05 - Mon - 1 - 28.0/28.6
05-1F890K - 0514000072 - PPNO 2574
20.XX.201.131
February 2014

Project Study Report

To

Request Programming in the 2012 SHOPP

On Route 1

Between 0.1 mile south of Big Creek Bridge

And 2.6 miles south of Dolan Creek Bridge

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

APPROVAL
RECOMMENDED:

for Lori Guinan, *ACTING DISTRICT DIVISION CHIEF, RIGHT OF WAY*

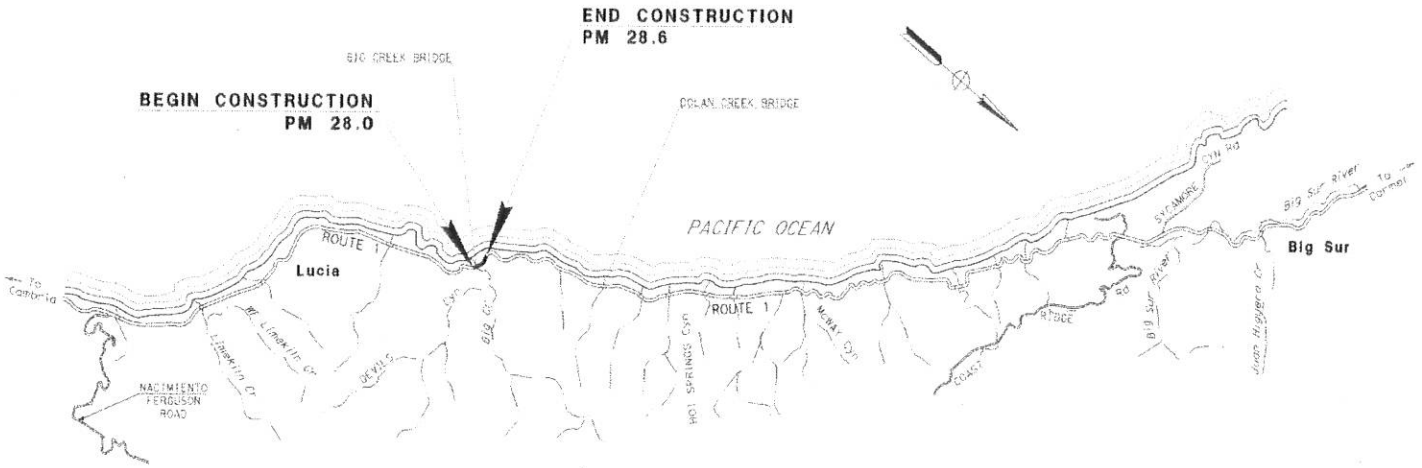
Ken Dostalek, *PROJECT MANAGER*

APPROVED:

TIMOTHY M. GUBBINS, *DISTRICT DIRECTOR*

3/11/14
DATE

Vicinity Map



This project study 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.

FEB 14, 2014

Joseph J. Erwin - REGISTERED CIVIL ENGINEER *DATE*

REGISTERED PROFESSIONAL ENGINEER
Joseph J. Erwin
No. 74015
Exp. 06/30/15
CIVIL
STATE OF CALIFORNIA

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1. INTRODUCTION

This project proposes to restore full access to Route 1 in Monterey County from 0.1 mile south of Big Creek Bridge to 2.6 miles south of Dolan Creek Bridge by constructing a viaduct. The current capital construction cost estimate is $2,965,188 (January 2014). Current estimated Right of Way costs for this project are $318,125 (January 2014) associated with utility relocation and acquiring permits. This project is a Permanent Restoration (201.131) Project.

Project Limits	05 - Mon - 1 - 28.0/28.6
Alternative Recommended for Programming	Build Alternative
Current Capital Outlay Support Estimate	$1,600,000
Current Capital Outlay Construction Estimate	$2,965,188
Current Capital Outlay Right-of-Way Estimate	$318,125
Funding Source	State Highway Operation and Protection Program (SHOPP) - 201.131
Funding Year	2014/15
Type of Facility	Conventional Highway
Number of Structures	1
Project Development Category	Category 5

2. BACKGROUND

Within Monterey County, Route 1 is a north south highway that follows the coastline of the Pacific Ocean. The highway is classified as a conventional two-lane highway within the project limits. Route 1 in this area was originally constructed in the 1930's and is subject to regular closures due to landslides and falling rocks. The roadway varies from 22 feet to 24 feet wide with 11-foot lanes and 0-foot to 2-foot outside shoulders. Existing terrain is mountainous and side slopes are steep within the project limits. Cut slopes along the east side of the highway and fill slopes along the west side vary from nearly vertical to 1:1. A rock net, installed in 2002, parallels the highway along a portion of the eastern edge of pavement. Guardrail and temporary railing protect vehicles from the steep slopes along the west edge of the roadway. Big Creek and Big Creek Bridge are within the southern portion of this project. Big Creek Bridge is eligible for the National Register of Historic Places.

This project was initiated on December 13, 2013 to address the erosion that is occurring along and underneath the southbound lane of Route 1 within the project limits. The embankment on which the highway was constructed has eroded underneath the outside portion of the southbound lane. This has resulted in the permanent closure of the southbound lane until a permanent solution can be developed. Currently, northbound and southbound traffic share the northbound lane by way of a temporary signal installed on December 13, 2013 under an Emergency

Opening Project (EA 05-1A980_) and are shielded from the failing portion of the southbound lanes by temporary railing. The cause of the erosion appears to be from ocean wave run-up and the resulting destabilization of the toe of the slope. This kind of erosion is not seasonal, but continuous and would continue to destabilize the slope as time goes on. Preliminary erosion rates have been established based upon a review of recent and historical photographs of the site and rainfall records. Initially a large turnout was constructed in this section approximately 20 feet in width. The embankment appears to have been relatively stable up to 1979. During the 1982/1983 "El Nino" storms approximately 6 foot of embankment was lost. From 1983 to 1997 only minor amounts of erosion occurred. Then during 1997/1998 "El Nino" storms another approximately 6 feet of embankment was lost. The top of the embankment slope was now 8 feet to the edge of traveled way. From 1998 to 2005 erosion rates were low but between 2005 and 2011 three episodes of high rainfall resulted in a loss of 5 more feet of embankment. Currently erosion continues, acute cracks are developing in the roadway pavement, and an active spring has developed at the base of the embankment fill. The apex of the erosion scarp is 2 ½ feet from the edge of traveled way.

The design speed for the project is 45 MPH. A 45 MPH design speed is consistent with projects in this area.

3. PURPOSE AND NEED

Purpose:

This project proposes to permanently restore access to the southbound lane of Route 1.

Need:

Erosion has compromised the embankment under the southbound lane, resulting in the closure of that lane. Currently, the northbound and southbound lanes share the northbound lane by way of a temporary signal.

4. DEFICIENCIES

Route 1 in the southbound direction is no longer viable in its current state due to erosion that has taken place beneath the roadway due to ocean wave run-up. The northbound lane is relatively stable so both the northbound and southbound directions of traffic are sharing the northbound lane. A temporary signal installed under the project 05-1A980 is providing traffic control between the two directions.

Additional deficiencies include nonstandard lane and shoulder width, nonstandard sight distance, and superelevation through the curves. These nonstandard features are typical for Route 1 in the Big Sur Coastal Region in northern San Luis Obispo County and southern Monterey County.

5. CORRIDOR AND SYSTEM COORDINATION

Within the project limits, Route 1 is two lanes and is classified as Conventional Highway without access control. The latest Transportation Concept Report, prepared

in December 2009, for Route 1 in District 5 indicates that this area is functionally classified as a Rural Minor Arterial. It is officially designated as a Scenic Highway. The Pacific Coast Bike Route follows this segment of Route 1. The California Conservancy website contains information that shows the California Coastal Trail on Route 1 near Big Creek Bridge. At the project location, Route 1 is designated as a California Legal Advisory Truck Route with a 30-foot king-pin-to-rear-axle limit. It is not part of the Strategic Highway Network (STRAHNET). Trucks make up less than 1% of the traffic flow. This project would be compatible with the future concept of this segment of Route 1 as outlined in the Transportation Concept Report for Route 1 in District 5.

6. ALTERNATIVES

6A. Viable Alternatives

The only viable alternative for this project that would restore the southbound lane is the build alternative. This solution would cost $2,965,188 (January 2014). Right of way costs are $318,125 (January 2014) and are for relocation of utilities and acquiring permits.

Proposed Engineering Features

A 175' long viaduct would span the compromised portion of the embankment under Route 1 within the project limits. The structure would feature 12-foot lanes and 4-foot shoulders. A railing would protect vehicles and bicycles traveling across the new structure from leaving the roadway. The superelevation of Route 1 would be improved through the project limits. New connections from the structure to the existing roadway on the north and south ends of the project would be required. Drainage inlets north and south of the slide area would be adjusted to match the new profile of the roadway. For more information, see the preliminary layout in Attachment C.

Stage construction would be required for this project. The viaduct and roadway would be built one half at a time starting with the southbound lanes. A temporary signal, similar to the one currently providing emergency traffic control, would be utilized to maintain a safe and efficient work zone. Traffic impacts during construction would be continuous reversing one-way traffic control. Once the southbound lanes are completed, reversing one-way traffic will be shifted over to them and construction would begin on the northbound side of the viaduct and the lane leading onto it. Construction of the viaduct is expected to take roughly one year to complete. Rubberized hot mix asphalt (RHMA) would not be used on this alternative due to the limited quantities needed. The RHMA would be cost prohibitive for a batch plant to produce in this small of a quantity.

Any potential environmental or hazardous waste issues would be addressed in the next phase of this project. Utilities within the project limits would either remain in place or be relocated during construction. Currently, the only known utility is a phone line that is buried along the northbound shoulder. The phone line would be temporarily relocated during construction and then relocated after work was completed. There may be a need for a permit to cover work within the Coastal Zone. This project and the estimate assume that one would be needed. The final

determination would be made in the next phase. Landscape architecture would determine the appropriate level of planting, aesthetic treatment for bridge rail and structures features during the following phases of the project.

This project would address nonstandard geometry. All exceptions to design standards would be documented in accordance with the Highway Design Manual and Design Information Bulletin 79-03 during the next phase of this project. The Design Coordinator concurred with this strategy. The following table describes the design standards that are not likely to be met with this alternative along with the probability of them receiving approval.

Design Standards Risk Assessment			
Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1B	Probability of Design Exception Approval (None, Low, Medium, High,)	Justification for Probability Rating
Viable	Index 202.2 Standards for Superelevation	Low	Too little information available for higher probability.
Viable	Index 302.1 Shoulder Width	Low	Too little information available for higher probability.
Viable	Index 202.5 Superelevation Transition/Runoff/in Restrictive Conditions	Low	Too little information available for higher probability.
Viable	309.1 Clear Recovery Zone	Low	Too little information available for higher probability.

6B. Other Alternatives

Another alternative for this project is the no-build alternative. This alternative would not reopen the southbound lane of Route 1. An alternative to place rock slope protection at the toe of the slope for stabilization was rejected due to environmental constraints. An earth retaining system was also rejected because the design height would be too large. There are also significant constructability issues in order to build these types of structures.

7. COMMUNITY INVOLVEMENT

Project Management has made an effort to reach out to the public regarding this project. A local blog about the Big Sur Coast the Big Sur Business Owners Association have received information regarding this project. Furthermore, the Emergency Opening Project (05-1A980) to place the temporary signal for traffic control involved contact with Monterey County in order to obtain a Coastal Development Permit. During the next phases of the project, the County of Monterey will be contacted again in order to inquire about the need for a Coastal Development Permit for this project. During that time, input on the project can be solicited.

8. ENVIRONMENTAL DETERMINATION/DOCUMENT

Environmental studies have not yet been completed. From preliminary discussions with Caltrans Environmental Staff, this project will require further field work and investigations to see if any endangered species or historical features are at risk. These studies would be conducted during the next phase of this project. The anticipated environmental documentation for the project is a Negative Declaration under the

California Environmental Quality Act and a Categorical Exclusion under the National Environmental Policy Act. When designed, this project would avoid impacts to environmental resources whenever feasible. Please refer to Attachment F for more information.

9. FUNDING/PROGRAMMING

The proposed project would be amended into the 2012 SHOPP to be funded by the Permanent Restoration Program (201.131) for delivery in the 2014/15 fiscal year. The current estimated project cost is $2,965,188 (January 2014). See Attachment E for the Project Scoping Report Cost Estimate. The proposed estimated resources and funding schedule for this project are summarized in the table on the following page. It has been determined that this project is eligible for federal-aid funding. This project would request state only funding for work in the PA&ED phase while federal funding is pending.

Capital Outlay Support and Project Estimates

SHOPP	Fiscal Year Estimate							
20.XX.201.131	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support			500					500
PS&E Support			500					500
Right-of-Way Support			100					100
Construction Support				500				500
Right-of-Way			318					318
Construction				3114				3114
Total			1418	3614				5032

Construction Capital is escalated at 5% per year. The support cost ratio is 47%.

10. SCHEDULE

Project Milestones		Scheduled Delivery Date (Month/Year)
APPROVE PID	M010	February 2014
PROGRAM PROJECT	M015	March 2014
PA & ED	M200	June 2014
BRIDGE SITE DATA ACCEPTED	M221	June 2014
DRAFT STRUCTURES PS&E	M378	September 2014
PS&E TO DOE	M377	September 2014
RIGHT OF WAY CERTIFICATION	M410	November 2014
READY TO LIST	M460	November 2014
PROJECT PS&E	M380	November 2014
AWARD	M495	January 2015
APPROVE CONTRACT	M500	February 2015
CONTRACT ACCEPTANCE	M600	February 2016
END PROJECT	M800	February 2018

11. RISKS

Risks associated with this project can affect the schedule and cost. One risk is that this is a geologically active area. Further erosion could close the highway, making it unusable for through traffic. Since it is geologically active, changes in the existing terrain could result which would require more surveys and could potentially change the design. Also, because studies are not complete for Environmental or Geotech, there is a level of uncertainty with the scope of the project. All of the risks associated with this project have been documented in the Risk Register and can be found under Attachment G.

12. FHWA COORDINATION

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

13. PROJECT REVIEWS

Scoping team field review	*Mike Finegan, Dan Appelbaum, Steve Wyatt, Hernan Perez*	Date 1/7/2014
District Program Advisor	*Lance Gorman*	Date 1/13/2014
Headquarters SHOPP Program Advisor	*Gerald Kracher*	Date 1/9/2014
Project Manager	*Ken Dostalek*	Date 1/13/2014
Design Coordinator	*Paul Gennaro*	Date 2/11/2014

14. PROJECT PERSONNEL

Ken Dostalek, Project Manager	805-549-3133
Steve Wyatt, Design Manager	805-549-3079
Joe Erwin, Project Engineer	805-549-3489
Hernan Perez, Structures	916-227-3234
Paula Huddleston, Environmental Planner	805-549-3063
Lance Gorman, Maintenance	805-549-3315
Patrick Mason, Right of Way	805-549-3498

15. ATTACHMENTS

A. Vicinity Map

B. Preliminary Typical Cross Section

C. Preliminary Layout

D. Right of Way Datasheet

E. Project Scoping Report Estimate

F. Preliminary Environmental Review

G. Risk Register

H. Pictures

I. Final Distribution List

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN MONTEREY COUNTY

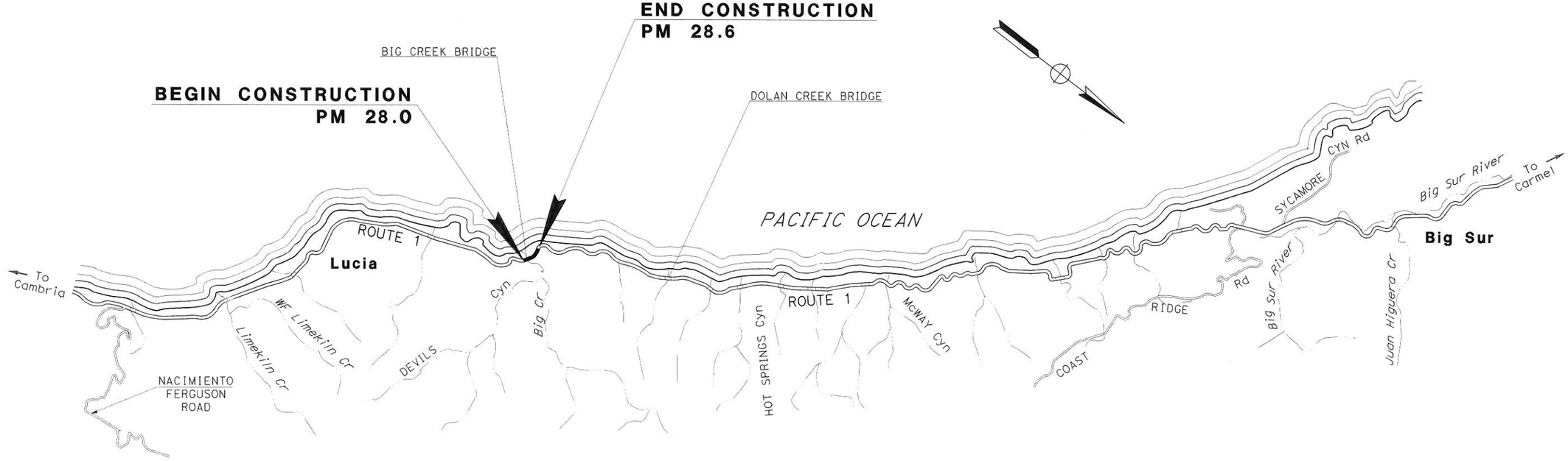
NEAR LUCIA

FROM 0.1 MILE SOUTH OF BIG CREEK BRIDGE

TO 2.6 MILES SOUTH OF DOLAN CREEK BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		



DESIGN ENGINEER: JOE ERWIN

PROJECT MANAGER: KEN DOSTALEK

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

NO SCALE

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

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.

ATTACHMENT A

CONTRACT No. **05-1F890K**

LAST REVISION — DATE PLOTTED

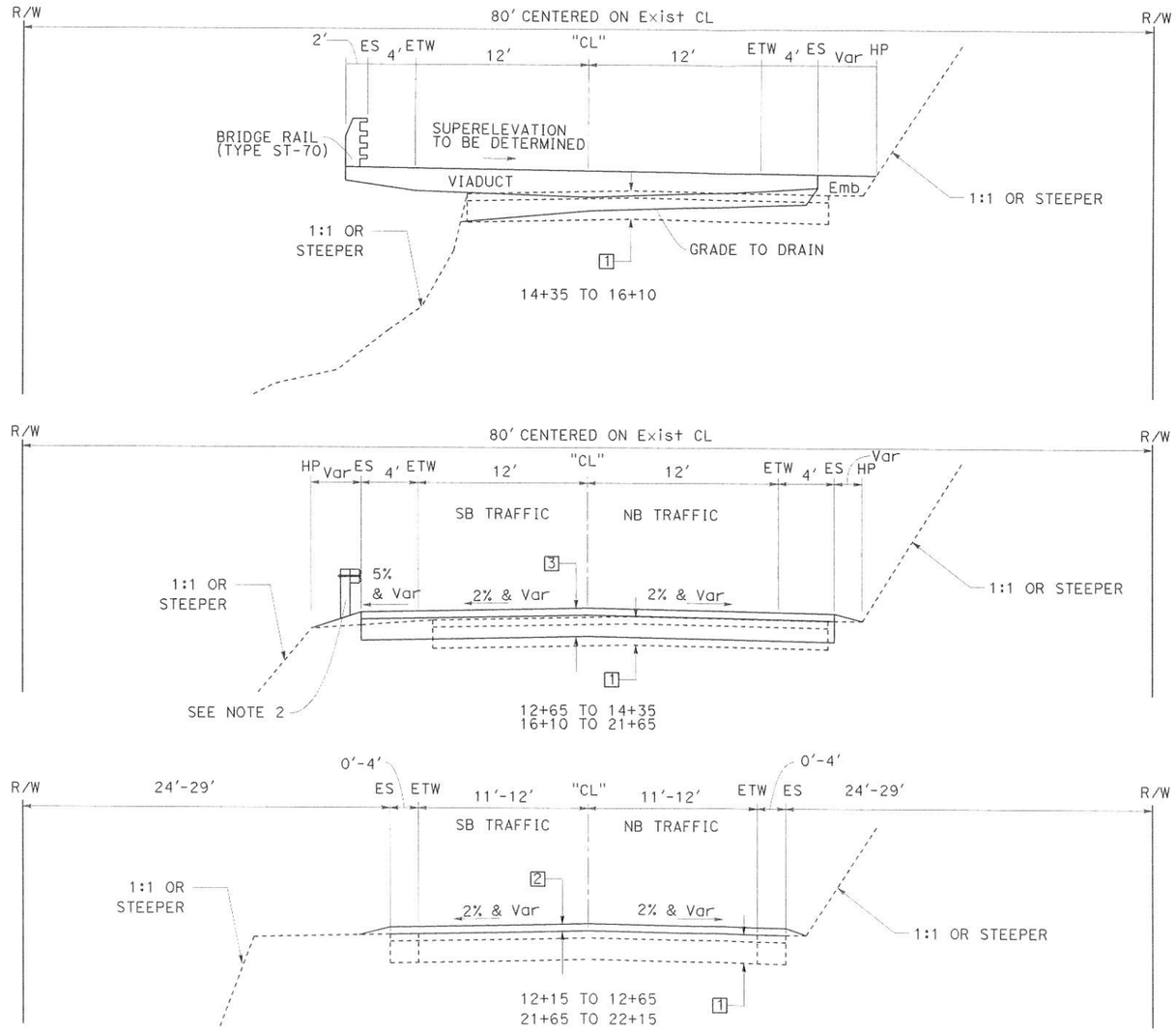
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

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.



ROUTE 1

NOTES:

1. TYPICAL SECTIONS ARE VALID FOR PROJECT STUDY REPORT ONLY.

2. SEE LAYOUTS FOR LOCATIONS OF GUARDRAIL

STRUCTURAL SECTIONS

1 — Exist (Var)

2 — Var HMA OVERLAY 0.10' TO 1.00'

3 — 0.50' HMA (TYPE A) 1.25' CL 2 AB

NO SCALE

PRELIMINARY TYPICAL CROSS SECTIONS

ATTACHMENT B

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

JOE ERWIN

FUNCTIONAL SUPERVISOR

STEVE WYATT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

USERNAME

LAST REVISION DATE PLOTTED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

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.

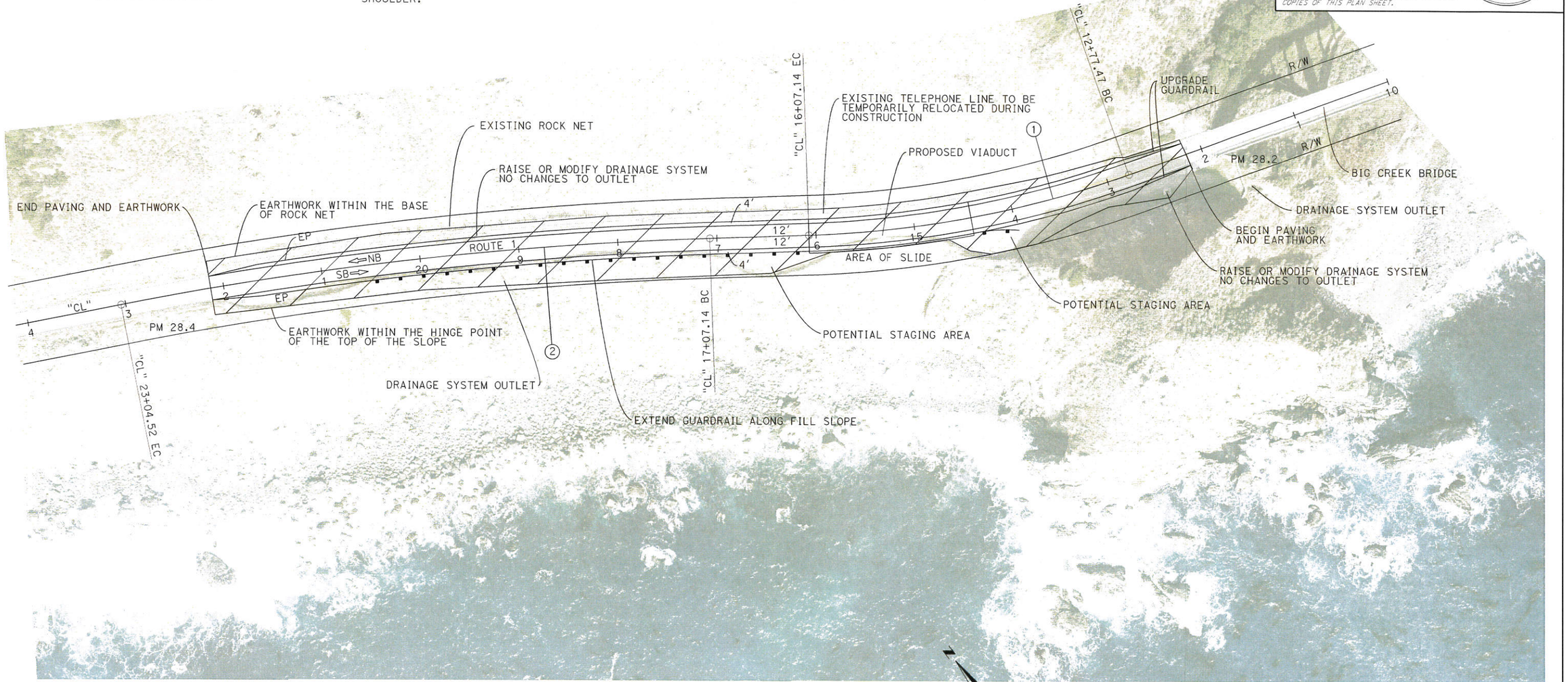
LEGEND

LIMITS OF WORK

NOTES:

1. TEMPORARY TRAFFIC SIGNALS WOULD BE PLACED AT THE NORTHERN AND SOUTHERN ENDS OF THE PROJECT FOR TRAFFIC CONTROL. ASSOCIATED FACILITIES INCLUDE TEMPORARY POLES, GENERATORS AND FUEL STORAGE. THE TEMPORARY SIGNAL IS NOT SHOWN ON THESE PLANS BUT WOULD BE AT PM 28.6 AND 28.0.

2. ANOTHER POTENTIAL STAGING AREA NOT SHOWN ON THIS PLAN IS AT PM 28.0 ALONG THE SOUTHBOUND SHOULDER.



PRELIMINARY CURVE DATA

No. ㊉	R	Δ	T	L
1	1060′	17°49′03"	166.18′	329.68′
2	3743′	07°40′00"	250.81′	500.88′

PRELIMINARY LAYOUT

SCALE: 1"=100′

ATTACHMENT C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

5-MON-1 PM: 28.4 FILE 1 OF 1
PHOTO ASC: 1331-03 PHOTO DATE: 01-29-13 PHOTO SCALE 1:3600
MAP ASC: 1331-03 MAP COMPLETION DATE: 02-15-13
FILENAME: 0513303E0501.DGN
DIGITAL COMPILATION BY:
TOWILL, INC
LiDAR DATE: 01-15-13

VERTICAL DATUM: NAVD 1988
COORDINATE SYSTEM: CCS 83 (1991.35) ZONE 4
UNITS= US SURVEY FEET MAP SCALE= 1:50′ CONTOUR INTERVAL= 2′
PLANE V8Z4 GO= 6346851.6352, 1896151.6352, -214748.3648

REVISED BY | DATE REVISED
JOE ERWIN | CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: STEVE WYATT
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION | DATE PLOTTED

State of California Business, Transportation and Housing Agency

Memorandum

To: Ken Dostalek

Attn Joe Erwin

Date: 1/22/2014

File: CD 05 EA 1F890K Alt 1
Co MON RTE 1

DESCRIPTION:
This project proposes to restore full access to Route 1 by constructing a viaduct.

From: Department of Transportation
Division of Right of Way Central Region

Subject: RIGHT OF WAY DATA SHEET

We have completed an estimate of the right of way costs for the above-referenced project based on the Right of Way Data Sheet Request Form dated 1/14/2014

The following assumptions and limiting conditions were identified:

Appraisal

Utility
The PE acknowledges early the requirement to relocate the existing UG communication line within the project limits. The preliminary design strategy includes use of temporary traffic signals for traffic control; this lane reduction technique suggests the project will employ a detour. Costs associated with utility interim relocation due to a detour are 100% state liability. Cost per LF is based on UG of electrical lines on a similar project on Mon 1. This is an opportunity for Caltrans design and the utility owner to collaborate as early as possible to determine the best engineered solution for communication line relocation. In the event that the best solution results in a "one-time" relocation, project utility costs may be significantly reduced.

Right of Way Lead Time will require a minimum of 10 months after we receive Certified Appraisal Maps and/or Utility Conflict Plans, obtained necessary environmental clearance and applicable freeway agreements have been approved.

JOHN T. MAGORIAN, Sr. Right of Way Agent
San Luis Obispo Field Office
(805) 549-3471

ATTACHMENT D

EA: 05-1F890K CO/RTE/PM-PM (Rte 1 and Rte 2) : MON/1/28-28.6 & //- Request Date: 1/14/2014
ALT: 1 Revised Date:

Right Of Way Cost Estimate

	Current Year 2014	Contingency Rate	Right of Way Escalation Rate	Escalated Year 2015
Acquisition:	$0	25%	5%	$0
Mitigation:	$37,500	25%	5%	$39,375
State Share of Utilities:	$280,625	25%	5%	$294,656
Expert Witness:	$0	25%	5%	$0
Relocation Assistance:	$0	25%	5%	$0
Demolition and Clearance:	$0	25%	5%	$0
Title and Escrow:	$0	25%	5%	$0
Ad Signs:	$0	25%	5%	$0
Total Current Value: If RW Cost Est fields are blank, Costs = $0	$318,125			$334,031

Estimated Construction Contract Work (CCW):

R/W LEAD TIME/Mo: 10

Cost Break Down

Pot Hole	4,500
Mitigation	
Land	
Bank	
Permit Fees	30,000

RR Involvement

Railroad Facilities or Right of Way Affected?	no
Const/Maint Agreement:	no
Service Contract:	no
Right of Entry:	no
Clauses:	no
Estimated Lead-time	0 mon

Parcel Data

# of Parcel Type X:			
# of Parcel Type A: less than $10,000 non-complex			
# of Parcel Type B: more than $10,000 non-complex			
# of Parcel Type C: complex, special valuation			
# of Parcel Type D: most complex and time consuming		# of Duals Needed:	
Totals:	0	**Totals:**	0

# of Excess Parcels:

Utilities

U4-1: Owner Expense	1
U4-2: State Expense, Conventional no Fed Aid	0
U4-3: State Expense, Freeway no Fed Aid	0
U4-4: State Expense, both with Fed Aid	0
U5-7: Utility verification, no relocation/potholing	0
U5-8: Utility verification, w/ some relocation/potholing	
U5-9: Utility verifications, relocation/potholing required	1

Misc R/W Work

# of RAP Displacements:	0
# of Clearance/Demos:	
# of Const Permits:	
# of Condemnations:	

ATTACHMENT D CONT'D

EA: 05-1F890K ALT: 1

Parcel Area

Total R/W Required:

Total Excess Area:

General Description of R/W and Excess Lands Required (zoning, use, major improvements, critical or sensitive parcels, etc.):

General Description of Utility Involvement:

Mon 1 pm 28.0 - 28.6 is designated a conventional highway. The proposes to permanently restore full highway access at this location by constructing a viaduct. AT&T operates a communication line through the project area and occupies the space by encroachment permit.

Is there a significant effect on assessed valuation: No

Were any previously unidentified sites with hazardous waste or material found: No

Are RAP displacements required: No

# of single family: # of muliti-family: # of business/nonprofit: # of farms:

Sufficient replacement housing will be available without last resort housing:

Are material borrow or disposal sites required: No

Are there potential relinquishments or abandonments: No

Are there any existing or potential airspace sites: No

Are environmental mitigation parcels required: Yes

Data for evaluation provided by:

Estimator:		
Railroad Liaison Agent:	sah	1/21/2014
Utiltiy Relocation Coordinator:	Chris Shaeffer	1/21/2014

I have personally reviewed this Right of Way Sheet and all supporting information. I find this Data Sheet complete and current, subject to the limiting conditions set forth.

Date

ENTERED PMCS 1/22/2014

BY: Patrick Mason

JOHN T. MAGORIAN
Sr. Right of Way Agent, Right of Way

ATTACHMENT D CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

PROJECT DESCRIPTION:

Limits: On Route 1, From 0.1 mile south of Big Creek Bridge to 2.6 miles south of Dolan Creek Bridge

Proposed Improvement: (Scope of Work) Construct Viaduct

Alternative: Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	Total of Sections 1 - 10 shown above	$ 1,477,688
TOTAL STRUCTURES ITEMS		$ 1,487,500
SUBTOTAL CONSTRUCTION COSTS		$ 2,965,188
TOTAL RIGHT OF WAY ITEMS (Not Escalated)		$ 318,125
TOTAL PROJECT CAPITAL OUTLAY COSTS		$ 3,283,313

Reviewed by
District Program Manager: _____ (Signature) 2/10/14 (Date)

Approved by Project Manager: Kim Dostalik (Signature) 2/10/14 (Date)

Phone Number: (805) 549-3133

Form revised 12/01/09

ATTACHMENT E

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

I. ROADWAY ITEMS

Section 1 - Earthwork	Quantity	Unit	Unit Price	Item Cost	Section Cost
Roadway Excavation	1,200	CY	$50	$60,000	
Imported Borrow	200	CY	$200	$40,000	
Clearing & Grubbing	1	LS	$10,000	$10,000	
				Subtotal Earthwork:	$110,000
Section 2 - Pavement Structural Section*					
Hot Mix Asphalt	1,400	Ton	$120	$168,000	
Aggregate Base	1,700	CY	$45	$76,500	
				Subtotal Pavement Structural Section:	$244,500
Section 3 - Drainage					
Drain Inlet Modifications	2	EA	$10,000	$20,000	
Misc. Drainage Facilities	1	LS	$60,000	$60,000	
Abandon Facilities	1	LS	$10,000	$10,000	
				Subtotal Drainage:	$90,000

* Reference sketch showing typical pavement structural section elements of the roadway. Include (if available) T.I., R-Value and date when tests were performed.

ATTACHMENT E CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

Section 4 - Specialty Items	Quantity	Unit	Unit Price	Item Cost	Section Cost
Resident Engineer Office Space	1	LS	$52,000	$52,000	
Water Pollution Control	1	LS	$60,000	$60,000	
Barriers and Guardrails	550	LF	$50	$27,500	
End Treatments	2	EA	$12,000	$24,000	
				Subtotal Specialty Items:	$163,500
Section 5 - Traffic Items					
Transportation Management Plan	1	LS	$25,000	$25,000	
Traffic Delineation Items	1	LS	$4,200	$4,200	
Temporary Traffic Signals	1	LS	$130,000	$130,000	
Traffic Control Systems	1	LS	$60,000	$60,000	
Roadside Signs	2	EA	$1,000	$2,000	
Changeable Message Signs	1	LS	$50,000	$50,000	
				Subtotal Traffic Items:	$271,200

ATTACHMENT E CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

II. ROADSIDE ITEMS

Section 6 Planting and Irrigation	Quantity	Unit	Unit Price	Item Cost	Section Cost
Highway Planting	1	LS	$21,000	$21,000	
			Subtotal Planting and Irrigation Section:		$21,000

Section 7: Roadside Management and Safety Section	Quantity	Unit	Unit Price	Item Cost	Section Cost
Vegetation Control Treatments	325	SQYD	$50	$16,250	
Erosion Control	1	LS	$10,000	$10,000	
			Subtotal Roadside Management and Safety Section:		$26,250

TOTAL SECTIONS 1 thru 7 $926,450

NOTE:Extra lines are provided for items not listed; use additional lines as appropriate.

ATTACHMENT E CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

III. ROADWAY ADDITIONS

Section 8 - Minor Items

					Item Cost	Section Cost
(Subtotal Sections 1 thru 7)	$926,450	x	0.10 (5 to 10%)	=	$92,645	

TOTAL Minor Items: $92,645

Section 9 - Roadway Mobilization

(Subtotal Sections 1 thru 8)	$1,019,095	x	0.10 (10%)	=	$101,910

TOTAL Roadway Mobilization: $101,910

Section 10 - Supplemental Work & Contingencies

Supplemental Work

(Subtotal Sections 1 thru 8)	$1,019,095	x	0.10 (5 to 10%)	=	$101,910

Contingencies

(Subtotal Sections 1 thru 8)	$1,019,095	x	0.25 (**%)	=	$254,774

Supplemental Work & Contingencies: $356,683

TOTAL ROADWAY ADDITIONS Sections 8 thru 10: $551,238

TOTAL ROADWAY ITEMS: $1,477,688

(Subtotal Sections 1 thru 10)

Estimate Prepared by: Joe Erwin (Print or Type Name) Phone: 805-549-3489 1/23/14 (Date)

Estimate Checked by: Steve Wyatt (Print or Type Name) Phone: 805-549-3079 1/23/14 (Date)

**Use appropriate percentage per PDPM, Part 3 Chapter 20.
http://www.dot.ca.gov/hq/oppd/pdpm/pdpmn.htm - pdpm

ATTACHMENT E CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

II. STRUCTURE ITEMS

	STRUCTURE			
Bridge Name	No. 1	No. 2	No. 3	
Structure Type	Viaduct			
Width (out to out) - (ft)	34			
Span Length - (ft)	175	0	0	
Total Area - ft^2	5,950	0	0	
Footing Type (pile/spread)	Pile	0	0	
Cost per ft^2 (incl. 10 % mobilization and 20 % contingency)	250	0	0	
Total Cost for Structure	$1,487,500	$0	$0	

SUBTOTAL STRUCTURES ITEMS **$1,487,500**
(Sum of Total Cost for Structures)

Railroad Related Costs (Not incl. in R/W Est)				$0
				$0

SUBTOTAL RAILROAD ITEMS **$0**

TOTAL STRUCTURES ITEMS **$1,487,500**
(Sum of Structures items plus Railroad Items)

COMMENTS:

Estimate Prepared by: Hernan Perez (Print or Type Name) Phone: 916-227-3234 1/13/14 (Date)

(If appropriate, attach additional pages as backup)

ATTACHMENT E CONT'D

PROJECT STUDY REPORT COST ESTIMATE

Dist-Co-Rte: 05-Mon-1
PM: 28.0/28.6
EA: 05-1F890K
Program Code: 20.10.201.131

III. RIGHT OF WAY ITEMS

No. of years for Escalation = 1

	Current Values	Rate (%)	Escalation Factor		Escalated Values
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	$0	5.0	1.05	-	$0
B. Utility Relocation (State Share)	$280,625	5.0	1.05	-	$294,656
C. Relocation Assistance	$0	5.0	1.05	-	$0
D. Clearance/Demolition	$0	7.0	1.07	-	$0
E. Mitigation/Permit Fees	$37,500	5.0	1.05	-	$39,375
TOTAL RIGHT OF WAY ITEMS=**	$318,125				$334,031 (Escalated Value)

Anticipated Date of Right of Way Certification: Oct-14
(Date to which Values are Escalated)

F. Construction Contract Work

Brief Description of Work

Right of Way Branch Cost Estimate for Work* $0

* This dollar amount is to be included in the Roadway and/or Structures Items of Work, as appropriate. Do not include in Right of Way Items

COMMENTS:

Estimate Prepared by: John T. Magorian (Print or Type Name) Phone: 805-549-3471 1/22/14 (Date)

(If appropriate, attach additional pages and backup including Right of Way Data Sheet and Environmental Mitigation and Compliance Cost Estimate Sheet).

ATTACHMENT E CONT'D

Memorandum

To : Steve Wyatt, Design Manager
Attn: Joe Erwin, Design Engineer

Date : February 4, 2014

File No. : Mon-1 PM 28.0/28.6
Cow Cliffs Viaduct
05-1F890K / 05 1400 0072

From : DEPARTMENT OF TRANSPORTATION
Paula Huddleston
Environmental Planning

Subject : Preliminary Environmental review

Project description: A 175' long viaduct would span the compromised portion of the embankment under Route 1 within the project limits. The lanes of Route 1 would be widened to 12 feet and the shoulders would be widened to 4 feet. A barrier would protect vehicles traveling across the new structure from leaving the roadway. The super elevation of Route 1 would be improved through the project limits. New connections from the structure to the existing roadway on the north and south ends of the project would be required. Drainage inlets north and south of the slide area would be adjusted to match the new profile of the roadway.

Assumptions: The project will:

- Impact a minimal area and will include no large areas of cut or fill
- Result in potential impacts to Smith's blue butterfly, a Federally listed endangered species
- Result in no public controversy and will receive few comments during the public comment period, and that no public hearing will need to be scheduled.
- Have top priority in the District to allow staff adequate time to meet the extremely aggressive project schedule.

Document schedule:

- Draft IS/MND- August 2014
- Final MND - November 2014
- PAED - November 2014

Approvals and permits:

- U.S. Fish and Wildlife Service Programmatic Biological Opinion (PBO) for federally endangered Smith's blue butterfly. (November 2014)
- Coastal Development Permit (April 2015)

Anticipated environmental commitments: The project is not expected to have any significant impacts. Preliminary environmental studies have shown that several buckwheat plants would be impacted by the project – the host plant for Smith's blue butterfly. To minimize potential

ATTACHMENT F

impacts to Smith's blue butterfly, the project must include the measures from the PBO. The PBO will require the replacement of buckwheat plants removed to construct the project. Most likely, we will enter into a contract with the University of Santa Cruz to meet this obligation.

The contract will also need to include contingency language in the case that peregrine falcons, a state fully protected species, are found to be nesting within a designated distance of the construction area. All work will have to cease during the nesting period (February 15 to August 31). Likewise, the contract might also require contingency language in the case condors, state and federally endangered, are found utilizing the construction area. All work will have to cease until the birds vacate the area.

Highway 1 through the project limits is classified as an All-American Road in the National Scenic Byway system, and is a Designated State Scenic Highway. The project should incorporate aesthetic treatments to the structure and treat all disturbed areas to minimize visual impacts, although permanent impacts to visual quality are not expected to be adverse.

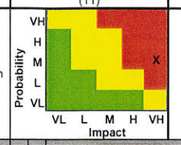
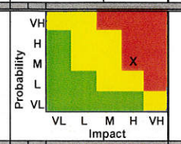
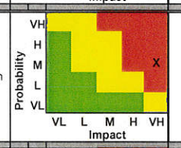
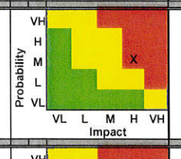
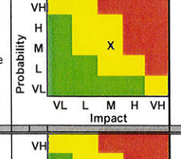
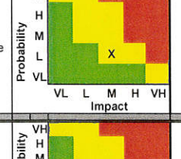
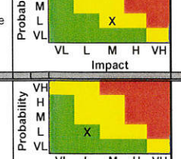
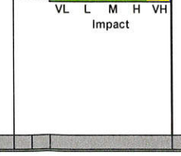
Dist-EA: 05-1F890K **Project Name:** Cow Cliffs Viaduct

Co-Rte-PM: Mon - 1 - 28.0/28.6

Date: 2/14/2014

Project Mngr: Ken Dostalek **Telephone Number:** 805-549-3133

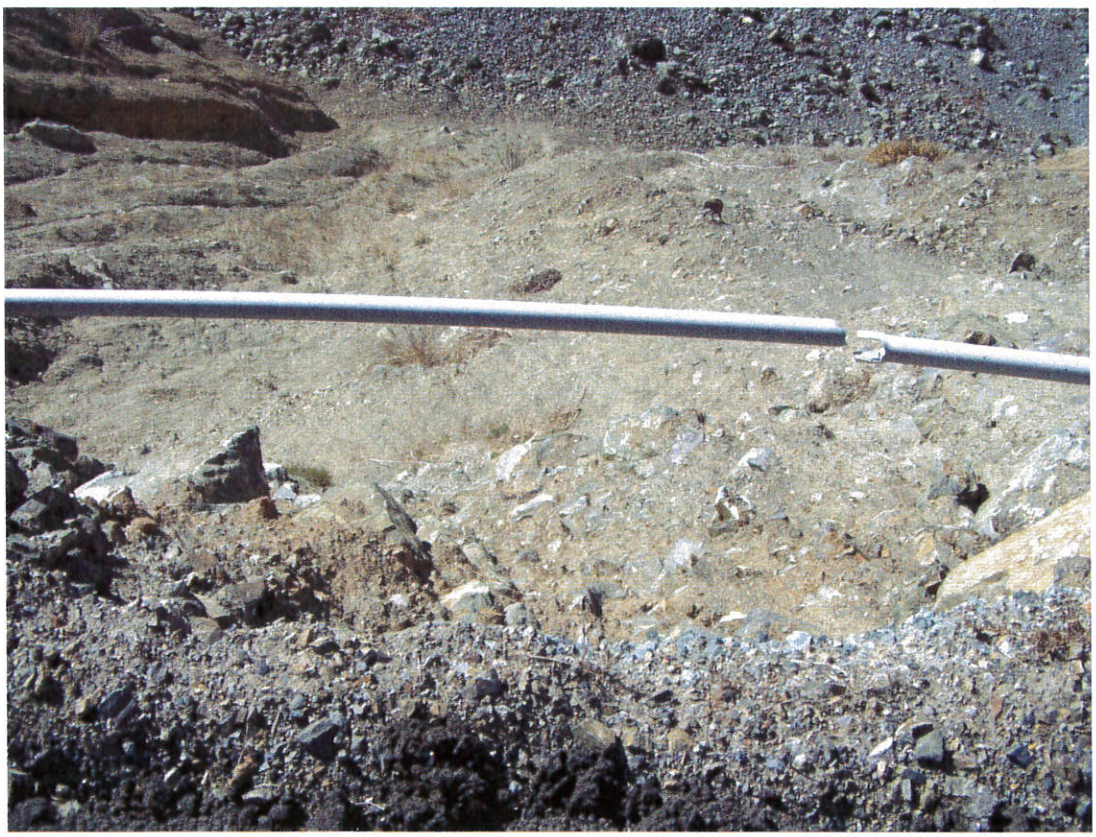
PROJECT RISK MANAGEMENT PLAN

	Identification						Qualitative Analysis				OPTIONAL Quantitative Analysis			Risk Response Plan		Monitoring and Control	
Priority	Status	ID #	Date Identified Project Phase	Functional Assignment	Threat/Opportunity Event	Risk Trigger	Type	Probability	Impact	Risk Matrix	Probability (%)	Impact ($ or days)	Effect ($ or days)	Strategy	Response Actions including advantages and disadvantages	Responsibility (Risk Manager)	Last date changes made to risk and Comments
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14) =(12)x(13)	(15)	(16)	(17)	(18)
	Active	1	2/13/2014 PA & ED PS&E	Engineering Services, Design	A slide could occur prior to the completion of the project design, accelerating the schedule.	Wet weather - heavy rain conditions	Schedule Cost	Moderate	Very High					Acceptance	The project would become an emergency opening (EO) project with construction starting immediately after the event. To help expedite construction, design details that have been completed to that point could be used for the EO project.	Steve Wyatt Matt Fowler	2/14/2014
	Active	2	2/13/2014 PA&ED	Environmental, Construction	Presence of nesting Peregrine Falcons, a California protected species, could delay construction.	Nesting occurs within 500' of work site between February 15 and August 31, and/or nesting occurs within one-half mile of work site during 6 week incubation period.	Schedule Cost	Moderate	High					Acceptance	Special provisions to include this information so Contractor can bid accordingly.	Larry Bonner	2/14/2014
	Active	3	2/13/2014 PS&E	Environmental	Presence of nesting Peregrine Falcons, a California protected species, could delay utility relocation.	Nesting occurs within 500' of work site between February 15 and August 31, and/or nesting occurs within one-half mile of work site during 6 week incubation period.	Schedule	Moderate	Very High					Mitigation	Include delayed start in special provisions, schedule relocation to occur between September 1 and February 15 to avoid nesting and fledglings.	Larry Bonner	2/14/2014
	Active	4	2/13/2014 R/W	Right of Way	R/W activities could delay RTL.	Obtaining R/W Cert takes longer than what scheduled will allow.	Schedule	Moderate	High					Acceptance	Determine if there are any R/W activities that can be started early in the PA&ED phase. R/W lead time estimates assume all activities will be performed after the PA&ED milestone.	Nick Dumas	2/14/2014
	Active	5	2/13/2014 PS&E	Right of Way	Utility relocation could delay schedule.	Response time from utility companies takes longer than expected.	Schedule	Moderate	Moderate					Acceptance	Work closely with utility companies to monitor progress	John Magorian	2/14/2014
	Active	6	2/13/2014 PS&E	Environmental, Design	Obtaining Coastal Development Permit (CDP) could delay the schedule.	If Coastal Commission deems CDP application incomplete or has conditions that are difficult to meet.	Schedule	Low	Moderate					Mitigation	Work closely with Coastal Commission to increase their knowledge of the project and to monitor their review process.	Matt Fowler	2/14/2014
	Active	7	2/14/2014 PA&ED	Design	Design Exceptions are not approved	If Design Coordinator does not deem the exceptions to standards appropriate.	Schedule Cost	Low	Moderate					Acceptance	Redesign the project to avoid the use of design exceptions	Steve Wyatt	2/14/2014
	Active	8	2/14/2014 PA&ED PS&E	Right of Way	R/W Certification milestone missed.	R/W Data Sheet estimated that 10 months would be required to complete all R/W activities and certify the project. The proposed project schedule allows for only 3 - 9 months for R/W depending on when the activities begin. R/W office has agreed to this schedule in order to help expedite the project as long as the risks are documented here. This risk will be triggered if R/W activities take longer than 9 months to complete.	Schedule	Low	Low					Acceptance	Open 2 phase early. Start R/W activities (normally performed during the PS&E phase) in the PID or PA&ED phase. Such charging has been agreed to by all parties due to the urgent nature of this project. If risk is triggered there is no actual negative impact on the project unless the R/W Cert. is delayed by more than 6 months which is unlikely.	John Magorian	2/24/2014

Picture 1: View from above pullout along southbound lanes, north of Big Creek Bridge. Looking north. Date: 1/10/2014

Picture 2: View from pullout north of the slide. Looking south. Date: 1/10/2014

Picture 3: View of northbound shoulder and rock net. Looking south. Date: 1/10/2014



Picture 4: View of slide area from original southbound shoulder. Looking west. Date: 1/10/2014

Picture 5: Aerial view from the west. Looking east. Date: 1/22/2014

Point here for instructions	CENTRAL REGION PID DISTRIBUTION LIST		
Division / Program / Office	Project Type	D5	
HQ Division of Design	All Projects	Design Report Routing	1
HQ Division of Engineering Serv	All Projects	Division of Engineering Services	5
HQ Transportation Programming	SHOPP	Rick Guevel	1
HQ Environmental	All Projects	Bob Pavlik	1
HQ Maintenance	All Other Projects	Gerald Kracher	1
Project Manager	All Projects	Ken Dostalek	1
Design Manager	All Projects	Steve Wyatt	2
Resident Engineer	All Projects	Dan Miller	1
District Maintenance	All Projects	Lance Gorman	1
	SHOPP	Kelly Mcclain	1
District Traffic Management	All Projects	Jacques Van Zeventer	1
District Traffic Safety	Mon/SCr	Romano Veriengia	1
Region Traffic Design	All Projects	Mohammed Qatami	1
District Traffic Operations	All Projects	Paul McClintic	1
Region Materials	All Projects	Doug Lambert	1
Region Environmental	All Projects	Susan Schilder	1
Region Landscape	All Projects	Dennis Reeves	1
Region Right of Way	All Projects	Connie Shellooe	1
Distict Planning	All Projects	Claudia Espino	1
PPM	All Projects	Linda Araujo	1
	All Projects	Jeremy Villegas	1
Surveys	Mon/SC/SBt	Bob Fredricks	1
	SB/SLO	Nick Tatarian	
HQ DES/OPPM	Proj w/Structures	Andrew T S Tan	1
District Records	All Projects	Pat Duty (electronic copy only)	0
	TOTAL COPIES	District 5 =	28
CR PJD Support		Last Revised 1-8-14	

ATTACHMENT I