDD:

Project: Approved as Submitted ✓ Rejected Approved With Conditions(See Comments)

COMMENTS: PID must be completed prior to 7/1/2015

For ✓ DDD Program/Project Management

DDD Maintenance

Date: 5/8/2012

EA 1C083
08-Riv-40 PM R134.0/R156.5

COLLISION ANALYSIS REPORT

Attachment F

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

Making Conservation
a California Way of Life.

To: Diboro Kanabolo
Branch Chief
Design O, MS 1164

Date: May 6, 2020

File: 08-Riv-10 PM R134.0/R156.5
Rehabilitate Mainline
Pavement, Shoulder, and
Ramps
EA 1C083
Project ID No: 0816000090
Program: 201.121 (HA22)

From: HAISSAM YAHYA HY
Office Chief
COS
Traffic Operations, MS 715

Subject: **ACCIDENT DATA AND COLLISION ANALYSIS**

The accident data on Interstate 10 (I-10) in Riverside County were collected from post mile R134.0 to R156.5 for the latest three-year data available between February 1, 2017 to January 31, 2020.

The actual accident rates for I-10 during the three-year period were compared to the statewide average for similar type of facilities. A summary of the Caltrans Traffic Accident Surveillance and Analysis System (TSAS), Traffic Selective Accident Retrieval (TSAR), and Selective Accident Rate Calculation (Table B) for accident rates (Fatal, Fatal + Injury, Total) for the proposed project was retrieved on April 29, 2020 and are shown in the tables below:

Table 1. Summary of Collision Data: I-10 PM R134.0/R156.5 Combined EB/WB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicle Miles)						
Location I-10	**Actual Accident Rates**			**Average Rates**		
	Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**
PM R134.0/R156.5 Combined EB/WB	0.009	0.07	0.23	0.009	0.18	0.53

Type of Collisions								
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated
0.0%	21.0%	25.3%	1.2%	30.9%	17.3%	1.2%	3.1%	0.0%

Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
4.3%	0.6%	1.2%	43.2%	23.5%	16.7%	0.0%	8.6%	1.9%	0.0%	0.0%

Table 2. Summary of Collision Data: I-10 PM R134.0/R156.5 EB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicle Miles)						
Location I-10	Actual Accident Rates			Average Rates		
	Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total
PM R134.0/ R156.5 EB	**0.009**	0.06	0.23	0.008	0.18	0.53

Type of Collisions								
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated
0.0%	23.8%	25.0%	1.3%	25.0%	23.8%	0.0%	1.3%	0.0%

Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
7.3%	0.0%	0.0%	51.3%	18.8%	13.8%	0.0%	6.3%	2.5%	0.0%	0.0%

Table 3. Summary of Collision Data: I-10 PM R134.0/R156.5 WB Mainline

Actual Rates and Average Rates (# of Accidents/Million Vehicles)						
Location I-10	Actual Accident Rates			Average Rates		
	Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total
PM R134.0/ R156.5 WB	**0.009**	0.08	0.24	0.008	0.18	0.53

Type of Collisions								
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated
0.0%	18.3%	25.6%	1.2%	36.6%	11.0%	2.4%	4.9%	0.0%

Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
1.2%	1.2%	2.4%	35.4%	28.0%	19.5%	0.0%	11.0%	1.2%	0.0%	0.0%

HBD = Influence of Alcohol
FTC = Following Too Close
FTY = Failure to Yield
ID = Improper Driving
IT = Improper Turn
ESS = Speeding
OV = Other Violations
NS = Not Stated
OTD = Other Than Driver
UNK = Unknown
FA = Fell Asleep

As shown in Table 1 for combined Eastbound and Westbound Mainline, the actual Fatal Fatal + Injury, and Total accident rates at this location are below the statewide average for similar facilities. The primary collision factors were Improper Turn (43.2%) and Speeding (23.6%); and the primary collision types were Hit-Object (30.9%), Rear-End (25.3%) and Sideswipe (21.0%).

Tables 2 and 3 show the Eastbound and Westbound Collision Data individually. The actual Fatal accident Rates for both EB and WB Mainline are higher than the statewide average while the actual Fatal + Injury and Total accident rates are below the statewide average.

Table 4. Summary of Collision Data: I-10 PM R134.907 WB ON FROM WILEY WELL

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R134.907			0.000	0.00	0.00	0.017	0.24	0.64		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 5. Summary of Collision Data: I-10 PM R134.914 EB OFF TO WILEY WELL RD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R134.914			0.000	0.00	1.04	0.012	0.49	1.35		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 6. Summary of Collision Data: I-10 PM R135.198 EB ON FROM WILEY WELL

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R135.198		0.000	0.00	0.00	0.017	0.24	0.64			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 7. Summary of Collision Data: I-10 PM R135.216 WB OFF TO WILEY WELL RD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R135.216		0.000	0.00	0.00	0.012	0.49	1.35			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 8. Summary of Collision Data: I-10 PM R144.201 WB ON FR WEIGH STA

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R144.201		0.000	0.00	0.00	0.002	0.01	0.77			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 9. Summary of Collision Data: I-10 PM R144.488 WB OFF TO WEIGH STA

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R144.488		0.000	0.00	0.35	0.009	0.22	1.74			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 10. Summary of Collision Data: I-10 PM R144.948 WB ON FROM MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R144.948		0.000	0.00	0.00	0.017	0.24	0.64			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 11. Summary of Collision Data: I-10 PM R144.960 EB OFF TO MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R144.960		0.000	**1.71**	**2.85**	0.012	0.49	1.35			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	20.0%	40.0%	0.0%	0.0%	40.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
20.0%	0.0%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 12. Summary of Collision Data: I-10 PM R145.258 WB OFF TO MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R145.258			0.000	0.00	0.00	0.012	0.49	1.35		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 13. Summary of Collision Data: I-10 PM R145.267 EB ON FROM MESA DR

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R145.267			0.000	0.00	0.00	0.017	0.24	0.64		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 14. Summary of Collision Data: I-10 PM R148.988 EB OFF TO NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R148.988			0.000	0.00	**1.66**	0.005	0.28	0.85		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 15. Summary of Collision Data: I-10 PM R149.009 WB ON FR NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM R149.009			0.000	0.00	0.00	0.036	0.23	0.55		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 16. Summary of Collision Data: I-10 PM R149.290 EB ON FR NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM R149.290			0.000	**0.70**	**0.70**	0.036	0.23	0.55		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 17. Summary of Collision Data: I-10 PM R149.311 WB OFF TO NEIGHBORS/78

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM R149.311			0.000	0.00	0.00	0.005	0.28	0.85		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 18. Summary of Collision Data: I-10 PM R151.914 EB OFF TO LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R151.914			0.000	0.00	**0.36**	0.002	0.11	0.30		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 19. Summary of Collision Data: I-10 PM R151.972 WB ON FROM LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R151.972			0.000	0.00	0.00	0.002	0.23	0.63		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 20. Summary of Collision Data: I-10 PM R152.330 EB ON FROM LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM R152.330			0.000	0.00	0.00	0.003	0.12	0.30		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 21. Summary of Collision Data: I-10 PM R152.338 WB OFF TO LOVEKIN BLVD

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM R152.338		0.000	0.00	0.00	0.002	0.11	0.30			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 22. Summary of Collision Data: I-10 PM R152.981 EB OFF TO SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 152.981		0.000	0.00	0.00	0.002	0.11	0.30			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 23. Summary of Collision Data: I-10 PM R153.015 WB ON FROM SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 153.015		0.000	**0.76**	**0.76**	0.003	0.12	0.30			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 24. Summary of Collision Data: I-10 PM R153.306 EB ON FROM SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM 153.306			0.000	0.00	0.00	0.002	0.23	0.63		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 25. Summary of Collision Data: I-10 PM R153.335 WB OFF TO SEVENTH AVE

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM 153.335			0.000	0.00	0.00	0.008	0.39	1.03		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 26. Summary of Collision Data: I-10 PM R154.007 EB OFF TO INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			Actual Accident Rates			Average Rates				
			Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total		
PM 154.007			0.000	0.00	**0.83**	0.004	0.29	0.80		
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 27. Summary of Collision Data: I-10 PM R154.023 WB ON FROM INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 154.023		0.000	**0.83**	**1.66**	0.002	0.17	0.49			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 28. Summary of Collision Data: I-10 PM R154.322 EB ON FROM INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 154.322		0.000	0.00	0.00	0.002	0.17	0.49			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 29. Summary of Collision Data: I-10 PM R154.338 WB OFF TO INTAKE BL/95

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 154.338		0.000	0.00	0.00	0.004	0.29	0.80			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 30. Summary of Collision Data: I-10 PM R156.024 EB OFF TO RIVIERA DR SO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 156.024		0.000	0.00	0.00	0.006	0.39	1.25			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 31. Summary of Collision Data: I-10 PM R156.046 WB ON FROM RIVIERA DR NO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 156.046		0.000	**4.15**	**4.15**	0.007	0.21	0.61			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 32. Summary of Collision Data: I-10 PM R156.132 WB OFF TO RIVIERA DR NO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10		Actual Accident Rates			Average Rates					
		Fatal	Fat + Inj	Total	Fatal	Fat + Inj	Total			
PM 156.132		0.000	0.00	**1.58**	0.006	0.39	1.25			
Type of Collisions										
Head-On	Sideswipe	Rear-End	Broadside	Hit-Object	Overturn	Auto-Ped	Other	Not Stated		
0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	FTC	FTY	IT	ESS	OV	ID	OTD	UNK	FA	NS
0.0%	0.0%	0.0%	0.0%	100%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 33. Summary of Collision Data: I-10 PM R156.187 EB ON FROM RIVIERA DR SO

Actual Rates and Average Rates (# of Accidents/Million Vehicles)										
Location I-10			**Actual Accident Rates**			**Average Rates**				
			Fatal	**Fat + Inj**	**Total**	**Fatal**	**Fat + Inj**	**Total**		
PM 156.187			0.000	0.00	0.00	0.007	0.21	0.61		
Type of Collisions										
Head-On	**Sideswipe**	**Rear-End**	**Broadside**	**Hit-Object**	**Overturn**	**Auto-Ped**	**Other**	**Not Stated**		
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		
Primary Collision Factors										
HBD	**FTC**	**FTY**	**IT**	**ESS**	**OV**	**ID**	**OTD**	**UNK**	**FA**	**NS**
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

HBD = Influence of Alcohol
FTC = Following Too Close
FTY = Failure to Yield
ID = Improper Driving
IT = Improper Turn
ESS = Speeding
OV = Other Violations
NS = Not Stated
OTD = Other Than Driver
UNK = Unknown
FA = Fell Asleep

According to Caltrans Traffic Accident Surveillance and Analysis System (TASAS), Traffic Selective Accident Retrieval (TSAR), and Selective Accident Rate Calculation (Table B), the types of collisions and primary collision factors for these ramps along I-10, PM R134.0-R156.5, are tabulated above from Table 4 to Table 33. The higher than statewide average three-year traffic accident rate history are shown in bold.

If you have any questions, please contact me or my staff Patrick Cheng.

EA 1C083
08-Riv-40 PM R134.0/R156.5

DRAFT MATERIAL REPORT

Attachment G

California Department of Transportation

District 8 / Construction Division / Materials Engineering

464 West 4th Street, 6th Floor

San Bernardino, CA 92401

MATERIALS REPORT

EA 08-1C083

Project Number: 0816000090

08-RIV-10-PM 134.0/156.5

Table of Contents

1.0 INTRODUCTION

This Materials Report (MR) is prepared per Design O request to support the Project Report document. This MR provides structural recommendations for various pavement strategies. Information contained herein is based on review of available as-built plans, historic data, site-specific soil sampling and laboratory testing, deflection study, traffic forecasting memorandum, and followed the requirement of Materials Report and pavement design specified in Topic 114 and Chapter 600 series of the Caltrans Highway Design Manual (HDM) 6th Edition, 2017.

2.0 PROJECT DESCRIPTION

2.1 Existing Facilities

The project site is located along I-10 in Riverside County between a starting limit at 1.05 mile west of Wiley's Well Road Interchange (PM R134.0) and ending limit at California/Arizona State Line (PM R156.5). A vicinity map and a site location map are shown in Figures 1 and 2 respectively. The I-10 within the project limit is a four-lane freeway (two lanes in each direction), separated by a terrain slope in the median. The existing lanes are 12 feet wide with outside shoulder widths of 10 feet and inside shoulder widths of 5 feet. Within the project limit, a majority of the mainlines consist of Asphalt Concrete (AC) Pavement. Inside and outside shoulders also consist of AC pavement in both directions. Existing mainline AC pavements, as well as shoulders are generally good to fair in lanes 1 and 2. The project site elevations ranged from about 250 feet to 550 feet above sea level.

2.2 Proposed Improvement

This project will improve existing I-10 AC pavement by evaluating various pavement strategies including reconstruction (rigid pavement), white topping (JPCP, CRCP), and rehabilitation (overlay, mill and overlay, partial depth removal and replace). In addition, the existing non-standard inside shoulders will be reconstructed to the standard 10-foot wide shoulders. Existing AC pavement on all ramps will be milled and overlaid with Rubberized Hot-Mix Asphalt (RHMA-G). To handle traffic during construction, detour lanes and crossovers will be constructed by widening within the median. After completion of construction, the detour will be striped to prevent use from traveling public.

Other improvements such as: replacing and upgrading existing metal beam guardrails, extending culverts and replacing inlets in the median, upgrading bridge railings, and repair/replace all bridge abutment Rock Slope Protections (RSP) will also be incorporated.

Below are some features that will be included with all the recommended strategies provided in this report:

- Cold Plane existing AC pavement on mainline and shoulders.
- Raise the profile grade to achieve the recommended structural sections.
- Existing AC pavement and base of mainline and shoulders will be removed at approaches and departures for a length of 1,000 feet and will be reconstructed with full depth structural sections to conform and transition to the existing structures profile grade.
- Remove existing AC on bridges and treat expose decks, as well construct the approach and departure slabs at all bridges.
- Remove and replace existing dikes and rumble strips.
- Widen existing bridges toward the median to manage the traffic handling during construction.
- Hydroseed the median for erosion control and restore vegetation as an environmental rehabilitation.

2.3 Climate

The project site is located in "Desert" climate as illustrated in the Caltrans Pavement Climate Region (2005). The available closest observation site is located in Blythe, CA and has data recorded from 01/01/1913 to 06/02/2016. This data was obtained from Western Regional Climate Center (www.wrcc.dri.edu) at the Blythe Station (040924). A summary of climate data is provided in Table 1.

Table 1 - Summary of Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max Temp. (F)	67.6	73	79.4	87.4	95.5	104.2	108.4	106.8	101.8	90.5	76.7	67.7	88.3
Average Min Temp. (F)	37.4	41.8	46.5	52.7	59.9	67.4	76.1	75.4	67.3	54.8	43.4	37.6	55
Average Total Precip.(in.)	0.51	0.46	0.34	0.12	0.03	0.05	0.2	0.61	0.39	0.27	0.27	0.57	3.81
Average Total SnowFall (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

The total average precipitation for a calendar year is 3.81 inches. The warmest month is July with an average high of 108.4°F and an average low of 76.1°F. The coolest month is January with an average high of 67.6°F and an average low of 37.4°F.

3.0 EXISTING STRUCTURAL SECTIONS

3.1 As Built Plans

A summary of the approximate existing pavement structural sections is provided in Table 2 for eastbound and westbound, which were provided from as-builts via the district data retrieval system.

Table 2 - Summary of Existing Structural Sections (EB & WB) Per As-Built

Post Mile	Mainline Lanes		Shoulders	
			Inside	Outside
PM 134.0/134.3	EB + WB Lane 1 & 2	0.82' AC 0.25' ACB 0.60 AB Varies AS	0.20' AC 0.80'-1.05' AB Varies AS	0.20'-0.35' AC 0.65'-0.85' AB Varies AS
PM 134.3/144.1	EB + WB Lane 1 & 2	0.82' AC 0.25' ACB 0.60 AB Varies AS	0.20' AC 0.80'-1.05' AB Varies AS	0.20'-0.35' AC 0.65'-0.85' AB Varies AS
PM 144.1/154.0	EB + WB Lane 1 & 2	0.75' AC 0.25' ACB 0.60' AB Varies AS	0.65' AC 0.80'-1.05' AB Varies AS	0.65'-0.80' AC 0.65'-0.85' AB Varies AS
PM 154.0/156.5	EB Lane 1 & 2	0.65' AC 0.25' ACB 0.60 AB Varies AS	0.55' AC 0.80'-1.05' AB Varies AS	0.55'-0.70' AC 0.65'-0.85' AB Varies AS
	WB Lane 1 & 2	0.75' AC 0.25' ACB 0.60' AB Varies AS	0.65' AC 0.80'-1.05' AB Varies AS	0.65'-0.80' AC 0.65'-0.85' AB Varies AS

NOTES:

- Existing Structural Sections were based on the consecutive sum from as-built data.
- AC: Asphalt Concrete; ACB: Asphalt Concrete Base: AB: Aggregate Base; AS: Aggregate Subbase.

3.2 Ground Penetrating Radar (iGPR Software)

iGPR is a software tool, which provides the depth of layers for the existing roadway structural sections detected by ground penetrating radar. iGPR data was reviewed to verify the as-built structural sections provided in Table 2.

Based on the review of the iGPR data, a summary of existing pavement structural sections is provided in Tables 3A and 3B for eastbound and westbound respectively. Detailed graphs representing these values are also provided in Appendix A.

Table 3A - Summary of Existing Structural Sections (Eastbound) per iGPR

Post Mile	Mainline Lanes	
PM 134.0-135.0	Lane 1	1.30' HMA / 1.0'AB
	Lane 2	0.80' HMA / 0.45'AB
PM 135.0-143.0	Lane 1	1.25' HMA / 0.50'AB
	Lane 2	0.80' HMA / 0.45'AB
PM 143.0-153.0	Lane 1	1.25' HMA / 0.50'AB
	Lane 2	1.25' HMA / 0.50'AB
PM 153.0-156.5	Lane 1	1.25' HMA / 0.50'AB
	Lane 2	1.10' HMA / 0.10'AB
Note: 1). Structural sections obtained from iGPR did not present the similar structural sections shown in the as-built plans.		

Table 3B - Summary of Existing Structural Sections (Westbound) per iGPR

Post Mile	Mainline Lanes	
PM 134.0-147.0	Lane 1	1.10' HMA / 0.50' AB
	Lane 2	1.00' HMA / 0.55'AB
PM 147.0-151.0	Lane 1	1.10' HMA / 0.50' AB
	Lane 2	0.80' HMA / 0.45'AB
PM 151.0-156.5	Lane 1	1.10' HMA / 0.50' AB
	Lane 2	1.20' HMA / 0.55'AB
Note: 1). Structural sections obtained from iGPR did not present the similar structural sections shown in the as-built plans.		

3.3 Automated Pavement Condition Survey (APCS)

APCS available from PaveM online website was reviewed to evaluate the existing pavement condition. The original measurements were taken in 2018.

As of latest year (2018), the existing pavement surface condition is "good" to "fair" with approximate average of 15.94% Alligator A cracking and 0.38% Alligator B cracking. The Mean Roughness Index (MRI) was 74 inch/mile for the year 2018. Detailed pavement condition reports are also provided in Appendix B.

3.4 H-chart

The H-Chart is a tool that illustrates the past projects on a specific segment of highway. It is a bar graph, which uses various colors and textures to illustrate work that was done. The available H-chart is presented in Appendix C.

4.0 GEOLOGY AND SUBSURFACE CONDITIONS

4.1 Geology and Terrain

The project alignment is located within the Colorado Desert and Mojave Desert geomorphic provinces. Within California, these geomorphic provinces encompass an area that extends from the Colorado River on the east, the Mexican border on the south, and the Peninsular Ranges on the west. The eastern Transverse Ranges borders the Colorado Desert on the north. The Colorado Desert Province, dominated by the Salton Sink, is a low-lying, pull-apart basin formed by movement of the San Andreas Fault and the East Pacific Rise. The Mojave Desert Geomorphic Province is composed of isolated mountain ranges separated by desert plains. The portions of the provinces are characterized by broad alluvial valleys separated by steep, discontinuous, sub-parallel mountain ranges that generally trend northwest-southeast. Alluvium (Qal) was deposited during the Holocene (<11,700 year ago). It consists of unconsolidated and undissected deposits of clays, silts, sands, and gravels of the valley areas (Dibblee 2008a,b). These sediments are generally underlain by Pleistocene older alluvial sediments at depth.

The ground surface elevation along the project alignment varies from approximately 250 feet to 500 ft.

4.2 Surface Water and Groundwater

Groundwater was not encountered in the borings performed to a maximum depth of 5 feet below the existing ground surface. Based on the DWR water data library (http://www.water.ca.gov/waterdatalibrary/), depth to groundwater measured in Well 336129N1147325W001, located close to PM R144.5, was deeper than 140 feet during the recorded date of 03/30/2006. It should be noted that fluctuations in the level of groundwater may occur due to variation in precipitation, temperature, and other factors. Depth to groundwater can also vary significantly due to localized pumping, irrigation practices, and seasonal fluctuations. Therefore, it is possible that groundwater will be higher or lower than the level reported.

Based on the above considerations, it is concluded that subsurface groundwater is not expected to affect the proposed improvement.

Based on the above considerations, it is concluded that subsurface groundwater is not expected to affect the proposed improvement.

5.0 FIELD EXPLORATION AND LABORATORY TESTING

5.1 Field Exploration

Field exploration was conducted on November 28, 2018 by Mauricio Santa Cruz and Jose Ortiz (Materials Branch Staff). Total of 21 boring locations were marked on the unpaved median. Underground Service Alert (USA) was notified prior to boring. Soil samples were obtained using a 6-inch diameter hollow stem auger. Soil samples collected from upper 5 feet were stored in bulk bags and transported to Southern California Regional Laboratory (SRL) for laboratory testing.

5.2 Laboratory Testing

Soil samples were tested to evaluate the physical characteristics and engineering properties of the subsurface materials. Following laboratory soil tests were conducted to perform pavement structural section design:

- CT 201……Soil Sample Preparation
- CT 202……Sieve Analysis (Fine and Coarse Grade)
- CT 204……Plasticity Index
- CT 301……R-Value
- CT 417……Sulfate Content
- CT 422……Chloride Content
- CT 643……Soil Resistivity and pH

Laboratory tests were performed by SRL and conducted in accordance with the California Test (CT) methods. Table 4 shows the summary of laboratory test results and are presented in Appendix D.

Table 4: Summary of Laboratory Test Results

Boring Number	PM	Latitude	Longitude	R-Value	LL (%)	PI (%)	Soil Type (USCS)
A-18-045	135	33.6078	-114.9026	69	NP	NP	SM
A-18-046	136	33.6084	-114.8851	73	NP	NP	SP-SM
A-18-047	137	33.6090	-114.8677	61	NP	NP	SM
A-18-048	138	33.6095	-114.8505	47	NP	NP	SM
A-18-049	139	33.6098	-114.8288	43	NP	NP	SM
A-18-050	140	33.6099	-114.8151	71	NP	NP	SM
A-18-051	141	33.6100	-114.7984	74	NP	NP	SP-SM
A-18-052	142	33.6100	-114.7807	72	NP	NP	SM
A-18-054	144	33.6091	-114.7466	66	NP	NP	SM
A-18-055	145	33.6094	-114.7288	72	NP	NP	SM
A-18-056	146	33.6068	-114.7117	72	NP	NP	SM
A-18-057	147	33.6067	-114.6947	64	NP	NP	SP-SM
A-18-058	148	33.6067	-114.6776	66	NP	NP	SP-SM
A-18-059	149	33.6066	-114.6602	71	NP	NP	SP-SM
A-18-060	150	33.6066	-114.6429	65	NP	NP	SM
A-18-061	151	33.6066	-114.6252	73	NP	NP	SP-SM
A-18-062	152	33.6071	-114.6074	71	NP	NP	SP-SM
A-18-063	153	33.6072	-114.5903	74	NP	NP	SM
A-18-064	154	33.6074	-114.5727	67	NP	NP	SM
A-18-065	155	33.6077	-114.5564	61	NP	NP	SM
A-18-066	156	33.6071	-114.5408	70	NP	NP	SM

LL = Liquid Limit
PI = Plasticity Index
NP = Nonplastic

6.0 PAVEMENT DESIGN PARAMETERS

6.1 Traffic Data

The following Annual Average Daily Traffic (AADT), AADTT, and Traffic Index (TI) values were provided in the memorandum dated 04/16/2018 from the Office of Traffic Forecasting (See Appendix E). The AADT, AADTT, and TI values are presented in Tables 5 through 7, respectively. Note that based on discussion with the Design Team, TI Value for a 3-Year design period was extrapolated using the Traffic Information provided in the memorandum from Office of Traffic Forecasting.

Table 5 – List of AADT Values

Forecasted Period	RIV-10 (PM 134.0/156.5)
Year 2018	28,900
Year 2020	30,000
Year 2026	33,400
Year 2046	47,500
Year 2066	62,600

Table 6 – List of AADTT Values

Forecasted Period	RIV-10 (PM 134.0/156.5)
Year 2018	14,750
Year 2020	15,300
Year 2026	17,050
Year 2046	24,250
Year 2066	31,950

Table 7 – List of TI Values

Forecasted Period (1)	RIV-10 (PM 134.0/156.5)	
	Travel Lanes 1 & 2	
	Mainline	Shoulder
3-Year (2)	12.5	-
10-Year	14.5	9.0
20-Year	16.5	10.0
40-Year	18.5	11.5

(1). Based on Construction Completion Acceptance (CCA) year 2026.
(2). Extrapolated from Traffic Data provided in Memo.

6.2 Pavement Design Life

In accordance with HDM Index 612.2, pavement design life for reconstruction projects should be 40 years. White topping is designed for a 40-year design life. In accordance with HDM Index 612.5, the minimum pavement design life for roadway rehabilitation projects should be 20 years or 40 years (AADTT > 12,000 in CCA year 2026) depending on which design life has the lowest life-cycle costs.

6.3 Resistance Value and Subgrade Type

Per section 5.0 of this MR, the soil samples obtained from unpaved median within the project limit showed that R-values ranged from 43 to 74. Materials encountered during field exploration are predominantly SILTY SAND (SM) and Poorly-graded SAND with SILT (SP-SM). Based on the HDM Index 614.3 guidelines for R-value limitation, an R-value of 50 will be selected for flexible pavement design (inside shoulder and detour through median) and Subgrade Soil Type I for the rigid.

7.0 PAVEMENT RECOMMENDATIONS

Pavement strategies such as reconstruction, white topping and rehabilitation are provided for existing mainline lanes and outside shoulder. New structural sections are provided for inside shoulder and median which will be used for stage construction.

Pavement structural recommendations are provided utilizing TI values (Section 6.1), pavement design life (Section 6.2) and Subgrade Types and R-values (Section 6.3) in this Materials Report.

Rigid pavement sections were obtained using the procedure described in Index 620 of HDM (2017). This procedure utilizes the design parameters summarized in Table 5 through Table 7.

Flexible pavement structural sections were obtained by employing CalFP version 1.5, a computer program based on design methodology, as documented in Chapter 630 of the HDM.

White topping (concrete overlay) option was also considered as an alternative and is provided in this MR. This practice involves milling the portion of AC layer and placing a leveling course prior to concrete overlay. Per discussions with the design team, the existing profile may be raised to a maximum of 1 foot.

Per HDM, 2012, JPCP is another alternative to CRCP in rigid pavement design in desert climate regions and will be provided in this MR based on discussions between Design Team and HQ.

7.1 Reconstruction

As summarized in Section 2.2 of this MR, Mainline AC lanes & shoulders will be replaced, and constructing a detour in the median to facilitate the construction of the Mainline Lanes in each bound.

Multiple alternatives are considered for the reconstruction using rigid pavement. Alternatives are as follows: Rigid Mainlines & Shoulders and Rigid Mainlines with a tied/widen slab of Rigid Shoulders. Note that the shoulder sections shall match with the adjacent lane thickness for complete reconstruction options. For all other options, first 1 foot of inside shoulder and first 2 feet of outside shoulders from ETW shall match the structural sections of the adjacent travel lane; remaining shoulder widths shall follow shoulder structural sections provided below.

Table 8 provides the recommended structural sections.

Table 8 – Recommended Structural Sections (EB & WB)

Alternatives [1]	Mainline lanes + First 1' of Inside Shoulder and First 2' of Outside Shoulder	Shoulders
Option 1 (CRCP)	1.10' CRCP 0.30' HMA-A	1.10' CRCP 0.30' HMA-A
Option 2 (CRCP widened lanes with JPCP shoulder)	1.10' CRCP 0.30' HMA-A	0.95' JPCP 0.45' HMA-A
Option 3 (JPCP with LCB)	1.20' JPCP 0.10' HMA-A 0.35' LCB	1.20' JPCP 0.10' HMA-A 0.35' LCB
Option 4 (JPCP with HMA base)	1.20' JPCP 0.30' HMA-A	1.20' JPCP 0.30' HMA-A
Option 5 (JPCP widened lanes with LCB)	1.20' JPCP 0.10' HMA-A 0.35' LCB	0.90' JPCP 0.10' HMA-A 0.35' LCB 0.30' AS [2]
Option 6 (JPCP widened lanes with HMA base)	1.20' JPCP 0.30' HMA-A	0.95' JPCP 0.30' HMA-A 0.25' AS [2]
Option 7 (Flexible Pavement)	Empirical method not applicable for TI > 15	0.20' RHMA-G 0.45' HMA-A 0.70' AB

Notes:

1). Options 3-6 will require design exemption to use JPCP in "Desert Climate".
2). Total Depth of shoulder section shall match grading plane of adjacent traffic lane; aggregate subbase layer was added.

7.2 Concrete Overlay (White topping)

The recommended structural sections for white topping are provided in Table 9 and are based on preliminary analysis retrieved from Pavement ME in coordination with HQ. **Further analysis is required and will be updated in a revised MR to reflect more precise recommendations.** Materials Engineering Unit recommends to mill the existing AC layer and overlay 0.20 feet HMA-A leveling course prior to white topping. The structural sections are based on using the design parameters described in Section 6.0 of this MR.

Table 9 - Recommended Structural Sections for Whitetopping

Location (1)	TI	Design Life	Structural Sections		Increase Above Existing Grade
			Mill Depth	White topping Sections (2)	
[WB & EB] Lane 1 & 2 + Shoulders	18.5	40-Year	0.30' AC	1.10' CRCP 0.20' HMA-A	1.00 foot
				1.00' JPCP 0.20' HMA-A	0.90 foot

Notes:

1). For locations where the depth removal extends to the existing base, remove and recompact the base to the required thickness to achieve the desired finish grade elevation.
2). Final Mechanistic-Empirical design calculations are pending from HQ.

Existing inside shoulders consist of approximately 0.20'- 0.65' AC over base. Materials Engineering recommends removing existing AC/portion of base to a minimum depth of 0.50' and placing 0.40' HMA-A prior to constructing white topping.

7.3 Rehabilitation

A Deflection Study was conducted to evaluation rehabilitation strategies.

The methods involving deflection study consist of measuring the total deflection resulting from a load applied on the surface of a flexible pavement. Structural adequacy recommendations are based on the asphalt concrete (AC) thickness, 80th percentile deflection, and the tolerable deflection at the surface (TDS).

Prior to conducting deflection studies, desk study was performed by the team:

- Review as-built plans to estimate the existing structural sections
- Obtain the design Traffic Index (TI)
- Schedule maintenance crew and SRL for traffic control and coring.

Based on discussions with the Project Engineer, deflection measurements were recorded on the outside lane only. Materials Engineering Unit follows the procedure (CTM 356) that uses a falling weight deflectometer (FWD). An FWD provides an impulse load that can be varied depending on the height of fall and mass used. Then, the sensor placed at the center of a loading plate measures the motion induced in the pavement. Two Methods are available for analysis to determine the rehabilitation strategy. For this study, Method A

was practiced. Method A consist of measuring the deflection at 80-m (0.05 mile) intervals in the outside wheel path to obtain 21 deflection measurements per one (1) lane-mile per California Test 356 June 2004.

Required Field Work for the deflection study involves obtaining cores at approximately every 800 meters; cores must be retrieved from the outside wheel path of the tested lane.

After all data was complied, appropriate groupings were made to correlate the best rehabilitation strategy to proceed with; which was based on similar engineering parameters from collected data, per HDM Index 635.2(3)(c).

Tables 10 provides the grouping that was applied for the analysis.

Table 10 – Grouping from Coring & Deflection Data (EB & WB)

Direction	Group	Location
EB	1A	PM: (134-138); (142-144)
	1B	PM: (145.5-147); (149-153)
	2A	PM: (138-140)
	2B	PM: (141-142)
	3A	PM: (140-141)
	3B	PM: (147-149)
	4	PM: (144-145)
	5	PM: (145-145.5)
	6	PM: (153-156)
WB	1A	PM: (134-141)
	1B	PM: (148-149)
	2A	PM: (141-144)
	2B	PM: (144-145)
	3	PM: (145-146);(149-150); (151-152);(153-156)
	4	PM: (146-148); (150-151);(152-153)

For the purposes of this MR, two rehab strategies is analyzed and presented: Mill & Overlay, Partial Depth Remove and Replace. The rehabilitation strategies are governed by the Structural Adequacy criteria and are based on a 20-Year Design Life, and TI Value of 16.5.

For EB direction, Materials Engineering recommends milling 0.25’ and overlaying with 0.20’ RHMA-G / 0.30’ HMA-A, with the exceptions of Groups 1A, 2A, 3A. Based on deflection studies, Recommended HMA Overlay for these segments range from 0.75’-0.90’. Therefore, it is more feasible to implement Partial Depth Removal of 1.25’ and Replace with 0.20’ RHMA-G / 1.30’ HMA-A for these segments.

For WB direction, Materials Engineering recommends milling 0.25’ and overlaying with 0.20’ RHMA-G / 0.20’ HMA-A, with the exceptions of Groups 1A, 2A. Based on deflection studies, Recommended HMA Overlay for these segments range from 0.75’-0.80’. Therefore, it is more feasible to implement Partial Depth Removal of 1.45’ and Replace with 0.20’ RHMA-G / 1.25’ HMA-A for these segments.

7.4 Stage Construction/Widening

Materials Engineering Unit understands that a pavement detour is required to shift I-10 mainline traffic (lanes 1 and 2) towards the unpaved median and inside shoulders beyond the ETW to facilitate two lanes work. After construction completion, the remaining detour width will be striped to prevent use from traveling public.

If Whitetopping alternative is selected for the existing mainline lanes and outside shoulder, Flexible pavement options with a 3-Year Design Period is applicable for the Detour Lanes.

Table 11 provide the recommended pavement structural sections for the unpaved median to accommodate the mainline detour traffic for 3-Year and 10-Year design periods.

Table 11 – Recommended Structural Sections in Unpaved Median

Location	Design Life	TI	Rigid Pavement			Flexible Pavement
			Option 1	Option 2	Option 3	
Detour Lane	3-Year	12.5	1.05' JPCP 0.10' HMA-A BB 0.35' LCB	1.05' JPCP 0.30' HMA-A	0.95' CRCP 0.30' HMA-A	0.65' HMA-A 0.80' AB
	10-Year (1)	14.5	1.20' JPCP 0.10' HMA-A BB 0.35' LCB	1.20' JPCP 0.30' HMA-A	1.10' CRCP 0.30' HMA-A	0.80' HMA-A 0.85' AB
Notes: 1). Structural sections for a 10-Year design life are provided per Design Team's request.						

7.5 Capital Preventative Maintenance (CAPM) for Ramps

Materials Engineering unit recommends to cold plane 0.20-feet and overlay with 0.20-feet RHMA-G for all the ramps within the project limits.

7.6 Bridge Coring

Per the request from the Design Team, Corings were done on the bridge decks along the route within the project limits. The samples were retrieved with coordination of Maintenance & SRL Crew. Refer to Appendix F for a summarized Table which provides the coring thicknesses for the bridge decks as well as photos of the corings.

8.0 CORROSION POTENTIAL AND CULVERTS

Culverts and drainage facilities require a 50-Year maintenance free design life. Factors that contribute to corrosion include presence of soluble sulfate, chloride, pH, and resistivity. Materials Engineering unit understands that minimal drainage work may be performed within the project limits. twenty-one (21) soil samples were obtained within the project limits and were tested in accordance with the California test methods. Laboratory test results are summarized in Table 12 and are presented in Appendix D.

Table 12 – Summary of Corrosion Test Results

Boring Name	Post Mile	Sample Depth (feet)	Soil pH	Minimum Resistivity (ohm-cm)	Sulfate Content (ppm)	Chloride Content (ppm)
A-18-045	135	5.0	8.32	6,973	28	9
A-18-046	136	5.0	8.17	1,139	105	291
A-18-047	**137**	**5.0**	**8.29**	**565**	**773**	**564**
A-18-048	138	5.0	8.14	3,505	132	38
A-18-049	139	5.0	8.35	4,869	39	13
A-18-050	140	5.0	8.29	1,831	290	20
A-18-051	141	5.0	8.43	1,978	151	96
A-18-052	142	5.0	8.29	3,184	35	44
A-18-054	144	5.0	8.01	1,346	260	138
A-18-055	145	5.0	8.09	7,751	51	3
A-18-056	146	5.0	8.16	3,801	108	18
A-18-057	147	5.0	8.43	6,458	64	4
A-18-058	148	5.0	8.35	9,719	38	3
A-18-059	149	5.0	8.18	2,147	147	90
A-18-060	150	5.0	8.16	4,910	39	12
A-18-061	151	5.0	8.14	4,251	40	15
A-18-062	152	5.0	8.56	2,543	128	47
A-18-063	153	5.0	8.27	791	284	307
A-18-064	154	5.0	8.25	2,443	57	50
A-18-065	155	5.0	7.88	916	184	173
A-18-066	156	5.0	8.19	2,315	102	60

A site is considered corrosive if one or more of the following conditions exist for the representative soil samples (Caltrans, March, 2018):

- Chloride concentration is 500 ppm or greater,
- Sulfate concentration is 1,500 ppm or greater, or
- pH is 5.5 or less.

The resistivity less than 1,000 ohm-cm indicates the presence of high quantities of soluble salts and a higher propensity for corrosion. Soil and water that have a minimum resistivity less than 1,100 ohm-cm require more testing for chlorides and sulfates.

Laboratory Test Results concluded that only sample A-18-047 is corrosive and everywhere else within the project limits are considered "non-corrosive". Therefore, the approximate location which will be considered "corrosive" for this project is between PM 136.5 and 137.5.

9.0 MATERIAL SPECIFICATIONS

The proposed project follows Caltrans 2018 Standard Specifications and Standard Plans.

9.1 Earthwork

- Clearing and grubbing is recommended as per section 17-2 of Standard Specifications, to remove vegetation, topsoil, and any artificial fills or debris, and to prepare the site for the proposed facilities.
- Earthwork should conform to Section 19 of Standard Specifications.
- The subgrades for paved areas should be compacted to a minimum relative compaction of 95%, as per Section 19-5.03 "Relative Compaction (95 Percent)" of the Standard Specifications.
- Any imported materials should conform to requirement described in Section 19-7 of Standard Specifications and must have a minimum R-value per the respective segments described in Section 6.3 of this MR.

9.2 Base Materials

- Aggregate Base should be Class 2 and conform to Section 26 of Standard Specifications.
- Aggregate Subbase should be Class 2 and conform to Section 25 of Standard Specifications.

9.3 Rigid Pavement

- Jointed Plain Concrete Pavement shall conform to Section 40 of Standard Specifications.
- Continuously Reinforced Concrete Pavement shall conform to Section 40 of Standard Specifications.
- Lean Concrete Base shall conform to Section 28-2 of Standard Specifications.

9.4 Flexible Pavement

- Hot Mix Asphalt (HMA-A) shall conform to Section 39 of Standard Specifications.
- Asphalt binder for HMA-A should be PG 64-28M.
- Prime Coat shall be applied to base material prior to placing hot mix asphalt concrete.
- Tack Coat shall be applied to the existing AC surface and between successive layers of HMA-A.
- Lime Slurry Marination is required for this route and shall conform to NSSP 39.2.01B.

9.5 Isolation Joint

Construction of isolation joint is required between two different rigid pavements (CRCP and JPCP) to prevent progression of transverse cracks due to differential movement. Isolation joint filler should extend to the depth of the new rigid pavement. Materials Engineering unit recommends to use preformed compression Sealant for sealing isolation joints. Construction of isolation joints should follow 2018 Standard Plan P18.

9.6 Smoothness

Pavement smoothness requirements for new pavement should follow HQ approved nSSP Section 36 and Section 39 for flexible pavement and Section 40 for rigid pavement.

10.0 CLOSURE

This MR is prepared for the proposed project based on information provided by Design O. If any change (i.e., structure type, location, scope of the project etc.) is implemented which materially alters the project, recommendation contained in this MR may need to be revised.

The data, opinions, and recommendations contained in this report are applicable to the specific design element(s) and location(s) that is (are) the subject of this report. They have no applicability to any other design elements or to any other locations, and any and all subsequent users accept any and all liability resulting from any use or reuse of the data, opinions, and recommendations without the prior written consent from Materials Engineering unit.

These findings and recommendations were obtained in accordance with generally accepted professional principles in Materials Engineering and are based on current Highway Design Manual.

If you have any questions, please contact authors of this MR at (909) 888-2090.

11.0 REFERENCE

- Caltrans, CalFP, A Computer Program, Version 1.5.
- Caltrans, Corrosion Guideline Version 3.0, March, 2018.
- Caltrans, Highway Design Manual – Sixth Edition, November, 2017.
- Caltrans, 2018 Standard Specifications.
- Caltrans, 2018 Standard Plans.
- Caltrans, Concrete Pavement Guide, January, 2015.
- Caltrans, Maintenance Technical Advisory Guide – Rigid Pavement Preservation, December, 2007.
- CTPC Unbonded Concrete Overlay Guide

12.0 ATTACHMENT

The following figures and appendices are included and complete this MR.

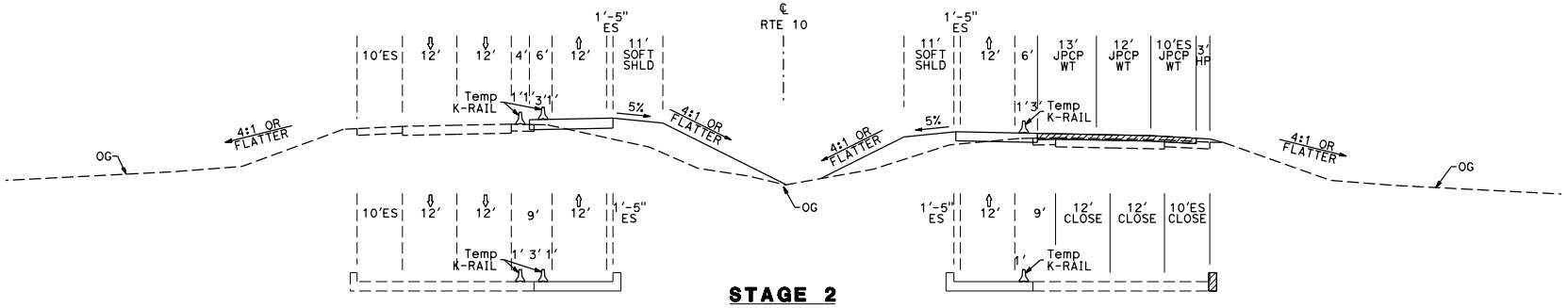
Figure 1	-	Vicinity Map
Figure 2	-	Site Location map
Figure 3	-	Regional Geologic Map
Appendix A	-	iGPR
Appendix B	-	APCS Data
Appendix C	-	H-Chart Data
Appendix D	-	Laboratory Test Results
Appendix E	-	Traffic Forecasting Memo
Appendix F	-	Deflection Study Data & Results and Coring Data

DETOUR OPTION / STAGE CONSTRUCTION

Attachment H

LEGEND:

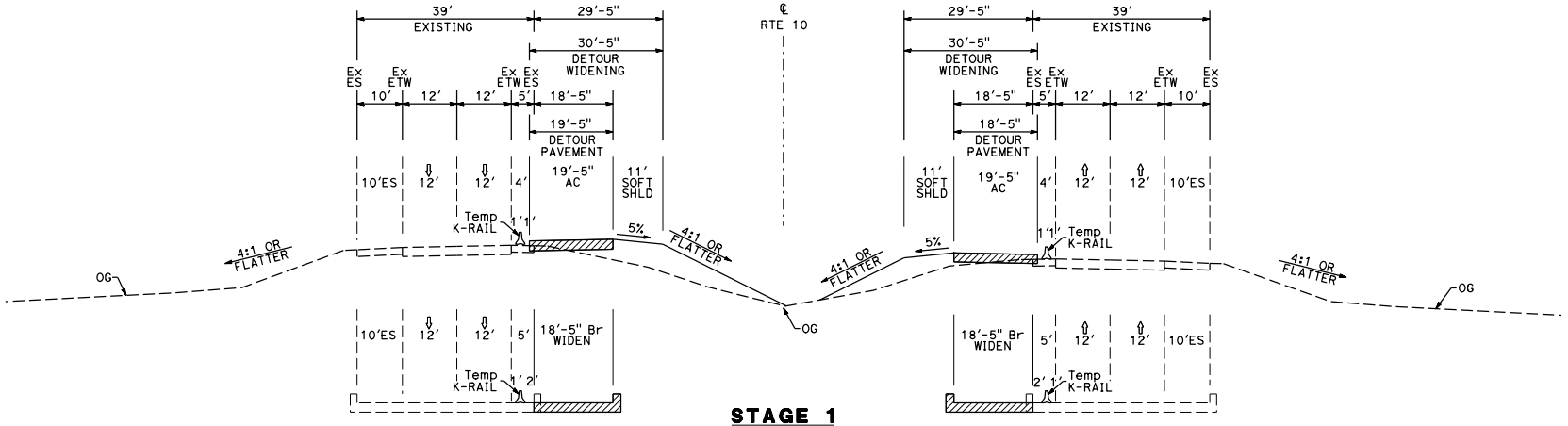
CONSTRUCTION ZONE



STAGE 2

I-10 WESTBOUND

I-10 EASTBOUND



STAGE 1

I-10 WESTBOUND

I-10 EASTBOUND

WIDEN BOTH EASTBOUND AND WESTBOUND ROADBEDS

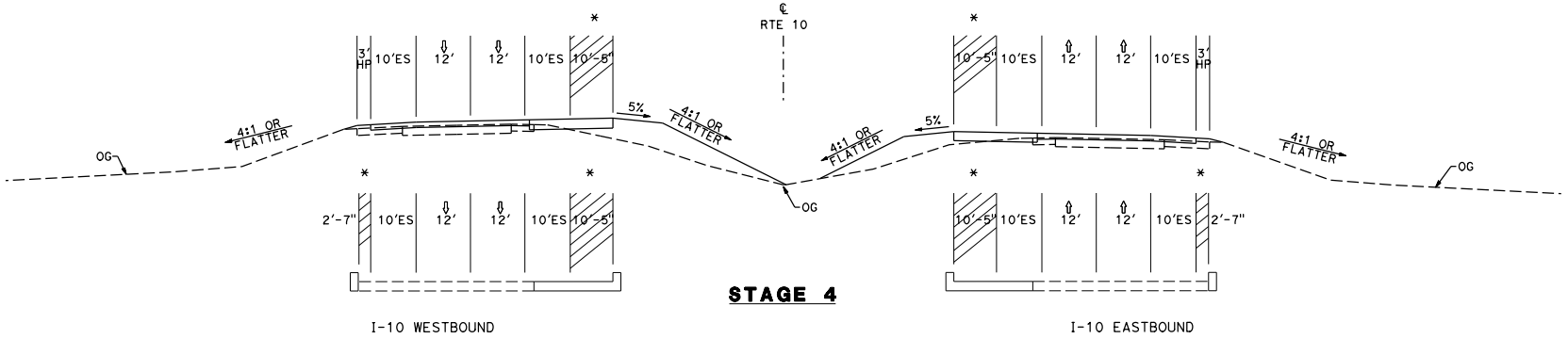
NO SCALE

ATTACHMENT H

DETOUR OPTION 1

SHEET 1/7

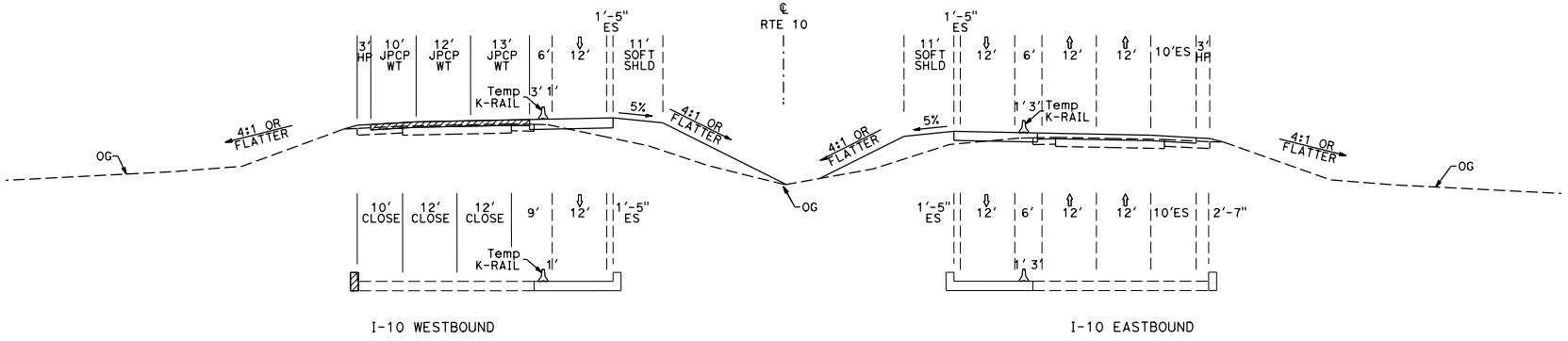
* FINAL STRIPING/DIAGONAL CROSSHATCH MARKINGS / NO TRAFFIC



STAGE 4

I-10 WESTBOUND

I-10 EASTBOUND



STAGE 3

I-10 WESTBOUND

I-10 EASTBOUND

WIDEN BOTH EASTBOUND AND WESTBOUND ROADBEDS

NO SCALE

ATTACHMENT H

DETOUR OPTION 1

SHEET 2/7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

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

LEGEND

- PROPOSED CONCRETE PAVEMENT
- PROPOSED TEMPORARY DETOUR (STAGE 1)
- MEDIAN CROSSOVER (STAGE 2)
- MEDIAN CROSSOVER (STAGE 3)
- BRIDGE WIDENING
- COLD PLANE AC PAVEMENT
- RIGHT OF WAY
- DISTURBED AREA

TEED DITCH
Br No. 56-0019L
PM R133.989

R/W

R133.8

R133.9

R134.0

WB ROUTE 10

EB ROUTE 10

TEED DITCH
Br No. 56-0019R
PM R133.991

DETOUR STAGE CONSTRUCTION

SCALE: 1" = 50'

ATTACHMENT H

DETOUR OPTION 1

SHEET 3/7

REVISED BY | DATE REVISED

CALCULATED/DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2239 | PROJECT NUMBER & PHASE 08160000901

NOTES:

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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

REVISED BY | DATE REVISED

CALCULATED/ DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

REPLACE ROCK SLOPE PROTECTION

MCCOY WASH
Br No. 56-0016L
PM R138.298

R/W

WB ROUTE 10

MATCH LINE (L-15)

R138.1

R138.2

R138.3

MATCH LINE (L-17)

EB ROUTE 10

R/W

MCCOY WASH
Br No. 56-0016R
PM R138.291

REPLACE ROCK SLOPE PROTECTION

DETOUR STAGE CONSTRUCTION

SCALE: 1" = 50'

ATTACHMENT H

DETOUR OPTION 1

SHEET 4/7

LAST REVISION DATE PLOTTED => $DATE
TIME PLOTTED => $TIME
00-00-00

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2239

PROJECT NUMBER & PHASE 08160000901

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HOBSONWAY

HOBSONWAY

R/W

R/W

WB ROUTE 10

R155.8

R155.9

EB ROUTE 10

MATCH LINE (L-78)

MATCH LINE (L-80)

R/W

R/W

DONLON St

DONLON St

DETOUR STAGE CONSTRUCTION

SCALE: 1" = 50'

ATTACHMENT H

DETOUR OPTION 1

SHEET 5/7

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

00-00-00

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE => $REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2239 | PROJECT NUMBER & PHASE 08160000901

NOTES:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

REVISED BY | DATE REVISED

CALCULATED/DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CANAL

HOBSONWAY

R/W

BLYTHE AGRICULTURAL INSPECTION STATION

TRUCK WEIGH STATION WB ENTRANCE RAMP

WB ROUTE 10

R156.1

R156.2

MATCH LINE (L-79)

MATCH LINE (L-81)

EB ROUTE 10

RIVIERA Dr EB EXIT RAMP

RIVIERA Dr EB ENTRANCE RAMP

DONLON St

CANAL

RIVIERA Dr

DETOUR STAGE CONSTRUCTION

SCALE: 1" = 50'

ATTACHMENT H

DETOUR OPTION 1

SHEET 6/7

LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $STIME

00-00-00

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2239

PROJECT NUMBER & PHASE 08160000901

NOTES:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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HOBSONWAY

COLORADO RIVER Br
Br No. 56-0008
PM R156.384

COLORADO RIVER

R156.3

R156.4

R156.492

WB ROUTE 10

EB ROUTE 10

MATCH LINE (L-80)

DONLON St

R/W

COLORADO RIVER

DETOUR STAGE CONSTRUCTION

SCALE: 1" = 50'

ATTACHMENT H

DETOUR OPTION 1

SHEET 7/7

REVISED BY | DATE REVISED

CALCULATED/DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME | 00-00-00

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2239

PROJECT NUMBER & PHASE 08160000901

TYPICAL STRUCTURE WIDENING

Attachment I

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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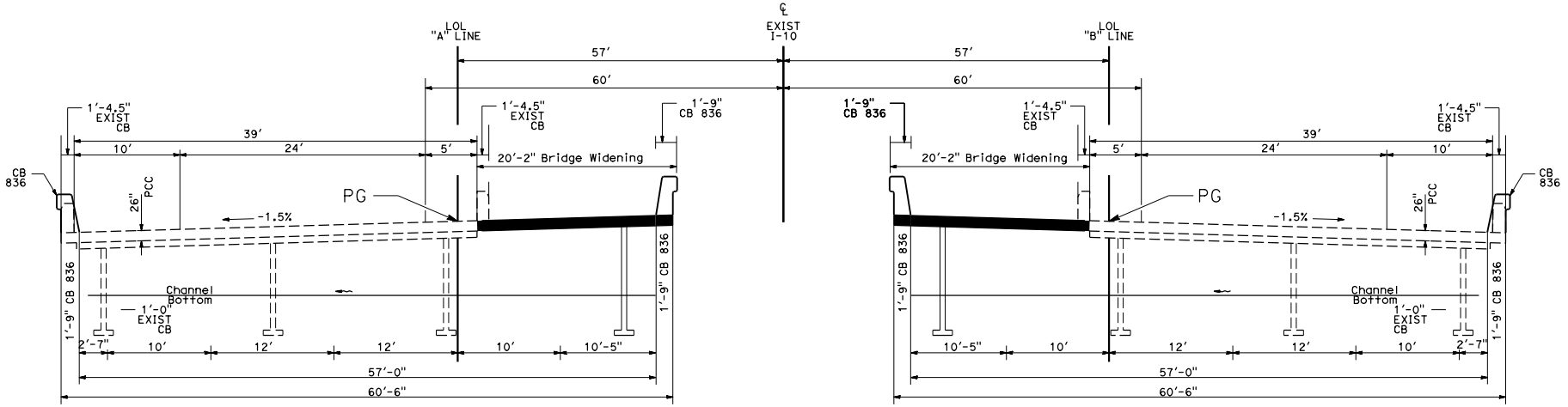
REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans



I-10 WESTBOUND

I-10 EASTBOUND

TYPICAL STRUCTURE WIDENING

NO SCALE

ATTACHMENT I

SHEET 1 OF 1

LAST REVISION 00-00-00 | DATE PLOTTED => 10-JUN-2020 | TIME PLOTTED => 17:09

BORDER LAST REVISED 7/2/2010 | USERNAME => s135527 | DGN FILE => Att 1_Typical Section Structure-sh1.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 00000000001

INTIAL SITE ASSESSMENT CHECKLIST

Attachment J

INITIAL SITE ASSESSMENT (ISA) CHECKLIST

DATE: 1/30/20

PROJECT INFORMATION

District 08 **County** RIV **Route** 10 **Post Mile** R134/R156.5 **EA** 1C083

DESCRIPTION OF WORK:

The project proposes to rehabilitate existing I-10 AC pavement using full depth pavement replacement strategy for the mainline and shoulders. Two temporary detour lanes and crossovers will be constructed in the existing median for traffic handling during construction. All work is done within the State right-of-way except at 4 locations where compliance with ADA mandates wheelchair ramps are to be constructed and additional right-of-way is required. Parcels where additional right-of-way is required are located at the intersections: Lovekin Boulevard and Donlon Street (APN 836141015 and APN 848100032), Lovekin Boulevard and Dekema Street (APN 848031033), and 7th Street and Donlon Street (APN 848171037). This project will rehabilitate bridges

Project Engineer Fred Asef **Telephone** (909) 383-7508

Environmental Coordinator Jeanine Gray **Telephone** (909) 383-5941

DATE ISA NEEDED ASAP

Attach the project location map and an aerial photo to this checklist to show the location of proposed R/W and all known and/or potential hazardous waste sites.

1. Project Features: New R/W? **YES** Excavation? **YES** Railroad Involvement? **NO**
   Structure Demolition/Modification? **YES** Utility Relocation? **Possible relocation of Caltrans utilities within the median**
2. Project Setting: Rural - **X** Urban -
   Current Land Uses: **Existing Roadway**
   Adjacent Land Uses: **Desert, lightly commercial**
   (Industrial light industry, commercial, agriculture, residential, other)
3. Check Federal, State, and local environmental and health regulatory agency records as necessary to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets as needed to provide all information available pertinent to the proposed project. IS PROJECT
4. AFFECTING SITES LISTED ON CORTESE LIST? **NO** IF YES, DESCRIBE SITE:_
5. Conduct Field Inspection **Geotracker and Google Maps** Date **1/30/20**

Storage Structures/Pipelines:				**Contamination: (spills, leaks, illegal dumping, etc)**		**Hazardous Materials: (asbestos, lead, etc.)**			
UST's	**YES**			Surface Staining	**NO**	Buildings		**NO**	
Surface tanks	**NO**			Oil Sheen	**NO**	Sprayed-on Fireproofing		**NO**	
Sumps	**NO**	Ponds	**NO**	Odors	**NO**	Pipe Wrap		**NO**	
Drums	**NO**	Basins	**NO**	Vegetation damage	**NO**	Friable Tile		**NO**	
Transformers	**NO**			Other		Acoustical Plaster		**NO**	
Landfill	**NO**					Serpentine		**NO**	
Other						Paint	**NO**	Other	

Other comments and/or observations:

Per Geotracker, there are several LUST cleanup sites near the Project Area as shown in the attached figures many of which are permitted UST or case closed.

Per Aerially Deposited Lead (ADL) Report on 8-Riv-10, PM R62.3/R63.7 (EA No. 452100), the projected STLC value based on the 95% UCL TTLC is 1.11 mg/L. Based on the 95% UCL of TTLC and the projected STLC, the on-site soils at the project site are below the regulatory thresholds. See report for recommendations.
Still need to fill out SSP 7-1.02K(6)(j)(iii) depending on excavation plan.

The following SSPs should be included in the PS&E package:

SSP 7-1.02K(6)(j)(iii): Earth Material Containing Lead, requires a Lead Compliance Plan in the PS&E Package
SSP 14-11.12: Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue
SSP 14-11.14: Treated Wood Waste
SSP 36-4: Containing Lead from Paint and Thermoplastic
SSP 84-9.03C: Remove Traffic Stripes and Pavement Markings Containing Lead
SSP 14-9.02 and SSP 2-1.06B for bridge rehabilitation
SSP 14-11.16 for asbestos

ISA DETERMINATION:

Does the project have potential hazardous waste involvement? **Low risk**

If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Preliminary Site Investigation? **NO** If yes, explain, and give estimate of additional time required:

ISA CONDUCTED BY: **Donald Cheng** **DATE:** **1/30/20**

DONALD CHENG, ENVIRONMENTAL ENGINEERING, MS-826
DISTRICT 08 TRANSPORTATION ENGINEER – CIVIL

RIGHT OF WAY DATA SHEET

Attachment K

Updated: April 9, 2020
08-Riv-10 PM – R134.0/R156.5
Rehabilitate Mainline Pavement,
Shoulders and Ramps
EA 1C083 PN # 0816000090

To: DIBORO KANABOLO
Design O

From: CHRISTINE SENTENO,
R/W Project Coordination

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above-referenced project based on maps we received from you on **January 14, 2020**, 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 for the estimator to 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. We have determined there is no right of way functional involvement in the proposed project as designed, at this time.

Right of Way Engineering will require a minimum of 6 months after receiving final Right of Way Requirements to deliver Right of Way Appraisal mapping.

Right of Way will require a minimum of 18 months prior to certification of the subject project after receiving final Right of Way Appraisal maps, necessary environmental clearances, and approved freeway agreements.

Shorter lead times will require either more Right of Way resources, an increased number of Eminent domain actions and possibly result in missing the certification date. Any of these actions may reflect adversely on the District's other programs or the Department's and/or District's public image.

*NOTE: WORKPLAN WILL BE PROVIDED SEPERATELYTHESE HOURS ARE PRELIMINARY BASED ON THE INFORMATION PROVIDED WITH THE DATA SHEET REQUEST. HOURS ARE SUBJECT TO CHANGE AS NEW OR ADDITIONAL INFORMATION IS PROVIDED.

Attachments:
[XX] Right of Way Data Sheet
[XX] Utility Information Sheet
[XX] Railroad Information Sheet
[XX] Right of Way Engineering Estimate Sheet

EVNT RW	3/6/20
COST RW1 – 6	3/6/20
TEXT TI	
SCAN	4/15/20
CLASS	
AGRE	
TPRC	

08-Riv-10 PM – R134.0/R156.5
Rehabilitate Mainline Pavement,
Shoulders and Ramps
EA 1C083 PN # 0816000090

1. Right of Way Cost Estimate:

			Value
A.	Acquisition, including Excess Lands, Damages, Goodwill, Major Rehabilitation, and Environmental Permits to Enter	$	30,820.00
B.	Acquisition of Offsite Mitigation.	$	4,042,380.00
C.	Utility - Relocation (State share)	$	4,903,730.00
	- Potholing $22,100.00 (34 Potholes @ $650.00)		22,100.00
D.	RAP	$	0.00
E.	Clearance/Demolition	$	0.00
F.	Title and Escrow Fees	$	3,000.00
G.	Project Permit Fees	$	172,765.00
H.	Condemnation Costs	$	10,146.00
I.	**Total R/W Estimate:**	**$**	**9,184,941.00**
J.	Construction Contract Work	$	0.00

1a. Real Property Services:

A.	Routine Maintenance (Object Code 058)	$	0.00
B.	Advertising Costs (Object Code 039)	$	0.00
C.	Utility Costs (Object Code 002)	$	0.00
D.	Total Real Property Services Estimate:	$	0.00

2. Anticipated Date of Right of Way Certification **April 1, 2022**

3. Parcel Data:

Type		Dual/Appr		Utility Involvement	
X				U4-1	
A				-2	
B	2			-3	17
C				-4	
D				U5-7	10
E	xxxx			-8	
F	xxxx			-9	7

Total 2

RR Involvement	No
C&M Agreement	0
Svc Contract	0
OE Clearances/	1
Clauses	0
LIC/ROE	0

Government Lands	Yes
Number of Parcels	0

Misc. R/W Work	No
RAP Displacement	0
Clear/Demo	0
Const Permits	0
Condemnation	1
Permits to Enter-ENV	0

Areas: Right of Way: S.F. 21,830 SF TCE
Excess: S.F. 0
No. Excess Land Parcels: 0

4. Are there major items of Construction Contract Work?
   Yes ____ No _X_ (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.).

   Type and Number of Parcels:

Fee	0
Partial	0
Full	0
Easements	2
Temporary	2
Permanent	0

6. Is there an effect on assessed valuation?
   Yes ____ Not Significant ____ No _X_ (If yes, explain.)

7. Are utility facilities or rights of way affected?
   Yes _X_ No ____ (If yes, attach Utility Information Sheet, Exhibit 4-EX-5.)
   The following checked items may seriously impact lead time for utility relocation:
   - ☐ Longitudinal policy conflict(s).
   - ☐ Environmental concerns impacting acquisition of potential easements.
   - ☐ Power lines operating in excess of 50 KV and substations.

   (See attached Exhibit 4-EX-5 for explanation.)

8. Are railroad facilities or rights of way affected? Yes ___ No _X_
   (If yes, attach Railroad Information Sheet, Exhibit 4-EX-6.)

9. Were any previously unidentified sites with hazardous waste and/or material found?
   Yes ____ None Evident _X_
   (If yes, attach memorandum per R/W Manual, Chapter 4, Section 4.01.10.00.)

10. Are RAP displacements required? Yes ____ No _X_ (If yes, provide the following information.)
    No. of single family ____ No. of business/nonprofit ____
    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 there material borrow and/or disposal sites required?
    Yes ____ No _X_ (If yes, explain.)

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

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

14. 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.)
    From Design Requirement Maps to R/W to Project Certification _24_ months.

15. Is it anticipated that all Right of Way work will be performed by CALTRANS staff?
    Yes _X_ No ____ (If no, discuss.)

08-Riv-10 PM – R134.0/R156.5
Rehabilitate Mainline Pavement,
Shoulders and Ramps
EA 1C083 PN # 0816000090

Evaluations prepared by:

Right of Way: Name STEPHEN HENSLEY Date 1/23/20

Railroad: Name JOHN RUBALCABA Date 1/31/20

Utilities: Name Jake iWeal Date 3/9/20

Government Lands: Name AIDEE ARPON Date 2/3/2020

Property Management: Name JOYCELYN GRANFLOR Date 2/4/2020

Excess Land: Name JOYCELYN GRANFLOR Date 2/4/2020

Right of Way Engineering: Name TRENT LENFESTEY/ DANA ROBIE Date 3/9/2020

Reviewed By:

Project Coordinator
District 8, Right of Way

Date 3/11/20

Reviewed By:

CHRISTINE SENTENO
Senior-Project Coordination
District 8, Right of Way

Date 3/11/2020

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

NANCY ESCALLIER
Project Delivery Manager
District 8, Right of Way

Date 4/13/20

REBECCA GUIRADO,
Deputy District Director
District 8, Right of Way and Land Survey

Date 4/14/2020

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATA SHEET

(Form #)

08-RIV-10-PM R134.0/R156.5
Rehab Mainline Pavement,
Shoulders& Ramps
EA 1C083 / 0816000090

This utility estimate was prepared using "project specific" data and unit values. This information is not to be utilized for the updating or preparation of this, or any other Right of Way Cost Report or Utility Information Sheet.

UTILITY INFORMATION SHEET

1. Name of utility companies involved in project:
   AT&T Transmission; City of Blythe; El Paso Natural Gas Company; Ex El Pipeline Services LLC; Imperial Irrigation; Palo Verde Irrigation District; SC Gas-Transmission; SC Gas-Blythe; Sprint; Suddenlink Comm-Blythe; Transcanada; Frontier Communications; SC Edison Telecom; SC Edison-Blythe Dist.

2. Types of facilities and agreements required:
   Underground electric, gas, telephone, fiber optic, water, sewer and cable TV.
   Overhead electric, telephone and cable TV.
   Notices to Owners will be required and Utility Agreements are anticipated.

3. Is any facility a longitudinal encroachment in existing or proposed access controlled right of way? Explain:
   Disposition of longitudinal encroachment(s):
   ☐ Relocation required.
   ☐ Exception to policy needed.
   ☒ Other. Explain:
   As-Builts/Inventory Maps will need to be requested to confirm encroachments.

4. Additional information concerning utility involvement on this project. Is there any special circumstances/facilities requiring additional lead time?
   Southern California Edison has needed long lead times to secure materials. Suggested to allow 18 months lead time for Tubular Steel Poles. This estimate has taken into consideration that this is a Design Build and that the poles to be relocated/removed may need to be replaced with an estimated (7) Tubular Steel Poles to support the greater distance spans.

5. Potholing costs: $ 22,100.00

# of Positive Locations (Potholing)	Cost of Each Positive Location	Total cost of Positive Location
34	$ 650	$ 22,100

Total estimated cost of State's obligation for utility relocation on this project:
(Phase 9 funding) $ 4,903,730

Facility type to be Relocated	# of Relocations	Cost of Each Relocation	Total Cost of Relocation	Total cost of Positive Location	Estimated Grand Total	30% Contingency
Wooden Utility Pole	10	$ 25,000	$ 250,000	$ 22,100	$3,772,100	$4,903,730
TSP	7	$ 500,000	$3,500,000			

Utility Involvement

U4-1_____ total number of expected owner expense involvements
-2_____ total number of expected State expense involvements-conventional highway, no Federal aid
-3_1___ total number of expected State expense involvements-freeway, no Federal aid
-4_____ total number of expected State expense involvements-conventional or freeway, with Federal aid
U5-7_10 _ total number of expected utility verifications, which will not result in involvements
-8_____ total number of expected utility verifications, 50% which will result in involvements, and 50% will not
-9__1__ total number of expected utility verifications, which will result in involvements

Prepared By: Jake Ewald Date 4/7/2020
Right of Way Utility Estimator

Reviewed by: Vincent Lundblad Date: 4/7/2020
Vincent Lundblad
Senior Right of Way Agent, Utilities

08-Riv-10 PM – R134.0/R156.5
Rehabilitate Mainline Pavement,
Shoulders and Ramps
EA 1C083 PN # 0816000090

RAILROAD AND GOVERNMENT LANDS INFORMATION SHEET

1. Describe railroad facilities or rights of way affected.

   The project's revised scope of work indicates work will be done near the railroad track that run under Blythe OH bridges 56-0593L/R at Riv-10-PM R152.43. The tracks are owned by Genesse & Wyoming (G&W) whom controls Arizona and California railroad. No work will be done within the railroad right of way but due to the proximity of work to the tracks, and OE Clearance with 5-1.20C clause may be needed at project certification.

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail service? Yes ____ No__**X**___(If yes, explain.)

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

   Permit to Enter will be needed to perform geo=tech functions. An easement will be needed to erect the additional columns which may be covered under a C&M agreement.

4. Remarks (non-operating railroad right of way involved?):

   OE Clearance with 5-1.20C clause may be needed.

   9-Phase cost: $0
   ***Maintain the $20K already listed for RW permits.**

5. Are Government Lands involved? Yes __X__ No ____
   If yes, number of parcels _____
   Agency Name and Explanation: **BLM, concurrence required prior to certification.**

6. PMCS Input Information

RR Involvement	**No**
C&M Agreement	1
SVC Contract	0
OE Clearances/	1
Clauses	
LIC/ROE	
Government Lands	**Yes**
Number parcels	0

Prepared By: _____ Date: 3/25/20
JOHN RUBALCABA
Right of Way Railroad Coordinator

Prepared By: _____ Date: 3/3/2020
AIDEE ARPON
Right of Way Government Lands Coordinator

Revised: 1/9/2020

Environmental Division
Mitigation and Compliance Cost Estimate (M.C.C.E.)

This MCCE is for: **FED** Oversight Project:

Dist - Co - Rte - PM: 08-RIV-010-R134.000/R156.500 EA (Proj ID): 08-1C083_ (0816000090)

Project Name: Riv 10 Blythe Pavement Rehab: mainline, Alternative #:

Project Manager: OCHOA, WILFREDO Phone Number:

MCCE Prepared By: Nancy Frost/Maria Hamlett Date: 1/9/2020 Phone Number: 909-383-6332

Resource Item	232/332 Dollars	FY	Acres/ Credits	ROW $ Planned	FY	ROW $ Actual	Paid	Construction 042$ (BEEs)	FY
Biological									
Contractor Supplied Biologist							☐	$2,696,980	21/22
Temp Impacts Waters US (401)			4.02	$1,065,300	20/21		☐		
Perm Impacts WSC (1600)			6.24	$1,653,600	20/21		☐		
Desert Tortoise Mitigation			220.58	$1,323,480	20/21		☐		
401 application fee				$13,203	20/21		☐		
401 annual fee for 6 yrs				$9,828	21/22		☐		
2081 filing fee				$35,000	20/21		☐		
Monitoring Survey/Report TO 60	$55,894	18/19					☐		
Temp Desert Tortoise Fence							☐	$150,416	20/21
1600 Fee for 17 bridges				$92,327	20/21		☐		
Natural Resource Protection Plan							☐	$5,000	20/21
Permit Fees									
CDFW Document Filing Fee				$2,407	19/20		☐		
TOTAL	**$55,894**			**$4,195,145**				**$2,852,396**	

Comments (explanation and risk management plan attached)

*The project will permanently impact 17.83 acres of desert tortoise critical habitat (mitigated at a 5:1 ratio) and 43.81 acres of suitable desert tortoise habitat (mitigated at a 3:1 ratio) (assuming mitigation $6,000/acre).
*The project will impact CDFW/RWQCB jurisdictional areas, including permanent impacts to 2.08 acre and temporary impacts to 4.02 acres (3:1 mitigation ratio for permanent impacts and 1:1 mitigation ratio for temporary impacts) (assuming mitigation $265,000/acre). *Assuming cost of 2 biological monitors concurrently conducting 16 days ($1,265/day for each biologist) of pre-construction surveys = $40,480 plus cost of 3 biological monitors concurrently conducting 700 days ($1,265/day for each biologist) of construction monitoring = $2,656,500. *Assuming cost of DT temporary fencing ($14/ft) for 2 concurrently-used staging areas (300'x50') = $420,000; and cost of DT temporary fencing ($14/ft) for 3 concurrently-widened bridges = Total Temporary Detour Roads & Bridge Work Area is 574,627.53 sq ft/17 bridges = Average Bridge Work Area is 24,983.8 sq ft – the square root of 24,983.8 sq ft is 158 ft. Assuming each side of the Average Bridge Work Area is 158 ft = 158 x 4 sides of a square = 632 ft perimeter for each Bridge Work Area x 3 bridges x $14/ft (DT temporary fencing) = $26,544 to concurrently fence (DT temporary) 3 Bridge Work Areas. Assuming 17 bridges/3 max times fence re-used = 5.67 x $26,544 (fencing for 3 bridges) = $150,416 total cost for temporary DT fence for all bridge work areas.

Approved By: _____ Date: 1/10/2020
Environmental Branch Chief

Right of Way Capital: _____ Date: 2/28/2020
Right-of-Way Office Chief, Mitigation

If cultural and biology mitigation totals more than $500,000: _____ Date: 1/10/20
Environmental Office Chief

Submitted to PM on:_____ **Initial**___

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Making Conservation a California Way of Life.

To: Christine Senteno
Office of Project Coordination, MS 971

Date: January 14, 2020
File: 08-Riv-10 PM R134.0/R156.5
Rehabilitate Mainline Pavement, Shoulders and Ramps
(EA 1C083)
Project No. 0816000090
201.122 (HA-22)

From: DIBORO KANABOLO
Office Chief
Design O, MS 1164

Subject: **REQUEST FOR RIGHT OF WAY DATA SHEET UPDATE**

A Project Report is being prepared to rehabilitate the pavement of portions of Interstate 10 (I-10), in Riverside County, from 1.0 mile west of Wiley Well Road Interchange (PM R134.0) to the Arizona State Line (PM R156.5). Please provide update to previously completed data sheet as attached. This data sheet update request includes additional right of way as shown in the attached plan.

Attached for your use in providing the Right of Way Data Sheet are:

- R/W Data Sheet Request Form_UPDATE
- Utility Data Assessment for RW Data Sheet
- Plan Sheet (1) and Aerial Map (1)

To meet the current project schedule, please provide us with this information by May 4, 2020.

If you have any questions regarding this request, please contact Fred Asef, the Project Engineer, at (909) 383-7508.

Attachments

RW Data Sheet Dated 4/4/2019
RW Data Sheet Request Form

Fred Asef /

RECEIVED
JAN 14 2020
BY

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

INITIAL STUDY / ENVIRONMENTAL ASSESSMENT

Attachment L

Interstate 10 Blythe Pavement Rehabilitation

Riverside County, California
DISTRICT 8 RIV-10 PM R134.0 to R156.5
PN 0816000090/EA 08-1C083

Initial Study with Mitigated Negative Declaration/Environmental Assessment

Prepared by the
State of California Department of Transportation

The environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

July 2020

SCH #2019069014
DISTRICT 8 RIV-10 PM R134.0/R156.5
PN 0816000090 / EA 08-1C083

Restore and extend the life of existing pavement on Interstate 10 (I-10) from post mile (PM) R134.0 to R156.5 in Riverside County, California.

INITIAL STUDY with Mitigated Negative Declaration/ Environmental Assessment

Submitted Pursuant to: (State) Division 13, California Public Resources Code

(Federal) 42 USC 4332(2)(C) and 49 USC 303 and/or 23 USC 138

THE STATE OF CALIFORNIA

Department of Transportation

COOPERATING AGENCY

U.S. Army Corps of Engineers

7/27/2020

Date

Craig WENTWORTH for

David Bricker
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation
CEQA Lead Agency
NEPA Lead Agency

The following persons may be contacted for information concerning this document:

Antonia Toledo, MS
Senior Environmental Planner
California Department of Transportation
464 West Fourth Street, 6th Floor, MS-820
San Bernardino, CA 92401-1400
(909) 806-2541

CALIFORNIA DEPARTMENT OF TRANSPORTATION

FINDING OF NO SIGNIFICANT IMPACT

FOR

Interstate 10 Blythe Pavement Rehabilitation

Riv-10 PM 134.00 to PM 156.50

The California Department of Transportation (Caltrans) has determined that the Build Alternative, (the Preferred Alternative), will have no significant impact on the human environment. The Build Alternative includes rehabilitating pavement on Interstate 10 (I-10) within the project area while improving safety and mobility for the traveling public between post mile (PM) R134.0 and R156.5 in Riverside County, California. A temporary detour route will also be constructed to maintain two-way traffic through the project corridor during construction. The total project area is approximately 745 acres.

This Finding of No Significant Impact (FONSI) is based on the attached Environmental Assessment (EA) and the associated Technical Studies and design documents, which have been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and the associated Technical Studies and design documents.

The environmental review, consultation, and any other action required in accordance with applicable Federal laws for this project is being, or has been, carried-out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.

7/27/2020

Date

Craig Wentworth for

David Bricker
Deputy District Director
District 8 Division of Environmental Planning
California Department of Transportation
NEPA Lead Agency

STORM WATER DATA SHEET

Signature Page

Attachment M

Dist-County-Route: 08-Riv-10
Post Mile Limits: PM 134/156.50
Type of Work: Rehabilitate Mainline Pavement, Shoulders, and Ramps
Project ID (EA): 0816000090 (1C0830)
Program Identification: 201.122
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Colorado River Basin (Region 7) RWQCB
Total Disturbed Soil Area: 489 ac PCTA: 302 ac
Alternative Compliance (acres): 0 ac ATA 2 (50% Rule)? Yes ☐ No ☒
Estimated Const. Start Date: 05/03/22 Estimated Const. Completion Date: 05/03/27
Risk Level: RL 1 ☒ RL 2 ☐ RL 3 ☐ WPCP ☐ Other: _____
Is MWELO applicable? Yes ☐ No ☒
Is the Project within a TMDL watershed? Yes ☐ No ☒
TMDL Compliance Units (acres): N/A
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: _____ No ☒

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

Behzad Sedighi, Registered Engineer — 3/15/2019 Date

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

Will Ocha, Project Manager — 3/5/19 *Date*

Leonard Estrella, Maintenance Representative — 4/2/2019 *Date*

Rose Bishop, District Landscape Architect — *Date*

[Stamp Required at PS&E only]

Jon Bumps, District SW Coordinator — 4-2-2019 *Date*

T.T 4-2-2019

EA 1C083
08-Riv-40 PM R134.0/R156.5

TRANSPORTATION MANAGEMENT PLAN COST ESTIMATE

Attachment N

For DTM use		Caltrans District 8 (Riverside & San Bernardino)	
Developer	ct	TMP Data Sheet (Ver. Sept. 2017)	

Transportation Management Plan (TMP) Data Sheet is for PID, PSR, PR and PS&E considering DTM's requirements. The validity of this TMP expires at the same time the associated LRCs expires.

The TMP Data Sheet includes background & signature, TMP elements & TMP estimate

Requester: *Complete section (A) & (B) of this page only*

Requester: Submit separate request for each roadway (Type the information in the cells below with yellow background ONLY)

TMP receiver: Please note that

Project shall not be certified without the approval of the Lane Requirement Charts (LRCs) & the TMP by the DTM

(A) Requester's info.

1 - Date of request	2/4/2019	2 - Department	Construction Work
3 - Full name	Fred Asef	4 - Phone No.	909 383 7508
5 - email address	fred.asef@dot.ca.gov		
6 - Project Manager's name	Wil Ochoa		
7 - Project Manager's email	wil.ochoa@dot.ca.gov		

(B) Project information

		1-EA#/ID#	1C083(0816000090)
2-County/Route	RIV/I-10	3-phase/sub object	0/160
4-Post mile (From-To)	R134.0/R156.4		
5-Short description of job	**Rehabilitation of mainline pavement and shoulders**		
Construction period per WPS			
6-Estimated start date	02/01/22	8-# of working days	700
7-Estimated end date	05/03/22	9-Estimated Proj. cost	$ 266,000,000

10- Requester: Use section (H), in the bottom of the page, to add any other information that helps developing the TMP

11- Documents to send → *Requester: Please attach the location map in jpeg/pdf format to your E-mail*

12- If hard copies are requested, Send or bring them to the DTM office located on the south side of 11th. Floor, Attn: Al Afaneh. Questions: call 383-6262

13- E-mail the request to: al_afaneh@dot.ca.gov

Following is for DTM use >>>>>>>>>>> Developer: Fill info in green cells only

C) BACKGROUND INFORMATION

		Date request received	02/04/19	Job assigned to	ct
# of working days	700				
Estimated Project cost ($)	266,000,000	Per E-mail dated	02/04/19		
TMP estimate($)	**$302,000**	Equal to **0.11%**	Of the project cost		

D) IMPACT	High	Medium	Low	N/A	Developer: (*Briefly, explain the high impact/mitigation): Work on embankment only, no lane closure is required, shoulder lane closure only.*
State Hwy.	X				
Local road				X	
Ramp/connector	X				

E) Developer: Complete the info

Developed by	Cuong Tieu	Original signed by:	ct	Date	7/2/2020
Title	TE-C				
E-mail	cuong.tieu@dot.ca.gov				
Phone/Fax	909-806-3904				

F) Approved by

		Original signed by:	Al Afaneh	Date	07/02/20
Name:	Al Afaneh				
Title	District Traffic Manager				
E-mail	al.afaneh@dot.ca.gov				
Phone/Fax	909-383-6262				

G) District's info:

Department of Transportation	
District:	8
Address:	464 W. Fourth St., San Bernardino, Ca., 92401-1400
Operations, DTM, MS >>>>	711

DTM is located on the North side of 7th. Fl. Enter from the open door & turn left. MS: 711

H) Remarks

Form was developed by Saleh Yadegari (September 2014)

TMP Elements	EA #/ID#	1C083(0816000090)	Date	7/2/2020

Note: A checkmark in the box means you need to include this in the project unless staging, material, or work hour changes eliminate the need for the item. A ? in front means TMP anticipates this - please check into this. A blank box means the item is not needed at this time based on the information received.

Public Affairs officer's 1st. & last name		Phone number

1 Public Information/Public Awareness Campaign (PAC).
Developer: Remember to obtain the estimate from Public affairs by contacting Terri Kasinga. Procedure is in the file under 3- TMP matters

Estimated Cost: $ 110,000

BEES 066063 (Traffic Management Plan-Public Information). Cost to be reduced by Public Affairs (PA) and Construction Liaison (CL) only. Show under **State Furnished** as the **total** of PA+CL.

1.1 ☐ Include Rideshare information in PA/CL project material to encourage vehicles reduction in work area
1.2 ☑ Brochures and Mailers
1.3 ☐ Media Releases (& minority media sources)
1.4 ☐ Paid Advertising
1.5 ☐ Public Meetings/PAC Mtgs./Speakers Bureau (show cost also for room rental)
1.6 ☐ Hand deliver notices to vicinity
1.7 ☐ Broadcast fax service
1.8 ☐ Telephone Hotline OR
1.9 ☑ 1-800-COMMUTE (The telephone number is shown on CS-Info signs) -
1.10 ☐ Visual Information (videos, slide shows, etc.)
1.11 ☐ Local cable TV and News
1.12 ☐ Traveler Information System (Internet)
1.13 ☑ Internet, E-mail, Social Media
1.14 ☐ Notification to targeted groups:
- ☐ Revised Transit Schedules/maps
- ☐ Rideshare organizations
- ☑ schools
- ☐ organizations representing people with disabilities
- ☐ bicycle organizations

1.15 ☐ Include PA/CL/Consultant resources in WPS
1.16 ☑ Commercial traffic reporters/feeds - e.g. brief Traffic Information people (TIP) group
1.17 ☐ Insert SSP's

"A representative of the Contractor, at Superintendent level or higher, and authorized to commit the Contractor, shall attend and participate in all Public Awareness Campaign meetings. Time commitment for the meeting(s) varies from two to four hours per month."

1.18 ☐ Other

Section 1 Total: $ 110,000

2 Traveler Information Strategies
Project team needs to coordinate with Traffic Design!

2.1 ☐ Existing Overhead Changeable Message Signs (Stationary)

☐ New Installation (Stationary) - BEES 860532 CHANGEABLE MESSAGE SIGN SYSTEM - list locations

2.2 ☐ Portable Changeable Message Signs (PCMS) - BEES 066578

This strategy is in addition to Traffic Design's PCMS for regular traffic handling within the project limits and is used for advising motorists to divert at remote advance decision points - outside the usual project limits. This also allows for advanced motorist information - e.g. a week ahead. Their placement may need to be cleared **environmentally.** Placement should be of sufficient distance prior to decision points as determined by the Resident Engineer.

# of PCMS [ ] Unit cost/month $ 1,000.00 Months needed [ ] $ -

2.3 ☑ Lane Closure System Website
2.4 ☐ Caltrans Highway Information Network (CHIN)
2.5 ☐ Radar Speed Message Sign (Specter sign) BEES 066064 (approx. EA @ $30,000)
2.6 ☐ Bicycle and pedestrian information, e.g. Detour maps
2.7 ☐ Automated Workzone Information System (AWIS) BEES 120105
- consult with TMP Developer prior to updating SSP 12-3.35A(1) for AWIS
- refer to Section 12-3.35, page 156 to 158 of the 2015 Standard Spec.

2.8 ☐ Other

TMP Elements	EA #/ID#	1C083(0816000090)	Date	7/2/2020
			Section 2 Total	$ -

3 Incident Management

3.1 CHP's Construction or Maintenance Zone Enhanced Enforcement Program – COZEEP or MAZEEP. BEES 066062 - show under "State or Agency furnished" in the Cost Estimate.

Make sure to consider the LC hours and add CHP driving time to/from their office

Day COZEEP: To protect active closures

	hours/day	CHP vehicles	# of officers.	Rate/Hr.	
	8	1	1	$ 100	$ -

Night COZEEP: To protect active closures

# of nights		hours/night	CHP vehicles	# of officers. Nights need 2 per car	Rate/Hr.	
120		8	1	2	$ 100	$ 192,000

3.2 **Freeway Service Patrol (FSP) for Construction (CFSP)** $/hr./truck $55

BEES 066065 - show under "State or Agency furnished" in the Cost Estimate

Short duration or remote area CFSP usually is bid with much higher hourly rates. If enhancement of program FSP feasible, CFSP could tie into the lower long-term FSP rates.

	# of trucks	# of days	Hours per day	
A For service within the regular FSP hours				$0
For service outside the regular FSP hours				
B Extended Peak hour coverage				$0
C Support during night closures				$0
D Weekend support				$0

Local agency (SAFE) support 8% $0

8% of truck cost

CFSP CHP support 5% $0

5% of truck cost only if within regular FSP and area

Equipment/Supplies 10% $0

% of truck cost unless more detail available

Consult with the Inland Empire division of CHP or the border division in the southern Riverside county to select the method which is acceptable for the B,C,D that are outside the regular FSP hours or area.

Method 1

CFSP/CHP support 20% $0

20% of truck cost or

CFSP Dispatcher @

# of days		# of nights	hours	# of FSP	Rate	# of FSP vehicles	
			0		$ 45.00		$ -
			0				

CFSP CHP Officers (See Cozeep rate)

# of days		# of nights	hours	# of officers	Rate	# of CHP vehicles	
0		0	0	1	$ 45.00	0	$ -
0		0	0	2	0	0	$ -

☐ Cooperative Agreement or Task Order with SAFE for $0

☐ Task Order with CHP (State-wide Master Agreement for FSP support). for $0

☐ Contact District FSP Coordinator for task orders.

☐ Service Contract

☐ Local Agency will arrange CFSP with SAFE

☐ Local Agency will arrange CFSP administration with CHP

3.2 Total $0

3.3 ☐ Other

Section 3 Total	$ 192,000

4 Construction Strategies

Contact DTM, at 909-383-6262, to get Delay Calculations, Lane Requirement Charts (LRC), Table Z and Special events list. Inform DTM of any concerns/commitments regarding special LC days, times, seasons, events; environmental restrictions; if work may be affected by snow and low or high temperatures. E.g. excessive heat may delay HMA operations lane openings which may increase traffic impact when vehicles overheat in the queue; etc. If traffic volumes vary significantly between seasons, consider 2 sets of LRCs to avoid CCOs.

4.1 This TMP presumes that work is planned as below. If different, TMP needs to be revised. The Project Engineer shall ensure all appropriate lane requirement charts are included.

- ☑ Off peak
- ☑ Night
- ☐ Weekend

4.2 Expected facility closures and requirements

- ☐ Flagging
- ☑ Shoulder
- ☑ Lane
- ☐ Street
- ☑ Ramp
- ☐ Connector*
- ☐ Extended Weekend Closures*
- ☐ Total Facility Closures*

*Consult with TMP developer and the DTM regarding COZEEP & other costs. Provide proposed detour and traffic diversion plans for review.

CAUTION: If the Lane Requirement Chart (LRC) for full mainline closures, of one or both directions on a highway or freeway, does not show the maximum number of allowable closures, the PS&E shall not be certified by DTM/TMP.

4.3 ☐ Coordinate with adjacent ongoing and planned construction projects - also on detour routes.

4.4 ☐ BEES 066008 Incentives

4.5 ☐ Strictly enforce construction CPM schedule

4.6 ☐ 10-Min. Delay Penalty — Contact DTM at 909-838-6262 for 10 Min. Delay Penalty Calculations.

4.7 ☐ Other

Section 4 Total	$ -

5 Demand Management (DM)

Project team needs to coordinate with RCTC/SANBAG/CVAG

Traffic diversion may increase available work hours.

5.1 ☐ A co-op will be executed - mentioned in PSR or PR.

☐ Instead of a co-op, 15% is added to the cost of DM elements since the payment to the local agency will be routed through the contractor.

Instead of a co-op, the local agency will make their own arrangements with RCTC/SANBAG/CVAG.

PA/CL or local agency need to inform commuters through RCTC/SANBAG. Funds part of PA/CL.

5.2 ☐ HOV Lanes/Ramps (New or Convert)

5.3 ☐ Park-and-Ride Lots

5.4 ☐ Parking Management/Pricing (Coordination with local agency is required)

5.5 ☐ BEES 066067 Rideshare Promotion

5.6 ☐ Other

Section 5 Total	$ -

6 Alternate Route Strategies

Caution - signed detours may require environmental clearance. Traffic diversion may increase available work hours. Please work with Traffic Design. BEES 066060 - ADITIONAL TRAFFIC CONTROL

6.1 ☐ Add Capacity to Freeway connector

6.2 ☐ Ramp Closures

6.3 ☐ Temporary Highway Lanes or Shoulder Use

6.4 ☐ Parking Restrictions

6.5 ☐ Street Improvements

- ☐ State R/W - Signals, Widen, etc.
- ☐ Local R/W - Signals, Widen, etc. co-op or permit may be needed

6.6 ☐ Local Street USE - co-op or Permit may be needed

6.7 ☐ Traffic Control Officers (see 3.1 COZEEP)

6.8 ☐ Signed detour - using State routes

6.9 ☐ Signed detour - using local streets and roads. Coordinate with corresponding local agency.

6.10 ☐ Adjust signals

6.11 ☐ Temporary bicycle or pedestrian facilities

6.12 ☐ Other

Section 6 Total	$ -

TMP Estimate

Developed by	Cuong Tieu	EA#/ID#	1C083(0816000090)	Date	7/2/2020

TMP developer: Amounts under the cost column will automatically be copied from the TMP elements

TMP Elements	Cost
1. Public Information	$110,000
2. Motorist Information Strategies	$0
3. Incident Management	$192,000
4. Construction Strategies	$0
5. Demand Management (DM)	$0
6. Alternate Route Strategies	$0
Total TMP Estimate	$ 302,000

LIFE CYCLE COST ANALYSIS

Attachment O

RealCost Input Data

1. Economic Variables	
Value of Time for Passenger Cars ($/hour)	$12.80
Value of Time for Single Unit Trucks ($/hour)	$31.70
Value of Time for Combination Trucks ($/hour)	$31.70

2. Analysis Options	
Include User Costs in Analysis	Yes
Include User Cost Remaining Service Life Value	Yes
Use Differential User Costs	Yes
User Cost Computation Method	Calculated
Include Agency Cost Remaining Service Life Value	Yes
Traffic Direction	Both
Analysis Period (Years)	55
Beginning of Analysis Period	2023
Discount Rate (%)	4.0
Number of Alternatives	3

3. Project Details and Quantity Calculations	
State Route	I-10
Project Type	Rehabilitation
Project Name	EA 08-1C083
Maintenance Service Level	1
Local Region	
County	Riverside - PM 134 - 156.5
Climate Region	Desert .
Analyzed By	Aso Delanian
Mileposts	
Begin	
End	
Length of Project (miles)	22.20
Comments	Bridge Length (0.30 miles) is not included in project length. Bridge and Detours costs are not included in initial cost of JPCP and CRCP.

4. Traffic Data	
AADT Construction Year (total for both directions)	31,700
Cars as Percentage of AADT (%)	49.0
Single Unit Trucks as Percentage of AADT (%)	9.1
Combination Trucks as Percentage of AADT (%)	41.9
Annual Growth Rate of Traffic (%)	1.6
Speed Limit Under Normal Operating Conditions (mph)	70
No of Lanes in Each Direction During Normal Conditions	2
Free Flow Capacity (vphpl)	2170
Queue Dissipation Capacity (vphpl)	1700
Maximum AADT (total for both directions)	215,092
Maximum Queue Length (miles)	5
5. Maintenance and Rehabilitation Sequence	

Alternative 1	
Final Pavement Surface	
Design Life	
Activity 1 Name	40YR REHAB (LANE REPLACE)
Activity 1 Year of Action	2023
Activity 1 Annual Maintenance Cost ($1000)	71.04
Activity 1 Activity Service Life (Year)	45
Activity 2 Name	CAPM (CPR C)
Activity 2 Year of Action	2068
Activity 2 Annual Maintenance Cost ($1000)	266.4
Activity 2 Activity Service Life (Year)	5
Activity 3 Name	CAPM (CPR B)
Activity 3 Year of Action	2073
Activity 3 Annual Maintenance Cost ($1000)	133.2
Activity 3 Activity Service Life (Year)	10
Activity 4 Name	CAPM HMA
Activity 4 Year of Action	2083
Activity 4 Annual Maintenance Cost ($1000)	8.8
Activity 4 Activity Service Life (Year)	5
Activity 5 Name	REHAB HMA (20YR)
Activity 5 Year of Action	2088
Activity 5 Annual Maintenance Cost ($1000)	23.2
Activity 5 Activity Service Life (Year)	5
Activity 6 Name	
Activity 6 Year of Action	2093
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 2	
Final Pavement Surface	
Design Life	
Activity 1 Name	40YR REHAB (LANE REPLACE)
Activity 1 Year of Action	2023
Activity 1 Annual Maintenance Cost ($1000)	17.76
Activity 1 Activity Service Life (Year)	55.0
Activity 2 Name	CAPM (PR C)
Activity 2 Year of Action	2078
Activity 2 Annual Maintenance Cost ($1000)	124.32
Activity 2 Activity Service Life (Year)	5.0
Activity 3 Name	CAPM (CPR B)
Activity 3 Year of Action	2083
Activity 3 Annual Maintenance Cost ($1000)	12
Activity 3 Activity Service Life (Year)	10
Activity 4 Name	
Activity 4 Year of Action	2093
Activity 4 Annual Maintenance Cost ($1000)	0
Activity 4 Activity Service Life (Year)	0
Activity 5 Name	
Activity 5 Year of Action	2093
Activity 5 Annual Maintenance Cost ($1000)	1
Activity 5 Activity Service Life (Year)	0
Activity 6 Name	
Activity 6 Year of Action	2093

Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 3	
Final Pavement Surface	
Design Life	
Activity 1 Name	REHAB HMA W/ RHMA (20YR)
Activity 1 Year of Action	2023
Activity 1 Annual Maintenance Cost ($1000)	328.56
Activity 1 Activity Service Life (Year)	21
Activity 2 Name	CAPM HMA W/ RHMA
Activity 2 Year of Action	2044
Activity 2 Annual Maintenance Cost ($1000)	364
Activity 2 Activity Service Life (Year)	9
Activity 3 Name	REHAB HMA W/ RHMA (20YR)
Activity 3 Year of Action	2053
Activity 3 Annual Maintenance Cost ($1000)	329
Activity 3 Activity Service Life (Year)	21
Activity 4 Name	CAPM HMA W/ RHMA
Activity 4 Year of Action	2074
Activity 4 Annual Maintenance Cost ($1000)	364
Activity 4 Activity Service Life (Year)	9
Activity 5 Name	
Activity 5 Year of Action	2083
Activity 5 Annual Maintenance Cost ($1000)	0
Activity 5 Activity Service Life (Year)	0
Activity 6 Name	
Activity 6 Year of Action	2083
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0
Alternative 4	
Final Pavement Surface	
Design Life	
Activity 1 Name	NEW/RECONST CRCP (20YR)
Activity 1 Year of Action	2023
Activity 1 Annual Maintenance Cost ($1000)	0
Activity 1 Activity Service Life (Year)	30
Activity 2 Name	CAPM (PR C)
Activity 2 Year of Action	2053
Activity 2 Annual Maintenance Cost ($1000)	0
Activity 2 Activity Service Life (Year)	5
Activity 3 Name	CAPM (PR B)
Activity 3 Year of Action	2058
Activity 3 Annual Maintenance Cost ($1000)	0
Activity 3 Activity Service Life (Year)	10
Activity 4 Name	CAPM (PR A)
Activity 4 Year of Action	2068
Activity 4 Annual Maintenance Cost ($1000)	0
Activity 4 Activity Service Life (Year)	10
Activity 5 Name	20
Activity 5 Year of Action	2078
Activity 5 Annual Maintenance Cost ($1000)	0
Activity 5 Activity Service Life (Year)	0

Activity 6 Name	
Activity 6 Year of Action	2078
Activity 6 Annual Maintenance Cost ($1000)	0
Activity 6 Activity Service Life (Year)	0

Alternative 1	
Number of Activities	3

Activity 1	40YR REHAB (LANE REPLACE)	
Agency Construction Cost ($1000)	$185,200.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	0	
No of Lanes Open in Each Direction During Work Zone	2	
Activity Service Life (years)	45.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	71.04	
Work Zone Length (miles)	22.20	
Work Zone Speed Limit (mph)	70	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		
Outbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Activity 2	CAPM (CPR C)	
Agency Construction Cost ($1000)	$9,947.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	0	
No of Lanes Open in Each Direction During Work Zone	2	
Activity Service Life (years)	5.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	266.4	
Work Zone Length (miles)	22.20	
Work Zone Speed Limit (mph)	70	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		
Outbound	Start	End

First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Activity 3	CAPM (CPR B)	
Agency Construction Cost ($1000)	$14,942.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	0	
No of Lanes Open in Each Direction During Work Zone	2	
Activity Service Life (years)	10.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	133.2	
Work Zone Length (miles)	22.20	
Work Zone Speed Limit (mph)	70	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		
Outbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Alternative 2	
Number of Activities	2

Activity 1	40YR REHAB (LANE REPLACE)	
Agency Construction Cost ($1000)	$215,140.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	0	
No of Lanes Open in Each Direction During Work Zone	2	
Activity Service Life (years)	55.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	17.76	
Work Zone Length (miles)	22.20	
Work Zone Speed Limit (mph)	70	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		
Outbound	Start	End
First period of lane closure		

Second period of lane closure		
Third period of lane closure		

Activity 2	CAPM (PR C)	
Agency Construction Cost ($1000)	$8,029.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	0	
No of Lanes Open in Each Direction During Work Zone	2	
Activity Service Life (years)	5.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	124.32	
Work Zone Length (miles)	22.20	
Work Zone Speed Limit (mph)	70	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		
Outbound	Start	End
First period of lane closure		
Second period of lane closure		
Third period of lane closure		

Alternative 3	
Number of Activities	4

Activity 1	REHAB HMA W/ RHMA (20YR)	
Agency Construction Cost ($1000)	$147,000.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	321	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	21.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	328.56	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	40	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24

Third period of lane closure		

Activity 2	CAPM HMA W/ RHMA	
Agency Construction Cost ($1000)	$48,705.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	321	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	9.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	364.08	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	40	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		

Activity 3	REHAB HMA W/ RHMA (20YR)	
Agency Construction Cost ($1000)	$101,724.00	
User Work Zone Costs ($1000)		
Work Zone Duration (days)	321	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	21.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	328.56	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	40	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		

Activity 4	CAPM HMA W/ RHMA
Agency Construction Cost ($1000)	$48,705.00

User Work Zone Costs ($1000)		
Work Zone Duration (days)	321	
No of Lanes Open in Each Direction During Work Zone	1	
Activity Service Life (years)	9.0	
Activity Structural Life (years)		
Maintenance Frequency (years)	1	
Agency Maintenance Cost ($1000)	364.08	
Work Zone Length (miles)	2.00	
Work Zone Speed Limit (mph)	40	
Work Zone Capacity (vphpl)	1510	
Traffic Hourly Distribution	Weekday Double-Peak	
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)		
Inbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		
Outbound	Start	End
First period of lane closure	0	5
Second period of lane closure	21	24
Third period of lane closure		

Deterministic Results

Total Cost	Alternative 1:		Alternative 2:		Alternative 3:	
	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)
Undiscounted Sum	$207,343	$0	$216,099	$0	$336,223	$8,954
Present Value	$189,835	$0	$215,531	$0	$210,252 *	$4,051
EUAC	$8,586	$0	$9,749	$0	$9,510	$183

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*Explanation and Basis for Adjusting LCCA Software Output

The LCCA Software was developed in 2013 and it is observed that the present value cost generated for the major rehabilitation schedule in "Year 31" of the project's life (analysis period is 55 years) is lower than the current year major rehabilitation estimate cost for HMA. The LCCA for this project aims to compare JPCP, CRCP, and HMA. The realistic/pragmatic difference between the two materials (Concrete and Asphalt) is in the cost of their frequency of repairs and/or maintenance. The expectation is that the cost of a major rehabilitation thirty-one (31) years from the present will in no way be less expensive (that is, cost less) than today's major rehabilitation estimated cost.

As such, the software result for HMA is suspect and Design contacted the software developer at the University of California, Davis. From our conversation, it was clear that the software result is inaccurate. Design subsequently performed the LCCA using Excel-spreadsheet, to obtain a more realistic and reasonable comparison between the present values of the different construction materials. The resulting Agency cost for present value of HMA is $395,461,000

EA 1C083
08-Riv-40 PM R134.0/R156.5

RIGHT OF WAY COST ESTIMATE and UTILITY MAPS

Attachment P

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

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

REVISED BY

DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

POWER POLE #1

POWER POLE #2

POWER POLE #3

POWER POLE #4

LOVEKIN Blvd

DEKEMA STREET

DONLON STREET

LOVEKIN Blvd OC
BR 56-0592

ATTACHMENT P
SHEET 1/5

UTILITY MAP

SCALE 1" = 50'

U-1

LAST REVISION DATE PLOTTED => !DATE
00-00-00 TIME PLOTTED => !TIME

BORDER LAST REVISED 7/2/2010

USERNAME => !USER
DGN FILE => !REQUEST

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 00000000001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

REVISED BY

DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

4RD STREET

5TH STREET

6TH STREET

7TH STREET

ALICE LANE

POWER POLE #5

POWER POLE #6

POWER POLE #7

POWER POLE #8

POWER POLE #9

POWER POLE #10

SEVENTH AVENUE UC
BR 56-0597

ATTACHMENT P

SHEET 2/5

UTILITY MAP

SCALE 1" = 50'

U-2

LAST REVISION DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 00000000001

DIST.	COUNTY	ROUTE	POST MILE	SHEET NO.	TOTAL SHEETS
08	RIV	10	R34.0/R56.5	1	3

LEGEND

RIGHT OF WAY TAKE

EB ROUTE 10

LOVEKIN Blvd OC
BR 56-0592

LOVEKIN Blvd

R/W

LOVEKIN Blvd EB EXIT RAMP

LOVEKIN Blvd EB ENTRANCE RAMP

DONLON STREET

DONLON STREET

APN 836141008

APN 836141015

APN 848100032

APN 848100035

No.	APN	TOTAL AREA Sq Ft	R/W TAKE AREA Sq Ft	REMAINDER AREA Sq Ft
1	836141015	17,875	175	17,700
2	848100032	30,202	376	29,826

ATTCHMENT P
SHEET 3/5

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY COST ESTIMATE MAP

0 100 200 400 600

SCALE 1"= 20'

ACCESS PROHIBITED

L-1

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES 0 1 2 3

SOURCE _____ CHARGE _____ E. A. _____

REVISIONS DATE REV CK

DIST.	COUNTY	ROUTE	POST MILE	SHEET NO.	TOTAL SHEETS
08	Riv	10	R134.0/R156.5	2	3

No.	APN	TOTAL AREA Sq Ft	R/W TAKE AREA Sq Ft	REMAINDER AREA Sq Ft
1	848031033	5666	75	5591

LEGEND

RIGHT OF WAY TAKE

APN 836122031

APN 848031031

APN 848031032

APN 848031033

R/W

LOVEKIN Blvd

DEKEMA STREET

LOVEKIN Blvd WB ENTRANCE RAMP

LOVEKIN Blvd WB EXIT RAMP

LOVEKIN Blvd OC
BR 56-0592

WB ROUTE 10

ATTACHMENT P
SHEET 4/5

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY COST ESTIMATE MAP

SCALE 1"= 20'

ACCESS PROHIBITED

L-2

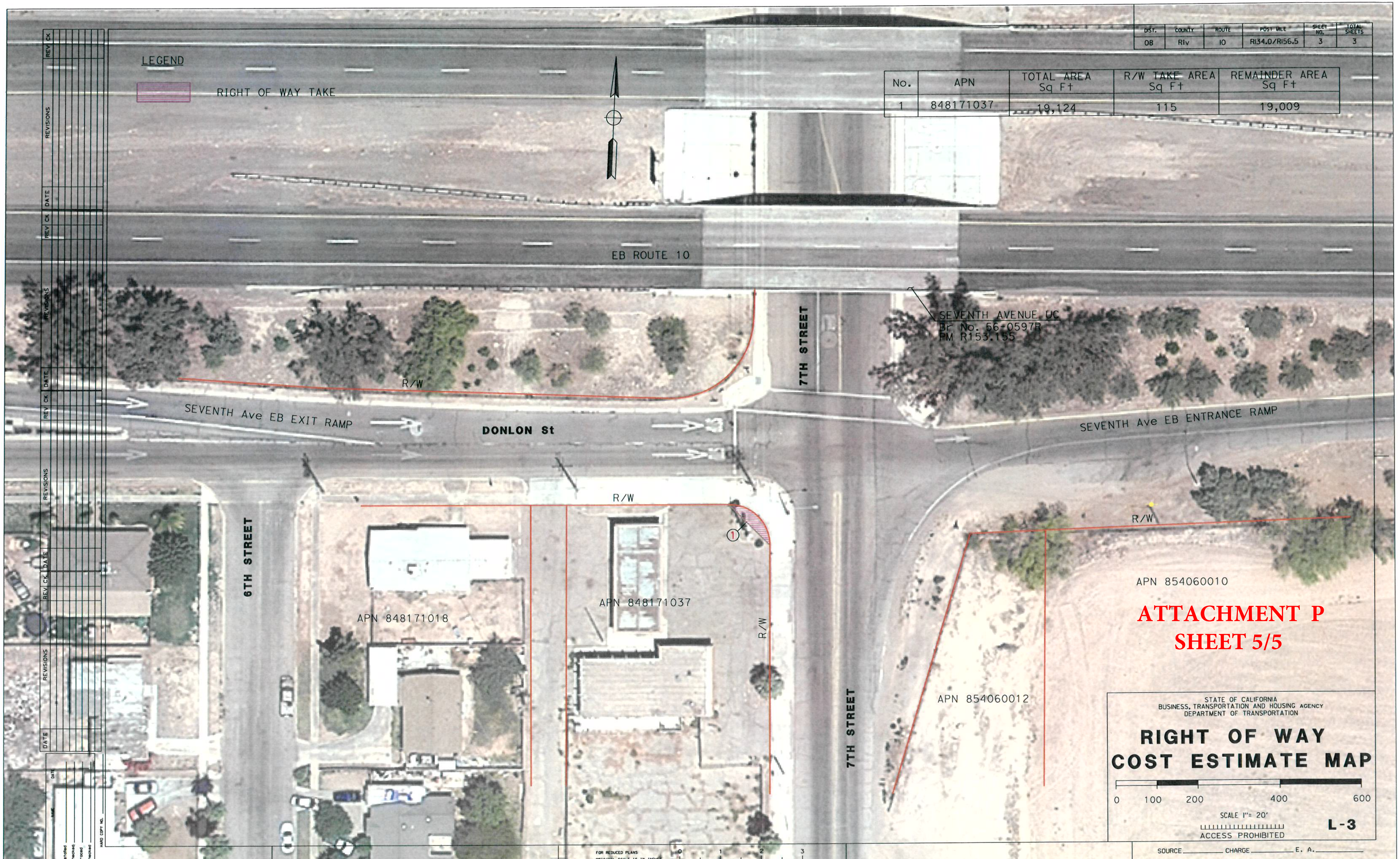
SOURCE _____ CHARGE _____ E. A. _____

FOR REDUCED PLANS
ORIGINAL SCALE IS IN INCHES 0 1 2 3

REVISIONS DATE REV CK

Detailed
Checked
Traced
Checked

HARD COPY NO.



DIST.	COUNTY	ROUTE	POST MILE	SHEET NO.	TOTAL SHEETS
08	Riv	10	R134.0/R156.5	3	3

No.	APN	TOTAL AREA Sq Ft	R/W TAKE AREA Sq Ft	REMAINDER AREA Sq Ft
1	848171037	19,124	115	19,009

ATTACHMENT P
SHEET 5/5

STATE OF CALIFORNIA
BUSINESS, TRANSPORTATION AND HOUSING AGENCY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY COST ESTIMATE MAP

0 100 200 400 600

SCALE 1" = 20'

L-3

SOURCE ______ CHARGE ______ E. A. ______

JOINT FIELD REVIEW ROSTER

Attachment Q

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
DISTRICT 8 • DIVISION OF DESIGN
JOINT DESIGN/MAINTENANCE/CONSTRUCTION/ENVIRONMENTAL/PROJECT MANAGEMENT FIELD MEETING

Contract Number-Project I.D. Number	County, Route, Post Mile	Federal Aid Number
EA 1C0B3	08-RIV-10 PM R134/R156.5	
Project Description		

Instructions: The Project Engineer (PE) shall coordinate with the Project Manager to facilitate the field meetings with representatives from the five Divisions. The joint field meetings shall be held pre-design/Phase 0 and within 2 weeks of the 60% design plans in Phase 1. The PE shall submit the completed sign-in sheet(s) with the design package to the District Office Engineer (DOE). Incomplete submittals will not proceed and DOE will forward to the Design Manager.

Phase 0

Division	Print Name	Signature	Date
Design	DIBORO KANABOLO	[signature]	09-17-2019
	TUAN TRUONG	[signature]	9-17-19
	Fred Asef	[signature]	9-17-19
Maintenance	Marcus Austin	[signature]	9-17-19
Field Construction			
Constructability	Hector Guerrero	[signature]	9-17-19
Environmental	Chun-Sheng Wang	[signature]	9-17-19
PPM	WIL OCHOA	[signature]	9/18/19

Phase 1 60% Design Plan

Division	Print Name	Signature	Date
Design	DIBORO KANABOLO	[signature]	09-17-2019
Maintenance	Marcus Austin	[signature]	9-17-19
Field Construction			
Constructability	Hector Guerrero	[signature]	9-17-19
Environmental	Chun-Sheng Wang	[signature]	9-17-19
PPM			

District Office Engineer Accepted ☐ Returned to Design Manager ☐

Print Name	Signature	Date	Date Returned

2P PROJECT CERTIFICATION

Attachment R

08 – RIV – 10
PM R60.9/R74.0,
R105.0/R134.0 &
R134.0/R156.5
Project EA 1C080

2R PROJECT CERTIFICATION

A Safety Screening, as required by Design Information Bulletin Number 79, was conducted for the segment of highway identified above in the project description.

REGISTERED PROFESSIONAL ENGINEER
HAISSAM S. YAHIA
No. 56288
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

Chief, District Traffic Safety Branch — Date: 1-12-16

This project will be scoped and designed as a 2R Project per the guidance in Design Information Bulletin Number 79. The Safety Screening that was performed will be an integral part of the development of this project.

Deputy District Director for Design — Date: 01/14/16

I concur with the 2R Purpose and Need of this project.

Design Coordinator — Date: 1/28/16

I concur that this project should be scoped and designed as a 2R Project per the guidance in Design Information Bulletin Number 79 and that the Safety Screening associated with this project will be an integral part of the development of this project. Therefore, since the appropriate Purpose and Need for this project is pavement resurfacing and restoration (2R), I have determined that this project is to be delivered as a 2R Project.

District Deputy for Maintenance — Date: 1.15.16

District Deputy for Traffic Operations — Date: 1-13-16

Notes:
1. This certification document shall be filed in the district project history files.
2. A copy of this Certification shall be sent to Headquarters Division of Design, attention Design Report Routing.
3. District organizations with separate Deputies for Maintenance and Operations need the signatures of both individuals.

RISK REGISTER CERTIFICATION

Attachment S

STATE OF CALIFORNIA · DEPARTMENT OF TRANSPORTATION

RISK REGISTER CERTIFICATION (ACCOUNTABILITY CHECKPOINTS) FORM

PPM-0001 (REV 07/2013)

The risk register is to be approved and signed-off by the District Deputies* listed below for all scalability levels. By signing this form, you are certifying that you have reviewed the risks documented in the register and agree that they have been managed to the extent possible by the PDT.

Project Information	○ Capital Project ○ Major Maintenance Project (Check One)	Total Estimated Const Cost:	$235,040,000
Project ID/District-EA	0816000090		1C083
Project Description	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS		
Project Manager (PM)	Wil Ochoa		
Risk Management Coordinator	Md Shaheed		

☐ No Risk Register Certification Required -- Check box if project is less than $1 million in total cost and risk register not prepared. Sign below and submit this form with PID, PA&ED, PS&E submittals, and RE Handoff Files (as applicable).

Project Manager Signature

PID (Recommended for Capital Projects Only excluding Minor Projects)

Project Manager	Date:	
Deputy District Director, Planning	Date:	
Deputy District Director, Design	Date:	
Deputy District Director, Construction	Date:	
Deputy District Director, Right of Way	Date:	
Deputy District Director, Environmental	Date:	
Deputy District Director, Project Management	Date:	

PA&ED (Required for Capital Projects Only)

Project Manager	Sign	*RafaelYoussef*	Date:	July 15, 2020
Deputy District Director, Design	Sign	*Electronically signed by ELSALEH, JAMAL M*	Date:	July 15, 2020
Deputy District Director, Construction	Sign	*Electronically signed by CONNORS, CHRISTY*	Date:	July 16, 2020
Deputy District Director, Right of Way	Sign	*Electronically signed by GUIRADO, MIRNA R*	Date:	July 21, 2020
Deputy District Director, Environmental	Sign	*Electronically signed by BRICKER, DAVID P*	Date:	July 21, 2020
Deputy District Director, Project Management	Sign	*Electronically signed by SHEIKH, AWAIS A*	Date:	July 16, 2020

Prior to PS&E (Required for Capital Projects and Major Maintenance Projects)

Project Manager	Date:
Deputy District Director, Design	Date:
Deputy District Director, Construction	Date:
Deputy District Director, Right of Way	Date:
Deputy District Director, Environmental	Date:
Deputy District Director, Project Management	Date:

RE File Hand-off (Recommended for Capital Projects and Major Maintenance Projects)

Project Manager	Date:
Deputy District Director, Construction	Date:

EA 1C083 QUALITATIVE RISK REGISTER

EA 1C083	Phase: 0	RIV 010 PM: 134.0/156.5	PM: Wil Ochoa	Const Capital Estimate: $235,040K	Project Description:
Program Code: 201.122 / HA22	M200 Target: 8/3/20		ARM: Jose Ortiz	R/W Capital Estimate: $9,185K	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS

Risk No.	Status	Type	Date of Origin / Originator	Updated	Category	Title	Risk Statement	Relevancy/Current Status/Assumptions/Comments/Triggers	Probability	Cost Impact Ph	Cost Impact	Cost Impact Ph	Cost Impact	Schedule Impact Ph	Schedule Impact	Response Strategy	Response Actions	Risk Owner
1	Active	Threat	6/23/2020 / Arvind Patel	7/15/2020	Environmental	Asbestos Containing Material (ACM)	There is a Risk that Asbestos may be encountered since there will be disturbance to the existing concrete with work activities such as drill and bond dowels in Concrete, Milling and Joint Seal Preparation. The contractor is required to perform “Sampling and Testing” prior to the start of Bridge Rehab work. This may increase project cost and may delay schedule.	Construction schedule delays may occur since the testing process can take up to 50 working days to produce the results. The latter can impact the “Controlling Item” work. There were some areas that were not accessible during our testing. Report was done on June 20, 2019. A total of 11 bridges were tested, six bridges tested positive for Asbestos. These locations should be treated as hazardous: POST MILE BRIDGE NO. BRIDGE NAME R153.155 56-0597 R/L Seventh Ave UC; R152.425 56-0593 R/L Blythe OH; R146.898 56-0604 R/L Keim Access Rd UC; R152.152 56-0592 R/L Lovekin Blvd UC; R152.652 56-0595 R/L Broadway UC; R154.154 56-0598R Rte 10/95 Sep	High	0 1 2 3 Very Low		9 4 Very Low		0 1 2 3 Low		Mitigate	Require the sampling and testing scope to be included in the Caltrans provided Asbestos Survey contract to provide a complete survey prior to Contract Approval. This would include all sampling and testing (including concrete). If the latter is not provided, additional working days may be required to accommodate testing at all required Bridge Structure locations. Appropriate SSPs will be included in the bid package. G12 and Contingency funds may be used to offset any additional cost.	Odufalu, Olufemi
2	Active	Threat	6/23/2020 / Arvind Patel	7/13/2020	Construction	Flash Flood During Construction	If flash flooding occurs, it may impact the falsework and excavation. The liability can be on the contractor, however, Caltrans may be liable for some of the impact. This may increase the project cost and delay the schedule.	Act of God specification changed after wild fires in the north. There is a possibility of monsoons happening in the desert. Monsoons typically occur between July - September.	Moderate	0 1 2 3 Low		9 4 Low		0 1 2 3 Low		Accept	Act of God spec will be included in the bid package. PM may have to adjust the construction schedule and push CCA date out further. G12 and Contingency funding may need to be used to offset any cost impact.	Arvind Patel
3	Active	Threat	6/24/2020 / Arvind Patel	7/15/2020	Construction	Differing Site Conditions	If the subsurface condition at the proposed pile and footing locations differ from anticipated, then the construction strategy may have to be revised and different methods may be required for construction. This may incur additional cost and delay the construction schedule.	Depending on Geotechnical report, mitigation strategies may need to be implemented to preempt any possible delays during construction. Preliminary Foundation Reports (PFR) are being completed, all reports are expected by end of August. Further final foundation reports will be done in PSE. Geotechnical investigative borings have been completed.	Moderate	0 1 2 3 Low		9 4 Low		0 1 2 3 Low		Mitigate	Further geotechnical evaluation and final foundation report will be prepared in PSE. Any change will be captured in the estimate. PM may have to adjust the project cost through fund request. If differing site condition is encountered during construction, RE will immediately notify the Structural Engineer. Contingency funds may need to be used for any CCO.	Arvind Patel
4	Active	Threat	6/24/2020 / Constructability	7/15/2020	Construction	Shortage of Materials	If contractor runs out of material (for example, HMA, JPCP), the production will slow down having impact on the project cost and schedule.	Due to large quantities of HMA and/or JPCP needed for this project, there is a possibility that suppliers may run out of material during construction slowing down the production. Make note that the suppliers may have other customers at the same time. This shortage will cause impact in the project schedule and cost. The project currently estimates 400,000 cyd of JPCP, and 190,000 tons of HMA.	Moderate	0 1 2 3		9 4 Moderate		0 1 2 3 Moderate		Mitigate	The PDT will evaluate materials availability related impacts further in PSE and the estimate may need to be revised. PM may need to adjust the project cost through fund request and may need to adjust the construction schedule.	Chigo Dike

EA 1C083 QUALITATIVE RISK REGISTER

EA 1C083	Phase: 0	RIV 010 PM: 134.0/156.5	PM: Wil Ochoa	Const Capital Estimate: $235,040K	Project Description:
Program Code: 201.122 / HA22	M200 Target: 8/3/20		ARM: Jose Ortiz	R/W Capital Estimate: $9,185K	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS

Risk No.	Status	Type	Date of Origin / Originator	Updated	Category	Title	Risk Statement	Relevancy/Current Status/Assumptions/Comments/Triggers	Probability	Cost Impact Ph	Cost Impact	Cost Impact Ph	Cost Impact	Schedule Impact Ph	Schedule Impact	Response Strategy	Response Actions	Risk Owner
5	Active	Threat	6/24/2020 / Constructability	7/15/2020	Construction	Unit Price Cost Increase	If contractors bids come in significantly higher than the Engineer's estimate due to unit price increase, then the capital cost will increase.	This risk is considered since quantities for HMA and JPCP are very large. A small increase in unit price for those large quantities could cause a project cost to increase significantly. The project currently estimates 400,000 cyd of JPCP, and 190,000 tons of HMA. Project 1C082 is going to bid soon, and we will have a better idea about the unit cost from that bid.	Low	0				0		Mitigate	Design will revisit the unit prices from the Cost Data Base and/or based on Construction experience. The Project Manager may need to prepare a PCR to increase the capital funds or adjust the funds through fund request.	Chigo Dike
										1				1				
										2		9		2				
										3		4	Moderate	3				
6	Active	Threat	6/24/2020 / Constructability	7/15/2020	Design	Pavement Deterioration	If pavement conditions worsen by the time construction begins, then digout quantities may need to be increased which will increase the project cost.	Project is located in an area that is exposed to extreme temperature fluctuation, which leads to faster pavement deterioration of the existing AC. Construction is planned to begin around May 2023. At some locations, the proposed 0.30' cold plane may not be sufficient requiring additional repairs (digouts) and may affect the project cost. The project currently has 10% digout cost included in the estimate.	Low	0				0		Mitigate	Design will evaluate existing pavement conditions, work with Maintenance Superintendent and incorporate recommendations when possible. Digout quantities may be further evaluated and adjusted in PSE. PM may need to adjust project cost during fund request.	Diboro Kanabolo
										1				1				
										2		9		2				
										3		4	Low	3	Very Low			
7	Active	Threat	6/24/2020 / Constructability	7/15/2020	Design	Unsuitable Excavated Soil	If excavated materials are not suitable to be reused in the project due to having low R value, it may require disposing the material or be used in some other areas, thereby, we may need to have import borrow which will increase the project cost.	Materials Engineering has performed borings and testing of the soil. According to PR, soil that will be excavated will be re-used for the embankments. There is a possibility that some of the materials may have low R value and not be suitable. The imported borrow may be very expensive especially since there is no Bid Item for this material. If cluster of materials with low R-value is encountered during construction, a mitigation option is to mix with higher R-value. Whether it is more cost effective to export or to mix will be dependent on the volume of the R-value soil and the distance between the low and the higher R-value locations. The project has over 200,000 cyd of materials for excavation. A map of various R-value location can be developed and be utilized to mix the soils in order to achieve the minimum R-value used in the design. Another mitigation option is cement or lime treatment for the low R-value soil.	Low	0				0		Mitigate	This risk will be further evaluated in PSE based on the final materials report. Design will incorporate any cost change in the estimate and the PM may have to adjust the cost through fund request.	Diboro Kanabolo
										1				1				
										2		9		2				
										3	Very Low	4	Low	3	Very Low			
10	Active	Threat	6/24/2020 / Constructability	7/15/2020	Str Design	Upgrade/ Replacement of Existing Bridges	If we need to retrofit/replace the existing bridges, it will affect the project cost and schedule.	All the bridges within the project area will be widened to accommodate the detour lane (there are 22 bridges in the scope). The existing bridges may not be in compliance with current standards and may need to be replaced/retrofitted to accommodate the widened sections. Some bridges are identified to have liquefaction potential which triggers seismic retrofit on existing bridges. We received 5 PFRs and out of those, 2 are showing to have liquefaction potential. Specifically, PFRs for Rannells and Lovekin locations have been delivered.	Very High	0				0		Avoid	Seismic Retrofit will be determined by Structure Design by having a Seismic Retrofit Strategy Meeting during Design phase at Type Selection. Str Design will continue discussion with Geotechnical. Every effort will be made to avoid any scope change since it may be possible to perform the retrofitting as part of a different project. Project cost estimate may need to be revised based on future findings. PM may have to adjust any updated cost through fund request.	Dawit Worku
										1	Moderate			1	Low			
										2		9		2				
										3	Moderate	4	Moderate	3	Moderate			

EA 1C083 QUALITATIVE RISK REGISTER

EA 1C083	Phase: 0	RIV 010 PM: 134.0/156.5	PM: Wil Ochoa	Const Capital Estimate: $235,040K	Project Description:
Program Code: 201.122 / HA22	M200 Target: 8/3/20		ARM: Jose Ortiz	R/W Capital Estimate: $9,185K	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS

Risk No.	Status	Type	Date of Origin / Originator	Updated	Category	Title	Risk Statement	Relevancy/Current Status/Assumptions/Comments/Triggers	Probability	Cost Impact Ph	Cost Impact	Cost Impact Ph	Cost Impact	Schedule Impact Ph	Schedule Impact	Response Strategy	Response Actions	Risk Owner
11	Active	Threat	6/24/2020 / Constructability	7/13/2020	Design	Overlapping Projects	The construction of an adjacent project at the same time may affect the construction activities and traffic handling or materials delivery of this project. This may increase the project cost and result in delays.	Sister project 1C082 is adjacent to 1C083. CCA for 1C082 is 5/1/24, and the Award date for this project 1C083 is 2/1/23. There is almost 1 year overlap between these two projects. This may affect the work schedule for both contractors and traffic handling signeage. Also, if 1C082 is delayed for some reason, then it will increase the overlapping risk.	Moderate	0				0		Mitigate	Design and Traffic Design will develop the traffic handling plans with input from Resident Engineer of EA 1C082 project to avoid conflicts. PM may need to delay the construction schedule to limit any overlap of work. Coordination Specs should be included to require contractors and RE to coordinate any work that is overlapping to limit any possible delays to construction if schedule cannot be modified.	Diboro Kanabolo
										1				1				
										2		9		2				
										3		4	Very Low	3	Very Low			
14	Active	Threat	6/25/2020 / Lorena Guptill	7/15/2020	Str Design	Corrosion Potential	Corrosion potential to structural elements was identified at some of the bridges per the PFR. Further evaluation is in progress. We may need to retrofit some of the bridges based on future findings, which may increase the project cost.	PFR identified that six bridge sites are corrosive. Blythe Overhead was identified to have corrosion damage in 2018 by Caltrans Bridge Inspection. Below are locations that were identified to be corrosive. Note that there are two structures (R/L: Right and Left) at each bridge site: Gale Ditech Bridge (56-0017 R/L) McCoy Wash Bridge (56-0016 R/L) Rannells Drain Bridge (56-0588 R/L) Lovekin Blvd UC (56-0592 R/L) Blythe Overhead (56-0593 R/L) Route 10/95 Separation (56-0598 R/L)	High	0				0		Avoid	Every effort will be made to avoid any scope change since it may be possible to perform the retrofitting as part of a different project. Project estimate may still need to be revised based on findings. PDT will evaluate the possibility of retrofitting only one or two locations based on cost. The extension portions will be designed based on corrosion potential.	Dawit Worku
										1	Low			1	Low			
										2		9		2				
										3	Low	4	Moderate	3	Moderate			
15	Active	Threat	6/25/2020 / Lorena Guptill	7/15/2020	Str Design	Scour Potential	Preliminary Hydraulic Report (PHR) identified 3 bridge locations (Palowalla Ditch, McCoy Wash and Gale Ditch) as scour critical, and preliminary recommendation is to replace/place RSP. If there are additional scour potentials identified, appropriate measures may need to be implemented, which may increase project cost and delay schedule.	Per project report, Palowalla Ditch is getting RSP replaced under this contract. McCoy Wash and Gale Ditch are not mentioned in the project report, therefore if the work is determined to be added during this project, it will increase the cost. If additional scour potential is identified, we may need to extend the pile length, design RSP etc. 1602 permit recommendation is to grout the RSPs.	Low	0				0		Mitigate	PHR is already received with preliminary recommendation, Final Hydraulic Report will get submitted in Phase 1 with the final recommendations. Remaining 2 locations can be evaluated during the design phase. Further evaluation will be done based on the findings. Project cost may need to be revised based on recommendation. PM may have to adjust the project budget through fund request.	Dawit Worku
										1	Low			1	Low			
										2		9		2				
										3	Low	4	Low	3	Low			
16	Active	Threat	6/25/2020 / Lorena Guptill	7/15/2020	Str Design	Water Diversion Plan	Water diversion plan may be required at some of the bridges where there is substructure work in the water beds. Cost and Schedule might be impacted due to permits and other related issues.	During monsoon season we may have water in the beds.Expect to have it addressed in Bridge Site Submittal. No water was noticed during site visits by Environmental representatives. Water diversion plan was not anticipated for the environmental document. If a diversion plan is needed, further environmental evaluation will be required. JD mentions that water runs during the rainy season at some of the locations. Rannel's drain close to the Colorado River had standing water noted in July 2018. According to the National Wetlands Inventory, Rannell's Drain (PM 153.1) is a Riverine System with some flow all year except in times of drought. Warning to contractor regarding possible flash flood and contingency plan may need to be added to specification.	Low	0				0		Mitigate	This risk will be further evaluated in PSE phase. Appropriate specifications will be included in the bid package to address sudden flooding. If a diversion plan will be required then it will be captured in the project estimate. PM may have to adjust the project cost through fund request and may need to revise the construction schedule.	Dawit Worku
										1	Low			1	Low			
										2		9		2				
										3	Low	4	Low	3	Low			

EA 1C083 QUALITATIVE RISK REGISTER

EA 1C083	Phase: 0	RIV 010 PM: 134.0/156.5	PM: Wil Ochoa	Const Capital Estimate: $235,040K	Project Description:
Program Code: 201.122 / HA22	M200 Target: 8/3/20		ARM: Jose Ortiz	R/W Capital Estimate: $9,185K	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS

Risk No.	Status	Type	Date of Origin / Originator	Updated	Category	Title	Risk Statement	Relevancy/Current Status/Assumptions/Comments/Triggers	Probability	Cost Impact Ph	Cost Impact	Cost Impact Ph	Cost Impact	Schedule Impact Ph	Schedule Impact	Response Strategy	Response Actions	Risk Owner
17	Active	Threat	6/25/2020 / Nancy Frost	7/8/2020	Environmental	Permit Changes	If any change in scope and/or design is made that may impact jurisdictional waters, the 401, 404, and 1602 permits may require additional measures and mitigation. This may increase the project's cost and delay schedule.	Within the project's limits, there are several bridges that cross Army Corps of Engineers, Regional Water Quality Control Board, and CDFW jurisdictional waters. If the environmental footprint is expanded, we anticipate that additional mitigation would be required. Due to the large scope of the project and based on the 1C082 Pavement Rehabilitation Project, we anticipate that several design changes may be required in future phase.	Moderate	0		9	Low	0		Mitigate	PM will closely monitor the scope of work to minimize the effects of any design change. If necessary the project cost and schedule may need to be revised.	Craig Wentworth
										1	Moderate			1	Low			
										2				2				
										3		4		3				
18	Active	Threat	6/25/2020 / Nancy Frost	7/15/2020	Environmental	Desert Tortoise Mitigation	If any change in scope and/or design is made in a way that results in additional permanent impacts to desert tortoise habitat, additional mitigation may be required. This may impact the project's cost and delay schedule.	Project is located within USFWS desert tortoise critical habitat. If the environmental footprint is expanded, we anticipate that additional mitigation would be required. Due to the large scope of the project and based on the 1C082 Pavement Rehabilitation Project, we anticipate that several design changes may be required. Current plan is to purchase land credits in mitigation bank to mitigate the impact and cost for this is included in the MCCE. 10,714 linear feet of temporary fencing has been also included.	Moderate	0		9	Low	0		Mitigate	PM to closely monitor the scope of work to minimize the effects of any design change. A 2081 permit will be applied for in PSE when the 95% plans are available. A contractor supplied biological monitor will perform pre-construction survey and monitoring will be done during construction. Project cost and schedule may need to be revised in the future.	Craig Wentworth
										1	Moderate			1	Low			
										2				2				
										3		4		3				
19	Active	Threat	6/30/2020 / Joe Damian	7/15/2020	Utilities	Electrical Poles Relocation	If the project is accelerated, coordination with SCE could be impacted because of design and manufacturing of the poles that need to be relocated. This could impact Right of Way schedule and cost. Also, the construction schedule and cost may be impacted if the relocation is delayed.	All existing powerpole locations will be shown on plans. Relocation plans from SCE will be shown on plans after they are received. At 7th St overcrossing 6 poles are planned to be relocated, and at Lovekin Blvd 4 poles are planned to be relocated.	Moderate	0		9	Low	0		Mitigate	Right of Way Utilities and UEW will coordinate with involved parties to determine the poles that need to be relocated early in PS&E to create the relocation plan. G12 and contingency funds may be used to accommodate any cost increase.	Xavier Quintanar
										1	Low			1	Low			
										2		9	Low	2				
										3	Low	4	Low	3	Low			
20	Active	Threat	7/8/2020 / DES-Geotech	7/15/2020	Geotechnical	Shallow Groundwater/ Liquefaction Potential	As a result of presence of shallow groundwater, liquefaction potential at some bridge sites may be present and dewatering for bridge foundations may be required. This impact the project cost and delay the schedule.	Shallow groundwater were encountered at six bridge sites during 2020 geotechnical field exploration for proposed bridge widenings.	High	0		9		0		Mitigate	Bridge foundations will be designed for liquefaction and construction dewatering be minimized by selecting adequate construction methodology. The project estimate will be revised accordingly and PM may have to adjust the project budget through fund request.	Chungkeun (Chung) Lee
										1	Very Low			1	Very Low			
										2				2				
										3	Very Low	4	Low	3	Low			

EA 1C083 QUALITATIVE RISK REGISTER

EA 1C083	Phase: 0	RIV 010 PM: 134.0/156.5	PM: Wil Ochoa	Const Capital Estimate: $235,040K	Project Description:
Program Code: 201.122 / HA22	M200 Target: 8/3/20		ARM: Jose Ortiz	R/W Capital Estimate: $9,185K	REHABILITATE MAINLINE PAVEMENT, SHOULDERS AND RAMPS

Risk No.	Status	Type	Date of Origin / Originator	Updated	Category	Title	Risk Statement	Relevancy/Current Status/Assumptions/Comments/Triggers	Probability	Cost Impact Ph	Cost Impact	Cost Impact Ph	Cost Impact	Schedule Impact Ph	Schedule Impact	Response Strategy	Response Actions	Risk Owner
21	Active	Threat	7/13/2020 / Wendy Escobar	7/15/2020	Right of Way	Railroad Acquisition	Railroad acquisition is required for this project. Extensive coordination efforts will be necessary to ensure timely delivery of required reviews. Since Caltrans must adhere to Genesee & Wyoming Railroad's (G&W) own internal review process, and if additional information is requested during the review, there may be a possibility of delays to the project schedule.	Based on past experience, it is known that railroad questions can be a lengthy process, due to the railroads internal review process. R/W will keep constant communication with the agency to ensure all information is presented and available during the review process to preempt any possible delays. Current schedule for R/W Cert Date is 04/01/22.	High	0				0		Mitigate	Railroad coordinator will reach out to Genesee & Wyoming Railroad (G&W) early on and maintain close contact throughout the review process. PM will have to adjust the schedule to accommodate R/W Certification, if necessary.	Christine Senteno
										1				1	Low			
										2	Low	9		2	Low			
										3		4		3				