

# PROJECT STUDY REPORT

To

## Request for Programming in the 2012 SHOPP

On Route 46

At SR 46/99 Separation

APPROVAL RECOMMENDED:



STEVEN MILTON  
PROJECT MANAGER

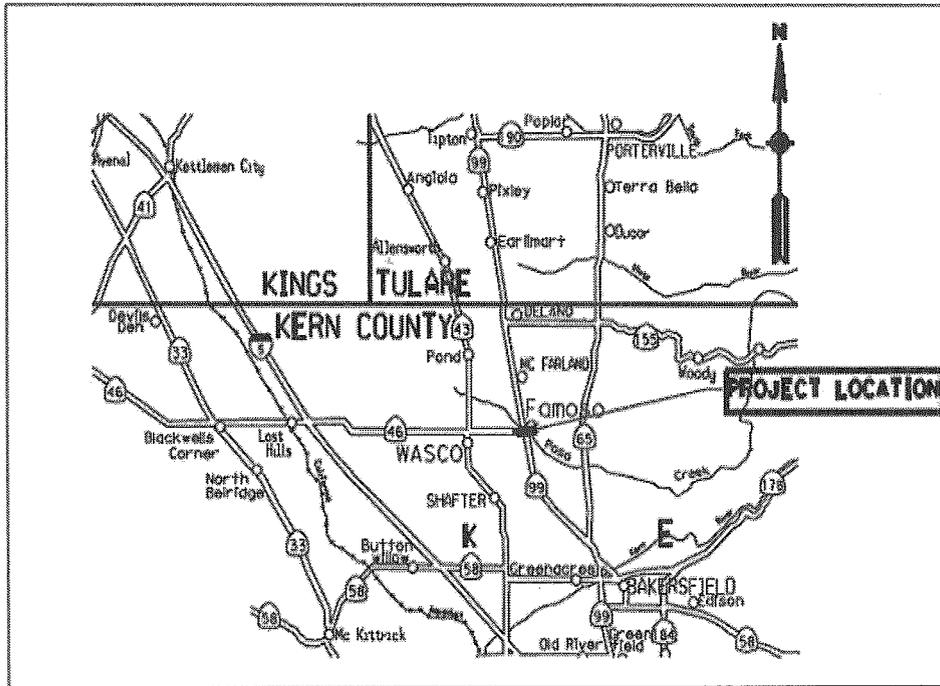
APPROVED:



SHARRI BENDER EHLERT  
INTERIM DISTRICT 06 DIRECTOR

11/1/2011  
DATE

## Vicinity Map



On Route 46

At SR 46/99 Separation

06-Ker-46(57.5/57.8)  
06-0K460k (0612000105)  
SHOPP (201.10.201.110)  
October 2011

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



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*TAREK CHOWDHURY*  
*REGISTERED CIVIL ENGINEER*

*10/31/2011*

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*DATE*



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**1. INTRODUCTION**

It is proposed to replace the existing damaged SR 46/99 separation steel girder bridge with a cast-in-place pre-stressed slab bridge. There are three build alternatives proposed for further consideration. Right of way acquisition will be required for all alternatives.

The estimated capital cost plus right of way cost for the alternatives ranges from 11,800,000 to 12,100,000 dollars.

This project is to be programmed in the 2012 State Highway Operations and Protection Program (SHOPP) with funding from the 201.110, HA-21 Bridge Rehabilitation program, in the 2015/2016 fiscal year

Bellow is the summary information table for the project.

<b>Project Limits</b> (Dist., Co., Rte., PM)	06-Ker-46 (57.5/57.8)	
<b>Number of Alternatives:</b>	3	
<b>Alternative Recommended for Programming:</b>	2	
<b>Proposed Capital Construction Costs</b>	Alt.-1	11,877,000
	Alt.-2	11,780,000
	Alt.-3	11,660,000
<b>Proposed Capital Right of Way Costs: (Not Escalated)</b>	Alt.-1	180,663
	Alt.-2	180,663
	Alt.-3	180,663
<b>Funding Source:</b>	2012 SHOPP	
<b>Type of Facility</b>	Two lane Conventional	
<b>Number of Structures:</b>	1	
<b>Anticipated Environmental Determination/Document</b>	ND (CEQA), CE (NEPA)	
<b>Legal Description</b>	In Kern County on SR 46 near WASCO at SR 46 / 99 separation bridge	
<b>Project Category</b>	4	

Other approvals required are: Environmental Document.

## **2. BACKGROUND**

Existing 249 feet SR 46/99 separation steel girder bridge is located in Kern County, approximately 15 miles north of Bakersfield. The westbound leg of the two lane structure serves traffic headed from Route 46 to Highway 99. The eastbound leg connects Famoso County Road to Highway 99. Famoso county road connected to SR46 with T intersection controlled by stop sign.

The Route 46/99 Separation existing Bridge is a simple span, welded three girder steel bridge on reinforced concrete (RC) columns with "L" type abutments.

The bridge, which opened in 1958, carries an ADT of more than 8,200 of which more than 40 % are heavy trucks. A quarry is located just east of the structure and a significant portion of the truck traffic is heavily loaded trucks carrying rock to construction areas across the southern San Joaquin Valley. Within the project limit SR 46 is operating with a Level of Service C.

A conceptual report for SR 46/99 separation bridge replacement was approved on May 28, 2008. After discovering multiple hits a peer review meeting was held on April 11, 2008 by structure personnel to determine the scope and feasibility of repair which includes replacing the girder, deck, rails, and bridge raising and replacing the structure.

Structural Peer Review recommended that District 06 proceed with programming a bridge replacement project in the State Highway Operation and Protection Program (SHOPP).

## **3. PURPOSE AND NEED STATEMENT**

### **Need:**

Existing SR 46/99 bridge structure suffered multiple hits by high load truck that has caused damage to the structure. Non standard vertical clearance leaves the bridge vulnerable to more hits in future. Continuous fatigue cracking and addition to damage of the girder may risk complete failure of the bridge.

### **Purpose:**

The purpose of the project is to increase the vertical clearance over SR 99 to the standard height of 16'-6" to avoid future risk from hits by high truck and maintain the structural integrity of the bridge.

#### 4. DEFICIENCIES

On April 25, 2006, investigation of the structure found damage to two of the three girders that were struck by over height vehicles since the last routine inspection of the bridge.

As the investigation was proceeding, an SM&I Peer Review was conducted to consider potential strategies to repair the bridge and to restore traffic on the bridge.

The number three girder over northbound Highway 99 suffered damage to the bottom flange and the diaphragms, although not as extensive as that found from the hit on the southbound direction. In addition, investigation of the structure identified significant fatigue cracking throughout the structure.

The vertical clearance of the bridge ranges from 14 feet 10 inches on one side to 15 feet 2 inches on the other which is below current standard. Because of low vertical clearance the bridge may continue to experience more hits by truck.

#### 5. CORRIDOR AND SYSTEM COORDINATION

Within the project limits, SR 46 is a 2-lane undivided conventional highway with 8 foot shoulder widths and an existing 80'-160' right of way width. The route is classified as a rural Minor Arterial roadway and is a Surface Transportation Assistance Act (STAA) access route. The ultimate concept for this route is 4-lane expressway. This project is consistent with ultimate route concept for SR46.

#### 6. ALTERNATIVES

Three options are presented to replace the damaged SR 46/SR 99 separation bridge to meet future safety and integrity of the bridge that needs minor realignment and configuration modification. The new bridge will be placed on south/ north side of existing bridge to minimize disruption of existing traffic flow. Existing bridge will be demolished after new bridge is placed. Vertical profile will be raised to have present standard vertical clearance of 16'-6". This project also proposes to place a left turn lane on eastbound SR 46 ramp to facilitate turning movement to Famoso road. All other non standard feature will be replaced with standard feature.

Existing damaged steel girder bridge will be replaced with a new 266' long, 42'-10" wide (includes 8 foot shoulder) cast in place pre-stressed slab bridge on CIDH pile foundation. The bridge profile grade is set such that future widening can accommodate similar type of structure.

Capital construction cost the alternatives will be in the range of \$11,700,000 to \$11,900,000 including structure construction cost.

**6A. Alternative- 1**

New bride will be place on north side of existing bridge and connected to Famoso road. SR 46 will then connect to existing loop connector to SR 99. Existing irrigation box culvert need to be extended for minor realignment of SR 46.

**6B. Alternative- 2**

New bride will be place on north side of existing bridge and connected to existing loop connector to SR 99. A left turn lane will be provided to facilitate turning movement to Famoso road. Existing irrigation box culvert need to be extended for minor realignment of SR 46.

**6C. Alternative- 3**

New bride will be place on south side of existing bridge and connected to existing loop connector to SR 99. A left turn lane will be provided to facilitate turning movement to Famoso road.

**7. COMMUNITY INVOLVEMENT**

No community involvements are anticipated for this project.

**8. ENVIRONMENTAL DETERMINATION/DOCUMENT**

The anticipated environmental document for the proposed project is a Negative Declaration/Categorical Exclusion. This document level has been selected based on the impacts to kit fox habitat which is anticipated to be mitigated below the threshold of significance as defined by CEQA. The California Department of Transportation would act as the lead agency in the preparation of a joint NEPA/CEQA (National Environmental Policy Act/California Environmental Quality Act) environmental document. Caltrans will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327.

The estimated time to obtain environmental approval is 15 months from the start of environmental studies. Assuming a start date of July, 2012, environmental studies would begin January, 2013 after project preliminary maps and permits to

enter are completed. Project Approval and Environmental Document would be anticipated by November, 2013.

It is anticipated multiple environmental studies and reports will be required for this project including (but not limited to): archaeology survey report, historic resource evaluation report, historic property survey report, biological assessment,

Section 7 consultation and a Biological Opinion issued by the U.S. Fish and Wildlife Service (USFWS). It is currently estimated that biology will be the critical path for the delivery of the environmental document.

### **Water Quality**

A 404 permit will be required to be issued by the Army Corps of Engineers and a 401 permit would be required from the Regional Water Quality Board. The project will be constructed in compliance with storm water quality regulations using a Water Pollution Control Program (WPCP). Drainage modification will be required.

## **9. TRANSPORTATION MANAGEMENT PLAN**

Preliminary traffic impacts and mitigation for this project have been outlined in the attached Transportation Management Plan Data Sheet (TMP Data Sheet). Costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet have been included in this documents estimate.

A TMP for this project is required and should be requested when the design is complete enough to determine specific traffic impacts, but yet early enough to make design changes/ addition required for traffic mitigation.

Lane closures chart and detailed TMP will be provided during PS&E stage. Night time work outside peak hours is anticipated for this project.

Stage Construction may not required and SR 46 will keep open for traffic during construction placing narrow two way lane. Temporary detour may be needed on SR 99 off ramp at off peak hour during scaffolding and piling foundation work at span no 1.

## **10. RIGHT OF WAY AND UTILITIES**

Right of way will be required for all alternatives. Right of way and access control issues will be considered and mitigated in the project development process.

Business on either side of the SR46 will be affected by acquiring right of way.

Several utilities will require relocation and special consideration. Utility poles, telephone line adjacent to the existing right of way boundaries will need to be relocated for alternative 1 and 2. In addition, communication lines may require potholing and/or relocation. Most utilities exist on the north side of the existing centerline.

Because of SR 46 will be connected to Famoso Road at grade rail crossing, railway involvement may be necessary. Right of Way acquisition cost for the alternatives in the range of \$180,000 to \$200,000.

## 11. FUNDING

This project is to be programmed in the 2012 State Highway Operations and Protection Program (SHOPP) with funding from the 201.110, HA-21 Bridge Rehabilitation program, in the 2015/2016 fiscal year.

### 11A. CAPITAL COST

#### Capital Cost Estimate for the Alternative Identified for Programming in the 2012 SHOPP

Component	12/13	13/14	14/15	15/16	16/17	Total
Const. Capital				\$13,623		\$13,623
R/W Capital		\$199				\$199
PA&ED Support	\$701					\$701
PS&E Support		\$2,444				\$2,444
R/W Support		\$113				\$113
Construction Support				\$1,626		\$1,626
<b>Total</b>	\$701	\$2,756		\$15,249		\$18,706

Notes:

All costs X 1000. R/W Capital escalated at 5% per year.

Construction and support cost are escalated at 3.1% per year. Capital to support ratio is 35%.

### RECOMMENDATION

It is recommended that the project study report be approved and authorization to be granted to program into the 2012 SHOPP cycle.

**12. SCHEDULE**

<b>HQ Milestones</b>	<b>Delivery Date (Month, Day, Year)</b>
Program Project (M015)	07/01/2012
PA & ED (M200)	02/01/2014
District PS & E (M377)	07/01/2015
PS & E to HQ (M380)	10/01/2015
R/W Cert (M410)	12/01/2015
RTL (M460)	01/15/2016
Award (M495)	06/01/2016
CCA (M600)	10/01/2017
End Project (M800)	12/01/2018

**13. FHWA COORDINATION**

Federal-aid funding is anticipated but no FHWA review is required for this project.

**14. DISTRICT CONTACTS**

HQ Transportation Programming – Rick Guevel  
 HQ Environmental – Bob Pevlik  
 HQ Maintenance – Roger Hunter  
 HQ Structure Design Liaison (Structure) -Michael Downs  
 Project Manager – Steven Milton  
 Design Manager - Mike Lim  
 District Maintenance – Bill Moses  
 District Bridge Coordinator –Sam Katich  
 District Traffic Management – Benjamin Camarena  
 Region Traffic Design – Mohammed Qatami  
 District Traffic Operations – Albert Lee  
 District Safety Review Committee- Joel Aguilar  
 Region Materials – Ted Mooradian  
 Region Environmental – Susan Schilder  
 Region Right of Way – Nick Dumas/Chanin Selway  
 District Planning – Steven S Mcdonald  
 PPM – Andrea Nason  
 Survey – Hanna Kassis (electronic copy only)  
 HQ DES/OPPM – Peggy Lim  
 District Records – Victoria Pozuelo

**15. PROJECT REVIEWS**

Field Review Design, Environmental, Hydraulics

Date 10-18-11

**16. LIST OF ATTACHMENTS**

- A. Vicinity Map
- B. Preliminary Layout
  - Alternative -1
  - Alternative -2
  - Alternative -3
- C. Typical Section
  - Alternative -1
  - Alternative -2
  - Alternative -3
- D. Cost Estimates
  - Alternative -1
  - Alternative -2
  - Alternative -3
- E. Right of Way Data Sheet
- F. Preliminary Environmental Analysis Report (PEAR)
- G. Storm Water Data Sheet
- H. TMP Data Sheet
- I. Traffic Forecast Data
- J. Advance Planning Study (APS).
- K. Structural Section Recommendation
- L. Project Risk Management Plan

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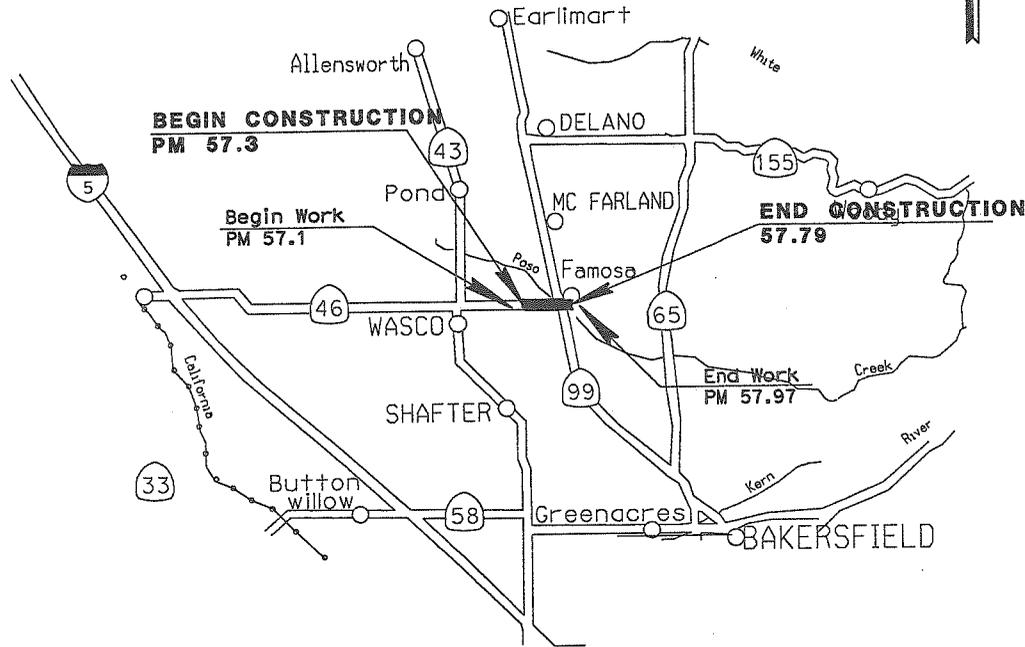
**ATTACHMENT**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 PROJECT PLANS FOR CONSTRUCTION ON  
 STATE HIGHWAY

IN KERN COUNTY  
 FROM PM 57.5 TO PM 57.79 ON ROUTE 46

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Ker	46	57.5/57.79		



PROJECT MANAGER  
 STEVEN MILTON  
 DESIGN ENGINEER  
 TAREK CHOWDHURY

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

PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

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. PROJECT ID 0612000105

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RELATIVE BORDER SCALE IS IN INCHES

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UNIT 1466 PROJECT NUMBER & PHASE 0612000105

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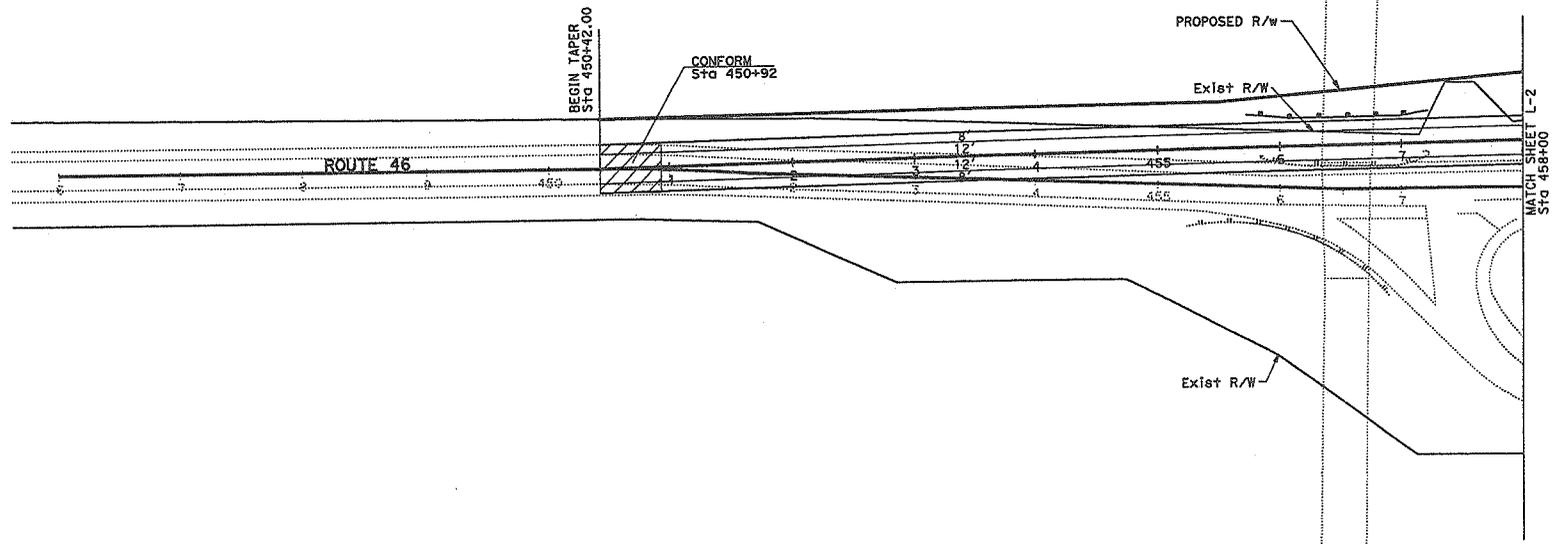
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	TAREK CHOWDHURY	REVISED BY	
	MICHAEL K LIM	CHECKED BY		DATE REVISED	

DIST	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET TOTAL No. SHEETS
06	Ker	SR 46/99	46 (57.5/57.79) 99 (43.9/44.6)	

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

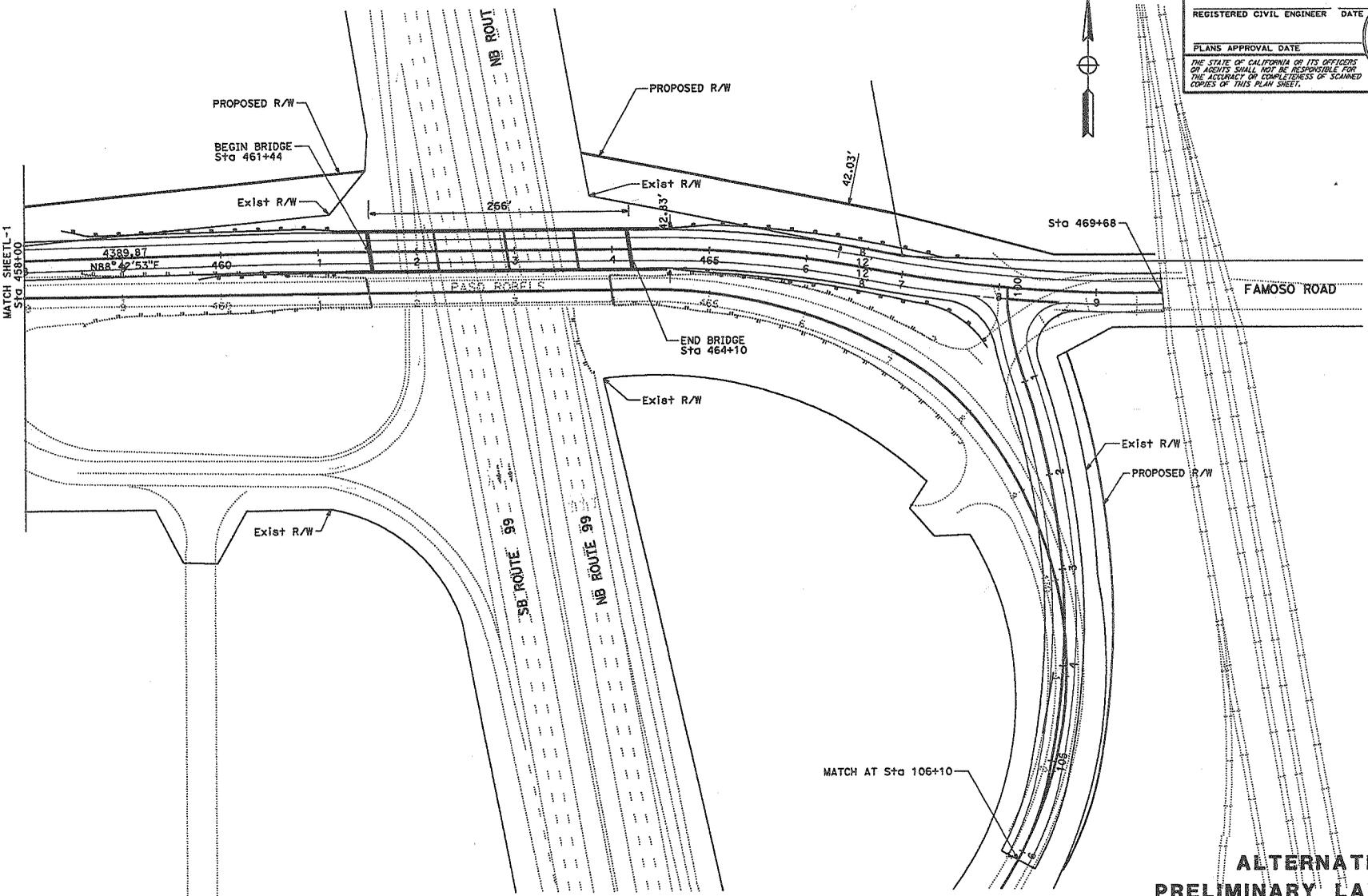
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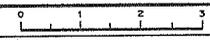
**ALTERNATIVE-1  
PRELIMINARY LAYOUT**  
SCALE: 1"=50' L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR  
 MICHAEL K LIM  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 TAREK CHOUBHURY  
 REVISED BY  
 DATE REVISED

DIST	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kern	SR 46/99	46(57.5/51.73) 99( 43.9/44.6)		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>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.</small>					



**ALTERNATIVE-1  
 PRELIMINARY LAYOUT**  
 SCALE: 1"=50' L-2



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
*Caltrans*

FUNCTIONAL SUPERVISOR  
 MICHAEL K LIM

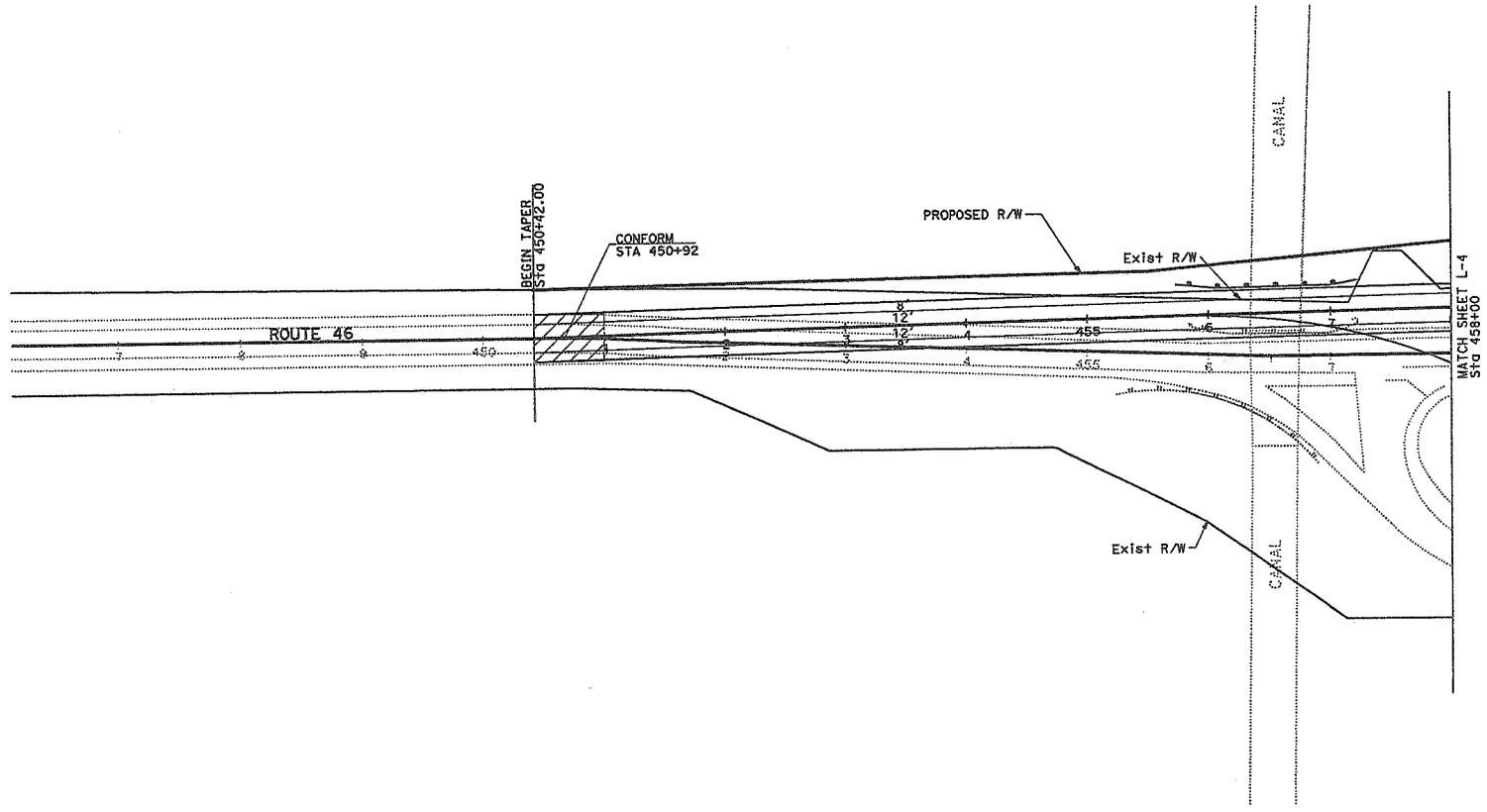
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TAREK CHOWDHURY

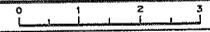
REVISED BY  
 DATE REVISED

DIST	COUNTY	LOCATION CODE	POST MILES	SHEET TOTAL
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REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_  
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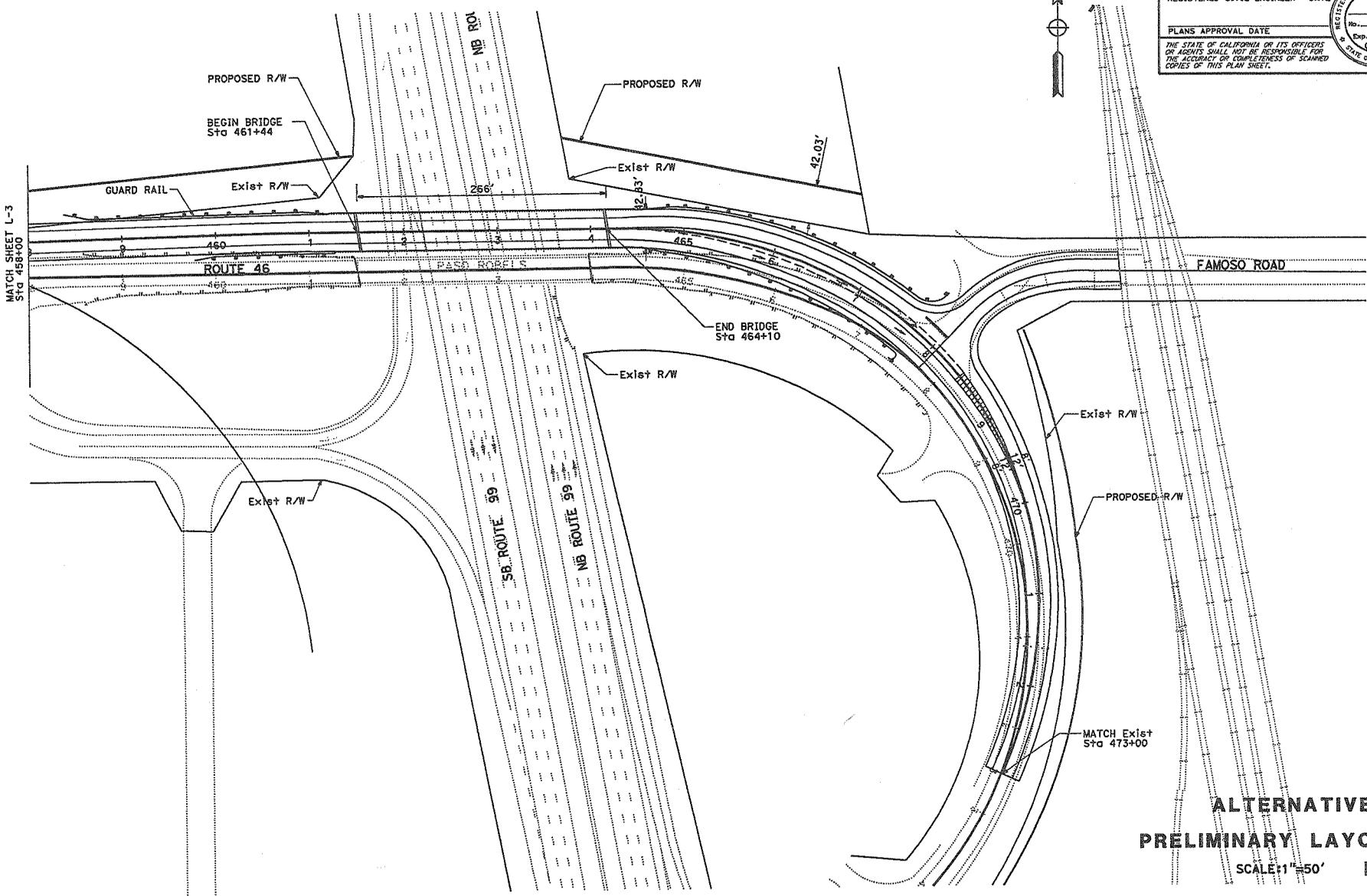


**ALTERNATIVE-2**  
**PREMINARY LAYOUT**  
 SCALE: 1"=50' L-3



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
	MICHAEL K LIM	CHECKED BY	TAREK CHOUBRY
			DATE REVISED

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	SR 46/99	46(57.5/57.79) 99( 43.9/44.6)		
REGISTERED CIVIL ENGINEER DATE					
PLANS APPROVAL DATE					
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**ALTERNATIVE-2**  
**PRELIMINARY LAYOUT**  
 SCALE: 1"=50' L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
*Caltrans*

FUNCTIONAL SUPERVISOR  
 MICHAEL K LIM

CALCULATED BY  
 CHECKED BY

TAREK CHOWHURY

REVISED BY  
 DATE REVISED

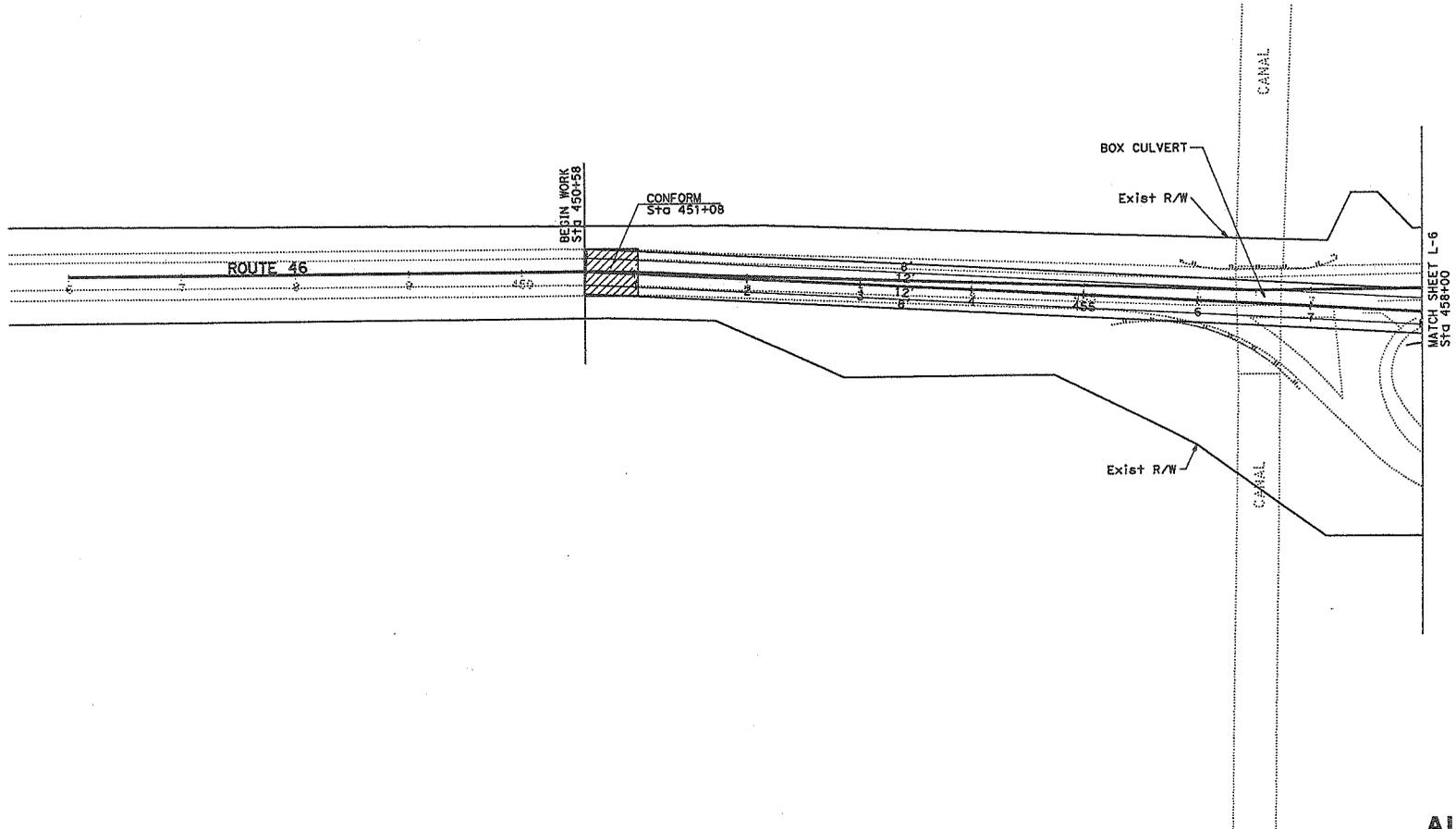
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06	Ker	SR 46/99	46(57.5/57.79) 99( 43.9/44.6)		

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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REGISTERED PROFESSIONAL ENGINEER  
 No. \_\_\_\_\_  
 Exp. \_\_\_\_\_  
 CIVIL  
 STATE OF CALIFORNIA

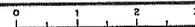


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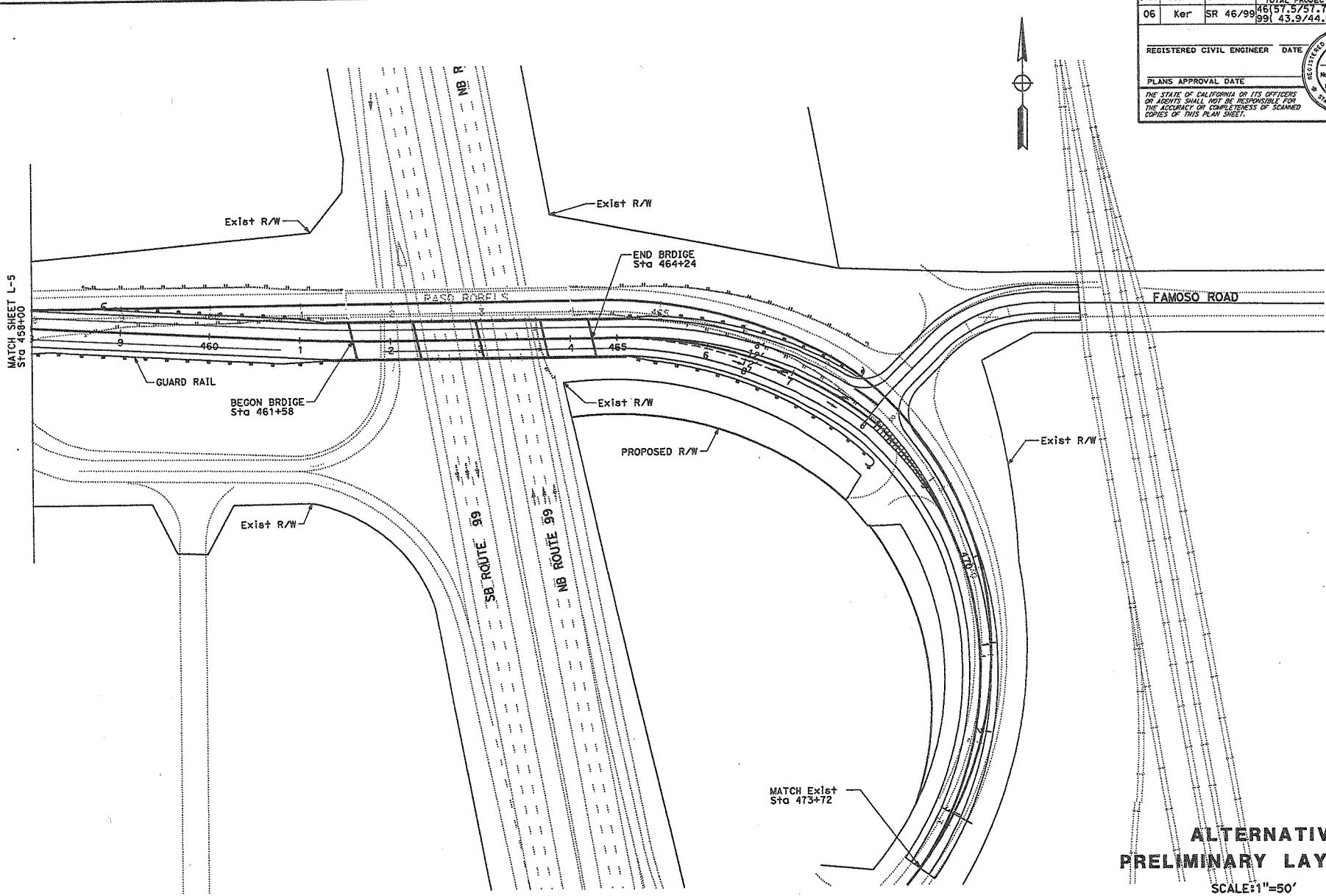


UNIT 1466

**ATTACHMENT B** 00105

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 TIME PLOTTED => 11:11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR  
 MICHAEL K LIM  
 CALCULATED-DESIGNED BY  
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 TAREK CHODHURY  
 REVISED BY  
 DATE REVISED



DIST	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kern	SR 46/99	46(57.5/57.79) 99( 43.9/44.6)		

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_

PLANS APPROVAL DATE \_\_\_\_\_

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**ALTERNATIVE-3  
 PRELIMINARY LAYOUT**  
 SCALE: 1"=50' L-6

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RELATIVE BORDER SCALE  
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UNIT 1466

**ATTACHMENT B**

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 TIME PLOTTED => 11:16

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 FUNCTIONAL SUPERVISOR  
 MICHAEL K LIM  
 TAREK CHODHURY  
 REVISOR  
 DATE REVISOR  
 CALCULATED-DESIGNED BY  
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**DESIGN DESIGNATION (20 YEAR)**

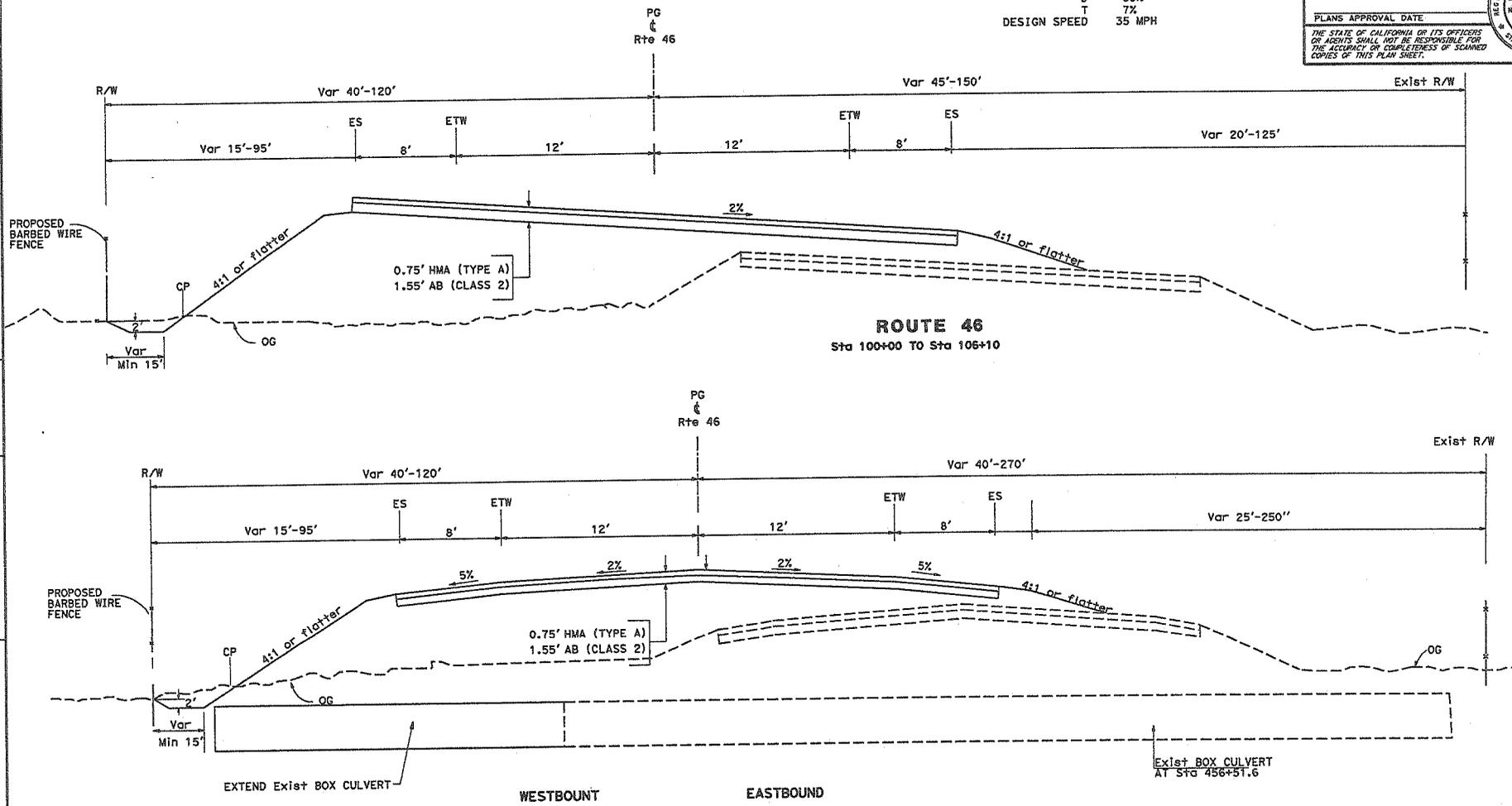
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 D 60%  
 T 7%  
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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	SR 46/99	46(57.5/57.79) 99(43.9/44.6)		

REGISTERED CIVIL ENGINEER DATE

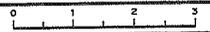
PLANS APPROVAL DATE

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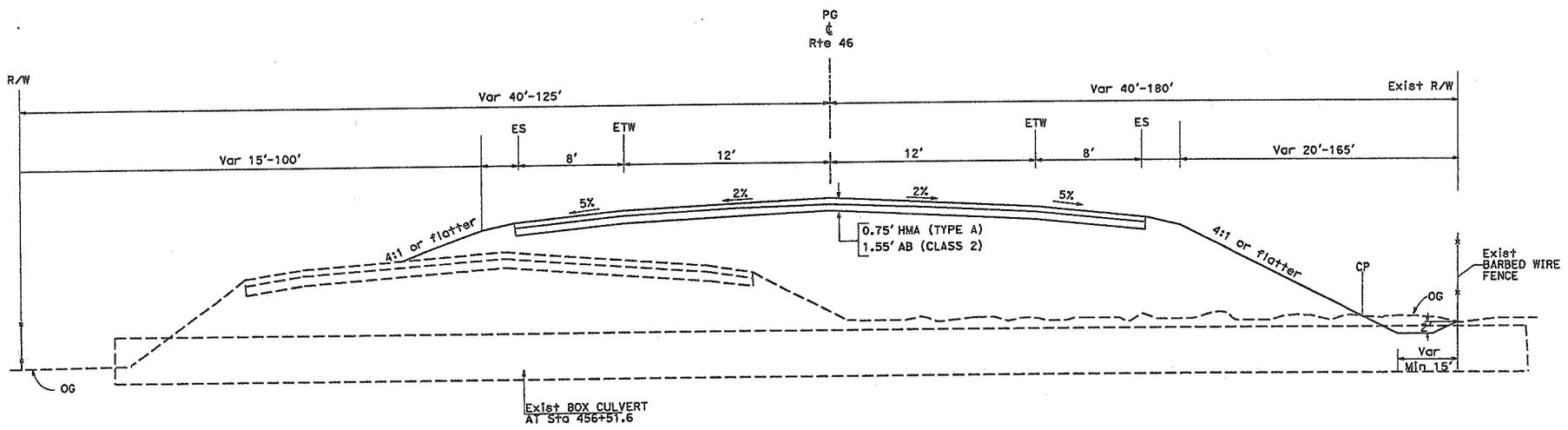
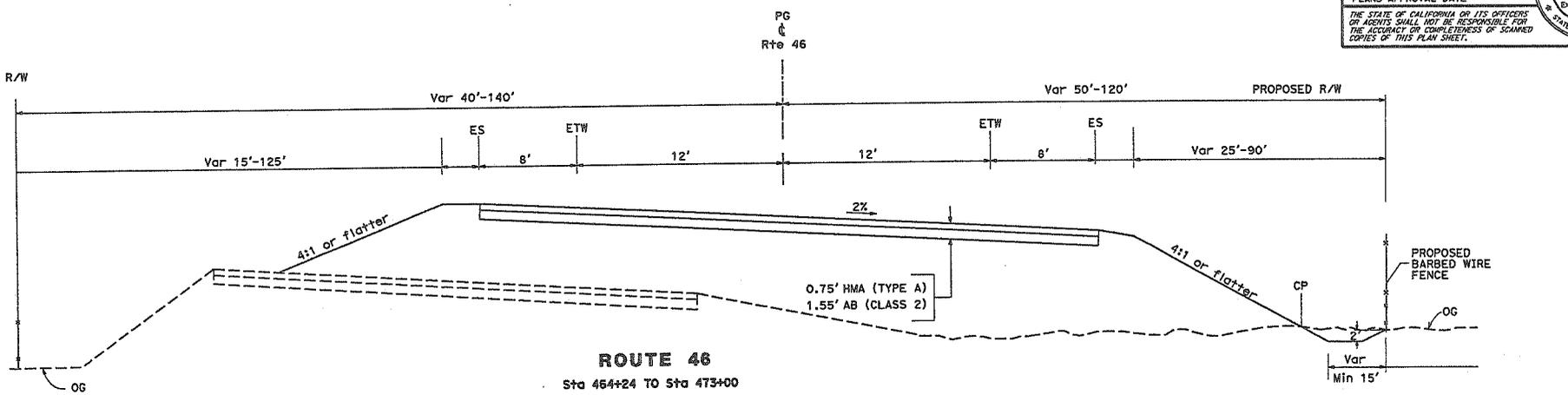
**ROUTE 46**  
 Sta 450+42 TO Sta 441+44  
 Sta 464+10 TO Sta 469+68

**ALTERNATIVE 1**  
**TYPICAL CROSS SECTIONS**  
 NO SCALE X-1





06	Ker	SR 46/99	46(57.5/57.79) 99(43.9/44.6)	SHEET No. 1	TOTAL SHEETS 1
REGISTERED CIVIL ENGINEER DATE					
PLANS APPROVAL DATE					
					
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WESTBOUND EASTBOUND

**ROUTE 46**  
Sta 450+58 TO Sta 461+58

**ALTERNATIVE 3**  
**TYPICAL CROSS SECTIONS**  
NO SCALE X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 CALIFORNIA  
 REVISIONS: REVISION BY DATE REVISION BY DATE  
 TAREK CHOURHURY  
 CALCULATED BY DESIGNED BY CHECKED BY  
 MICHAEL K. LIM  
 FUNCTIONAL SUPERVISOR

BORDER LAST REVISED 7/2/2010

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Sta 456+51.6

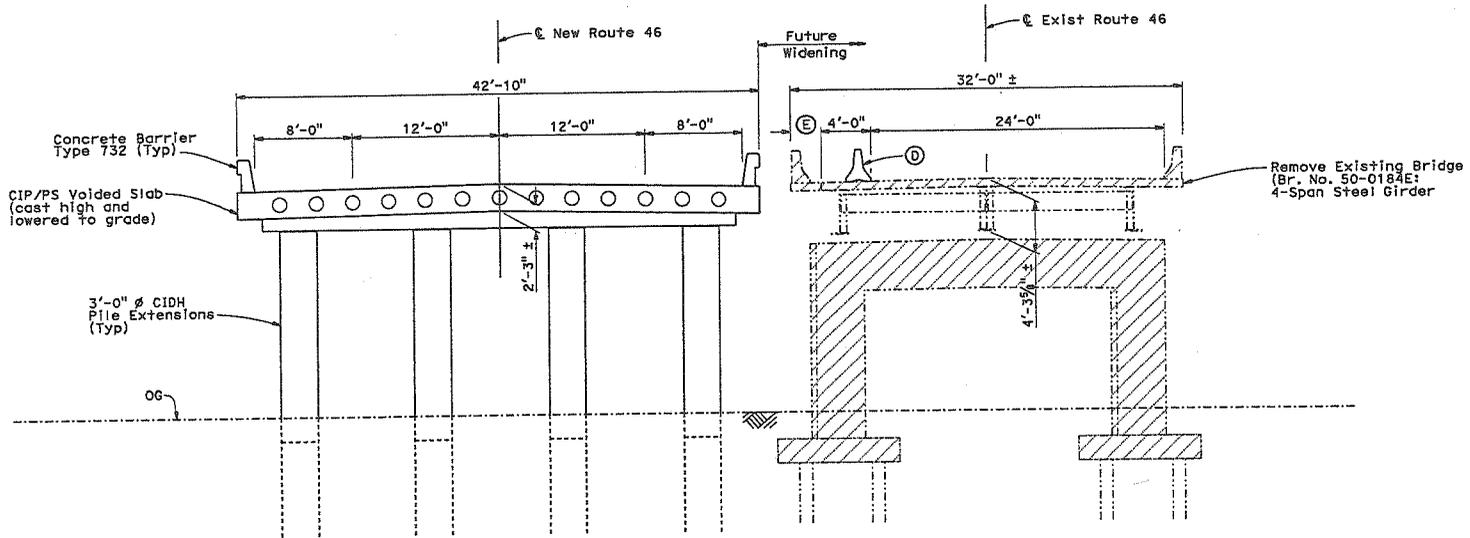
UNIT 1466

PROJEC

**ATTACHMENT C**

DATE PLOTTED => 27-OCT-2011  
 TIME PLOTTED => 11:41

DIST	COUNTY	ROUTE	POST MILE
06	Ker	46	57.8



**TYPICAL SECTION**  
1" = 10'

**Risks/Assumptions:**

- Traffic will be pass through construction site. Falsework openings will be required. A minimum vertical clearance of 15'-0" required under falsework.
- Route 99 detours/closures will be necessary for falsework erection/removal, superstructure jacking and existing bridge removal operations. Night work is expected.
- SB off-ramp to be closed during bent 2 foundation construction operations.
- New Route 46 profile grade cannot be raised to allow for a more economical structure type and/or construction method.
- Bridge superstructure to be cast high and lowered to grade.
- Profile grade to be set such that future widening accommodates a similar structure type.
- Temporary shoring will be required at each existing abutment.
- Preliminary Geotechnical Recommendations have not been prepared for this study. 3-ft  $\phi$  CIDH piles assumed at each bent and 16-in  $\phi$  CIDH piles assumed at each abutment. Liquefaction potential is assumed to be low.

**Notes:**

- Ⓓ Temporary Railing (Type K), see Road Plans
- Ⓔ Remove existing left barrier, overhang and abutment wingwalls to facilitate new bridge construction

- Indicates bridge removal
- Indicates existing structure
- Indicates new construction

**PRELIMINARY CONCEPT  
For PID Only  
Sheet 2 of 2**

INCOMPLETE PLAN  
FOR DESIGN STUDY  
PRINTED  
DATE: 17-OCT-2011  
Office of Structures Design  
STATE OF CALIFORNIA

DESIGNED BY	MD	DATE	10/11
DRAWN BY	MD	DATE	10/11
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

**STRUCTURE  
DESIGN  
BRANCH**

PLANNING STUDY	
Rte 46/99 Separation (Replace)	
UNIT: 3585	BRIDGE No. 50-TBD
SCALE: As Noted	PROJECT No. & PHASE: 06.1200.0105

FILE => 06-OK490\_Concepts\_Sheet2.dgn

CONTRACT No.: 06-OK460K

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**PROJECT DESCRIPTION:**

**Limits:** On Route 46 at SR 46/99 Separation in Kern County

**Proposed Improvement:** State Route 46/99 Sepatation Bridge Replacemnt with cast in place pre-stressed slab bridge on North side of the existing bridge (Alternative-1)  
 (Scope of Work)

**Alternative:** Placing Bridge on South Side of Existing Bridge

**SUMMARY OF PROJECT COST ESTIMATE**

TOTAL ROADWAY ITEMS	Total of Sections 1 - 10 shown above	\$ <u>7,660,945</u>
TOTAL STRUCTURES ITEMS		\$ <u>4,215,329</u>
	SUBTOTAL CONSTRUCTION COSTS	\$ <u>11,876,273</u>
TOTAL RIGHT OF WAY ITEMS (Not Escalated)		\$ <u>180,663</u>
	TOTAL PROJECT CAPITAL OUTLAY COSTS	\$ <u>12,056,936</u>

Reviewed by  
 District Program Manager:

\_\_\_\_\_  
 (Signature) \_\_\_\_\_  
 (Date)

Approved by Project Manager:

*[Handwritten Signature]*  
 \_\_\_\_\_  
 (Signature) 10/31/11  
 (Date)

Phone Number:

(559) 243-3456  
 \_\_\_\_\_

Form revised 12/01/09

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**I. ROADWAY ITEMS**

<u>Section 1 - Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Roadway Excavation	10,000	CY	\$25	\$250,000	
Imported Borrow	48,000	CY	\$56	\$2,688,000	
Clearing & Grubbing	1	LS	\$25,000	\$25,000	
Develop Water Supply	1	LS	\$0	\$0	
Cold Plane	5,000	SQYD	\$6	\$30,000	
Stepped Slopes and Slope			\$0	\$0	
Rounding (Contour Grading)			\$0	\$0	
			\$0	\$0	
			<b>Subtotal Earthwork:</b>		<b>\$2,993,000</b>
 <u>Section 2 - Pavement Structural Section</u>					
Conc SW and Ramp		CY		\$0	
Conc Curb & Gutter (A2-6)		CY		\$0	
Asphalt Concrete	5,590	Ton	\$100	\$559,000	
Red Brick Pattern	0	SF		\$0	
Minor concrete (Side walk)		CY	\$0	\$0	
Aggregate Base	5,650	CY	\$40	\$226,000	
Treated Permeable Base	0	CY	\$0	\$0	
Aggregate Subbase	0	CY	\$0	\$0	
Conc Curb(A1-6)		LF	\$0	\$0	
Concrete Pavement		CY	\$0	\$0	
AC Dike (Type E)	4,000	LF	\$10	\$40,000	
			<b>Subtotal Pavement Structural Section:</b>		<b>\$825,000</b>
 <u>Section 3 - Drainage</u>					
Large Drainage Facilities	1	LS	\$200,000	\$200,000	
Storm Drains	1	LS	\$100,000	\$100,000	
Pumping Plants	0	LS	\$0	\$0	
Project Drainage	0	LS	\$0	\$0	
				\$0	
			<b>Subtotal Drainage:</b>		<b>\$300,000</b>

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

<u>Section 4 - Specialty Items</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Environmental MCCE	0	SF	\$0	\$0	
Fishing and Game	0	EA	\$0	\$0	
Barriers and Guardrails	1,500	LF	\$25	\$37,500	
Storm Water Control	1	EA	\$15,000	\$15,000	
Construction Site Mgt	1	LS	\$70,000	\$70,000	
Const Site BMP	1	LS	\$94,000	\$94,000	
Environmental Compliance	0	LS	\$0		
Resident Engineer Office Space	1	LS	\$50,000	\$50,000	
Erosion Control	1	LS	\$50,000	\$50,000	
			<b>Subtotal Specialty Items:</b>		<b>\$316,500</b>
<u>Section 5 - Traffic Items</u>					
Portable CMS	1	LS	\$30,000	\$30,000	
Traffic Delineation Items	1	LS	\$11,600	\$11,600	
Traffic Signals	0	LS	\$0	\$0	
Road side sign	1	EA	\$2,000	\$2,000	
Construction Area Sign	1	EA	\$10,000	\$10,000	
Traffic Control Systems	0	LS	\$0	\$0	
Transportation Management Plan	1	LS	\$50,000	\$50,000	
Electrical conduit system	1	LS	\$40,000	\$40,000	
Stage Construction (K Rail)	1,000	FT	\$25	\$25,000	
Traffic Handling	1	LS	\$75,000	\$75,000	
			<b>Subtotal Traffic Items:</b>		<b>\$243,600</b>

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**II. ROADSIDE ITEMS**

<u>Section 6 Planting and Irrigation</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Highway Planting	0	LS	\$0	\$0	
Replacement Planting	0	LS	\$0	\$0	
Irrigation Modification	0	LS	\$0	\$0	
Relocate Existing Irrigation	0	LS	\$0	\$0	
Facilities	0	LS	\$0	\$0	
Irrigation Crossovers	0	LS	\$0	\$0	
				\$0	
Subtotal Planting and Irrigation Section:					\$0

<u>Section 7: Roadside Management and Safety Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Vegetation Control Treatments	1	LS	\$0	\$0	
Replacement HWY planting	1	LS	\$0	\$0	
Pavement beyond the gore area	0	LS	\$0	\$0	
Miscellaneous Paving-aesthetic treatment		LS	\$0	\$0	
Erosion Control		LS	\$0	\$0	
San Joaquin Kit Fox	1	LS	\$0	\$0	
Bats Exclusion	1	LS	\$50,000	\$50,000	
Swallow Exclusion	1	LS	\$75,000	\$75,000	
Permits (401,404)	0	LS	\$0	\$0	
Fish and Game Doc Review	1	LS	\$0	\$0	
Subtotal Roadside Management and Safety Section:					\$125,000

TOTAL SECTIONS 1 thru 7 \$4,803,100

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. ROADWAY ADDITIONS**

Section 8 - Minor Items

					<u>Item Cost</u>	<u>Section Cost</u>
(Subtotal Sections 1 thru 7)	<u>\$4,803,100</u>	x	<u>0.10</u>	=	<u>\$480,310</u>	
			(5 to 10%)			

TOTAL Minor Items: \$480,310

Section 9 - Roadway Mobilization

(Subtotal Sections 1 thru 8)	<u>\$5,283,410</u>	x	<u>0.10</u>	=	<u>\$528,341</u>
			(10%)		

TOTAL Roadway Mobilization: \$528,341

Section 10 - Supplemental Work & Contingencies

Supplemental Work

(Subtotal Sections 1 thru 8)	<u>\$5,283,410</u>	x	<u>0.10</u>	=	<u>\$528,341</u>
			(5 to 10%)		

Contingencies

(Subtotal Sections 1 thru 8)	<u>\$5,283,410</u>	x	<u>0.25</u>	=	<u>\$1,320,853</u>
			(25%)		

Supplemental Work & Contingencies: \$1,849,194

TOTAL ROADWAY ADDITIONS Sections 8 thru 10: \$2,857,845

TOTAL ROADWAY ITEMS: \$7,660,945

(Subtotal Sections 1 thru 10)

Estimate Prepared by: TAREK CHOWDHURY Phone: (559) 230-3139 10/28/11  
 (Print or Type Name) (Date)

Estimate Checked by: MIKE LIM Phone: (559) 230-3138 10/28/11  
 (Print or Type Name) (Date)

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**II. STRUCTURE ITEMS**

	STRUCTURE			
	No. 1	No. 2	No. 3	
Bridge Name	CIP/PS	_____	_____	
Structure Type	_____	_____	_____	
Width (out to out) - (ft)	43	_____	_____	
Span Length - (ft)	266	0	0	
Total Area - ft <sup>2</sup>	11,393	0	0	
Footing Type (pile/spread)	Pile	0	0	
Cost per ft <sup>2</sup>	370	0	0	
(incl. 10 % mobilization and 20 % contingency)				
Total Cost for Structure	<u>\$4,215,329</u>	<u>\$0</u>	<u>\$0</u>	
SUBTOTAL STRUCTURES ITEMS			<u>\$4,215,329</u>	
(Sum of Total Cost for Structures)				
Railroad Related Costs (Not incl. in R/W Est)	_____	_____	_____	<u>\$0</u>
	_____	_____	_____	<u>\$0</u>
SUBTOTAL RAILROAD ITEMS			<u>\$0</u>	
TOTAL STRUCTURES ITEMS			<u>\$4,215,329</u>	
(Sum of Structures items plus Railroad Items)				

**COMMENTS:**

Estimate Prepared by: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
 (Print or Type Name) (Date)

(If appropriate, attach additional pages as backup)

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. RIGHT OF WAY ITEMS**

No. of years for Escalation = 0

	Current Values 2,011	Rate (%)	Escalation Factor		Escalated Value 2,014
A. Acquisition	\$28,750	5.0	1.00	-	\$31,697
B. Utility Relocation (State Share)	\$59,125	5.0	1.00	-	\$65,185
C. Mitigation	\$87,500	5.0	1.00	-	\$96,469
D. Clearance/Demolition	\$0	5.0	1.00	-	\$0
E. Title and Escrow Fees	\$5,288	5.0	1.00	-	\$5,829
<b>TOTAL RIGHT OF WAY** ITEMS=</b>	<b>\$180,663</b>				<b>\$199,180</b> (Escalated Value)

Anticipated Date of Right of Way Certification: 0/0/00  
 (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: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
(Date)  
 (Print or Type Name)

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

PROJECT STUDY REPORT COST ESTIMATE



Dist-Co-Rte: 06-Ker-46/99  
PM: PM 46 (57.5/57.8)  
EA: 06-0K460k  
Program Code: 20.10.201.110

PROJECT DESCRIPTION:

Limits: On Route 46 at SR 46/99 Separation in Kern County

Proposed Improvement: State Route 46/99 Sepatation Bridge Replacemnt with cast in place pre-stressed slab bridge on North side of the existing bridge (Alternative-2)  
(Scope of Work)

Alternative: Placing Bridge on South side of Existing Bridge

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	Total of Sections 1 - 10 shown above	\$ 7,564,766
TOTAL STRUCTURES ITEMS		\$ 4,215,329
	SUBTOTAL CONSTRUCTION COSTS	\$ 11,780,095
TOTAL RIGHT OF WAY ITEMS (Not Escalated)		\$ 180,663
	TOTAL PROJECT CAPITAL OUTLAY COSTS	\$ 11,960,758

Reviewed by  
District Program Manager:

\_\_\_\_\_  
(Signature) (Date)

Approved by Project Manager:

*AK*  
\_\_\_\_\_  
(Signature) (Date) 10/31/11

Phone Number:

559 243 - 3456  
\_\_\_\_\_

Form revised 12/01/09

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**I. ROADWAY ITEMS**

<u>Section 1 - Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Roadway Excavation	10,000	CY	\$25	\$250,000	
Imported Borrow	46,000	CY	\$56	\$2,576,000	
Clearing & Grubbing	1	LS	\$25,000	\$25,000	
Develop Water Supply	1	LS	\$0	\$0	
Cold Plane	5,000	SQYD	\$6	\$30,000	
Stepped Slopes and Slope			\$0	\$0	
Rounding (Contour Grading)			\$0	\$0	
			\$0	\$0	
			Subtotal Earthwork:		\$2,881,000
 <u>Section 2 - Pavement Structural Section</u>					
Conc SW and Ramp		CY	\$0	\$0	
Conc Curb & Gutter (A2-6)		CY	\$0	\$0	
Asphalt Concrete	5,650	Ton	\$100	\$565,000	
Red Brick Pattern	0	SF	\$0	\$0	
Minor concrete (Side walk)		CY	\$0	\$0	
Aggregate Base	5,735	CY	\$40	\$229,400	
Treated Permeable Base	0	CY	\$0	\$0	
Aggregate Subbase	0	CY	\$0	\$0	
Conc Curb(A1-6)		LF	\$0	\$0	
Concrete Pavement		CY	\$0	\$0	
AC Dike (Type E)	4,500	LF	\$10	\$45,000	
			Subtotal Pavement Structural Section:		\$839,400
 <u>Section 3 - Drainage</u>					
Large Drainage Facilities	1	LS	\$200,000	\$200,000	
Storm Drains	1	LS	\$100,000	\$100,000	
Pumping Plants	0	LS	\$0	\$0	
Project Drainage	0	LS	\$0	\$0	
				\$0	
			Subtotal Drainage:		\$300,000

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

<u>Section 4 - Specialty Items</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Environmental MCCE	0	SF	\$0	\$0	
Fishing and Game doc	1	EA	\$2,300	\$2,300	
Barriers and Guardrails	1,400	LF	\$25	\$35,000	
Storm Water Control	1	EA	\$15,000	\$15,000	
Construction Site Mgt	1	LS	\$70,000	\$70,000	
Const Site BMP	1	LS	\$94,000	\$94,000	
Environmental Compliance	0	LS	\$0		
Resident Engineer Office Space	1	LS	\$50,000	\$50,000	
Erosion Control	1	LS	\$50,000	\$50,000	
			<b>Subtotal Specialty Items:</b>		<b>\$316,300</b>
<u>Section 5 - Traffic Items</u>					
Portable CMS	1	LS	\$30,000	\$30,000	
Traffic Delineation Items	1	LS	\$11,600	\$11,600	
Traffic Signals	0	LS	\$0	\$0	
Roadside Sign	1	EA	\$2,000	\$2,000	
Const Area sign	1	EA	\$10,000	\$10,000	
Traffic Control Systems	0	LS	\$0	\$0	
Transportation Management Plan	1	LS	\$60,000	\$60,000	
Electrical conduit system	1	LS	\$40,000	\$40,000	
Stage Construction (K Rail)	1,100	FT	\$25	\$27,500	
Traffic Handling	1	LS	\$75,000	\$75,000	
			<b>Subtotal Traffic Items:</b>		<b>\$256,100</b>

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**II. ROADSIDE ITEMS**

<u>Section 6 Planting and Irrigation</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Highway Planting	1	LS	\$25,000	\$25,000	
Replacement Planting	1	LS	\$0	\$0	
Irrigation Modification	0	LS	\$0	\$0	
Relocate Existing Irrigation	0	LS	\$0	\$0	
Facilities	0	LS	\$0	\$0	
Irrigation Crossovers	0	LS	\$0	\$0	
				\$0	
Subtotal Planting and Irrigation Section:					\$25,000

<u>Section 7: Roadside Management and Safety Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Vegetation Control Treatments	1	LS	\$0	\$0	
Replacement HWY planting	1	LS	\$0	\$0	
Pavement beyond the gore area	0	LS	\$0	\$0	
Miscellaneous Paving-aesthetic treatment	1	LS	\$0	\$0	
Erosion Control	1	LS	\$0	\$0	
San Joaquin Kit Fox	0	LS	\$0	\$0	
Bats Exclusion	1	LS	\$50,000	\$50,000	
Swallow Exclusion	1	LS	\$75,000	\$75,000	
Permits (401,404)	0	LS	\$0	\$0	
Fish and Game Doc Review	0	LS	\$0	\$0	
Subtotal Roadside Management and Safety Section:					\$125,000

TOTAL SECTIONS 1 thru 7 \$4,742,800

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. ROADWAY ADDITIONS**

Section 8 - Minor Items

					<u>Item Cost</u>	<u>Section Cost</u>
(Subtotal Sections 1 thru 7)	<u>\$4,742,800</u>	x	<u>0.10</u> (5 to 10%)	=	<u>\$474,280</u>	

TOTAL Minor Items: \$474,280

Section 9 - Roadway Mobilization

(Subtotal Sections 1 thru 8)	<u>\$5,217,080</u>	x	<u>0.10</u> (10%)	=	<u>\$521,708</u>
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TOTAL Roadway Mobilization: \$521,708

Section 10 - Supplemental Work & Contingencies

Supplemental Work

(Subtotal Sections 1 thru 8)	<u>\$5,217,080</u>	x	<u>0.10</u> (5 to 10%)	=	<u>\$521,708</u>
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Contingencies

(Subtotal Sections 1 thru 8)	<u>\$5,217,080</u>	x	<u>0.25</u> (25%)	=	<u>\$1,304,270</u>
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Supplemental Work & Contingencies: \$1,825,978

TOTAL ROADWAY ADDITIONS Sections 8 thru 10: \$2,821,966

TOTAL ROADWAY ITEMS: \$7,564,766

(Subtotal Sections 1 thru 10)

Estimate Prepared by: TAREK CHOWDHURY Phone: (559) 230-3139 10/28/11  
 (Print or Type Name) (Date)

Estimate Checked by: MIKE LIM Phone: (559) 230-3138 10/28/11  
 (Print or Type Name) (Date)

**\*\*Use appropriate percentage per PDPM, Part 3 Chapter 20.**

**<http://www.dot.ca.gov/hq/oppd/pdpm/pdpmn.htm> - pdpm**

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**II. STRUCTURE ITEMS**

	STRUCTURE			
	No. 1	No. 2	No. 3	
Bridge Name	CIP/PS	_____	_____	
Structure Type	_____	_____	_____	
Width (out to out) - (ft)	43	_____	_____	
Span Length - (ft)	266	0	0	
Total Area - ft <sup>2</sup>	11,393	0	0	
Footing Type (pile/spread)	Pile	0	0	
Cost per ft <sup>2</sup>	370	0	0	
(incl. 10 % mobilization and 20 % contingency)				
Total Cost for Structure	\$4,215,329	\$0	\$0	
<b>SUBTOTAL STRUCTURES ITEMS</b>				<b>\$4,215,329</b>
(Sum of Total Cost for Structures)				
Railroad Related Costs (Not incl. in RW Est)	_____	_____	_____	\$0
	_____	_____	_____	\$0
<b>SUBTOTAL RAILROAD ITEMS</b>				<b>\$0</b>
<b>TOTAL STRUCTURES ITEMS</b>				<b>\$4,215,329</b>
(Sum of Structures items plus Railroad Items)				

**COMMENTS:**

Estimate Prepared by: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
 (Print or Type Name) (Date)

(If appropriate, attach additional pages as backup)

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. RIGHT OF WAY ITEMS**

No. of years for Escalation = 0

	Current Values 2,011	Rate (%)	Escalation Factor		Escalated Value 2,013
A. Acquisition	\$28,750	5.0	1.00	-	\$31,697
B. Utility Relocation (State Share)	\$59,125	5.0	1.00	-	\$65,185
C. Mitigation	\$87,500	5.0	1.00	-	\$96,469
D. Clearance/Demolition	\$0	5.0	1.00	-	\$0
E. Title and Escrow Fees	\$5,288	5.0	1.00	-	\$5,829
<b>TOTAL RIGHT OF WAY** ITEMS=</b>	<b>\$180,663</b>				<b>\$199,180</b> (Escalated Value)

Anticipated Date of Right of Way Certification: 0/0/00  
 (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: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
(Date)  
 (Print or Type Name)

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



**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**I. ROADWAY ITEMS**

<u>Section 1 - Earthwork</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Roadway Excavation	10,000	CY	\$25	\$250,000	
Imported Borrow	44,000	CY	\$56	\$2,464,000	
Clearing & Grubbing	1	LS	\$25,000	\$25,000	
Develop Water Supply	1	LS	\$0	\$0	
Cold Plane	5,000	SQYD	\$6	\$30,000	
Stepped Slopes and Slope			\$0	\$0	
Rounding (Contour Grading)			\$0	\$0	
			\$0	\$0	
			<b>Subtotal Earthwork:</b>		<b>\$2,769,000</b>
 <u>Section 2 - Pavement Structural Section</u>					
Conc SW and Ramp		CY	\$0	\$0	
Conc Curb & Gutter (A2-6)		CY	\$0	\$0	
Asphalt Concrete	5,545	Ton	\$100	\$554,500	
Red Brick Pattern		SF		\$0	
Minor concrete (Side walk)		CY		\$0	
Aggregate Base	5,350	CY	\$40	\$214,000	
Treated Permeable Base		CY	\$0	\$0	
Aggregate Subbase		CY	\$0	\$0	
Conc Curb(A1-6)		LF	\$0	\$0	
Concrete Pavement		CY	\$0	\$0	
AC Dike (Type E)	4,000	LF	\$9	\$36,000	
			<b>Subtotal Pavement Structural Section:</b>		<b>\$804,500</b>
 <u>Section 3 - Drainage</u>					
Large Drainage Facilities	1	LS	\$50,000	\$50,000	
Storm Drains	1	LS	\$150,000	\$150,000	
Pumping Plants	0	LS	\$0	\$0	
Project Drainage	0	LS	\$0	\$0	
				\$0	
			<b>Subtotal Drainage:</b>		<b>\$200,000</b>

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

<u>Section 4 - Specialty Items</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Environmental MCCE	0	LS	\$0	\$0	
Fishing and Game	1	EA	\$2,300	\$2,300	
Barriers and Guardrails	1,450	LF	\$25	\$36,250	
Storm Water Control	1	LS	\$15,000	\$15,000	
Construction Site Mgt	1	LS	\$70,000	\$70,000	
Const Site BMP	1	LS	\$94,000	\$94,000	
Environmental Compliance	0	LS	\$0		
Resident Engineer Office Space	1	LS	\$50,000	\$50,000	
Erosion Control	1	LS	\$50,000	\$50,000	
			<b>Subtotal Specialty Items:</b>	<b>\$317,550</b>	
<u>Section 5 - Traffic Items</u>					
Portable CMS	1	LS	\$30,000	\$30,000	
Traffic Delineation Items	1	LS	\$11,600	\$11,600	
Traffic Signals	0	LS		\$0	
Radside sign	1	EA	\$2,000	\$2,000	
Const Area sign	1	EA	\$10,000	\$10,000	
Traffic Control Systems	0	LS	\$0	\$0	
Transportation Management Plan	1	LS	\$50,000	\$50,000	
Electrical conduit system	1	LS	\$40,000	\$40,000	
Stage Construction (K Rail)	1,100	FT	\$25	\$27,500	
Traffic Handling	1	LS	\$75,000	\$75,000	
			<b>Subtotal Traffic Items:</b>	<b>\$246,100</b>	

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
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 Program Code: 20.10.201.110

**II. ROADSIDE ITEMS**

<u>Section 6 Planting and Irrigation</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Highway Planting	0	LS	\$0	\$0	
Replacement Planting	1	LS	\$205,000	\$205,000	
Irrigation Modification	0	LS	\$0	\$0	
Relocate Existing Irrigation	0	LS	\$0	\$0	
Facilities	0	LS	\$0	\$0	
Irrigation Crossovers	0	LS	\$0	\$0	
				\$0	
			Subtotal Planting and Irrigation Section:		\$205,000

<u>Section 7: Roadside Management and Safety Section</u>	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Item Cost</u>	<u>Section Cost</u>
Vegetation Control Treatments	1	LS		\$0	
Replacement HWY planting	1	LS	\$0	\$0	
Pavement beyond the gore area	0	LS	\$0	\$0	
Miscellaneous Paving-aesthetic treatment	1	LS		\$0	
Erosion Control	1	LS		\$0	
San Joaquin Kit Fox	0	LS	\$0	\$0	
Bats Exclusion	1	LS	\$50,000	\$50,000	
Swallow Exclusion	1	LS	\$75,000	\$75,000	
Permits (401,404)	0	LS	\$0	\$0	
Fish and Game Doc Review	0		\$0	\$0	
			Subtotal Roadside Management and Safety Section:		\$125,000

**TOTAL SECTIONS 1 thru 7** \$4,667,150

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

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. ROADWAY ADDITIONS**

Section 8 - Minor Items

				<u>Item Cost</u>	<u>Section Cost</u>
(Subtotal Sections 1 thru 7)	<u>\$4,667,150</u>	x	0.10 (5 to 10%)	=	<u>\$466,715</u>

TOTAL Minor Items: \$466,715

Section 9 - Roadway Mobilization

(Subtotal Sections 1 thru 8)	<u>\$5,133,865</u>	x	0.10 (10%)	=	<u>\$513,387</u>
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TOTAL Roadway Mobilization: \$513,387

Section 10 - Supplemental Work & Contingencies

Supplemental Work

(Subtotal Sections 1 thru 8)	<u>\$5,133,865</u>	x	0.10 (5 to 10%)	=	<u>\$513,387</u>
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Contingencies

(Subtotal Sections 1 thru 8)	<u>\$5,133,865</u>	x	0.25 (25%)	=	<u>\$1,283,466</u>
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Supplemental Work & Contingencies: \$1,796,853

TOTAL ROADWAY ADDITIONS Sections 8 thru 10: \$2,776,954

TOTAL ROADWAY ITEMS: \$7,444,104

(Subtotal Sections 1 thru 10)

Estimate Prepared by: TAREK CHOWDHURY Phone: (559) 230-3139 10/28/11  
 (Print or Type Name) (Date)

Estimate Checked by: MIKE LIM Phone: (559) 230-3138 10/28/11  
 (Print or Type Name) (Date)

**\*\*Use appropriate percentage per PDPM, Part 3 Chapter 20.**

<http://www.dot.ca.gov/hq/oppd/pdpm/pdpmn.htm> - pdpm

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**II. STRUCTURE ITEMS**

	STRUCTURE			
Bridge Name	No. 1	No. 2	No. 3	
Structure Type	CIP/PS	_____	_____	
Width (out to out) - (ft)	43	_____	_____	
Span Length - (ft)	266	0	0	
Total Area - ft <sup>2</sup>	11,393	0	0	
Footing Type (pile/spread)	Pile	0	0	
Cost per ft <sup>2</sup>	370	0	0	
(incl. 10 % mobilization and 20 % contingency)				
Total Cost for Structure	<u>\$4,215,329</u>	<u>\$0</u>	<u>\$0</u>	
<b>SUBTOTAL STRUCTURES ITEMS</b>			<u><b>\$4,215,329</b></u>	
(Sum of Total Cost for Structures)				
Railroad Related Costs (Not incl. in R/W Est)	_____	_____	_____	<u>\$0</u>
	_____	_____	_____	<u>\$0</u>
<b>SUBTOTAL RAILROAD ITEMS</b>			<u><b>\$0</b></u>	
<b>TOTAL STRUCTURES ITEMS</b>			<u><b>\$4,215,329</b></u>	
(Sum of Structures items plus Railroad Items)				

**COMMENTS:**

Estimate Prepared by: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
 (Print or Type Name) (Date)

(If appropriate, attach additional pages as backup)

**PROJECT STUDY REPORT COST ESTIMATE**



Dist-Co-Rte: 06-Ker-46/99  
 PM: PM 46 (57.5/57.8)  
 EA: 06-0K460k  
 Program Code: 20.10.201.110

**III. RIGHT OF WAY ITEMS**

No. of years for Escalation = 0

	Current Values 2,011	Rate (%)	Escalation Factor		Escalated Value 2,013
A. Acquisition	\$28,750	5.0	1.00	-	\$31,697
B. Utility Relocation (State Share)	\$59,125	5.0	1.00	-	\$65,185
C. Mitigation	\$87,500	5.0	1.00	-	\$96,469
D. Clearance/Demolition	\$0	5.0	1.00	-	\$0
E. Title and Escrow Fees	\$5,288	5.0	1.00	-	\$5,829
<b>TOTAL RIGHT OF WAY** ITEMS=</b>	<b>\$180,663</b>				<b>\$199,180</b> (Escalated Value)

Anticipated Date of Right of Way Certification: 0/0/00  
 (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: \_\_\_\_\_ Phone: \_\_\_\_\_ 0/0/00  
(Date)  
 (Print or Type Name)

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

**Memorandum**

To: STEVEN MILTON

Date: 10/27/2011

Attn TAREK A CHOWDHURY

File: CD 06 EA 0K460K Alt 1

Co KER RTE 99

MIKE LIM

DESCRIPTION:  
BRIDGE REPLACEMENT

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 10/12/2011

The following assumptions and limiting conditions were identified:

**Appraisal**

Small strips of bare land with no improvements.

**Utility**

Per the Right of Way Data Sheet Request Form received from Mike Lim, Design Manager, the work also includes 8 foot shoulder, raising the vertical profile to have vertical clearance of 16'-16", placing new guard rails, improving safety features and existing drainage culvert. Per e-mail dated 10/26/11 from Tarek Chowdhury, there are 4 PG&E and 2 AT&T poles in conflict. The Sprint Communication line and the Gas line located outside existing R/W are not in conflict with the proposed project.

Right of Way Lead Time will require a minimum of 12 months after we receive Certified Appraisal Maps and/or Utility Conflict Plans, obtained necessary environmental clearance and applicable freeway agreements have been approved.

for Chamin Selway  
NICHOLAS G DUMAS  
Assistant Region Division Chief, Right of Way  
(559) 445-6195

**Right Of Way Cost Estimate**

	Current Year 2012	Contingency Rate	Right of Way Escalation Rate	Escalated Year 2014
Acquisition:	\$28,750	25%	5%	\$31,697
Mitigation:	\$59,125	25%	5%	\$65,185
State Share of Utilities:	\$87,500	25%	5%	\$96,469
Expert Witness:	\$0	25%	5%	\$0
Relocation Assistance:	\$0	25%	5%	\$0
Demolition and Clearance:	\$0	25%	5%	\$0
Title and Escrow:	\$5,288	25%	5%	\$5,829
Ad Signs:	\$0	25%	5%	\$0
<b>Total Current Value:</b>	<b>\$180,663</b>			<b>\$199,180</b>
If RW Cost Est fields are blank, Costs = \$0				

Estimated Construction Contract Work (CCW): 0 R/W LEAD TIME/Mo. 12

Cost Break Down	
Pot Hole	6,000
Mitigation	
Land	
Bank	44,000
Permit Fee	3,300

**RR Involvement**

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

**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	4		
# of Parcel Type C: complex, special valuation			
# of Parcel Type D: most complex and time consuming		# of Duals Needed:	
<b>Totals:</b>	<b>4</b>	<b>Totals:</b>	<b>0</b>

# of Excess Parcels:

**Misc R/W Work**

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

**Utilities**

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

EA: 06-0K460K ALT: 1

Parcel Area

Total R/W Required:	1.21
Total Excess Area:	

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

Small strips of bare land with no improvements.

**General Description of Utility Involvement:**

The project is in Kern County near Wasco on State Route 46 PM 57.5/57.79 and proposes to replace existing Route 46/99 separation Steel Girder Bridge with a new CIP/PS Girder Bridge. There are 3 Alternatives proposed for this project.

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 multi-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:

No

**Data for evaluation provided by:**

Estimator:	Gordon Watkins	10/14/2011
Railroad Liaison Agent:	Maria Toles	10/14/2011
Utility Relocation Coordinator:	Stephanie Rendon-Fuentes	10/26/2011

*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 10/27/2011

BY: H Yang

*Nicholas G Dumas*  
 \_\_\_\_\_  
 for NICHOLAS G DUMAS  
 Assistant Region Division Chief, Right of Way

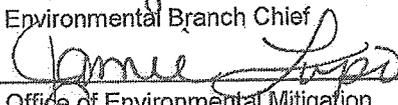
## Central Region Environmental Division Mitigation Cost Compliance Estimate (MCCE)

This MCCE is for: **PEAR**

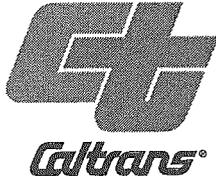
Dist - Co - Rte - PM: <u>06-KER-99-43.9 / 44.6</u>	EA: <u>06-0K460</u>
Project Name: <u>Kern 46/99 Bridge Separation Replacement</u>	Alternative #: <u>3</u>
Project Description: <u>BRIDGE REPLACEMENT</u>	(If applicable)
Environmental Senior: <u>Kirsten Helton</u>	Phone Number: <u>559-445-6282</u>
Design Manager: <u>Shahin Mansour <i>Mike Lim</i></u>	Phone Number: <u>(559) 230-3114 <i>38</i></u>
Design Engineer: <u>Tarek Chowdhury</u>	Phone Number: <u>(559) 230-3138</u>
Project Manager: <u>Steven Milton</u>	Phone Number: <u>(559) 243-3456</u>
Date: <u>10/27/2011</u>	
MCCE Prepared By: <u>Jamal Assi</u>	Phone Number: <u>(559) 445-6206</u>

	Right of Way Capital (Prior to Construction 050-\$'s)	Construction Capital (During & Post Construction 042-\$'s)
Archaeological		
Architectural History		
Paleontology		
Hazardous Waste		
Air Emissions		
Biological		
Mitigation parcels (acre/dollars)	/	
Mitigation/Bank Credits (acre/dollars)	/ \$44,000	
Monitoring		
Permit Fees		
DFG Fee	\$2,300	
401	\$1,000	
Swallow Exclusion		\$75,000
Bats Exclusion		\$50,000
<b>TOTAL</b>	<b>\$47,300</b>	<b>\$125,000</b>

Approved By:

 Environmental Branch Chief	Date: <u>10-27-2011</u>
 Office of Environmental Mitigation	Date: <u>10-27-2011</u>

This form is completed as part of the PEAR for all candidate projects, at completion of the Draft Environmental Document, at completion of the Final Environmental Document, and during preparation of the PS&E. This form is to be completed for all SHOPP, STIP, and Minor A & B projects (even those without mitigation). Include all costs necessary to complete the commitment including: capital outlay (non-staffing support costs); cost of right-of-way or easements; long-term monitoring and reporting by consultants during the construction phase; and any follow-up maintenance p. Timing of Enhancement/Endowment funds will depend on which agency is requiring the mitigation. Funds may nec



## Preliminary Environmental Analysis Report

### Project Information

District:	06	County:	Kern	Routes:	99/46	Post Mile:	Ker-46-57.5/57.79 – Ker-99-43.9/44.6
Project ID#:	06-1200-0105		EA: 06-0K460				
Project Title:	Kern 46/99 Separation Bridge Replacement						
Project Manager:	Steven Milton		Phone #:		(559) 243-3456		
Design Manager:	Mike Lim		Phone #:		(559) 230-3138		
Design Engineer:	Tarek Chowdhury		Phone #:		(559) 230-3139		
Environmental Manager:	Bryan Apper		Phone #:		(559) 445-6282		
Environmental Planner:	Jamal Assi		Phone #:		(559) 445-6206		

### PSR Summary Statement

The anticipated environmental document for the proposed project is a Negative Declaration/Categorical Exclusion. This document level has been selected based on the impacts to kit fox habitat which are anticipated to be mitigated below the threshold of significance as defined by CEQA. The California Department of Transportation would act as the lead agency in the preparation of a joint NEPA/CEQA (National Environmental Policy Act/California Environmental Quality Act) environmental document. Caltrans will serve as the NEPA lead agency under its assumption of responsibility pursuant to 23 U.S. Code 327. The estimated time to obtain environmental approval is 15 months from the start of environmental studies. Assuming a start date of July 01, 2012, environmental studies would begin in October 01, 2012 after project preliminary maps and permits to enter are completed. Project Approval and Environmental Document would be anticipated by February 01, 2014.

It is anticipated multiple environmental studies and reports will be required for this project including (but not limited to): archaeology survey report, historic resource evaluation report, historic property survey report, biological assessment, Section 7 consultation and a biological opinion issued by the U.S. Fish and Wildlife Service (USFWS). It is currently estimated that biology will be the critical path for the delivery of the environmental document. A 404 permit will be required to be issued by the Army Corps of Engineers and a 401 permit would be required from the Regional Water Quality Board.

### Project Description

The California Department of Transportation (Caltrans) proposes to replace the existing steel girder bridge with a new 42'-10" wide cast in place pre-stressed slab bridge, which includes an 8 foot shoulder. The bridge profile grade is set such that future widening can accommodate a similar type of structure. The new bridge will be constructed either to the south or the north of the existing bridge to minimize disruption of existing traffic flow. The vertical profile will be raised to provide interstate standard vertical clearance of 16'-6". This project also proposes to place a left turn lane on the eastbound SR 46 ramp to facilitate turning movements to Famoso Road. All other non-standard features will be replaced with standard features. The existing bridge will be demolished after the new bridge is place.

### Purpose and Need

#### Need:

The existing SR 46/99 bridge structure suffered multiple hits by high load trucks that have caused damage to the structure. Non-standard vertical clearance leaves the bridge vulnerable to more hits in the future. Continuous fatigue cracking in addition to damage of the girder may risk complete failure of the bridge.

#### Purpose:

The purpose of the project is to increase the vertical clearance over SR 99 to the standard height of 16'-6" to avoid future risk from hits by high load trucks and to maintain the structural integrity of the bridge.

### Alternatives

Several alternatives were studied and discussed in PDT meetings. Three alternatives are currently being considered.

Alternative-1: A new bridge will be placed on the north side of the existing bridge and connected to Famoso Road. SR 46 will then connect to the existing loop connector to SR 99. The existing irrigation box culvert will need to be extended to match the existing SR 46 alignment.

Alternative-2: A new bridge will be placed on the north side of the existing bridge and connected to the existing loop connector to SR 99. A left turn lane will be provided to facilitate turning movements to Famoso Road. The existing irrigation box culvert will need to be extended to match the existing SR 46 alignment.

Alterenative-3: A new bridge will be placed on the south side of the existing bridge and connected to the existing loop connector to SR 99. A left turn lane will be provided to facilitate turning movements to Famoso Road. All non-standard features including guard rail will be replaced with standard features.

**Funding**

State     Federal

The estimated capital cost plus right of way cost for the alternatives ranges from 11 to 12 million dollars. This project is proposed to be funded from State Highway Operations and Protection Program under (20.10.201.110) Bridge Rehabilitation Program.

**Anticipated Environmental Approval**

**CEQA**

**NEPA**

- |   |  |
|---|--|
| <input type="checkbox"/> Categorical Exemption/Statutory Exemption  | <input checked="" type="checkbox"/> Categorical Exclusion ( <input checked="" type="checkbox"/> 6004/ <input type="checkbox"/> 6005) |
| <input checked="" type="checkbox"/> Negative Declaration/Mitigated ND( <input type="checkbox"/> Appendix G) | <input type="checkbox"/> Finding of No Significant Impact  |
| <input type="checkbox"/> Environmental Impact Report  | <input type="checkbox"/> Environmental Impact Statement  |

**Anticipated Environmental Schedule**

Total Time for Environmental Approval	15 months
Start Date	07/01/2012
Begin Environmental	10/01/2012
Draft Environmental Document	07/01/2013
Final Environmental Document	01/01/2014
PA&ED*	02/01/2014

*\*PA&ED is generally 1 month following the FED date*

**Assumptions and Risks**

**Assumptions:**

- Caltrans would enter into informal Section 7 Consultation with the USFWS for impacts to the federally and state listed San Joaquin kit fox (SJKF), and would receive a ‘not likely to adversely affect’ determination for the SJKF.
- No substantial public controversy - business owners’ opposition to the project is anticipated but is not anticipated to be “substantial.”.
- No cultural resources would be discovered.
- No 4(f) resources would be impacted.
- The project description will be consistent with the project description in the Regional Transportation Plan (RTP) and Federal Transportation Improvement Program (FTIP) and the project will be financially constrained.

**Risks:**

- If protocol level kit fox surveys (April 1 to September 30) are required there would be an impact to both schedule and cost. Probability of occurrence is a 3, the impact to the schedule would be moderate and cost would be low.

Risk Probability Ranking	
Ranking	Probability of Risk Event
5	60-99%
4	40-59%
3	20-39%
2	10-19%
1	1-9%

Evaluating Impact of a Threat on Project Objectives						
Impact		Very Low	Low	Moderate	High	Very High
<b>Objectives</b>	Time	Insignificant Schedule Slippage	Delivery Plan Milestone Delay within quarter	Delivery Plan milestone delay of one quarter	Delivery Plan milestone delay of more than 1 quarter	Delivery Plan milestone delay outside fiscal year
	Cost	Insignificant Cost Increase	<5% Cost Increase	5-10% Cost Increase	10-20% Cost Increase	>20% Cost Increase
	Scope	Scope decrease is barely noticeable	Changes in project limits or features with <5% Cost Increase	Changes in project limits or features with 5-10% Cost Increase	Sponsor does not agree that Scope meets the purpose and need	Scope does not meet purpose and need

**Mitigation**

Known mitigation costs, which were determined during the creation of this document, are listed in the respective categories below. Further studies may reveal the need for additional mitigation, which would be added to the cost of the project and included in an updated Mitigation Cost Compliance Estimate Form.

**Right of Way Capital (050)**

Right of way will be required for all alternatives. Right of way and access control issues will be considered and mitigated in the project development process. Business on either side of the SR46 will be affected by the need to acquire right of way.

Fish and Game Document Review fee = \$ 2,300 (2010 dollars)

401 and 404 permits: approximately \$1,000

**Construction Capital (042)**

Construction Capital (042) mitigation is defined as those portions of mitigation that must be paid during or after construction.

Swallow Exclusion: \$ 75,000

Bat Exclusion: \$ 50,000

San Joaquin Kit Fox: \$44,000

Disclaimer

This report is not an environmental document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in this report. The estimates and conclusions provided are approximate and are based on cursory analysis of probable effects. This report is to provide a preliminary level of environmental analysis to supplement the Project Initiation Document. Changes in project scope, alternatives, or environmental laws will require a reevaluation of this report.

Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

Approved by:

  
\_\_\_\_\_  
Environmental Manager

Date: 10/28/11

  
\_\_\_\_\_  
Environmental Office Chief

Date: 10/28/11

  
\_\_\_\_\_  
Project Manager

Date: 10/28/11

**Environmental Technical Reports or Studies Required**

*Required*—requires analysis including field surveys, database searches, report, or memo to file and brief explanation in the environmental document.

*Not Required*—Issue is not applicable to the proposed project.

*Possible Critical Path*—Major issue that has the potential to drive the schedule and determine the length of time to reach PA&ED (can be more than one major issue).

	Required	Clearance Memo Received	Not Required	Possible Critical Path
<b>Biology</b>		<input type="checkbox"/>		<input checked="" type="checkbox"/>
Endangered Species (Federal)	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Endangered Species (State)	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Species of Concern (CNPS, USFS, BLM, S, F)	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Wetland Delineation	<input type="checkbox"/>		<input type="checkbox"/>	
Natural Environment Study	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Biological Assessment (USFWS, NMFS, State)	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
401 Permit Coordination	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
404 Permit Coordination	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
1601 Permit Coordination	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
NEPA 404 Coordination	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
<b>Cultural Resources</b>				<input type="checkbox"/>
ASR	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
HRER	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
HPSR/HRCR	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Screening Memo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SHPO Concurrence	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
Native American Coordination	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
Finding of Effect Document	<input type="checkbox"/>		<input type="checkbox"/>	
Treatment Plan & MOA	<input type="checkbox"/>		<input type="checkbox"/>	
<b>Hazardous Waste</b>		<input type="checkbox"/>		<input type="checkbox"/>
ISA	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
PSI	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
ADL	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
<b>Air Quality Analysis</b>		<input checked="" type="checkbox"/>		<input type="checkbox"/>
Hot Spot Analysis	<input type="checkbox"/>		<input type="checkbox"/>	
MSAT	<input type="checkbox"/>		<input type="checkbox"/>	
<b>Noise Study</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Water Quality</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Community Impact Assessment</b>				<input type="checkbox"/>
Environmental Justice	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
Growth Related Impacts	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
<b>Cumulative Impacts</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Farmland</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Visual Resources</b>		<input type="checkbox"/>		<input type="checkbox"/>
Scenic Resource Evaluation	<input type="checkbox"/>		<input type="checkbox"/>	
Visual Impact Assessment	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
<b>Floodplain Evaluation</b>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
<b>Paleontology</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Section 4(f) Evaluation</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Wild and Scenic River Consistency</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Geology</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Topology</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Soils</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Greenhouse Emissions</b>	<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Permits Anticipated for Construction**

	<u>Required</u>	<u>Not Required</u>
401 Permit Coordination (discharge into navigable waters)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
404 Permit Coordination (discharge into waters of the US including wetlands)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> - Nationwide		
<input type="checkbox"/> - Individual		
1600 Permit (Streambed Alteration)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
City/County Coastal Permit Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State Coastal Permit Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>
NPDES Coordination	<input type="checkbox"/>	<input checked="" type="checkbox"/>
US Coast Guard (Section 10)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
State 2081 Permit (State only incidental take of threatened or endangered species)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Discussion of Technical Review

### Biology

Biological studies required would include a Natural Environment Study (NES) and Biological Assessment (BA) to determine the effects to state and federal species known to occur within the project vicinity. It is recommended to initiate early Section 7 Consultation with the United States Fish and Wildlife Service (USFWS), to obtain concurrence on avoidance, minimization and mitigation measures to reduce potential impacts to the San Joaquin kit fox. Additional purchase of credits at a mitigation bank may be required at a ratio to be determined, to offset possible impacts to the SJKF. The project is intersected in the west by the Famosa Canal, and located nearby to Paso Creek. Therefore, 401 and 404 Permits will be required.

### Cultural Resources

The State Route 99/46 Separation is listed on the California Historic Bridge Inventory as Category 5 rating (Not Eligible for the National Register) and does not require study. No previous archaeological studies have been conducted in the project area. Due to the urban environment and past construction activities it is assumed that no archaeological sites or historic properties are located within the project area. However preparation of an Archaeological Survey Report will be required. In addition preparation of an Historic Property Survey Report and consultation with the State Historic Preservation Officer will be required if properties are identified that are formally evaluated in accordance with the Section 106 PA. As currently proposed it is likely that the results of Cultural Resource studies will be No Historic Properties Affected. Therefore, preparation of an HPSR with Findings to File will complete the Section 106 and or CEQA requirements for the project.

### Hazardous Waste

Hazardous waste studies and reports required for this study area include, but are not limited to: bridge survey for leaded paint and asbestos on the existing bridge, a hazardous waste initial site assessment for hazardous waste, aerially deposited lead and other heavy metals, and an assessment of any property that would need to be taken by the project. Hazardous waste issues to the project are three closed hazardous waste remediation sites within the project area and 2 sets of underground storage tanks at operating fuel service stations.

### Air Quality Analysis

The project is located in Kern County. This is within the San Joaquin Valley Air Basin, and is organized within the KERNCOG. However, the bridge Replacement under the Safety Program is specifically exempted for safety purposes under the Transportation Conformity Rule (40 CFR 93.126). No further consideration is needed. Therefore, no further investigation concerning air quality is needed to proceed with the project.

Caltrans Standard Specifications, Section 14-9.01 "Air Pollution Control" and Section 14-9.02, pertaining to dust control and dust palliative requirements is a required part of all construction contracts and should effectively reduce and control emission impacts during construction.

### Noise Study

This project is a Type I project (New Highways and Reconstruction) which could have long term noise impacts. This project would not qualify as a Type II (Retrofit Barriers) or Type III project, per the May 2011 Traffic Noise Analysis Protocol pursuant to 23 CFR 772. Further investigation concerning noise analysis is needed to proceed with the project.

### Water Quality

This project is located within the South Valley Floor California Hydrologic Unit (558.80) and part of the North Kern hydrologic area. No water bodies are listed on the 303(d) or impaired water bodies list. The project is intersected in the west by the Famosa Canal, and located nearby to Paso Creek. Water Quality permits, such as a 401 certification, may be required. With incorporation of proper and accepted engineering practices, such as Best Management Practices (BMPs), the proposed project would not produce significant impacts to water quality during construction or operation. No further investigation concerning water quality assessment is needed to proceed with the project.

### Community Impact Assessment

The impact of the proposed project on the social, economical, planning and growth patterns within the project's local community and businesses was evaluated. It was concluded that, beyond the temporary impacts caused by construction, the proposed project would not have any adverse effects on the local community, businesses or the economy.

### Cumulative Impacts

The project type does not require a Cumulative Impact Analysis.

### Farmland

The project does not have the potential to impact Farmland.

### Visual Resources

After reviewing the State Scenic Highway database, it has been determined the project location is not on an "Officially Designated" or "Eligible" State Scenic route and no qualifying scenic resources, as defined in Section 15300 of the CEQA Guidelines, will be affected by the implementation of the proposed project. As well, after a preliminary review of the project site and the project description it has been determined that no qualifying scenic resources, as defined in the Caltrans Standard Environmental Reference manual and as defined in the enactment of Section 15300.2(d) of the California Environmental Quality Act Implementation Guidelines, will be affected by the implementation of the proposed project.

However, this project is located within the Route 99 Corridor Enhancement Master Plan, where Kern County has established guidance for enhancing the quality of the visual environment. Therefore, further visual study in the form of a Visual Impact Assessment (VIA) will be required to address aesthetic treatments as outlined in the State Route 99 Corridor Master Plan and other potential visual impacts that pertain to the design and construction of this project.

Floodplain Evaluation

The Flood Insurance Rate Map (FIRM) was used to determine if any portion of the proposed project is in an area that could be subjected to flooding. Community-Panel (Numbers 06029C 1277 E dated September 26, 2008) show that the project area is located in areas designated as "Zone A". Zone A is designated as 100-year flood plain whose elevations are not determined.

This project as mentioned does not have a significant impact on the floodplain. However, a Floodplain Study Report is needed, because the highway is located in Zone A.

Paleontology

The project is in northwestern Kern County, six miles east of Wasco in the Famoso 7.5-minute USGS Quadrangle. The location is in the central San Joaquin Valley within the Great Valley of California geomorphic province (Jenkins, 1943). The project area is characterized by flat topography with an elevation of about 415 feet MSL. Mapped by Smith (1964), the area is underlain by Pleistocene nonmarine fan deposits. The California State University, Fresno, Department of Geology Paleontological Sensitivity Mapping Project database lists the geology of this segment as low sensitivity for paleontological resources.

No further studies are recommended at this time if excavation is limited to shallow surface disturbance. Another paleontological update is recommended for any project description changes.

Section 4(f) Evaluation

No 4(f) resources are in or adjacent to the project area

Wild and Scenic River Consistency

There are no Wild or Scenic Rivers in or adjacent to the project area.

Greenhouse Emissions

A GHG summary will be included in the environmental document.

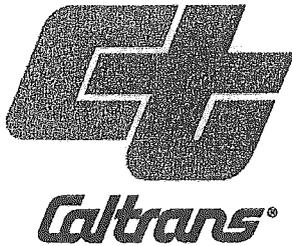
Permits:

- 401 Coordination (discharge into navigable waters) and,
- 404 Permit Coordination (discharge into waters of the US including wetlands) Non-Reportable Nation- wide Permit are required because of proposed work in Famoso canal.

List of Preparers

Biological Scoping by	Primavera Parker	10/27/2011
Cultural Resources Scoping by	Kelly Hobbs	10/26/2011
Hazardous Waste by	Clemens Goewert	09/13/2011
Air, Noise, Noise by	Christopher Bassar	10/20/2011
Community Impact Assessment by	Jamal Assi	10/24/2011
Visual Resources by	Sherry D. Alexander	10/26/2011
Floodplain Evaluation by	Jagannath Sarkar	10/26/2011
Paleontology Scoping by	Richard Stewart	10/26/2011
Preliminary Environmental Analysis Report by	Jamal Assi	10/27/2011

October 28, 2011



Dist-County-Route: 06-Ker-46/99  
 Post Mile Limits: 46( 57.5/57.79), 99(43.9/44.6)  
 Project Type: Bridge Replacement  
 Project ID (or EA): 06-1200-0105, EA 06-OK460K  
 Program Identification: SHOPP (20.10.201.110)  
 Phase:  PID  
 PA/ED  
 PS&E

Regional Water Quality Control Board(s): Central Valley Region (5F)

Is the Project required to consider Treatment BMPs? Yes  No   
 If yes, can Treatment BMPs be incorporated into the project? Yes  No

If No, a Technical Data Report must be submitted to the RWQCB  
 at least 30 days prior to the projects RTL date. List RTL Date: \_\_\_\_\_

Total Disturbed Soil Area: 6.5 acre Risk Level: 1

Estimated: Construction Start Date: Mar 1, 2017 Construction Completion Date: October 15, 2017

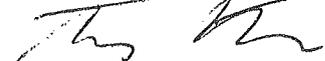
Notification of Construction (NOC) Date to be submitted: \_\_\_\_\_

Erosivity Waiver Yes  Date: \_\_\_\_\_ No   
 Notification of ADL reuse (if Yes, provide date) Yes  Date: \_\_\_\_\_ No   
 Separate Dewatering Permit (if yes, permit number) Yes  Permit # \_\_\_\_\_ No

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

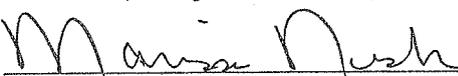
  
 Tarek Chowdhury, Registered Project Engineer 10-21-11  
Date

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

  
 Steven Milton, Project Manager 10/24/11  
Date

  
 Bill Moses, Designated Maintenance Representative 10/24/11  
Date

  
 Brad Cole, Designated Landscape Architect Representative 10/24/11  
Date

  
 Marissa Nishikawa, District/Regional Design SW Coordinator 10-25-2011  
Date

[Stamp Required for PS&E only]

Department of Transportation  
District 6

**TRANSPORTATION MANAGEMENT PLAN DATA SHEET**

06-Ker 46-PM 57.5/57.79

*SR 46/99 Separation Bridge Replacement*

**PROJECT NUMBER: 0612000105-K**

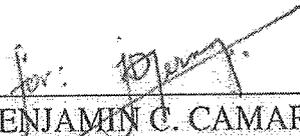
October 24, 2011

**Prepared For:** MICHAEL LIM, Design Senior  
Office of Design IV, Branch T

**Prepared By:** FLORENCIA ALLENGER

**Concurred By:**

**Approved By:**

  
\_\_\_\_\_  
BENJAMIN C. CAMARENA  
District 6 – District Traffic Manager

  
\_\_\_\_\_  
JOSE FERNANDEZ JR., P.E.  
District 6 – TMP Manager

This Transportation Management Plan (TMP) data sheet is prepared in response to a request from Office of Design IV, Branch T dated October 13, 2011.

Attached is the TMP Data Sheet for the above referenced project. Per Deputy Directive 60, TMP must be considered at the early stage of all projects and activities performed on the State Highway System. The following items shall be included in the project initiation document (PID):

- 1) The TMP Data Sheet shall be attached to the project initiation document (PID).
- 2) Any costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet shall be included in the PID estimate.
- 3) The following statements shall be included in the body of the PID:

“Preliminary traffic impacts and mitigation for this project have been outlined in the attached Transportation Management Plan Data Sheet (TMP Data Sheet). Costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet have been included in this documents estimate.”

ATTACHMENT H

*TMP Data Sheet*  
*Design Senior: Michael Lim*  
*Date: October 24, 2011*

*Project No. 0612000105-K*

*Cty/Rte/PM: Ker 46-PM 57.5/57.79*  
*Office of Design IV, Branch T*  
*Page 2 of 2*

“A TMP for this project is required and should be requested when the design is complete enough to determine specific traffic impacts, but yet early enough to make design changes/additions required for traffic mitigation.”

“Lane closure charts and detailed TMP will be provided during PS&E stage.”

“Nighttime work outside peak hours is anticipated for this project.”

If you have any questions, please contact me at 559-444-2492.

Attachments:

- TMP Data Sheet

# DISTRICT 6 - TRANSPORTATION MANAGEMENT PLAN

## DATA SHEET

(TMP Elements and Costs)

<i>CO/RTE/PM</i>	KER	46	PM	57.5/57.79	<i>PROJ. NO.</i>	0612000105
<i>PROJECT NAME</i>	SR 46/99 Separation Bridge Replacement					
<i>PROJECT LIMIT</i>	In Kern county from 1.2 miles north of the Friant-Kern Canal 50-146 to the end of the Kern County line					
<i>PROJECT DESCRIPTION</i>	Bridge Replacement					

A) *The project includes the following:*  
(Check all that applicable type of facility closures.)

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Highway or Freeway Lanes     | <input checked="" type="checkbox"/> Freeway Off-ramps |
| <input checked="" type="checkbox"/> Highway or Freeway Shoulders | <input type="checkbox"/> Freeway On-ramps             |
| <input type="checkbox"/> Freeway Connectors                      | <input type="checkbox"/> Local Streets                |

B) *Are there any construction strategies that can restore existing number of lanes?*  
 No       Yes (Check all applicable strategies.)

- Temporary Roadway Widening Structure Involvement?       Yes       No (If yes, notify Project Manager)
- Lane Restriping (Temporary narrow lane widths)
- Roadway Realignment (Detour around work area)
- Median and/or Right Shoulder Utilization
- Use of HOV lane as Temporary Mixed Flow Lane
- Staging Alternatives (Explain Below)

C) *Calculated Delay*  
(To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A or on all projects along Interstate 5 and Route 99)

- |  |  |                 |
|--|--|-----------------|
| 1. Estimated Maximum Individual delay                      |  | _____ minutes   |
| 2. Existing or Acceptable Individual Vehicle Delay         |  | _____ minutes   |
| 3. Estimated Individual Vehicle Delay Requiring Mitigation |  | _____ minutes   |
| 4. Estimate Delay Cost (Most Applicable)                   |  | _____           |
| <input type="checkbox"/> Extended Weekend Closure          |  |                 |
| <input type="checkbox"/> Weekly (7 days)                   |  |                 |
| 5. Estimated Duration of Project Related Delays            |  | _____ # of Days |
| 6. Cost of Construction Related delays                     |  | _____           |

TMP Estimates based on X-Number of Working Days  
requiring Lane/Shoulder/Ramp/Freeway/Highway Closures:      45 Working Days

**TMP DATASHEET**

PAGE 2 OF 2

Date: October 24, 2011

Design Senior: Michael Lim

Branch: T

Office of Design:

Cnty/Rte: KER

46

PM: 57.5/57.79

Project No: 0612000105

**D) Preliminary TMP Elements and cost:** (Identify all elements and estimated costs that will be used to mitigate congestion resulting from the proposed construction activities.)

**1. Public Information - Bees # 066063**

<input type="checkbox"/>	Brochures & Mailers	
<input checked="" type="checkbox"/>	Press Release/Media Alerts	\$3,000
<input type="checkbox"/>	Paid Advertisements	
<input type="checkbox"/>	Public Information Center/Kiosks	
<input type="checkbox"/>	Telephone Hotline	
<input checked="" type="checkbox"/>	Planned Lane Closure Website	\$0
<input type="checkbox"/>	Project Website	
<input type="checkbox"/>	Pubic Meetings	
<input checked="" type="checkbox"/>	Freight Travel Information	\$0

**2. Motorist Information Strategies**

<input checked="" type="checkbox"/>	Traffic Radio Announcements	\$0
<input type="checkbox"/>	Fixed CMS	
<input checked="" type="checkbox"/>	Portable CMS BEES 128650	\$17,000
<input type="checkbox"/>	Temporary Motorist Information Signs	
<input type="checkbox"/>	Ground Mounted Signs (Detour)	
<input type="checkbox"/>	Dynamic Speed Message Sign	
<input type="checkbox"/>	Highway Advisory Radio	
<input checked="" type="checkbox"/>	CT Hwy Infom. Network (CHIN)	\$0

**3. Incident Management**

<input checked="" type="checkbox"/>	Transportation Management Center	\$0
<input type="checkbox"/>	Traffic Management Team (TMT)	
<input type="checkbox"/>	Intelligent Transportation Systems	
<input type="checkbox"/>	Traff. Surveillance (Loop & CCTV)	
<input type="checkbox"/>	Helicopter Surveillance	
<input type="checkbox"/>	Tow/Freeway	
<input type="checkbox"/>	COZEEP BEES 066062	

**4. Construction Strategies (In Addition to Elements Identified on Item B)**

<input checked="" type="checkbox"/>	Lane Requirement Chart	\$0
<input type="checkbox"/>	Construction Staging	
<input type="checkbox"/>	Traffic Handling Plans	
<input type="checkbox"/>	Full Facility Closures	
<input type="checkbox"/>	Local Road Closures	
<input type="checkbox"/>	Lane Modifications	
<input type="checkbox"/>	One-Way Reversing Operation	

**4. Construction Strategies (In Addition to Elements Identified on Item B)**

<input type="checkbox"/>	Two-way Traffic On One Side	
<input checked="" type="checkbox"/>	Reversible Lanes	\$0
<input checked="" type="checkbox"/>	Ramp/Connector Closure	\$0
<input checked="" type="checkbox"/>	Night Work	\$0
<input type="checkbox"/>	Extended Weekend Work	
<input type="checkbox"/>	Ped/Bicycle Access Improvements	
<input type="checkbox"/>	Maintain Business Access	
<input type="checkbox"/>	A + B Bidding	
<input type="checkbox"/>	Innovative Const. Techniques	
<input checked="" type="checkbox"/>	Coordination w/ Adj. Const. Site	\$0
<input type="checkbox"/>	Speed Limit Reduction	
<input type="checkbox"/>	Traffic Screens	

**5. Demand Management**

<input type="checkbox"/>	HOV Lane/Ramps	
<input type="checkbox"/>	Variable Work Hours	
<input type="checkbox"/>	Telecommuting	
<input type="checkbox"/>	Truck/Heavy Vehicle Restrictions	
<input type="checkbox"/>	Rideshare Promotions	
<input type="checkbox"/>	Ramp Metering	
<input type="checkbox"/>	Transit Incentives	
<input type="checkbox"/>	Shuttle Services	
<input type="checkbox"/>	Ridesharing/Carpooling Incentives	
<input type="checkbox"/>	Park & Ride Promotion	

**6. Alternative Route Strategies**

<input type="checkbox"/>	Off-site Detours/Use of Alt. Rtes	
<input type="checkbox"/>	Signal Timing/Coord. Improvements	
<input type="checkbox"/>	Temporary Traffic Signals	
<input type="checkbox"/>	Signal Retiming	
<input type="checkbox"/>	Street/Intersection Improvements	
<input type="checkbox"/>	Turn Restrictions	
<input type="checkbox"/>	Parking Restrictions	

**7. Other Considerations**

<input type="checkbox"/>	Application of New Technologies	
<input type="checkbox"/>	Other	

**TOTAL ESTIMATED COST OF TMP | \$20,000**

**PROJECT NOTES:**

1. Current dollar values used. Inflation was not factored into the estimate.
2. There are no noise restrictions / moratoriums for night work.
3. Traffic Control/Maintain Traffic costs was not provided. Please consult with the OE or construction office for this estimate.
4. Portable CMS specified for this project by this estimate is designed for congestion relief as outlined by DD-60. Portable CMS required for other purposes should be included under other specifications.
5. COZEEP specified for this project by this estimate is designated for congestion relief as outlined by DD-60. COZEEP required for other purposes should be included under other specifications.
6. The TMP is a living document that is subject to change if material changes take place in the final version of the project phase or if changes are required during construction to respond to excessive levels of congestion.

PREPARED BY: Florescia Allenger	OFFICE OF TRAFFIC MANAGEMENT	DATE: October 24, 2011
------------------------------------	------------------------------	---------------------------

**DEPARTMENT OF TRANSPORTATION**  
 1352 W. Olive Avenue / Post Office Box 12616  
 Fresno, California 93721-2616



(559) 488-4175  
 FAX: (559) 488-4088  
 TDD: (559) 488-4066

**MEMORANDUM**

October 21, 2011

Expenditure Authorization: 0K460K  
 Report Number: 2235  
 File: Ker-46-57.5/57.79

TO: MICHAEL K LIM, Design Senior, Design IV  
 FROM: Mohammed Al-Ahmed, P.E  
 Transportation Planning

RE: Design Designation at Ker-46-57.5/57.79

In response to your October 18, 2011 request, the following design designations are submitted for the project on State Route 46 to replace the existing steel girder bridge with new CIP/PS bridge includes 8 foot shoulder.

	Design Periods	
	10 Years <u>2012-2022</u>	20 Years <u>2012-2032</u>
2012 ADT	8,200	8,200
2022 ADT	11,400	
2032 ADT		15,800
2022 Design Hour Volume	1,150	
2032 Design Hour Volume		1,600
% of Peak Directional Volume	60%	60%
% of Truck Design Hourly Volume	7%	7%
Traffic Index (TI)	12	13.5
Equivalent Single Axle Load (ESAL)	11,340,000	27,750,000

Trucks comprise 40% of the ADT.

The breakdown by axle is:

Axles	
2	29.0%
3	3.0%
4	3.0%
5+	65.0%

Number of Lanes in One Direction	20 Year Traffic Index Lane Distribution				
	Lane 1	Lane 2	Lane 3	Lane 4	Shoulder
One	13.5	--	--	--	8.5
Two	13.5	13.5	--	--	
Three	11	13	13	--	
Four	11	11	13	13	

- Notes:
- Lane 1 is next to the centerline or median.
  - For more than four lanes in one direction, use an 80% factor for the outer two lanes and a 20% factor for all others.
  - Shoulders utilize a 2% factor, but no less than a 5.0 TI
  - RAMP TIs:  
 8.0 - Light Traffic  
 10.0 - Medium Traffic  
 12.0 - Heavy Traffic

\*Source: Highway Design Manual §603 "Traffic Data for Structural Section Design"

Mohammed Al-Ahmed, P.E  
 Transportation Engineer

MA/dmb  
 cc file

# Memorandum

*Flex your power!  
Be energy efficient!*

To: **MICHAEL LIM**  
Senior Transportation Engineer  
Design IV, Branch T  
Project Development Division  
Central Region

Date: October 20, 2011

File: 06-Ker-46-PM 57.5/57.8  
06-Ker-99-PM 43.9/44.6  
Route 46/99 Separation  
(Br. No. 50-0184E) -  
Bridge Replacement  
**06-0K460K**  
Project ID 0612000105

From: **MICHAEL DOWNS**   
Technical Liaison Engineer  
Office of Bridge Design Central  
Structure Design  
Division on Engineering Services

Subject: **Structure PID Estimate Transmittal**

The Division of Engineering Services has completed the conceptual study and PID estimate to replace the Route 46/99 Separation (Br. No. 50-0184E) on the above referenced project.

The forecast structure costs, including time related overhead, mobilization, contingencies, and bridge removal is as follows:

Structure	Br. No.	Structure Cost	Preliminary Working Day Estimate
Rte 46/99 Separation (Replace)	exist 50-0184E new 50-TBD	\$4,200,000	200 days

The above structure cost and working day estimate should only be considered to be at a preliminary level of accuracy. During the PA&ED phase, the Central Region should request a formal Advance Planning Study to better define structure scope and associated cost.

The attached conceptual study and PID estimate are based on the following risks/assumptions:

1. Traffic will pass through construction site. Falsework openings will be required. A minimum vertical clearance of 15'-0" is required under falsework.
2. Route 99 detours/closures will be necessary for falsework erection/removal, superstructure jacking and existing bridge removal operations. Night work is expected.
3. Southbound off-ramp to be closed during bent 2 foundation construction operations.

MICHAEL LIM

October 20, 2011

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4. New Route 46 profile grade cannot be raised to allow for a more economical structure type and/or construction method.
5. Bridge superstructure to be cast high and lowered to grade.
6. Profile to be set such that future widening accommodates a similar structure type.
7. Temporary shoring will be required at each existing abutment.
8. Preliminary Geotechnical Recommendations have not been prepared for this study. Cast-in-drilled-hole piles are assumed at each support location. Liquefaction potential is assumed low.

If you have any questions or need further information regarding this study, please contact me at (916) 227-9365.

c: Peggy Lim – Project Liaison Engineer  
John Stayton – Office of Bridge Design Central/Structure OE  
Kevin Wall – Structure Maintenance & Investigations  
Pete Whitfield – Structure Maintenance & Investigations  
John Babcock - Structure Construction  
Roy Bibbens – Geotechnical Services  
Steven Milton – Project Manager, District 6  
Tarek Chowdhury – CR Project Development

# Memorandum

*Flex your power!  
Be energy efficient!*

To: Michael K. Lim, Chief  
Design Branch T  
Office of Design IV  
Central Region Project Development

Date: October 27, 2011

File: 06-Ker-46/99-PM 57.5/57.8  
EA: 06-0K460K  
Project No: 0612000105

Attention: Tarek Chowdhury

From: Ted Mooradian, Chief  
District Materials Engineer  
Materials Engineering Branch - Fresno  
Central Region Construction Deflection Testing

Subject: Preliminary Structural Section Recommendations

This is in response to your request dated October 11, 2011 for structural section recommendations for the above-referenced project on State Route (SR) 46 in Kern County from PM 57.5 to PM 57.8 for the SR 46/99 separation Bridge replacement. The project proposes to replace the existing steel girder bridge with new 42'-10" width CIP/PS bridge including 8 foot shoulder, raise the vertical profile to have a vertical clearance of 16'-6", match the existing highway, improving the guard rail, safety feature and existing drainage systems within project limit. The following structural sections are recommended. These recommendations cover all three alternatives as proposed for this project. Three alternative choices shows in the recommendations are for the shoulder only.

The abbreviations used herein are described as follows;

HMA	Hot Mix Asphalt (Type A)
AB	Aggregate Base (Class 2)
AS	Aggregate Subbase (Class 1)
ES	Edge of Shoulder
ETW	Edge of Traveled Way
TI	Traffic Index
/	Overlaying

The structural sections are designed in accordance with Chapters 600 to 660 of the Highway Design Manual (HDM) dated July 1, 2008.

In addition to the TIs indicated herein, the design parameters are:

Class 2 AB design R-value	=	78
Class 2 AS design R-value	=	60
Assumed Basement soil design R-value	=	30

**ROUTE 46**

**TRAVELED WAY**

	TI <sub>20</sub> = 13.5	TI <sub>40</sub> = 15.5
HMA/AB	0.75'/1.55'	0.85'/1.90'
HMA/AB/AS	0.75'/0.55'/1.10'	0.85'/0.75'/1.30'

**Shoulder Adjoining New Lane**

In accordance with Index 613.5 (2) of the HDM, it is recommended that the TI on which the HMA shoulder section is based be the same as that used for the adjacent traffic lane, with the exception that the thickness of HMA pavement in the shoulder may vary to account for the difference in cross slope between the shoulder and the traffic lane.

At a minimum, the required shoulder section would be based on 2% of the projected ESALs in the adjacent lane. Even in this scenario, the first 2 feet of the shoulder width, measured from the ETW, would be the same structural section as the traveled way.

Under this guidance, the following alternatives are recommended for the median shoulder.

**ALTERNATIVE 1 – SAME AS ADJACENT NEW LANE**

In this alternative, the shoulder section is the same as the adjacent lane and the kinds of materials and the thickness of each material are identical to that of the adjacent traveled way.

This design would necessitate a cross slope break at the ETW for every plane of every material, from the top of the HMA to the grading plane, in order to achieve the required 5% cross slope in the outside shoulder.

	TI <sub>20</sub> = 13.5	TI <sub>40</sub> = 15.5
HMA/AB	0.75'/1.55'	0.85'/1.90'
HMA/AB/AS	0.75'/0.55'/1.10'	0.85'/0.75'/1.30'

ALTERNATIVE 2 – SAME AS ADJACENT NEW LANE BUT MODIFIED HMA THICKNESS

In this alternative, the TI, kinds of materials, and thicknesses of materials in the shoulder are the same as the adjacent lane, except the HMA, which tapers from the traveled way thickness, at the ETW, to a lesser thickness, at the ES, in order to achieve the required 5% shoulder cross slope.

This design enables each of the underlying planes, from the top of the AB to the grading plane, to be on a single, unbroken cross slope of 2%.

	TI <sub>20</sub> = 13.5
HMA/AB	taper from 0.75' to 0.50'/1.55'
HMA/AB/AS	taper from 0.75' to 0.50'/0.55'/1.10'
	TI <sub>40</sub> = 15.5
HMA/AB	taper from 0.85' to 0.60'/1.90'
HMA/AB/AS	taper from 0.85' to 0.60'/0.75'/1.30'

ALTERNATIVE 3 – DESIGNED WITH TI BASED ON 2% OF ADJACENT LANE ESALs

In this alternative, the TI of the shoulder is determined from 2% of the projected ESALs in the adjacent lane.

In accordance with Index 613.5(2)(a) of HDM dated July 1, 2008, the first 2-foot width of shoulder measured from the ETW, must be the same section as the traveled way.

This design, utilizing a tapered thickness for the HMA to obtain a 5% cross slope, enables many of the underlying planes, except the grading plane, to be on a single, unbroken cross slope of 2%.

$$TI_{20} = 8.5$$

First 2.0 ft:	Same as Alternative 1
Remaining 6.0 ft	
HMA/AB	taper from 0.75' to 0.55'/0.75'
HMA/AB	0.40'/1.05'
HMA/AB	0.75'/0.35'

$$TI_{40} = 9.5$$

First 2.0 ft:	Same as Alternative 1
Remaining 6.0 ft	
HMA/AB	taper from 0.85' to 0.65'/0.35'
HMA/AB	0.50'/1.10'
HMA/AB	0.85'/0.35'

### SAFETY EDGE

Where no dike or curb is planned, it is recommended to use Safety Edge at the outside pavement edge, including medians. This asphalt pavement technique is to protect motorists from an over-correction when re-entering the travel lane upon a departure across the edge of the pavement, with unpaved shoulders. Safety Edge must be placed monolithic with the adjacent lane or shoulder and shaped and compacted with a device attached to the paver.

Refer to and use nSSP for Safety Edge, XE "39-050\_E\_A06-05-09\_w\_SafetyEdge", see attachment.

[http://safety.fhwa.dot.gov/roadway\\_dept/pavement/safedge/](http://safety.fhwa.dot.gov/roadway_dept/pavement/safedge/)

### SHOULDER BACKING

PROJECT RISK MANAGEMENT PLAN

Dist - E.A      06-0K460      Project Name Kern 46/99 Bridge Separation Replacement  
 Co-Rte-PM Ker-99-43.9/46.6  
 Date 10/26/2011  
 Project Mngr Steven Milton      Telephone Number 559-243-3456

PROJECT RISK MANAGEMENT PLAN																	
Priority	Identification						Qualitative Analysis				OPTIONAL Quantitative Analysis			Risk Response Plan		Monitoring and Control	
	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)
1	Active	1	10/26/2011 PID	Env./RW	Project can not be RTL'ed in the 4 year 2012 SHOPP cycle.	Environmental or RAW determines that they need additional time for their PID estimate.	Cost Schedule	Moderate	Moderate		50%	180	18	Acceptance	We will need to request a time extension in the 2014 SHOPP cycle	EM/RW	10/26/2011
2	Active	2	10/26/2011 PID	RAW	Additional Utilities are discovered and will need to be relocated	We will do a more extensive search at PA&ED.	Schedule	Moderate	Moderate		50%	120	36	Acceptance	We will do a more extensive search at PA&ED.	RAW	10/26/2011
3	Active	3	10/26/2011 PID	Design	The PSR/PDS was prepared in a very short timeframe. Additional information may lead to higher cost and/or longer schedule.	Preparing the Draft PR.	Cost Schedule	Moderate	Moderate		50%	60	30	Acceptance	May need to do a PCR to request more fund are extend the schedule.	DM	10/26/2011
4	Active	4	10/26/2011 PID	Env.	If project description changes to require construction outside of the existing pavement and median, San Joaquin kit fox habitat could be affected.	The project description changes and work is required outside the existing pavement and median.	Schedule	Low	High		30%	120	36	Acceptance	Preparation of a BA and formal consultation with US Fish and Wildlife Service would be required to obtain a BO Schedule to reflect change.	EM	10/26/2011
5	Active	5	10/26/2011 PID	Env.	A cultural site is discovered that requires evaluation within the project limits.	During studies, a cultural site is discovered.	Schedule	Low	High		30%	120	36	Acceptance	Evaluate the site and coordinate with resource agencies. Schedule to reflect change.	EM	10/26/2011
6	Active	6	10/26/2011 PID	PM	Additional RAW may be needed.	Will determine prior the Maps to RAW.	Cost	Moderate	Moderate		70%	60	18	Acceptance	We revise the RAW data sheet at PA&ED.	DM	10/26/2011