03 - ED - 50 – PM 21.95-24.25
EA: 03-4E620K – Project ID: 0314000039
20.XX.201.010
November 2015

Project Study Report

Request for Programming and Amendment into the 2016 SHOPP

On US Highway 50

Between Still Meadows Road

And Upper Carson Road

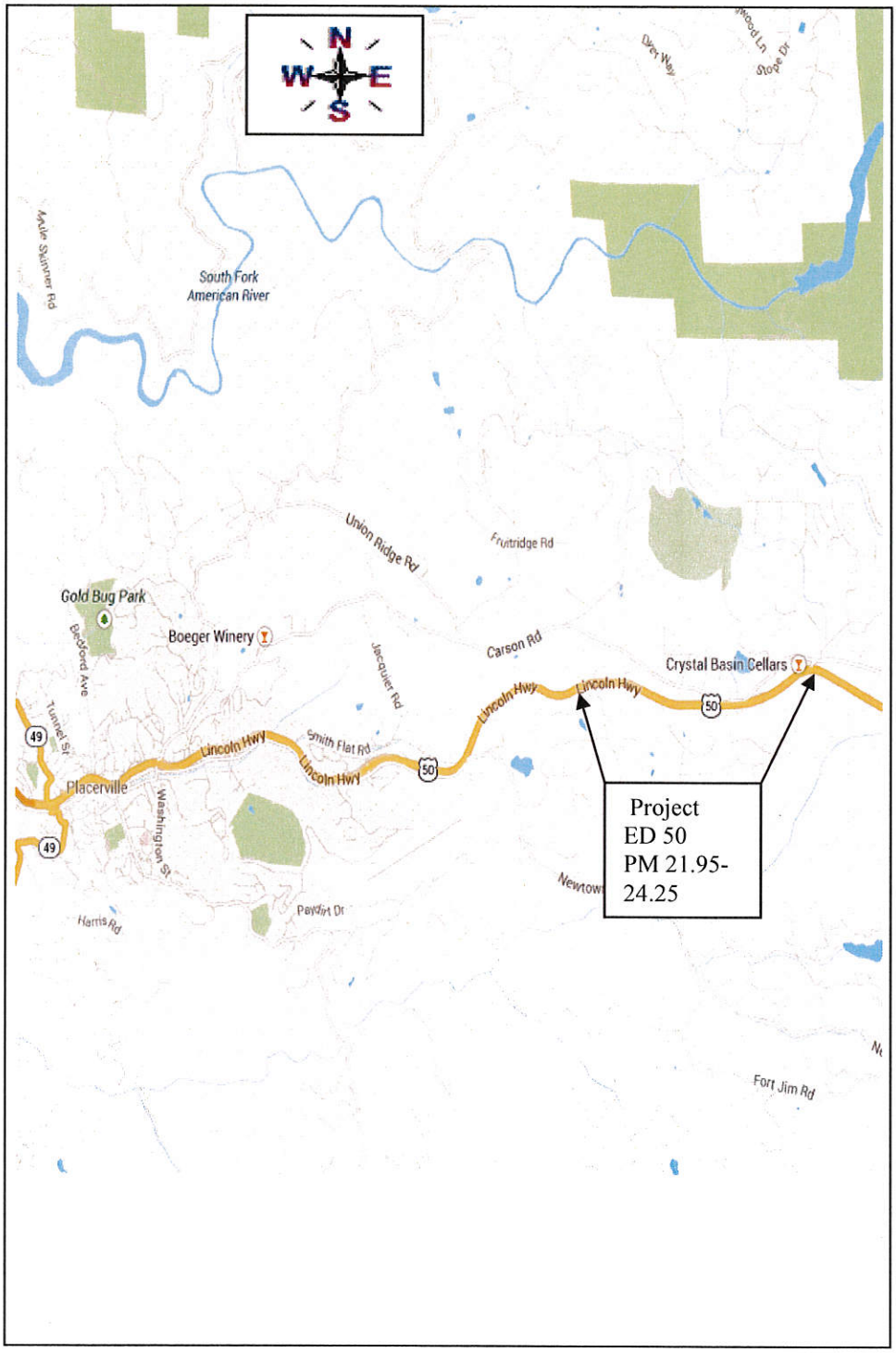
APPROVAL RECOMMENDED:

CLARK A. PERI, *PROJECT MANAGER*

APPROVED:

AMARJEET S. BENIPAL, *DISTRICT DIRECTOR* *DATE* 12-1-15

Vicinity Map



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

11/24/2015

REGISTERED CIVIL ENGINEER *DATE*

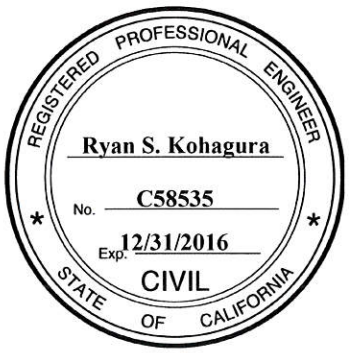


Table of Contents

1. INTRODUCTION

Project Description:
The proposed project is located on US 50 in El Dorado County between Post Mile (PM) 21.95 to 24.25. This Project Study Report (PSR) identifies the referenced location on US Highway 50 (US 50) as being in need of modifications to improve the safety of the traveling public. The project will be proposed to be programmed as an amendment to the 2016 SHOPP under the 20.XX.201.010, Traffic Safety Program. The project is scheduled to be delivered in the 2018/2019 fiscal year. The project proposes to install a concrete median barrier, widen outside shoulders, and install several acceleration/deceleration lanes to decrease potential vehicle conflicts.

Project Limits	*03-ED-50- PM 21.95/24.25*
Number of Alternatives (excluding "no build")	*4*
Alternative Recommended for Programming	1A
Future Capital Outlay Support Estimate	$13,870,000
Future Capital Outlay Construction Estimate	$33,850,000
Future Capital Outlay Right-of-Way Estimate	$ 2,550,000
Funding Source	*SHOPP 20.XX.201.010* *HSIP* *Local*
Funding Year	2018/2019 FY
Type of Facility	*4-lane Expressway*
Number of Structures	1 Bridge and Soil Nail Retaining Walls
SHOPP Project Output	108 Collision Reduced
Anticipated Environmental Determination or Document	*Initial Study (IS)/Mitigated Negative Declaration (MND)/ Environmental Assessment*
Legal Description	*In El Dorado County on Route 50, between Still Meadows Road and Upper Carson Road*
Project Development Category	*3*

2. BACKGROUND

Currently, US 50 within the project limits is a 4-lane expressway with a striped median that separates opposing traffic lanes. The surrounding portion of US 50 in this area is a multi-lane facility. Median barrier exists at each end of the limits of this project. US 50 also contains 12-foot wide lanes with shoulders that vary from 1 foot to 8 feet. The profile of Route 50 from Smith Flat follows a steep topography with grades that vary from 3.9% to 6.0%. The horizontal radii in this location vary from 1,000 feet to 4,140 feet. There are 13 at grade intersections and 5 driveways from Smith Flat to Cedar Grove.

A Project Study Report- Project Development Support Project Initiation Document (PSR-PDS) was approved for this project in December 2009. The lead agency that sponsored the PSR-PDS was the El Dorado County Transportation Commission (EDCTC). The 2009 PSR-PDS indicated that the Project Approval and Environmental Document Phase (PA&ED) was proposed to be funded by the 2010 State Transportation Improvement Program (STIP). The project is also a part of the US 50 Camino Corridor Safety and Operational Improvements Project, which is in the El Dorado County Regional Transportation Plan 2005-2025 and the Metropolitan Transportation Improvement Program (MTIP).

3. PURPOSE AND NEED

Purpose:
The purpose of this project is to improve the safety on US 50 in the Camino Corridor by modifying the facility. This will be done by installing a concrete median barrier that will restrict left-turn movements within the project limits. Widening the outside shoulders to standard width and installing several acceleration/deceleration lanes will help to reduce collisions within the project limits. A secondary purpose is to maintain local and regional access to and from the north and south sides of US 50 while providing safe east-west access on and off US 50.

Need:
Collision rates along this segment of US 50 in El Dorado County are higher than the state-wide average. Uncontrolled left turn movements at intersections and driveways as well as cross-centerline collisions contribute to an increase in potential conflicts. There is a need to reduce the collision rate along the Camino Corridor on US 50.

4. DEFICIENCIES

A traffic study report done in August 2009 by DKS Associates indicated that significant operations and safety issues in the Camino Corridor on US 50 occur at the un-signalized intersections within the project limits. Turning movements, primarily left turns, result in a delay for drivers and potential conflict locations. The proposed

improvement alternatives focus on eliminating or reducing these potential conflicts to improve safety and traffic flow, while also improving connectivity between the north side and south side of US 50 through the Camino community.

4A. Traffic and Accident Data

Location	Accidents	Actual Rates (collision/million-vehicle-miles)			Average Rate (collision/million-vehicle-miles)		
		Fatal	Fatal + Injury	Total	Fatal	Fatal + Injury	Total
ED-50 21.95/24.25	49	0.018	0.46	0.90	0.008	0.31	0.75

Traffic Accident Surveillance and Analysis System (TASAS) data was collected from January 1, 2009 through December 31, 2011 and generated to determine the collision history. This report identified a total of 49 collisions. The collision breakdown is as follows: 1 fatal, 24 injuries, and 31 involving multiple vehicles. The collision rate is above the statewide average.

The collision type's breakdown is as follows: 12 hit object, 11 broadside, 10 rear end, 7 other, 6 sideswipe, 1 head-on, 1 overturn, and 1 auto-pedestrian. The primary collision factor cited is "Failure to yield" (32.7%) followed by "Speeding" (18.4%).

The existing daily peak hour volume on US 50 for the segment west of Upper Carson Road is 2,650 vehicles per hour with a daily volume of 25,000 vehicles per day.

5. CORRIDOR AND SYSTEM COORDINATION

Long term planning for US 50 is addressed in two documents, the US 50 Corridor System Management Plan (CSMP), which addresses segments (1-12) from West Sacramento to the Cedar Grove exit and the Transportation Corridor Concept Report (TCCR), which addresses the remainder of the route from the Cedar Grove exit to the Nevada State Line. This project is contained within segment 12 (PM 18.11 to 25.95) of these reports and is defined as being from Bedford Avenue to the Cedar Grove exit. The CSMP defines the existing highway segment as a 4-lane expressway. The concept (20-year) and ultimate (beyond 20 year) facility is listed as a 4-lane expressway with auxiliary lanes. The project is consistent with the CSMP on Route 50 as it proposes to widen the roadway to accommodate right turn acceleration/deceleration lanes in addition to widening to 10 foot paved shoulders.

The El Dorado Trail extends from the western El Dorado County line near Latrobe Road to Camino according to the El Dorado County Bicycle Transportation Plan (January 2005). An alignment for the remaining connection from the Camino area to South Lake Tahoe has yet to be determined.

6. ALTERNATIVES

6A. Viable Alternatives

Alternative 1A – This alternative proposes to widen US 50 for the installation of Type 60 concrete median barrier from Still Meadows Road (PM 22.0) to the existing concrete median barrier located at Upper Carson Road (PM 24.01). This alternative would also restripe and conform the mainline pavement to approximately 1,500 lf east of Upper Carson Road. A partial median access opening (westbound, left turn only) at Still Meadows Road would be maintained. Vista Tierra Drive would be extended in a northeasterly direction through a proposed undercrossing (PM 23.48) at US 50 with a connection to Carson Road on the north side of US 50. Carson Road will be realigned and improved to accommodate traffic at this location. A portion of the El Dorado Irrigation District (EID) main ditch would need to be relocated near the proposed undercrossing. The above features are common to all alternatives as well as the features listed below.

Features Common to all Alternatives:

- The proposed median barrier will be designed for deer and animal crossing.
- Maintain access to Still Meadow Road from US 50 through right-in/right-out and left turn pocket from west bound US 50.
- US 50 would maintain acceleration and deceleration lanes at Still Meadows Road, Paul Bunyon Road/Five Mile Road, Lower Carson Road, and Upper Carson Road. The outside shoulder would be widened to 10-ft on US 50 where there are acceleration/decelerations lanes and it also would be widened to 10 ft. in all other locations within the project.
- Re-stripe 12ft wide travel lanes and turn lanes.
- US 50 inside shoulders would be widened to 5 ft from the proposed Type 60 concrete median barrier.
- US 50 would be widened from its existing width an additional 0 to 18 feet to accommodate shoulders and median. The existing pavement would be overlayed with 2" HMA (Type A) and the widened pavement section would be 6" HMA-Type A with 12" Class-2 aggregate base.
- The widened section of US 50 would have retaining walls varying in heights from 4 to 12 feet with aesthetic treatment and 2:1 side slopes for the end conditions.
- All driveways and intersections would remain open, but left turn movements may be prohibited at some locations due to the proposed median barrier. Affected driveways and intersections would be slightly regraded to conform to the widened US 50 pavement within State Right of way.
- The proposed Drainage facilities on this project occur between approximately PM 22.00 and 23.46 on US 50. Scuppers are to be installed in the median barrier from Station 96+00 to 98+00 (PM 22.18 to 22.22) and from Station 107+50 to 113+50 (PM 22.40 to 22.51). A total of approximately 16 Drainage Inlets (DIs) will be installed from Station 86+50 to 145+50 (PM 22.00 to 23.13). Five (5) new culverts are proposed to be installed between

Station 98+00 to 134+00 (PM 22.22 to 22.90). Six (6) existing cross-culverts will be extended from Station 96+00 to 124+50 (PM 22.18 to 22.73) and one slotted Corrugated Steel Pipe (CSP) drain along the east-bound side of the median barrier is proposed to be installed from Station 86+50 to 90+00 (PM 22.00 to 22.07). An existing drainage system between PM 23.46 and 24.10 is adequate and no additional drainage facility is proposed in this section of the Highway.

- The project also proposes to place two (2) DIs on each side of the proposed Vista Tierra Drive Undercrossing. A proposed 24" CSP will connect both DIs and outfall will be via a West bound (WB) side ditch at Station 165+00 (PM 23.46).

Features of Alternative 1A that may differ from the other Alternatives:

- Close access to US 50 from Camino Heights Drive and Pondorado Road
- Install Roundabout at the Vista Tierra Drive/Camino Hills Drive intersection
- Construct on and off ramps from US 50 to the Vista Tierra Drive/Camino Hills Drive Roundabout Intersection
- Close off Sierra Blanca Drive by installing a cul-de-sac
- Modify park and ride lot

Alternative 1B – This alternative would incorporate all the proposed features common to all alternatives as listed for Alternative 1A. Below are the features that may differ from the other alternatives:

- Close access to US 50 from Camino Heights Drive and Pondorado Road
- Install four (4) legged intersection at the Vista Tierra Drive/Camino Hills Drive intersection
- Construct on and off ramps from US 50 to the Vista Tierra Drive/Camino Hills Drive four legged Intersection
- Close off Sierra Blanca Drive by installing a cul-de-sac
- Modify park and ride lot

Alternative 1C – This alternative would incorporate all the proposed features common to all alternatives as listed above. Below are the features that may differ from the other alternatives:

- Maintain access to US 50 from Camino Heights Drive and Pondorado Road
- Maintain a 3-way Intersection at the Vista Tierra Drive/Camino Hills Drive intersection
- Install a 1,400 ft eastbound auxiliary lane on US 50 that would exit at Pondorado Road, which connects to Vista Tierra Drive at an all-way stop controlled three-way intersection
- Modify the Pondorado Road exit into a right-in and right-out access point to US 50

Alternative 1D – This alternative would incorporate all the proposed features common to all alternatives as listed above. Below are the features that may differ from the other alternatives:

- Maintain access to US 50 from Camino Heights Drive
- Close access to US 50 from Pondorado Road
- Maintain a 3-way Intersection at the Vista Tierra Drive/Camino Hills Drive intersection

Note: All four (4) alternatives have the option of ending the proposed concrete median barrier approximately 70 feet west of Upper Carson Road. The intersection of Vista Tierra Drive and Carson Road is currently proposed as a two lane approach. There may be a need, due to Apple Hill Seasonal traffic conditions, to add one or two turn lanes to the approach, which could require a wider roadway and longer undercrossing structure at US 50.

B. Rejected Alternatives

Alternative "B" was proposed in the 2009 Project Initiation Document (PID). This alternative proposed to widen US 50 for the installation of a concrete median barrier from Still Meadows Road to approximately 700 feet west of Upper Carson Road. An opening in the median barrier would be maintained for the intersection at Camino Heights Drive and partial access at Still Meadows Road. An eastbound auxiliary road was also proposed at Camino Heights Drive to be preceded by a 600 feet eastbound auxiliary lane on US 50, which diverges onto a separate auxiliary road. A left turn lane from the auxiliary road onto Camino Heights Drive directs vehicles back to US 50. This would allow vehicles turnaround access to westbound US 50.

The 2009 PSR-PDS rejected Alternative "B" for the following reasons:

- The off-ramp/auxiliary road configuration that is currently a part of Alternative B's design creates an unexpected move for drivers.
- The turning movements required by Alternative B would create confusion with driver expectations in a rural area.
- Alternatives to the off-ramp/auxiliary road configuration would impact the local road system by routing freeway traffic into the local residential area to make a U-turn or circuitous movement back to US 50.

C. Traffic Operations and Safety

A traffic study report will be required in the PA&ED phase to analyze control and lane storage requirements, operation of alternatives, and operations under seasonal conditions. The alternatives and traffic conditions were not analyzed in the 2009 traffic study report. The traffic study should also analyze where to locate a dedicated chain on/off area with lighting within the project limits.

7. COMMUNITY INVOLVEMENT

The 2009 Project Study Report-Project Development Support (PSR-PDS) for this project documented the process in which the alternatives for this project were selected. The following is a summary of that process. On June 25, 2008 a public open house was held to present the project's general purpose to the public and receive input from the attendees for further consideration. A Stakeholder Advisory Committee (SAC) was re-engaged for this project to ensure the values of the community and its interests were considered in the development of the project alternatives.

The project team met with the SAC in July and November of 2008 to review and discuss the 25 alternatives proposed over the past several years for this project. The list of alternatives was reduced to four as the project team met again with the SAC in December of 2008. On February 2009, the project team met with the SAC to inform them that Caltrans recommended moving forward with Alternatives B and C. Other alternatives were eliminated because they did not meet the purpose and need of the project.

During a Stakeholder Advisory Committee (SAC) meeting on November 2008, a SAC member requested that consideration be given to eliminating the left turn movement from Upper Carson Road to eastbound US 50. Alternative C2 was developed as a modification to Alternative C1 that would extend the proposed concrete barrier further east and close the access opening to Upper Carson Road by connecting it to the existing concrete barrier approximately 100 feet east of Upper Carson Road.

The alternatives were reduced to two (C1 and C2) and presented at a public open house on July 21, 2009. A presentation was made by the staff of El Dorado County Transportation Commission (EDCTC) to the EDCTC board on August 6, 2009; this meeting allowed public input.

Alternatives C1 and C2, have since been renamed to Alternatives 1A, 1B, 1C, and 1D, which include different local road configurations. Two options for the terminus of the median barrier at US 50/Upper Carson Road (Formerly alternatives C1 and C2) can be accommodated for each of the four alternatives.
The Caltrans PDT will re-engage the public during the PA&ED phase.

8. ENVIRONMENTAL DETERMINATION/DOCUMENT

In order to identify environmental issues, constraints, costs and resource needs, a Preliminary Environmental Analysis Report (PEAR) was prepared for this project.

The anticipated environmental documents for CEQA is an Initial Study with proposed Mitigated Negative Declaration (MND). The anticipated document for NEPA is a Routine Environmental Assessment with proposed Finding of No Significant Impact. See Attachment C for more information.

9. FUNDING/PROGRAMMING

This project is proposed to be funded as an amendment to the 2016 SHOPP, Program 20.XX.201.010 (Traffic Safety). It has been determined that this project is eligible for federal-aid funding. See Programming Sheet, Attachment M, for project support costs.

The new median barrier will have an impact on local street access. Due to this impact, El Dorado County Community Development Agency, Transportation Division (EDCDA TD) is contributing support and capital funding to the project for work on the local system. Caltrans intends to fund the median barrier and minimum work necessary to connect the local road system across US 50. EDCDA TD intends to fund additional improvements to the local road network to improve the flow for travelers on and off US 50 and through the local road network.

EDCDA TD intends to fund the local road improvements with a combination of Federal Highway Safety Improvement Program (HSIP) Cycle 7 funding of $3,124,500, approved on November 12, 2015, and Local funds.

Caltrans and El Dorado County will execute cooperative agreements as needed for each project component to show responsibilities and funding commitments of each agency. State and Local fund split is as follows:

Proposed Funding Allocations (escalated to 18/19 FY)			
Project Component	Agency		
	Caltrans	ED County	Total
Support:			
PA&ED	$ 2,500,000	$ 160,000	$ 2,660,000
PS&E	$ 3,500,000	$ 230,000	$ 3,730,000
RW Support	$ 1,200,000	$ 80,000	$ 1,280,000
Construction Support	$ 5,800,000	$ 400,000	$ 6,200,000
Subtotal Support	$ 13,000,000	$ 870,000	$ 13,870,000
Capital:			
RW Capital	$ 2,000,000	$ 550,000	$ 2,550,000
Construction Capital	$32,000,000	$1,850,000	$ 33,850,000
Subtotal Capital	$34,000,000	$2,400,000	$ 36,400,000
Total	$47,000,000	$3,270,000	$ 50,270,000

See Programming Sheet, Attachment M, for more information.

10. SCHEDULE

Project Milestones		Scheduled Delivery Date (Month/Day/Year)
PROGRAM PROJECT	M015	12/15/2015
BEGIN ENVIRONMENTAL	M020	01/02/2016
CIRCULATE DPR & DED EXTERNALLY	M120	01/02/2017
PA & ED	M200	04/01/2017
DRAFT STRUCTURES PS&E	M378	05/01/2018
PROJECT PS&E	M380	07/01/2018
RIGHT OF WAY CERTIFICATION	M410	10/01/2018
READY TO LIST	M460	10/01/2018
AWARD	M495	05/01/2019
APPROVE CONTRACT	M500	06/01/2019
CONTRACT ACCEPTANCE	M600	12/01/2021
END PROJECT	M800	12/01/2024

11. RISKS

A Level 2 Risk Assessment was completed for this project. See Attachment L for more information.

12. FHWA COORDINATION

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

13. PROJECT REVIEWS

Scoping team field review Environmental & Planning Date 3/24/2014
District Program Advisor Mike Hagen Date 5/13/2013
District Maintenance Ed Ingram Date 5/13/2014
Headquarters Design Coordinator Jim DeLuca Date 5/13/2014
Project Manager Clark Peri Date 5/13/2014
District Safety Review Kevin Espinoza Date 5/13/2014
Constructability Review Jason B. Miller Date 5/13/2014
Other _____ Date _____

14. PROJECT PERSONNEL

District Project Engineer:	Ryan Kohagura	530-741-5746
District Environmental Coordinator:	Gerorgette Neale	916-274-0623
District RW Coordinator:	Karen Basra	530-741-4565
District TMP Coordinator:	Joyce Loftus	530-741-5411
Highway Operations:	Teresa Limon	530-634-7669
Maintenance Area Superintendent:	Darrell Uppendahl	530-622-5094
Construction Area Manager:	Lynnette Spadorcio	916-718-3745
District Project Manager:	Clark Peri	916-825-8168
District Program Advisor:	Mike Hagen	530-741-5712
DES Structure Design:	Dan Adams	916-227-8358
District Hydraulic Engineer:	Dennis Jagoda	530-741-4517
District Landscape Architect:	Chris T. Johnson	530-741-4436
District Advance Planning Chief	Isam Tabshouri	530-741-5749

15. ATTACHMENTS

A. Typical Cross-Sections
B. Layout Sheets
C. Preliminary Environmental Analysis Report
D. Preliminary Drainage Report
E. Right of Way Data Sheet
F. Traffic Management Plan Data Sheet
G. Initial Site Assessment
H. Advance Planning Study
I. Landscape Architecture Assessment Sheet
J. Storm Water Data Report
K. Cost Estimate Breakdown
L. Traffic Study
M. Risk Management Plan
N. Programming Sheet

ATTACHMENT A

TYPICAL CROSS-SECTIONS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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INCOMPLETE PLANS NOT FOR CONSTRUCTION

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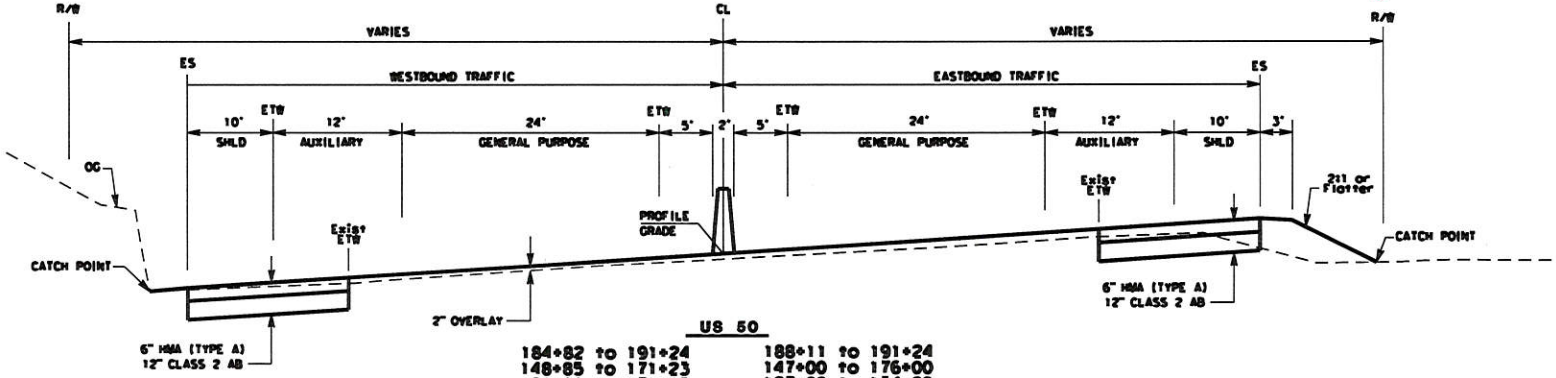
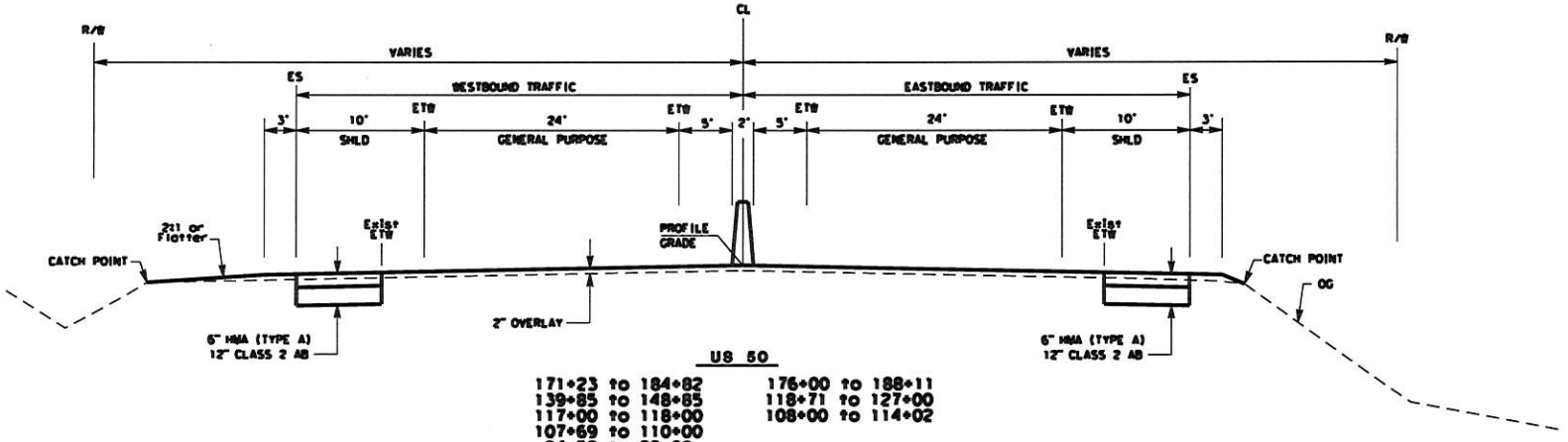


US 50

184+82 to 191+24
148+85 to 171+23
128+00 to 171+23
188+11 to 191+24
147+00 to 176+00
127+00 to 134+89
86+49 to 93+71



US 50

171+23 to 184+82
139+85 to 148+85
117+00 to 118+00
107+69 to 110+00
94+52 to 99+00
86+49 to 87+94
176+00 to 188+11
118+71 to 127+00
108+00 to 114+02

NOTE:
STRUCTURAL SECTION SHOWN FOR ROUTE 50
IS ASSUMED AND BASED UPON A CONSTRUCTION IN 2001.

TYPICAL SECTION
X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR: I. Tobshouri

CALCULATED-DESIGNED BY: R. Kohagura

CHECKED BY:

REVISED BY	DATE REVISED
	10/15/13

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UNIT 0800

PROJECT NUMBER & PHASE 0000000001

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03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER ____ DATE ____

PLANS APPROVAL DATE ____

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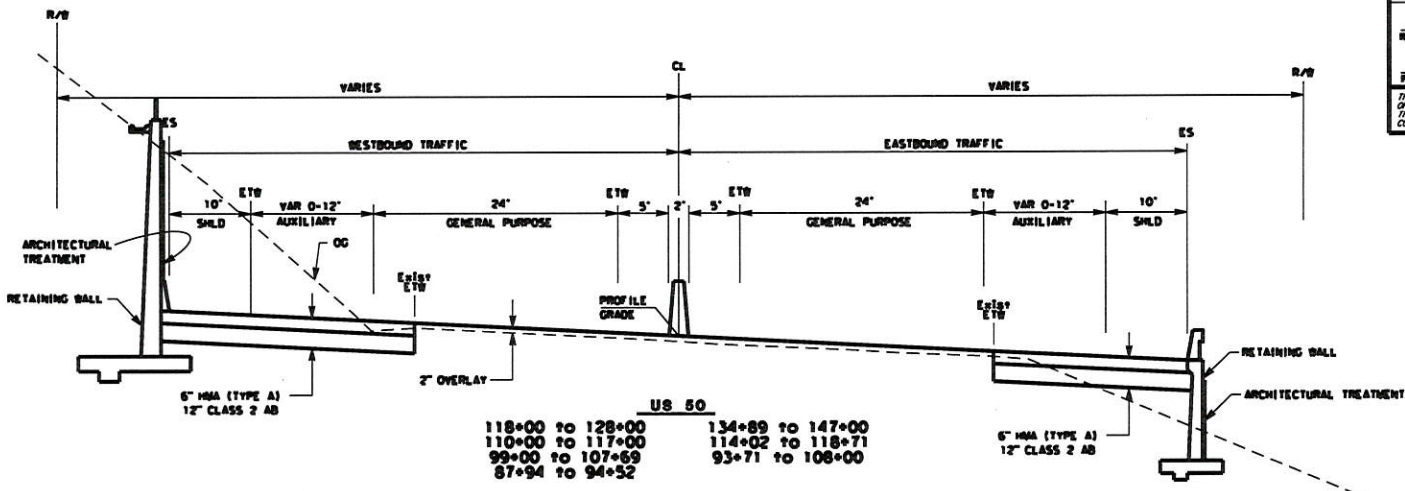
INCOMPLETE PLANS NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA



US 50

118+00 to 128+00
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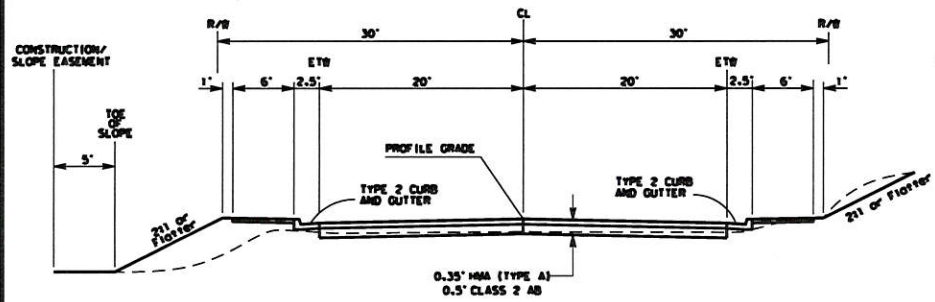
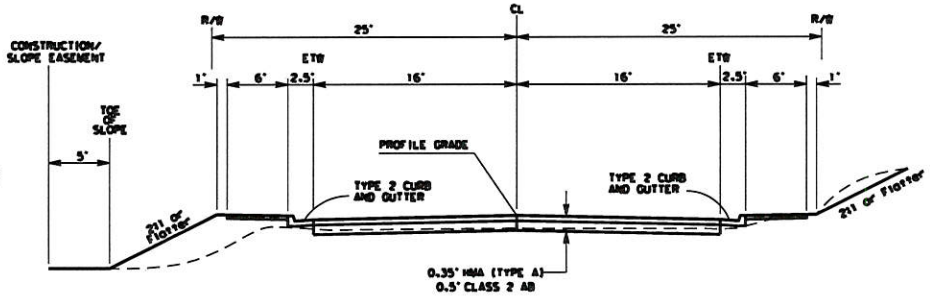
99+00 to 107+69
87+94 to 94+52
134+89 to 147+00
114+02 to 118+71
93+71 to 108+00



C2 & C3



C1

NOTE:
STRUCTURAL SECTION SHOWN FOR ROUTE 50 IS ASSUMED AND BASED UPON A CONSTRUCTION IN 2001.

STRUCTURAL SECTION FOR C1, C2 AND C3 ARE BASED UPON EL DORADO COUNTY DESIGN STANDARDS.

TYPICAL SECTION
X-2

REVISED BY	DATE REVISED
	10/15/13

CALCULATED-DESIGNED BY: R. Kohagura
CHECKED BY: I. Tabshouri
FUNCTIONAL SUPERVISOR:

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

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ATTACHMENT B

LAYOUT SHEETS

Dist	County	Route	Post Miles Total Project	Sheet No.	Total Sheets
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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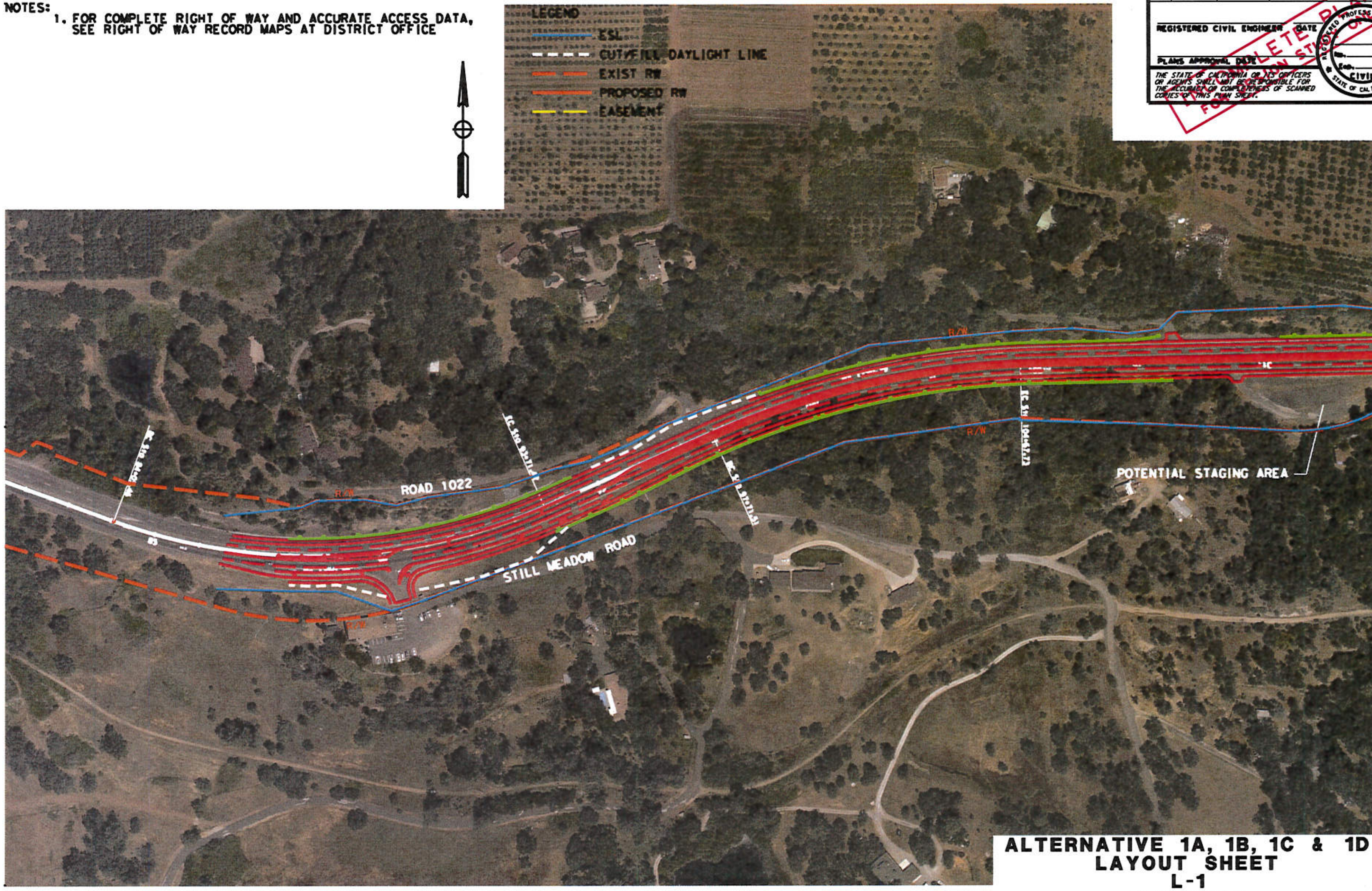
NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE



ALTERNATIVE 1A, 1B, 1C & 1D LAYOUT SHEET L-1

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY
Caltrans	I. Tabshouri	CHECKED BY R. Kohagura	DATE REVISED 10/15/13

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UNIT 0800

PROJECT NUMBER & PHASE 00000000001

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NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

Dist	County	Route	Post Miles Total Project	Sheet No.	Total Sheets
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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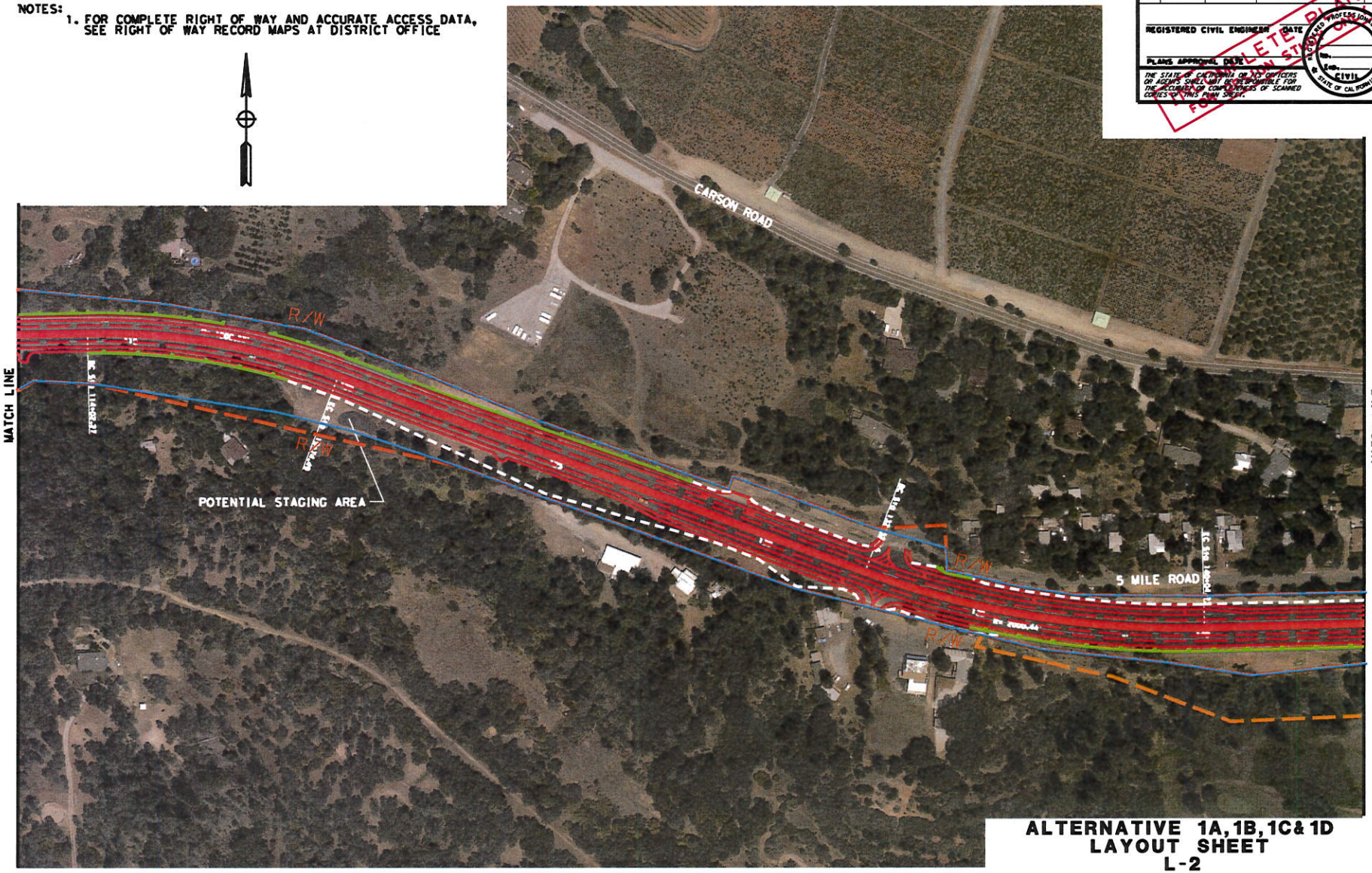
No.
Exp.
CIVIL
STATE OF CALIFORNIA



ALTERNATIVE 1A, 1B, 1C & 1D
LAYOUT SHEET
L-2
SCALE: 1" = 50'

REVISED BY	
DATE REVISED	10/15/13
CALCULATED-DESIGNED BY	R. Kohagura
CHECKED BY	
FUNCTIONAL SUPERVISOR	I. Tobshouri

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION DATE PLOTTED => 00-00-00
TIME PLOTTED => 0TIME

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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NOTES:
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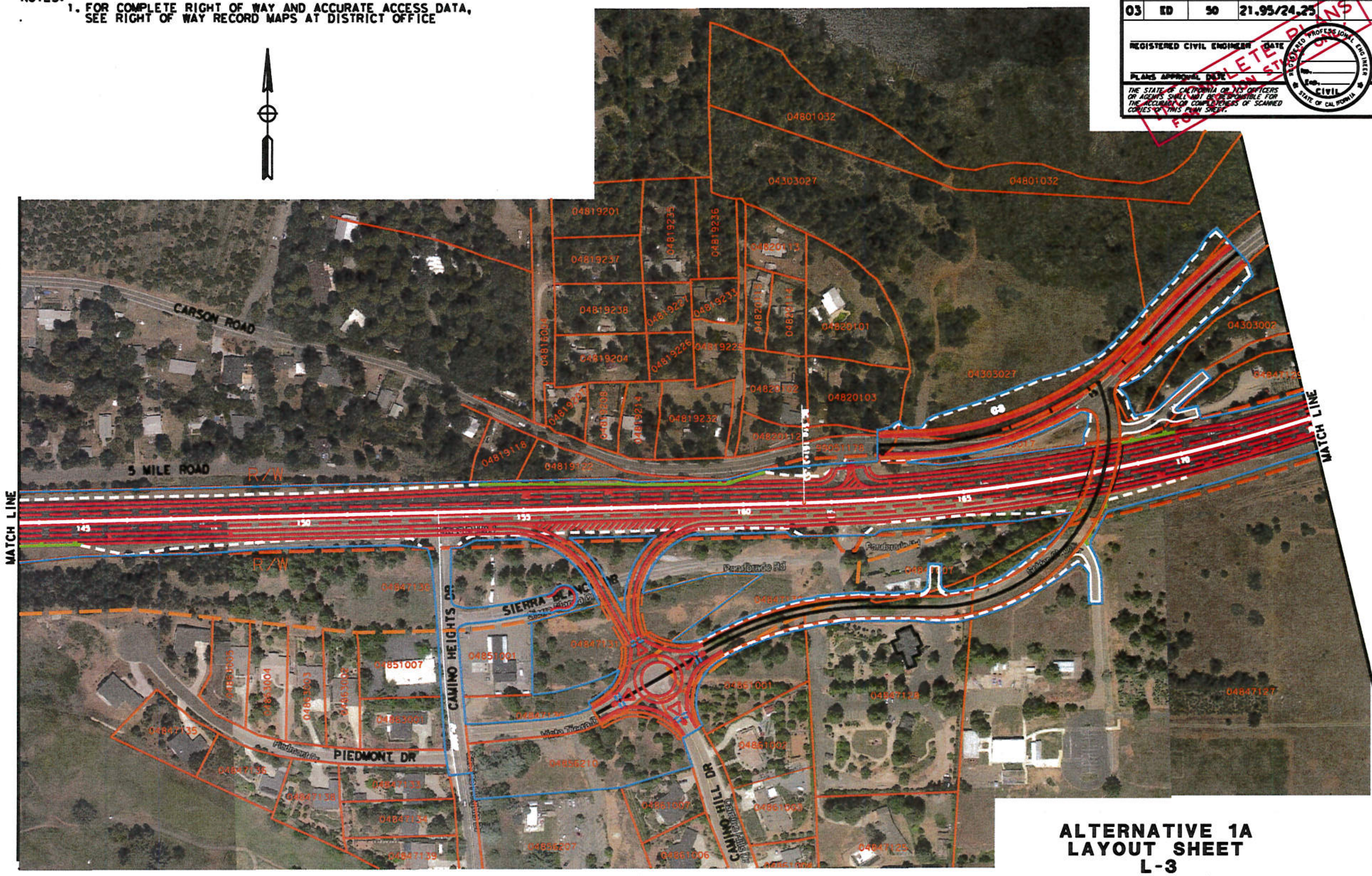

ALTERNATIVE 1A
LAYOUT SHEET
L-3
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY	
Caltrans	I. Tabshouri	CHECKED BY: R. Kohagura	DATE REVISED: 10/15/13	

BORDER LAST REVISED 7/2/2010 | USERNAME => USER, DGN FILE => REQUEST | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0800 | PROJECT NUMBER & PHASE 00000000001

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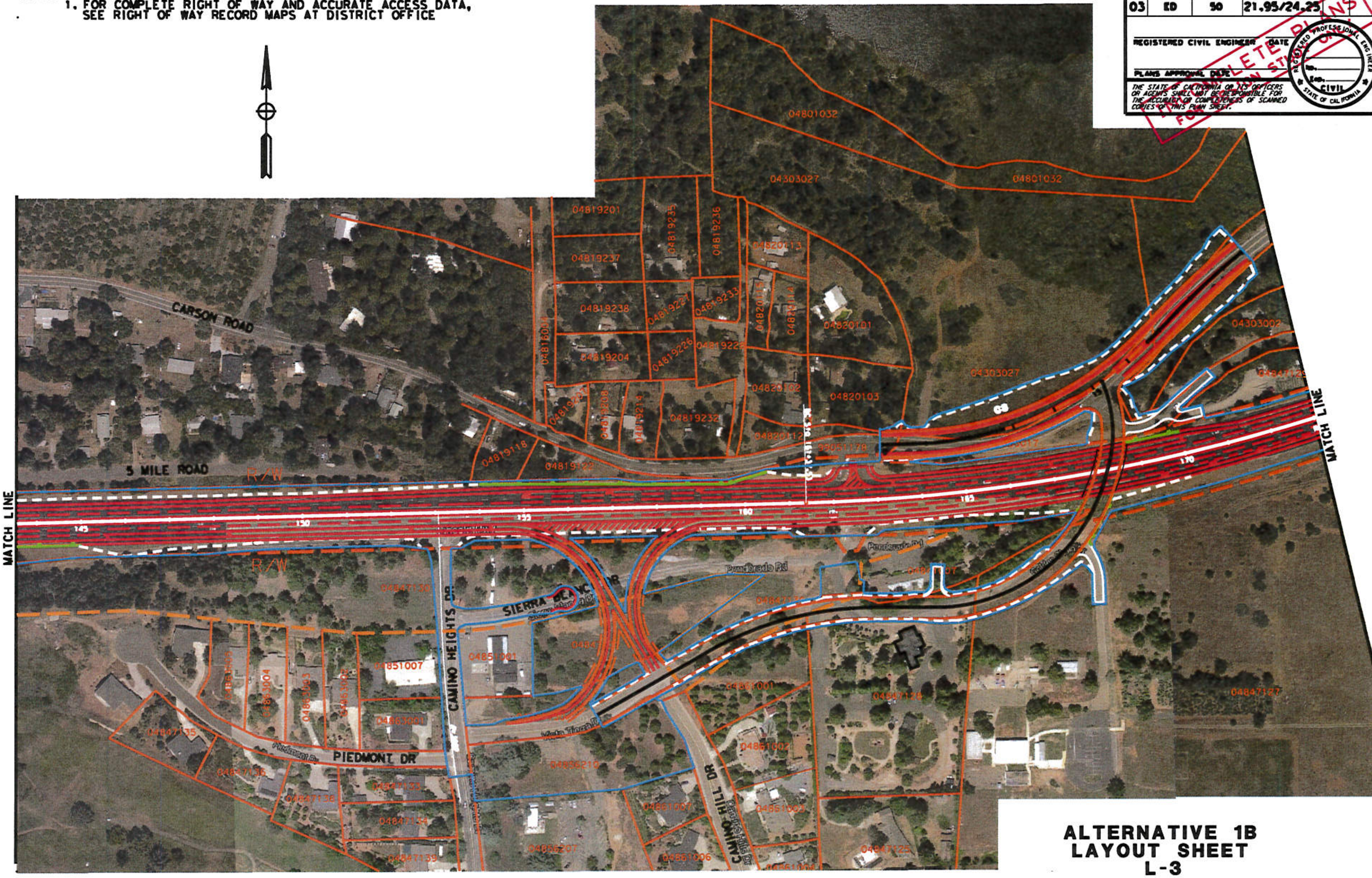

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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INCOMPLETE PLANS FOR DISCUSSION ONLY

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

ALTERNATIVE 1B
LAYOUT SHEET
L-3
SCALE: 1" = 50'

FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY
I. Tabshouri	CHECKED BY R. Kohaguro	DATE REVISED 10/15/13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0800

PROJECT NUMBER & PHASE 00000000001

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

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1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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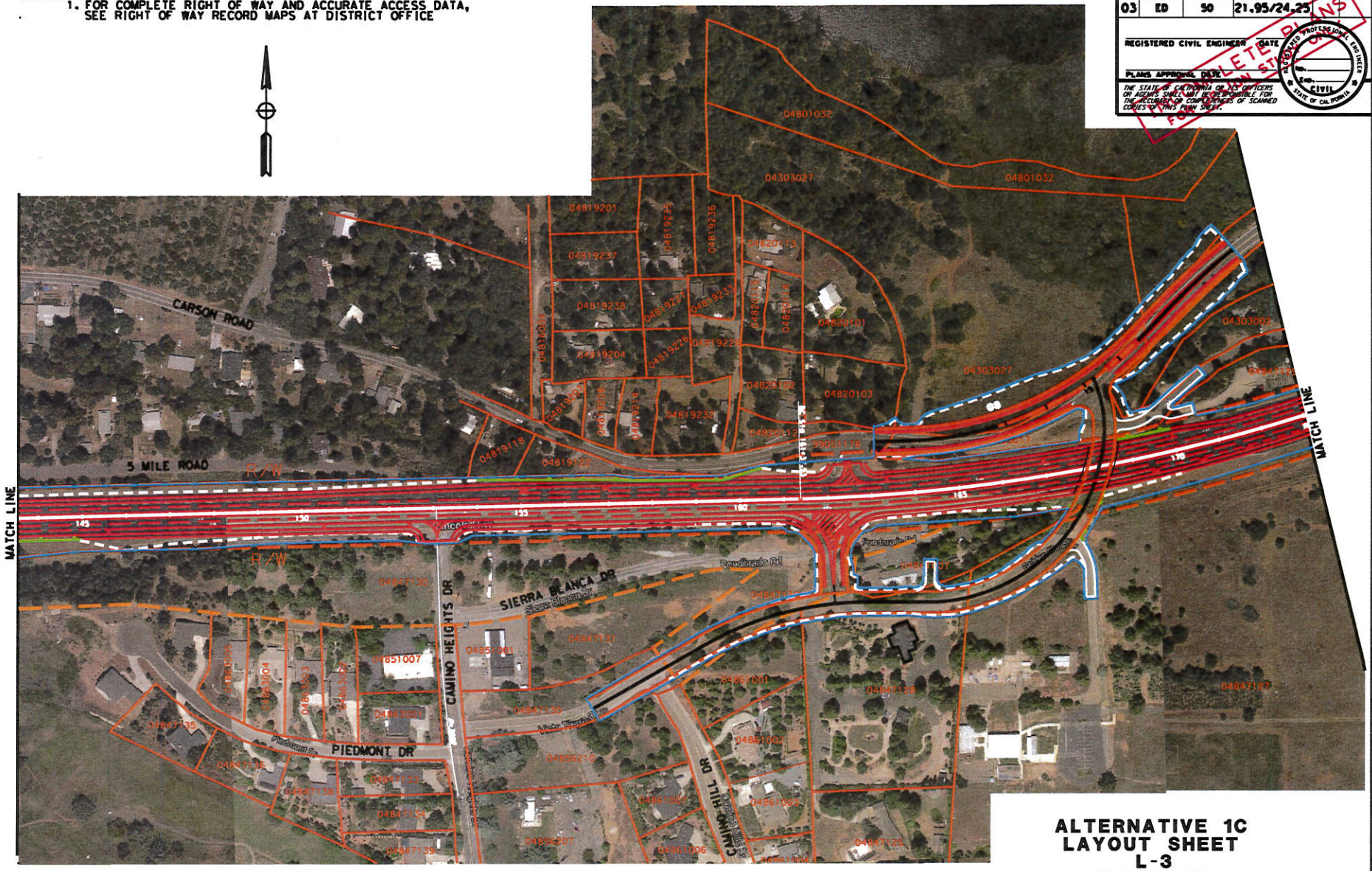

ALTERNATIVE 1C
LAYOUT SHEET
L-3
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY		REVISED BY	
I. Tadshouri	CHECKED BY	R. Kohagura	DATE REVISED	10/15/13

LEGEND: REVISION | DATE PLOTTED => DATE | 00-00-00 | TIME PLOTTED => TIME

BORDER LAST REVISED 7/2/2010

USERNAME => #USER
DGN FILE => #REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0800

PROJECT NUMBER & PHASE 0000000001

NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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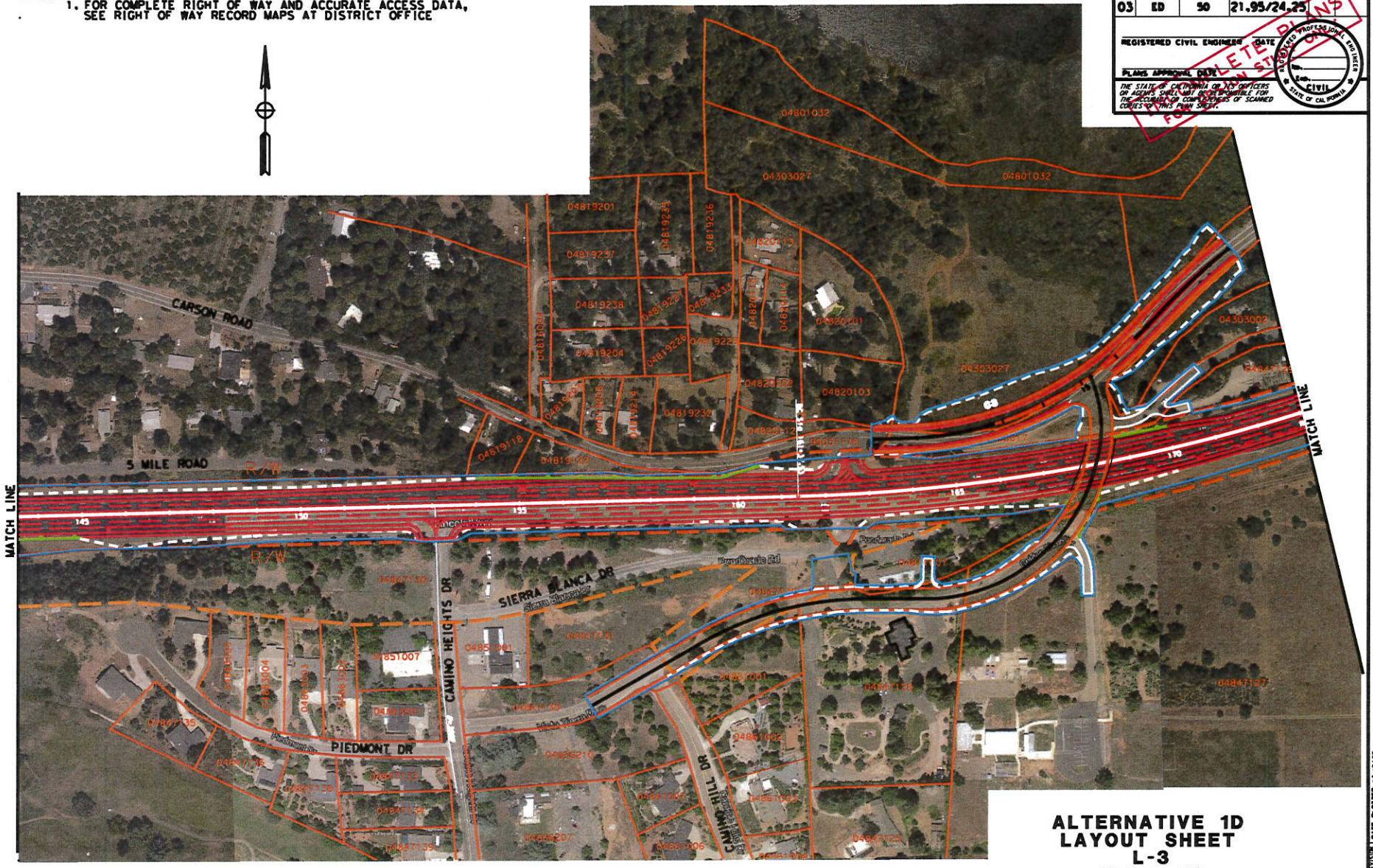

ALTERNATIVE 1D
LAYOUT SHEET
L-3
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR: I. Tabshouri

CALCULATED-DESIGNED BY:

CHECKED BY: R. Kohaguro

REVISED BY

DATE REVISED 10/15/13

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

BORDER LAST REVISED 7/2/2010

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RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0800

PROJECT NUMBER & PHASE 0000000001

NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER _____ DATE _____

PLANS APPROVAL DATE _____

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REGISTERED PROFESSIONAL ENGINEER
No. CIVIL
STATE OF CALIFORNIA

INCOMPLETE PLANS FOR REVIEW STUDY ONLY

ALTERNATIVE 1A, 1B, 1C & 1D
LAYOUT SHEET
L-4
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR: I. Tabshouri
CALCULATED-DESIGNED BY:
CHECKED BY: R. Kohagura
REVISED BY:
DATE REVISED: 10/15/13

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

BORDER LAST REVISED 7/2/2010

USERNAME => !USER
DGN FILE => !REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0800

PROJECT NUMBER & PHASE 0000000001

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1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

Dist	County	Route	Post Miles Total Project	Sheet No.	Total Sheets
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER ____ DATE ____

PLANS APPROVAL DATE ____

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INCOMPLETE PLANS NOT FOR CONSTRUCTION

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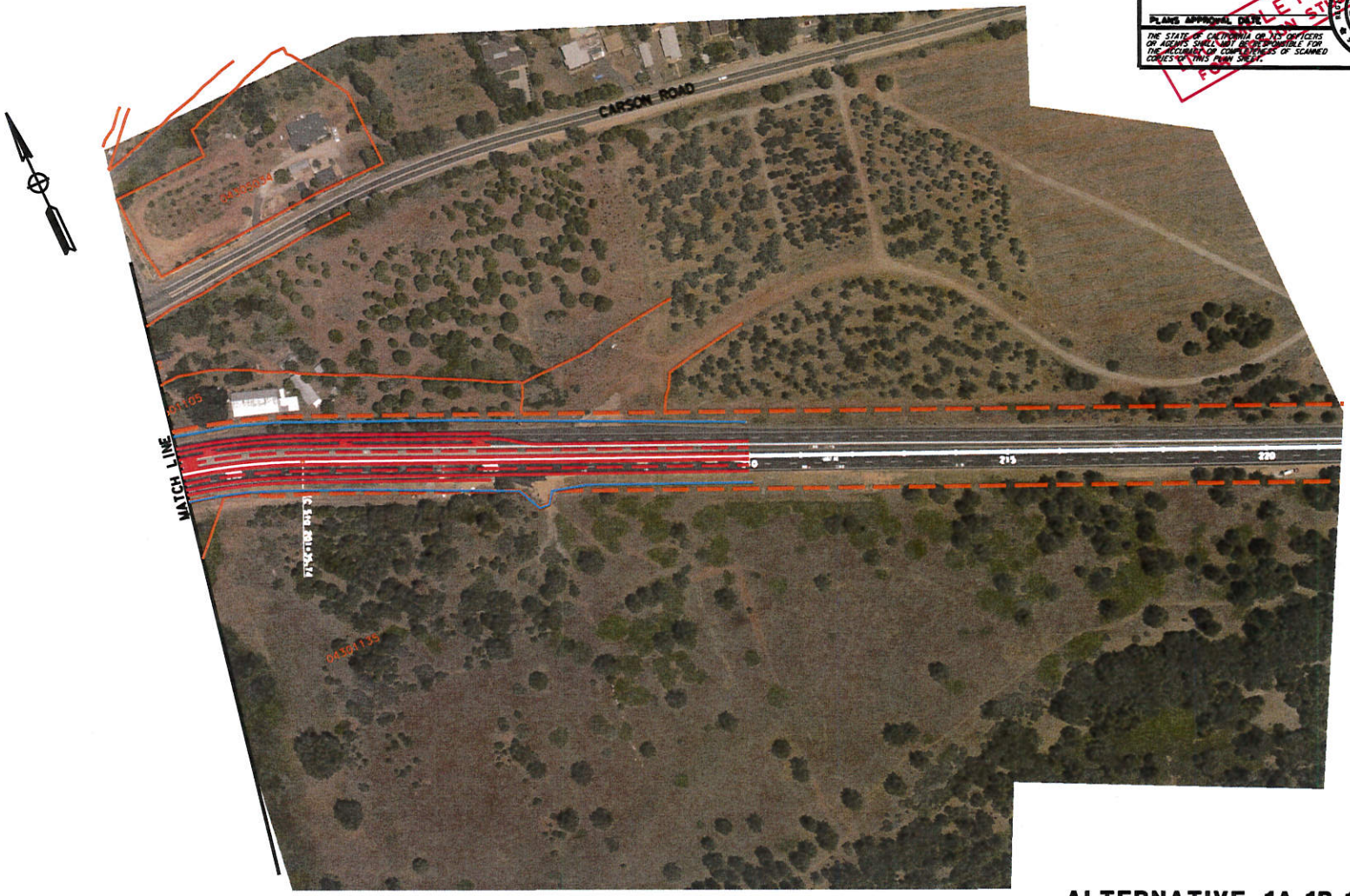

ALTERNATIVE 1A, 1B, 1C & 1D
LAYOUT SHEET
L-5
SCALE: 1" = 50'

REVISED BY	DATE REVISED
R. Kohagura	10/15/13

CALCULATED-DESIGNED BY

CHECKED BY

FUNCTIONAL SUPERVISOR
I. Tabshouri

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

BORDER LAST REVISED 7/2/2010

USERNAME => %USER
DGN FILE => %REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0000000001

DATE PLOTTED => %DATE
TIME PLOTTED => %TIME
00-00-00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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INCOMPLETE PLANS FOR DISCUSSION ONLY

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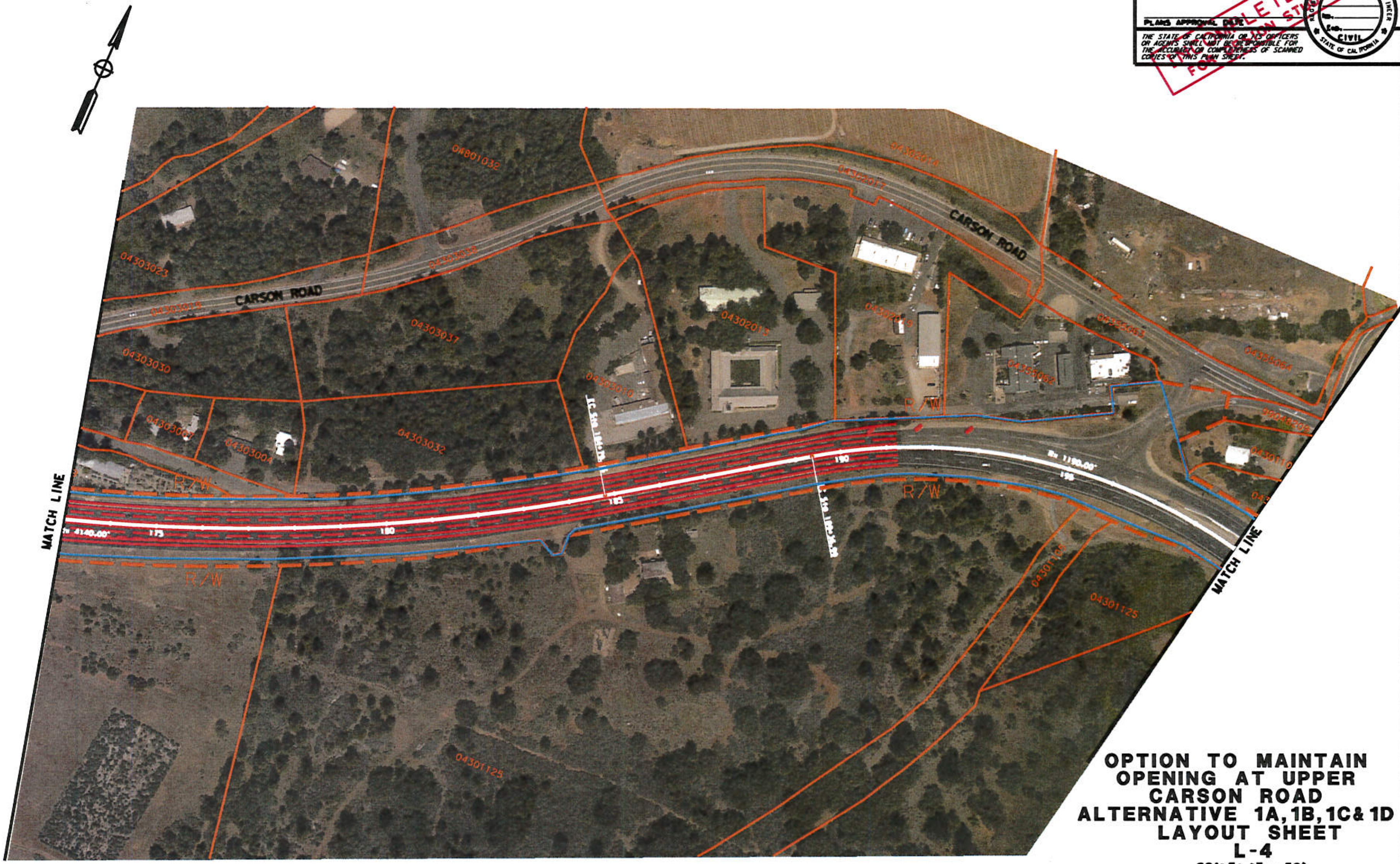


OPTION TO MAINTAIN OPENING AT UPPER CARSON ROAD ALTERNATIVE 1A,1B,1C& 1D LAYOUT SHEET L-4

SCALE: 1" = 50'

FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
I. Tabshouri		R. Kohagura		10/15/13

STATE OF CALIFORNIA · DEPARTMENT OF TRANSPORTATION

Caltrans

BORDER LAST REVISED 7/2/2010

USERNAME => $USER
DGN FILE => $REQUEST

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0800

PROJECT NUMBER & PHASE 00000000001

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

ATTACHMENT C

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District	County	Route	PM	EA
D-3	ED	50	21.95 to 24.27	03-4E620K and EFIS # 0314000039
Project Title: *Brief descriptive phrase, e.g., CAPM, Curve Re-alignment, Passing Lane, etc.* ED 50 Camino Safety Project				
Project Manager: Clark Peri			Phone #: 916) 274-0538	
Project Engineer: Ryan Kohagura			Phone #: (530) 741-5746	
Environmental Office Chief/Manager: Kendall Schinke			Phone #: (916) 274-0610	
PEAR Preparer: Georgette Neale			Phone #: (916) 274-0623	

2. Project Description

Purpose and Need

The purpose of this project is to improve safety on U.S. Highway 50 in the Camino area. Safety improvements are needed because the collision rates are higher than the state average.

Description of Work and Alternatives

The safety issues can be attributed to uncontrolled left-turn movements and the speed differential between the local Camino traffic and the interregional travelers on U.S. Highway 50. Due to these conditions, there is a need to improve safety for local and interregional travelers along the Camino Corridor. This Safety project will modify the highway to improve travel safety by providing access to the north and south sides of the highway, which will facilitate the east-west access within the project limits. The project has a Safety Program code of 20.20.201.010.

The project proposes to install a concrete median barrier, widen outside shoulders, and install several acceleration/deceleration lanes to decrease potential vehicle conflicts. The El Dorado County Transportation Commission (EDCTC) completed a PSR-PDS in December 2009 to make these improvements. The PSR-PDS proposed to use future State Transportation Improvement Program (STIP) funds which never became available.

There are four proposed alternatives for the project.

Alternative 1A: This alternative proposes to widen US 50 for the installation of Type 60 concrete median barrier from Still Meadows Road (PM 22.0) to the existing concrete median barrier located at Upper Carson Road (PM 24.01). This alternative would also restripe and conform the mainline pavement to approximately 1,500 linear feet (lf) east of Upper Carson Road. A partial median access opening (westbound, left turn only) at Still Meadows Road would be maintained. Vista Terra Drive would be extend in a northeasterly direction through a proposed undercrossing (PM 23.48) at U.S. 50 with a connection to Carson Road on the north side of US 50. Carson Road will be realigned and improved to accommodate traffic at this location. A portion of the El Dorado Irrigation District (EID) main ditch would need to be relocated near the proposed undercrossing.

Features Common to all Alternatives:

- Maintain access to Still Meadow Road from U.S. 50 through right-in/right-out and left turn pocket from west bound US 50.
- U.S. 50 would maintain acceleration and deceleration lanes at Still Meadows Road, Paul Bunyon Road/Five Mile Road, Lower Carson Road, and Upper Carson Road. The outside shoulder would be widened to 8 feet on U.S. 50 where there are acceleration/decelerations lanes and it would be widened to 12 feet in all other locations within the project.
- Re-stripe 12 foot wide travel lanes and turn lanes.
- US 50 inside shoulders would be widened to 5 feet from the proposed Type 60 concrete median barrier.
- US 50 would be widened from its existing width an additional 0 to 16 feet to accommodate shoulders and median. The existing pavement would be overlaid with 2" HMA (Type A) and the widened pavement section would be 6" HMA-Type A with 12" Class-2 aggregate base.
- Widened section of U.S. 50 would have retaining walls varying in heights from 4 to 12 feet with aesthetic treatment and 2:1 side slopes for the end conditions.
- All driveways and intersection would remain open, but left turn movements may be prohibited at some locations due to proposed median barrier. Affected driveways and intersection would be slightly re-graded to conform to the widened U.S. 50 pavement within State Right of way (ROW).
-

Features on Alternative 1A that may differ from the other Alternatives:

- Close access to U.S. 50 from Camino Heights Drive and Pondorado Road.
- Install Roundabout at the Vista Terra Drive/Camino Hill Drive intersection.
- Construct on and off ramps from U.S. 50 to the Vista Terra Drive/Camino Hills Drive Roundabout Intersection.
- Close off Sierra Blanca Drive by installing a cul-de-sac.
-

Alternative 1B - The second alternative would incorporate all the proposed improvements in Alternative 1A. Below the features that may differ from Alternative 1A:

- Close access to U.S. 50 from Camino Heights Drive and Pondorado Road
- Install four (4) legged intersection at the Vista Terra Drive/Camino Hill Drive intersection.

- Construct on and off ramps from U.S. 50 to the Vista Terra Drive/Camino Hills Drive four legged Intersection.
- Close off Sierra Blanca Drive by installing a cul-de-sac.

Alternative 1C - The third alternative would incorporate all the proposed improvements in Alternative 1A. Below the features that may differ from Alternative 1A:

- Keep access to US 50 from Camino Heights Drive and Pondorado Road
- Maintain a 3-way Intersection at the Vista Terra Drive/Camino Hill Drive intersection
- Install a 1,400 ft eastbound auxiliary lane on US 50 that would exit at Pondorado Road, which connects to Vista Terra Drive at an all-way stop controlled three-way intersection
- Improve the Pondorado Road exit into a right-in and right-out access point to US 50

Alternative 1D - The fourth alternative would incorporate all the proposed improvements in Alternative 1A. Below the features that may differ from Alternative 1A:

- Keep access to US 50 from Camino Heights Drive
- Close access to US 50 from Pondorado Road
- Maintain a 3-way Intersection at the Vista Terra Drive/Camino Hill Drive intersection

Note: All four (4) alternatives have the option of ending the proposed concrete median barrier approximately 70 feet west of Upper Carson Road.

The proposed Drainage facilities on this project occur approximately between PM 22.00 and 23.46. Scuppers are to be installed in the median barrier from Station 96+00 to 98+00 (PM 22.18 to 22.22) and from Station 107+50 to 113+50 (PM 22.40 to 22.51). A total of approximately 16 Drainage Inlets (DIs) will be installed from Station 86+50 to 145+50 (PM 22.00 to 23.13). Five (5) new culvert are proposed to be installed between Station 98+00 to 134+00 (PM 22.22 to 22.90). Six (6) Existing cross-culvert will be extended on both end from Station 96+00 to 124+50 (PM 22.18 to 22.73) and one slotted CSP drain along the east-bound side of the median barrier is proposed to be installed from Station 86+50 to 90+00 (PM 22.00 to 22.07).

An existing Drainage system exist between PM 23.46 and 24.10 and no additional drainage facility is proposed in this section of the Highway.

It also proposes to place two (2) DIs on each side of the proposed Vista Terra Undercrossing on alignment C1. A proposed 24" CSP will connect to both DIs and outfall on the WB side ditch at station 165+00 (PM 23.46).

No-Build Alternative - The No-Build Alternative would make no modifications to the existing highway and would leave it in the current condition, which would not address the safety need and purpose of the current project.

3. *Anticipated Environmental Approval*

The anticipated environmental document for CEQA is an Initial Study/Negative Declaration (ND) or Mitigated ND. Due to the number of potential right-of-way acquisitions and potential community impacts, the anticipated document for NEPA is a routine Environmental Assessment (EA) with proposed Finding of No Significant Impact.

Check the anticipated environmental determination or document for the proposed project in the table below.

CEQA		NEPA:	
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☒	Routine Environmental Assessment with proposed Finding of No Significant Impact Complex Environmental Assessment with proposed Finding of No Significant Impact	☒ ☐
Environmental Impact Report	☐	Environmental Impact Statement	☐
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		16 months	
Estimated person hours to complete identified tasks (PYs)		5.43	

4. *Special Environmental Considerations*

With the current preliminary mapping and information available in the current K planning phase, the considerations listed below would apply to each alternative 1A – 1D.

Community Impacts: There are approximately 13 affected land parcels for the proposed project. As a result, consultation with property owners and ROW financial compensation are necessary for affected parcels. Of the 13 parcels affected by the project, several parcels are residential and several parcels are commercial properties. The project must involve appropriate notice to property owners and fair-market value compensation from the Caltrans District 3 Division of Right-of-Way (ROW). At this time (during the K planning phase) a right-of-way (ROW) cost estimate map has not yet been completed, so the exact number of affected parcels, both full takes and partial takes, could change. During the 0 phase, a ROW cost estimate map will be completed, which will include the assessor parcel numbers (APNs), APN boundaries, and the project's Environmental Study Limit, which will give the Team more complete and accurate information about the number of parcels affected by the project, and whether they will be full acquisitions or partial acquisitions. Discussions and meetings with the affected property owners will take place after the ROW cost estimate map is completed.

Discussion and consultation with El Dorado County officials are required for relocating a portion of the El Dorado County Irrigation Ditch in the Lower Carson Road area.

Section 7 for Biology: Formal or Informal Consultation may be required for several special-status (listed) animal and plant species that may be located within the project area. Caltrans would consult with the U.S. Fish and Wildlife Service (USFWS) and possibly with the California Department of Fish and Wildlife (CDFW) regarding the impacts to endangered species. Potential habitat suitable for the California red-legged frog (CRLF), Valley Elderberry longhorn beetle (VELB), as well as several sensitive and rare plant species potentially occur within the project study area.

Bird Nesting Work Windows (for Biology): To avoid and minimize possible impacts to nesting birds and their young and also to comply with the Migratory Bird Treaty Act (MBTA), tree and vegetation removal needs to occur during the non-nesting season, from August 16 to February 28. (Migratory bird nesting season in the project area occurs between March 1 to August 15)

Surveys (for Biology): Surveys for sensitive biological species and natural resources required for environmental documentation are expected to occur between March and August of any given survey season; and these surveys are expected to require one survey (March August) to accomplish, if the surveys can be started at the beginning of the survey season. Surveys required for environmental documentation may require more than one survey season if surveys for these resources cannot e started at the beginning of a survey season and may require surveys to be conducted at the beginning of the following season.

Focused botanical surveys will be required to determine if these species occur within the project study area. Based on the known blooming periods of each of these species, botanical surveys should occur between February and July.

Additional *pre-construction* surveys may be required for some species which may not have been detected or may not have occupied the project study area during surveys required for environmental documentation (for example: nesting migratory birds).

Work Windows (for Water Quality): The written conditions of the environmental permits will state the rainy season's start and ending dates, and we will be required to avoid construction near jurisdictional ditches and waterways that could put sediment and disturbed soil into these aquatic features. October 15 is the typical start date of the rainy season.

Visual/Aesthetics: US Highway 50 is a designated State Scenic Highway. Avoidance and minimization measures will apply for both Alternatives 1 and 2 to offset impacts to the visual/aesthetic environment. These avoidance and minimization measures are discussed further in this PEAR.

Paleontology: The study area is underlain with some sensitive geologic formations, the Pliocene Mehrten Formation and the Miocene Valley Springs Formation, which could potentially contain plant, invertebrate, and vertebrate fossils.

5. Anticipated Environmental Commitments:

The following environmental commitments would apply to alternatives 1A – 1D.
Community Impacts:

- As stated above, there are approximately 13 land parcels that will be affected by the proposed project's four alternatives. During the 0 Phase (PA&ED phase) of the project, the PDT will further investigate the design and right-of-way (ROW) needs for the project, and they will determine the exact number of affected parcels, and how many parcels would need to be full acquisitions and how many be partial acquisitions To compensate for the parcel land acquisitions, Caltrans ROW will arrange and provide for current fair-market financial compensation to any affected property owners for any full and partial land acquisitions that are necessary for the completion of the proposed project. During the PA&ED phase in the next several months, Caltrans divisions of Project Management, Design, ROW, and Environmental will explore the four alternatives to determine which alternative(s) accomplish the project's purpose and are the most feasible.

- Because the project will affect approximately 13 property owners, public outreach and public meetings will be required for this project. Additionally, there will be temporary traffic impacts during construction that will temporarily affect traffic patterns for the local residents of Camino and the traveling public using U.S. Highway 50 will experience temporary traffic impacts. The public outreach and information should provide information on the affected portion of the local roads and U.S. Highway 50 and the local roads, so that the public has a solid understanding of the proposed project.

- Replacement of a portion of the El Dorado County Irrigation Ditch is necessary. Any public outreach and public meetings should also discuss the replacement of the ditch.

- The PDT team will need to coordinate with El Dorado County officials about the proposed project and discuss with the County about the current use and status of the El Dorado County Irrigation Ditch (if it serves any local agriculture, such as vineyards and orchards) and the relocation of the affected Ditch portion.

- For the lane closures that will occur during construction avoidance and minimization measures a Traffic Management Plan (TMP) Checklist was completed for the K Phase. These requirements and recommendations are based on the current design mapping, which is dated 2008-2009 and was created by CH2M Hill design consultants)

The TMP Checklist requires the following items and actions:

- Planned Lane Closure Charts.
- Portable Changeable Message Signs – to alert motorists of construction activities.
- Coordination with adjacent construction.
- Double Fine zones (signs).

The TMP Checklist recommends the following items and activities:

- Brochures and mailers sent to those residents and businesses within the ESL and project limits.
- Involvement of the Caltrans Public Information Office
- Construction Zone Enhanced Enforcement Program (COZEEP) – use of supplemental California Highway Patrol Units assist in the management of traffic passing through the construction zone.
- Reduced speed zones, an emergency detour plan, and an emergency notification plan.
- Late closure reopening notification
- Temporary lanes or shoulder use.

Visual/Aesthetic:

- Due to its State Scenic Highway status, all existing trees that can be saved within the project ESL/project limits and near proposed staging areas will be protected using standard ESA fencing. These locations will be determined in the next Phase.
- Replacement plantings for any trees removed shall be considered, if feasible. Any replanted trees should be placed, if possible, near the location of their removal.
- All staging areas and other DSA locations shall be treated with erosion control measures and contour graded to naturally blend in with the surrounding topography.
- The replanting shall use a native, indigenous seed mix or container native plant, or both. This work shall be conducted under the guidance of the Office of Landscape Architecture, and specifications and plans will be developed for replanted areas.
- Retaining walls shall be treated with aesthetic features that represent natural stone walls. After the walls have cured, the concrete shall be painted or stained of earthen colors.

Resource Hours: The current Attachment B does not have a column for the Landscape Architectural Branch, Unit 0381, and they work on the VIA Study and LAAS. This Branch needs to be resourced as follows:

- Task 160: 60 hours (LAAS)
- Task 165: 69 hours (VIA)
- Task 230: These hours will be determined during the development of the LAAS.

Cultural Resources

- Because this is an area with medium to high sensitivity for archaeological and historical resources, if further surveys and studies reveal that there are sensitive cultural resources buried underground within the project limits, an Extended Phase 1 (XPI) testing program would be necessary and would need to be conducted by an archaeological consultant at an approximate cost of $50,000. If resources are identified as a result of the XPI studies, and cannot be avoided, evaluative studies (Phase II) conducted by an archaeological consultant, will be

necessary at a cost of approximately $50,000. XPI and Phase II studies will require consultation, excavation, analysis, and documentation.

- During construction, the Standard Special Provision (SSP) for encountering possible buried cultural resources shall apply.
- Alternative 2 is the longer alternative that ends at PM 24.27. All Construction activities, including DSB sites and sign placement, must avoid straying towards PM 24.50, due to the presence of cultural resources off the highway at PM 24.50.

Resources and Timeline:

See Attachment B for resource projections. Timelines are provided below:

- Phase I Identification Study: One month.
- Extended Phase I Study: Three additional months.
- Phase II Evaluation Studies: Four additional months.
- Phase III Mitigation: Four additional months.
- Eligibility Determination/FOE: Six to twelve additional months (160 to 320 hours).
- MOA and 4(f) evaluation: Six to twelve additional months.

Water Quality

- The project is in the jurisdiction of the Central Valley RWQCB; and Caltrans may participate in early project design consultation with the Central Valley RWQCB.
- The project shall comply with the requirements in the Caltrans Statewide NPDES Permit No. CAS 000003 (Order No. 2012-0011-DWQ) issued by the State Water Resources Control Board. If the DSA is equal to or greater than 1.0 acre, then compliance is required with the mandates of NPDES General Permit No. CAS 000002 (Order No. 2009-0009-DWQ) for General Construction Activities (CGP). Due to the project description, it is likely that the project will result in 1.0 acres or greater of DSA.
- The CGP (which are mandatory for all projects that result in DSA of 1.0 acre or more) also require completion of a Risk Level Determination. In addition, a project having a minimum Risk Level 2 or above requires additional monitoring and reporting, as outlined in the CGP. A Storm Water Data Report (SWDR) will need to be completed for final Risk Level Determination for project covered under the CGP.
- PS&E shall include Section 13 of the 2010 Caltrans Standard Specifications. The Contractor may be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) or a Water Pollution Control Program (WPCP) that incorporate appropriate construction site BMPs during construction activities. SWPPP are required for projects that result in 1.0 acre or more of DSA.
- Determine if permanent Treatment BMPs are necessary. Line Item BMPs may be required and incorporated into the PS&E.
- Treatment BMPs (if applicable) and construction site BMP's will be considered during design and will be selected by the Project Engineer (PE) in accordance with PPDG and Storm Water Manual guidelines.
- Construction Site BMPs shall be selected to protect water bodies within or near the project limits during construction. Water quality BMPs will be installed to protect that portion of the ED County Irrigation Ditch that is outside the cut/fill lines. To address the temporary water quality impacts, the contractor will

implement Temporary Construction Site BMPs identified in the SWPPP or included as Line Item BMPs.

- If site de-watering is required, then a de-watering plan is required. Site access for construction must be included any water quality analysis.
- Additional research is required by NPDES staff to determine if the potential exists for spills to occur within Caltrans ROW as the result of construction operations, which could discharge directly to municipal or domestic water supply reservoirs or ground water percolations facilities. This research includes an evaluation to determine if "Drinking Water Reservoirs and Recharge Facilities" within the project could be impacted.
- The written conditions (both standard and special conditions) of the 401 Water Quality Certification Permit must be included in the Final Plans, Specifications, and Estimate (PS&E) package.
- The cost of environmental permits is covered in the Biology section.
- Additional research by NPDES staff will need to be conducted to determine the extent and magnitude of potential dewatering. Coordination with the Central Valley RWQCB and completion of a dewatering plan may be necessary to ensure permit compliance during construction if dewatering is necessary.

Hazardous Waste

- Since a large amount of disturbed soil area (DSA) will occur, an ADL Site Investigation is required to determine if hazardous soils exist and what actions, if any, will need to occur during construction. The SI needs to be requested by the PE or PM and takes 2 to 5 months to complete, due to the preparation, approval, and issuance of a task order to a hazardous waste contractor. The contractor is then required to prepare the work plans, health and safety plans, conduct the Site Investigations, and prepare Investigation Reports for Caltrans' review and approval.
- Naturally-Occurring Asbestos (NOA): Since a large quantity of DSA will occur, an NOA Site Investigation is required to determine if NOA exists; and what actions, if any, will need to occur during construction. This study will take place at the same time as the ADL study. The same 2 to 5 month time frame applies to complete a NOA Site Investigation (because of the task order's preparation, approval, and issuance to a hazardous waste contractor).
- Traffic Stripe Removal: Roadway grindings (which consist of the roadway material and the yellow color traffic stripes) shall be removed and disposed of in accordance with SSP 15-305 (Residue Containing High-Lead Concentration Paints) which require a Lead Compliance Plan (LCP). The white traffic striping grindings shall be removed and disposed of in accordance with the same specification. For budget purposes, Caltrans will assume a cost of $2,000 and will use BEES item code 190110.
- Treated Wood Waste (TWW): If the wooden posts of the metal beam guardrail are removed, they shall be disposed of in accordance with SSP 14-11.09 (Treated Wood Waste).
- Cured-in-place pipe and styrene: If cured in place pipe (CIPP) will be used to rehabilitate/upgrade drainage facilities, the potential for hazardous waste may exist with styrene, which is a highly volatile chemical used in the main liner. If groundwater is known to be present in the vicinity of a culvert or if pooled water permeates to the inside of the culvert, the North Region Office of Environmental

Engineering recommends the use of a pre-liner instead of patching the deteriorated culvert.

- Hazardous Materials Disclosure Document (HMDD): an HMDD will be required for attached to the Certificate of Sufficiency (COS) before any ROW can be acquired. To provide the HMDD, Design will need to provide the D-3 Hazardous Waste Office with final ROW mapping as soon as it is available.

- For budget purposes, Caltrans will assume a cost of $2,000 and will use BEES item code 190110.

Air Quality

- For the short term construction-related air emissions (including fugitive dust and exhaust emissions from equipment), Caltrans Standard Specifications, a required part of all construction contracts, **Section 14-9.02, Air Pollution Control, Section 14-9.03 Dust Control,** requires the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

Noise

- For temporary noise during construction, the following required Caltrans Standard Specifications, shall apply; and they state the following: **Section 14-8.02A, Noise Control**:

  "Do not exceed 86 dBA LMax at 50 feet from the job site activities from 9 p.m. to 6 a.m. Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler." **Section 7-1.02A, Laws,** require the contractor to comply with all local sound control and noise level rules, regulations and ordinances, which apply to any work performed pursuant to the contract.

Biology

The following potential avoidance and minimization measures will apply to the project to protect biological resources:

1. Establish Environmentally Sensitive Areas:

Direct and indirect impacts to sensitive biological resources, including waters, wetlands, vegetation or sensitive species habitat throughout the project area will be avoided or minimized by designating these features outside of the construction impact area as "Environmentally Sensitive Areas" (ESAs) on project plans and in project specifications. ESA information will be shown on contract plans and discussed in the Special Provisions. ESA provisions may include, but are not necessarily limited to, the use of temporary orange fencing to identify the proposed limit of work in areas adjacent sensitive resources or to locate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavated materials). ESA provisions will be implemented as a first order of work and remain in place until all construction activities are complete.

2. Containment Measures / Construction Site Best Management Practices:

Measures will be employed to prevent any construction material or debris from entering surface waters or their channels. BMP's for erosion control will be implemented and in

place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.
Caltrans' Standard Specifications require the Contractor to submit a Water Pollution Control Plan. This plan must meet the standards and objectives to minimize water pollution impacts set forth in section 7-1.01G of Caltrans' Standard Specifications. The Water Pollution Control Plan must also be in compliance with the goals and restrictions identified in the Lahontan Water Quality Control Board's Basin Plan. Any additional measures included in the 401 certification, 1602 Agreement, and 404 permit will be complied with. These standards/objectives, at times referred to as "Best Management Practices" (BMP's), include but are not limited to:

- Where working areas encroach on live or dry streams, lakes, or wetlands, RWQCB-approved physical barriers adequate to prevent the flow or discharge of sediment into these systems shall be constructed and maintained between working areas and streams, lakes, and wetlands. During construction of the barriers, discharge of sediment into streams shall be held to a minimum. Discharge will be contained through the use of RWQCB-approved measures that will keep sediment from entering protected waters.
- Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live or dry stream, pond, or wetland.

- Asphalt concrete shall not be allowed to enter a live or dry stream, pond, or wetland.

3. Minimize Disturbance to Creek Channel and Adjacent Areas and Restrict Timing of In-stream Activities
All stream and riparian habitat areas outside of the construction limits will be designated as ESAs, as detailed above. Disturbed areas within the construction limits will be graded to minimize surface erosion and siltation into streambeds. Any streambeds and banks will be re-contoured to as close to pre-project condition as possible. Stream-banks and adjacent areas that are disturbed by construction activities will be stabilized as soon as possible (and no later than October 15th of each construction season) to avoid erosion during subsequent storms and runoff.

Bare areas will be covered with mulch and re-vegetated with appropriate native species to pre-project conditions. Construction site BMPs will be utilized to prevent contamination of the stream bank and watercourse from construction material and debris. To avoid direct impacts to water quality, no work will be performed within project drainages until flows are at their seasonal low or have ceased and the streambed is dry. It is predicted that in most years, the seasonal dry period of these drainages occurs between July 15th and October 15th; however work within these drainages will be subject to stream conditions and permit restrictions.

4. Compensate Loss of Aquatic and/or Wetland Functions
Due to the extremely limited opportunities to perform the compensation on-site required for impacts to Waters of the US (WUS), and because Caltrans knows of no "mitigation bank" serving the proposed project area, Caltrans proposes to compensate for the loss of jurisdictional WUS by participation in the USACE and National Fish and Wildlife Foundation's (NFWF's) "In-Lieu Fees (ILF)" program.

According to NFWF's ILF Schedule of October 2014, the price per "Aquatic Resource Credit" is $200,000 per acre/credit. The extent of impacts to jurisdictional WUS is unknown at this time but is expected to be less than 1/2-acre (0.5 acre). To compensate for the loss of *a maximum* of 0.5-acre of jurisdictional WUS, Caltrans would expect a 1:1 in-lieu fee compensation of $100,000.

5. Limit Vegetation Removal: Vegetation removal shall be limited to the absolute minimum amount required for construction.

6. Restrict Timing of Woody Vegetation Removal: It is recommended that the removal of any woody vegetation (trees and shrubs) required for the project be completed between August 16th and February 28th prior to project construction, because August 16 through February 28 is outside of the predicted nesting season for raptors and migratory birds in this area. Vegetation removal outside this time period may not proceed until a survey by a qualified biologist determines no migratory bird nests are present or in use (see below).

7. Restore Habitat Disturbed by Construction:
Areas temporarily impacted by construction activities will be restored and replanted. Drainage areas will be contour graded at the completion of work to restore topography and flow patterns. Disturbed areas will be covered with mulch and replanted with appropriate native species present on site.

8. Nesting Bird Avoidance:
Vegetation Removal and Ground Disturbance.
If woody vegetation removal, structures construction, grading, or other project-related improvements are scheduled during the nesting season of protected raptors and migratory birds (March 1st to August 15th), a focused survey for active nests of such birds shall be conducted by a qualified biologist within 15 days prior to the beginning to project-related activities. If active nests are found, Caltrans shall consult with USFWS regarding appropriate action to comply with the Migratory Bird Treaty Act of 1918 and with CDFG to comply with provisions of the Fish and Game Code of California.

> If a lapse in project related work of 15 days or longer occurs, another survey and, if required, consultation with USFWS and CDFG will be required before the work can be reinitiated.

9. Roosting Bat Avoidance:
Vegetation Removal

Bats shall be allowed to roost in mature trees where conflicts with construction are not anticipated. If contractors work does not conflict with bat roosting, then no further measures are required.

If work interfering with known bat day-roosts or removal of potential bat day-roosting trees is proposed, work can only be conducted after consultation with the California department of Fish and Wildlife (CDFW) regarding appropriate action to comply with provisions of the Fish and Game Code of California, and California Code of Regulations

and to assure adverse impacts for day-roosting bats are avoided or minimized.

10. Weed Free Construction Equipment:
All off-road construction equipment will be cleaned of potential noxious weed sources (mud, vegetation) before entry the project area, and after entering a potentially infested area before moving on to another area, to help ensure noxious weeds are not introduced into the project area. The contractor shall employ whatever cleaning methods (typically with the use of a high-pressure water hose) are necessary to ensure that equipment is free of noxious weeds. Equipment shall be considered free of soil, seeds, and other such debris when a visual inspection does not disclose such material. Disassembly of equipment components or specialized inspection tools is not required. Equipment washing stations shall be placed in areas that afford easy containment and monitoring and that do not drain into sensitive (riparian, streams, wetlands, etc.) areas.

11. Equipment Staging in Weed Free Areas:
Staging and storage of equipment should only be done in weed free areas.

12. Weed Free Erosion Control and Revegetation Treatments:
To further minimize the risk of introducing additional non-native species into the area, only locally adapted plant species appropriate for the project area will be used in any erosion control or revegetation seed mix or stock. No dry-farmed straw will be used, and certified weed-free straw shall be required where erosion control straw is to be used. In addition, any hydro-seed mulch used for revegetation activities must also be certified weed-free.

Paleontology

- Because the study area is underlain with some sensitive geologic formations (Pliocene Mehrten Formation and the Miocene Valley Springs Formation), a written Paleontological Identification Report (PIR) is required to identify potential paleontological resources and the likelihood of encountering them during the project excavation.

- It is strongly advised that a qualified Caltrans Geologist conduct the PIR and any other possible Paleontology Studies. The Caltrans Geologist will determine in the PIR if a Paleontological Evaluation Report (PER) and a possible Paleontological Mitigation Plan (PMP) will be required.

6. Permits and Approvals – for Biology

Potential jurisdictional drainages and waterways were detected within the project area. The known potential drainages/waterways within the project area are from a large cross culvert that runs underneath the highway near STA 163 – STA 164 and also from the El Dorado County Irrigation Ditch near approximately STA 169 – STA 170. Both the large cross culvert and the EID are located near the lower portion of Carson Road.
Permits: If sensitive biological resources (including Other Waters of the U.S., wetlands, or Waters of the State) are detected within the project area and are impacted by the project design and construction, the following environmental permits are required: **US Army Corps of Engineers (USACE) 404 Permit** from the Sacramento office USACE and **Regional Water Quality Control Board (RWQCB) 401 Permit** (or Water Quality

Certification Permit) from the Central Valley RWQCB. Because the project will most likely conduct activities that would affect the bed, channel, or bank of a stream, the **California Department of Fish and Wildlife (CDFW) 1600 permit** would be required from the Sacramento Valley-Central Sierra Region office. For budgetary purposes the cost of **the** CDFW 1600 permit would be approximately $4,605.00, **(**which is based on the current fee schedule). The cost of the RWQCB 401 Permit would be approximately $3,000.00. **For all of the proposed alternatives 1A – 1D the total cost for environmental permits would be $7,605.00.**

Approvals: During the pedestrian field trip in the K phase, no special status animals and plant species were observed. However, the project area may provide habitat suitable for the federally-listed Valley Elderberry longhorn beetle (VELB) and the California Red-legged frog (CRLF), and both species are protected by the Federal Endangered Species Act (FESA) of 1973. Due to the possible presence of VELB and CRLF it may necessary to obtain either formal or informal FESA Section 7 consultation with the U.S. Department of Fish and Wildlife (USFWS.

Timelines:

- Each permit will require a completed application that describes in detail the project scope, maps, permanent impacts and temporary impacts.
- Each permit application takes approximately 40 hours to complete, and then they must be proofread by the appropriate Caltrans Liaison, which (for planning purposes) will take an additional week.
- For the project schedule, we will need to allow up to four weeks for the Biologist to finish all three permit applications and for proofreading.
- For the approval of all permits, we will need to allow approximately 6-10 months total review time.
- For the FESA Section 7 formal or informal consultation, we will need to allow approximately 9-10 months total review time for the USFWS to issue their Biological Opinion concurrence.

7. Level of Effort: Risks and Assumptions

Using the current preliminary mapping and information available at the time of this writing, the following information regarding risks and assumptions would apply to all of the current alternatives 1A – 1D. For the completion of this PEAR, Caltrans D-3/North Region Environmental Division has the following Project Assumptions:

- The project work scope/description will remain mostly as described in the revised Environmental Study Request (ESR), dated December 2014.

- The Project Engineer will identify potential areas that are free of sensitive resources for disposal, staging, and borrow sites.

- The ESR requesting an Environmental Compliance Document will contain all of the information described in Brent Felker's November 2001 Memo, "Begin Environmental".

- Paleontological Resources: According to a previous PEAR study from LSA Associates (dated 12/01/08) the study area is underlain with some sensitive geologic formations, the Pliocene Mehrten Formation and the Miocene Valley Springs Formation. According to District 6 Geologist, Richard Stewart, the discovery of sensitive buried paleontological resources (invertebrate fossils) in project areas is infrequent, but it can occur. A Paleontological Identification Report (PIR) should be completed in the 0 Phase by a qualified Caltrans geologist (rather than by a consultant). The PDT Team will not know if any paleontological resources are present and if the project could possibly impact any potential resources until the PA&ED Phase (0 Phase).

- ROW: At the time of this writing, there are possibly 13 land parcels that could be affected by the project. The 13 parcels are comprised of home sites, commercial property, County of El Dorado, El Dorado Irrigation District, and a high school. This information could change as the project design progresses in the PA&ED Phase. Two potential Staging Areas are indicated on the ESL aerial maps on sheets L-1 and L-2. At this time, there are no Temporary Construction Easements (TCEs); and the TCE areas will be determined in the 0 Phase.

- With the current mapping, all of the alternatives will require the relocation of a portion of the El Dorado County Irrigation Ditch. The coordination with El Dorado County on the relocation of this ditch could be lengthy and should be factored into the Project Schedule.

8. PEAR Technical Summaries

The following discussion of technical studies applies to the four proposed alternatives 1A, 1B, 1C, and 1D.

8.1 **Land Use**:
For all alternatives 1A – 1D there is considerable excavation and disturbed soil area necessary for construction of the undercrossing which will connect Lower Carson Road(which is located on the north side of U.S. Highway 50) with the local road(s) that are presently located on the south side of the highway. In addition, with the current design mapping (which is dated 2008-2009) several adjacent private properties will be affected.
All driveways and intersections would remain open, but left-turn movements may be prohibited at some locations due to the proposed median barrier.

8.2 **Growth**: Not applicable (N/A). The project scope will not result in growth inducement.

8.3 Farmlands/Timberlands

Located a short distance outside the ESL/project limits along Lower Carson Road there is at least one cultivated vineyard (possibly belonging to Jodar Winery) and what appears to be apple orchards located nearby. At the current time, the cultivated vineyard(s) and the orchard(s) are located outside the ESL/project limits. If the ESL/project limits change during the 0 Phase, further consideration about impacts to

agriculture may be required. The area popularly known as "Apple Hill" overlaps with the eastern portion of the project ESL/limits at Upper Carson Road.

8.4 Community Impacts:

Officials from El Dorado County have informed Caltrans that there's local concern from the owners of the Sierra Banquet Center about proposed highways projects possibly affecting their business. This is a relatively new business that opened approximately five years ago.

A portion of the El Dorado County Irrigation Ditch occurs within the ESL/project limits in Lower Carson Road area, and this portion of the Irrigation Ditch will have to be relocated. At this time, the El Dorado Irrigation Ditch is not in use. Also in the Lower Carson Road area, but well outside the ESL/project limits, there is a small dam (labeled the "Blakely 53-002 Dam" on Google Earth) and a small reservoir known as the Blakely Reservoir. Even though the El Dorado County Irrigation Ditch is currently not in use, the public outreach should mention that a portion of the ditch will need relocation for the project. Lower and Upper Carson Road are adjacent to vineyards and some orchards. The area known as "Apple Hill" overlaps with the eastern portion of the project ESL/limits at Upper Carson Road.

During construction in the project limits, all driveways and intersections would remain open, but left-turn movements may be prohibited at some locations due to the proposed median barrier. Lane closures will occur during construction, and the TMP required and recommended measures will apply to the project. At this time, the ESL and project limits overlap with the driveway and possibly with the parking lot of Jodar Vineyard and Winery. Coordination with Jodar Winery is necessary in the 0 Phase.

8.5 Visual/Aesthetics:

The Highway 50 corridor north of Placerville is known for its scenic quality and has been designated as a State Scenic Highway. This designation requires doing a Visual Impact Assessment (VIA) study during the PA&ED phase. This Scenic Highway designation also requires that consideration be given to visual resources during its design and construction. Vegetation should be protected as much as possible, replanting should occur where possible (staying out of the 20-foot Clear Recovery Zone), and that the proposed retaining walls should receive aesthetic treatment (to help them blend in and look more natural). During the PA&ED phase, a Landscape Architectural Assessment Sheet (LAAS) needs to be developed. Both reports (VIA study) and LAAS will help establish the minimization measures for tree planting, replanting, and aesthetic features for the retaining walls.

8.6 Cultural Resources (Archaeology and Architectural History):

The PEAR Cultural Studies addressed the potential impacts to Archaeological (prehistoric) resources and for Architectural History (built environment). A field trip occurred on March 24, 2014 where Cultural staff did a general survey of the current ESL, as well as a record search for the PEAR Study. Overall, the project study area has a moderate-to-high sensitivity for prehistoric and historic period archaeological

resources. There could be a high possibility of unrecorded or buried archaeological prehistoric sites based on the project being situated near two springs. Additionally, Gold Rush era sites and features are extremely prevalent in El Dorado County, which witnessed an onslaught of mining activity in the late 1840's and 1850's, and a brief resurgence during the Great Depression of the 1930's.

There are two cultural resources identified within the ESL and Area of Potential Effect: (a.) The Iowa Ditch - an abandoned water conveyance system; and (b.) The Camino, Placerville, and South Lake Tahoe Railroad (CP & SLTRR) – an abandoned railroad grade that no longer has railroad track and is currently used as an access road. According to the District 3 Architectural Historian, these two resources are both exempt under the 2014 Programmatic Agreement. More detailed studies and surveys to confirm the absence and presence of cultural resources within the ESL/project limits will occur in the 0 Phase.

Built Environment Resources within the APE:
According to the Caltrans Statewide Historic Bridge Inventory of 2010, all structures within the study area appear to be Category 5 (not eligible for the National Register of Historic Places) and no further management is required.

Project Assumptions for Cultural Resources:

- The project scope will remain as described in the revised Environmental Study Request (ESR) #4, dated December 2014.
- The Project Engineer will identify potential areas that are free of sensitive resources for disposal, staging, and borrow sites.
- The ESR requesting an Environmental Compliance Document will contain all of the information described in Brent Felker's November 2001 Memo, "Begin Environmental".
- There will be property acquisitions from approximately 13 property owners. Of the 13 parcels affected by the project, several parcels are residential and several parcels are commercial properties.

For Archaeology, the following cultural resource process needs to occur:
For compliance with Section 106 of the National Historic Preservation Act (NHPA) and with the California Environmental Quality Act (CEQA) Public Resources Code (PRC) 5024, Caltrans Professionally Qualified Staff (PQS) or the consultants would minimally be required to conduct a *Phase I Identification Study,* which would include the following:

1. Request of an updated cultural resource record/literature search at the California Historical Information System (CHRIS).
2. Delineate an Area of Potential Effects (APE) for cultural resources.
3. Conduct pedestrian surveys of the APE (archaeological and architectural).
4. Solicit input from local Native American groups/individuals
5. Solicit input from local historical groups.
6. Conduct an archaeological study of any prehistoric and historic era resources within the APE, and then summarize the study in a Historic Property Survey Report (HPSR).
7. Conduct an architectural study of any structures or bridges within the APE that may require work and prepare a Historic Resource Evaluation Report (HRER).
8. Coordinate with the State Office of Historic Preservation (SHPO).

If impacts to the identified cultural resources cannot be avoided, a *Phase II Evaluation Study* must be completed for both archaeological and architectural resources.

Phase II Evaluation Study

1. Archaeological excavations will be conducted.
2. The information obtained and artifacts collected will be analyzed.
3. Phase I studies will be reported in an Archaeological Survey Report (ASR).
4. Phase II studies will be reported in a Determination of Eligibility Report (aka Phase II Evaluation Report) for prehistoric resources and a Historic Resources Evaluation Report (HRER) for structures and historic-era archaeological sites.

If cultural resources within the APE are found to be eligible for listing on either the NRHP or the California Register of Historical Resources (CRHP) and cannot be avoided or protected during construction, mitigation may be required. A Finding of Effect (FOE) Report and Memorandum of Agreement (MOA) will be necessary.

Finding of Effect, Memorandum of Agreement, and Section 4(f)Evaluation

1. An FOE documenting the effects of the project on cultural resources will be prepared and submitted to the SHPO and FHWA for consultation.
2. If the effects are adverse, MOA describing mitigation efforts will be prepared.
3. An evaluation under Section 4(f) of the National Transportation Act would be required in the Environmental Document.
4. If there are temporary or permanent impacts to properties eligible for or listed on the NRHP a Section 4(f) evaluation will be necessary.

Phase III Archaeological Mitigation

1. Archaeological information and artifacts will be collected from the area(s) of impact.
2. The information and artifacts will be analyzed.
3. A Phase II Report documenting the material, the analysis, and conclusions, will be produced.
4. The material will be selected and cared for at a certified curator facility.
5. Mitigation efforts may include preparing the information/data in such a way that it can be shared with the public.

If the project plans change, the results of the PEAR Evaluation may be invalidated, and potential impacts to cultural resources may need to be re-examined.

Based on the current layout plans and project limits (which end at PM 24.25), and based upon the available cultural records, we will avoid potential cultural resources within the project limits and ESL. Therefore, a Section 4(f) Evaluation, Phase 1 Identification Study, Extended Phase 1 Study, Phase II Evaluation Study, and Phase III Mitigation are not anticipated. However, since the project has considerable excavation and disturbed soil area, and because the project area is medium-to-high cultural resource sensitivity, there is some potential for encountering buried cultural resources.

8.7 Hydrology and Floodplain: Not completed at this time. A Hydrology Study will need to be completed in the 0 Phase. Design will need to request a Hydrology Study from the D-3 Hydraulics Branch in the late K Phase or early 0 Phase.

8.8 Water Quality and Storm Water Runoff:
The work scope for all of the alternatives consists of widening the roadway, constructing retaining walls, and constructing an under crossing underneath U.S. Highway 50. These activities will require a considerable amount of excavation and disturbed soil area (DSA); therefore, the project's ESL should be evaluated for potential water quality impacts during the PA&ED phase. At this time, the amount of DSA is unknown. The project is within the jurisdiction of the Central Valley RWQCB. Caltrans may participate in early project design consultation with CVRWQCB

8.9 Geology, Soils, Seismic and Topography: Not completed at this time. Due to the involved scope of the project, a Geotechnical Report will need to be completed in the 0 Phase. Design will need request a Geotechnical Study in the late K Phase or early 0 Phase.

8.10 Paleontology:
In fall and winter 2008-2009 LSA Associates conducted a brief preliminary paleontology report consisting of background research and a field study of the U.S. Highway 50 Camino Corridor for the El Dorado Transportation Commission (EDTC). LSA's study for this report consisted of a review of the project limits of the alternatives and **a half-mile radius around the alternatives**. The approach of LSA was to consider a large ESL and their PEAR Paleontology study results reflected this large ESL. It should be noted that the current ESL from Caltrans Planning Design is a smaller ESL.

Also the LSA paleontology study forwarded to Caltrans did not contain detailed scaled mapping to verify the presence or absence of paleontological resources. At this time, Caltrans was unable to update the preliminary paleontology studies started by LSA Associates because there is no designated Paleontology specialist in the District 3/North Region office. Therefore, this PEAR Study will reiterate the points made in LSA's Paleontology Study, with the understanding that further studies and surveys will need to occur in the 0 Phase. The resource hours for potential Paleontology studies for this PEAR were estimated by District 6 personnel, on April 14, 2014.

According to District 6 Geotechnical/Geology staff, the discovery of buried, sensitive paleontological resources is a lower possibility. The discovery of sensitive buried paleontological resources (such as invertebrate fossils) can occur, but it is infrequent. Regardless, due to the presence of sensitive geological formations in the area, a Paleontological Identification Report (PIR) should be completed by a qualified Geologist with a paleontological background. It is strongly advised that a qualified Caltrans Geologist write the PIR as well as any other possible further Paleontological studies to ensure the necessity of such studies. The Caltrans Geologist will use appropriate mapping (with scale) during the 0 Phase for the PIR Study. (The Study completed by LSA did not include maps with appropriate scale to clarify the geologic formations). The PDT Team will not know if any potential paleontological resources are present within the ESL/project limits until the PA&ED Phase (0 Phase). Any paleontological studies and possible mitigation would come from Construction funding.

8.11 Hazardous Waste/Materials:

As stated previously, the following hazardous waste issues are applicable to this project: project: Aerially-Deposited Lead (ADL), Naturally-Occurring Asbestos (NOA), Traffic Stripe Removal, and Treated Wood Waste (TWW). Please refer to the previous section (under Item 5), for a description of the necessary task orders and site investigations involved with these hazardous waste topics.

If cured in place pipe (CIPP) will be used to rehabilitate/upgrade drainage facilities, the potential for hazardous waste may exist with styrene, which is a highly volatile chemical used in the main liner. If groundwater is known to be present in the vicinity of a culvert or if pooled water permeates to the inside of the culvert, the North Region Office of Environmental Engineering recommends the use of a pre-liner instead of patching the deteriorated culvert.

8.12 Air Quality:

After reviewing the alternatives 1A – 1D, the project work scope will not increase traffic on U.S. Highway 50. The air quality conformity analysis requirements are governed by the Code of Federal Regulations (CFR). Based on the project's scope of work, this project is exempt from air quality conformity analysis under Table 2 of 40 Code of Federal Regulations (CFR) section 93.126, subsection **Safety ("Pavement resurfacing and/or rehabilitation; Guardrails, median barriers, crash cushions; Shoulder improvements")**

Construction Impacts: The proposed project may result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust, sometimes referred to as windblown dust or PM10, would be the primary short-term construction impact, which may be generated during excavation, grading and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature.

8.13 Noise and Vibration:

Based on the work scope, this project does not meet the definition of a Type 1 project as specified in CFR Part 772 (Procedures for Abatement of Highway Traffic Noise and Construction Noise). Since this project is not a Type 1 project, no detailed traffic noise analysis will be required. During construction, however, noise may be generated from the contractor's equipment and vehicles, which is temporary. As the project plans are updated, sensitive noise receptors (residences or businesses) may occur within the project limits and ESL, and the possibility of any sensitive receptors will be investigated in the 0 Phase.

8.14 Energy and Climate Change:

The proposed project is not expected to impact energy resources. Air quality in the project area is expected to improve due to reduced left-turn delays; therefore, greenhouse gas emissions are also expected to decrease when compared to existing conditions. An evaluation of the greenhouse gas emissions will be needed in the environmental document to demonstrate the reduction.

8.15 Biological Environment:

The project area is located in the foothills on the western side of the northern Sierra Nevada mountain range, at an elevation that ranges from approximately 2,645 to 2,995 feet. The project area is surrounded by oak woodlands, conifers, and invasive grasslands. The project's Environmental Study Limit (ESL) is comprised mostly of the highway's asphalt concrete, as well as disturbed shoulder and pullout areas, and some surrounding vegetation that consists of trees, shrubs, and some riparian plants. Additional ROW acquisition is necessary for the project's construction. The PEAR Biology Study states that the following surveys are required for both Alternatives 1 and 2. Please note that some of these surveys can be done concurrently with one another.

Birds (including Raptors): Surveys should be completed during the PA&ED phase to make sure listed birds are not nesting and roosting within the project area. The nesting California spotted owl (*Strix occidentalis occidentalis*), a California species of special concern, occurs within the project area. Potential direct or indirect impacts on the California spotted owl during its nesting season could occur as a result of the proposed project.

Amphibians, Reptiles: Surveys should be completed for the California red-legged frog (*Rana draytonii*). Potential Impacts and Consultation: Potential habitat suitable for the California red-legged frog occurs within or near the project area. Potential direct or indirect impacts could occur as a result of the proposed project.

Insects: Surveys should be completed for the Valley Elderberry longhorn beetle (VELB) *(Desmocerus californicus dimorphus*), which has potential for occurring in the project area. The VELB is associated with the Valley Elderberry shrub, which is the host plant for VELB. **Potential Impacts and Consultation: Potential habitat suitable for the VELB occurs within the project area.**

Vegetation/Sensitive and Rare Plants: The following sensitive plant species have been identified as potentially occurring within the project study area based on the habitat requirements and known ranges of each species: *Clarkia biloba ssp. brandegeeae*, *Clarkia virgata, Claytonia parviflora ssp. grandiflora, Lilium humboldtii ssp humboldtii, and Navarretia prolifera ssp. lutea.*

The proposed project is expected to result in ground disturbance and vegetation removal due to highway widening and other construction activities, and has the potential to result in negative effects to sensitive or rare plant species. Because the proposed project will result in ground disturbance and vegetation removal which has potential to negatively impact these sensitive/rare plants, botanical surveys are required to identify any special-status plants that have potential to occur within the project area. These surveys should occur during the appropriate blooming period and if any listed special-status plants are discovered within the project area, they will be mapped. Potential Impacts and Consultation: Potential direct or indirect impacts on listed plant species could occur as a result of the proposed project.

Jurisdictional Waters/Water Quality: Surveys will be required to determine if the drainage areas and waterways are jurisdictional within the project limits.

Potential Impacts and Consultation: Potential jurisdictional drainages and waterways were detected within the project area. However, Best Management Practices (BMPs) and Environmentally-Sensitive Areas (ESAs) will be implemented to avoid impacts to these water ways.

For more information, please refer to the project's PEAR Biology Study, dated December 4, 2014.

8.16 Cumulative Impacts:

A Cumulative Impact Analysis was not completed at this time. Under CEQA cumulative impacts are defined as a project's incremental impacts combined with the effects of other projects. Environmental damage can occur incrementally from a variety of small sources. Under NEPA a cumulative impact is defined as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Effects include (a) direct effects, which are caused by the action and occur at the same time and place, and (b) indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

As the project develops and moves from the 0 Phase (PA&ED) through the 3 Phase (Construction), the Project Development Team (PDT) will need to gather information and consider other planned highway projects in the vicinity of this project, as well as the construction schedules of those other projects. Addressing cumulative impacts is required in the DED and FED.

8.17 Context Sensitive Solutions:

A context sensitive solutions study was not completed at this time, and this topic should be considered and addressed in the 0 Phase. According to the Federal Highway Administration and the American Association of State and Highway Transportation Officials (AASHTO), context sensitive solutions are an interdisciplinary approach that involve all stakeholders in providing a transportation facility that fits its setting. The aim of context sensitive solutions is to preserve and enhance scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions.

Context sensitive solutions for this project will be addressed in the Visual Impact Analysis (VIA), and the VIA's recommendations will be included in the DED and FED. Applying aesthetic treatment to the proposed median barrier is one example of a context sensitive solution; and the PDT Team will develop other context-sensitive solutions for this project.

9. Disclaimer

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report (PSR). The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

10. List of Preparers

Cultural Resources specialists: Richard Olson & Joan Fine	Date: 12/03/14
Biologist: Jason Meigs	Date: 12/04/14
Community Impacts specialist: PEAR Community Impacts addressed by Environmental Coordinator. G. Neale	Date: 1/16/15
Noise and Vibration specialist: Saeid Zandian	Date: 3/27/14
Air Quality specialist: Shalanda Christian	Date: 12/04/14
Paleontology specialist/liaison: Further study/investigation needed for 0 Phase - because there's no Paleo specialist in D-3/North Region. (LSA Associates wrote a brief Paleo PEAR Study in Dec. 2008)	Date: 12/01/08
Water Quality specialist: Sean Cross	Date: 12/02/14
Hydrology and Floodplain specialist: Not completed at this time - further study/investigation required.	Date: N/A
Hazardous Waste/Materials specialist: Rajive Chadha	Date: 2/21/14
Visual/Aesthetics specialist: Kathleen Grady	Date: 4/09/14
Energy and Climate Change specialist: Further study/investigation needed for 0 Phase.	Date: 4/14/14
Other:	
PEAR Preparer (Name and Title) Georgette Neale – Environmental Coordinator	Date: 1/23/15

11. Class of Action recommendation:

At this time it is unknown if there will be any strong public controversy for this project. Although this project has multiple alternatives for re-routing the local roads/streets, we propose at this time (during the K Phase) that the project fits the classification of a Routine EA. The other environmental issues listed above are not overly-complex issues; and there are required avoidance/minimization or

mitigation measures--that will apply to the project to offset them to less-than-significant impacts. If there is strong public controversy or opposition to the project, or other unforeseen issues, the project has the potential to elevate to a Complex EA, and the project schedule would need to be changed to accommodate quality control review for a Complex EA.

12. 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 (COA). The COA concurrence occurred on February 6, 2015.

Kendall Schulz
Environmental Branch Chief — Date: 2/9/15

Clark A. Peri
Project Manager — Date: 2/9/15

REQUIRED ATTACHMENTS:

Attachment A: PEAR Environmental Studies Checklist
Attachment B: Estimated Resources by WBS Code
Attachment C: Schedule (Gantt Chart) Attachment C is not included in this PEAR.
Attachment D: PEAR Environmental Commitments Cost Estimate (Standard PSR)

Attachment A: PEAR Environmental Studies Checklist

Rev. 11/08

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☒	☐	☐	L	
Growth	☒	☐	☐	L	
Farmlands/Timberlands	☒	☐	☐	L	
Community Impacts	☐	☒	☒	M	ROW impacts to private parcels, temporary traffic impacts during construction, & relocation of El Dorado Co. Irrigation Ditch.
Community Character and Cohesion	☒	☐	☐	L	
Relocations	☐	☐	☒	H	According to current maps (dated 2008-2009) one (1) full parcel take of Sierra Banquet Center & four (4) part-take land acquisitions due to proposed Undercrossing. PE will look into shifting the design northward to attempt to avoid take of Sierra Banquet Center.
Environmental Justice	☐	☒	☐	L	
Utilities/Emergency Services	☐	☒	☐	M	Relocation of El Dorado Co. Irrigation Ditch.
Visual/Aesthetics	☐	☒	☐	L	State Scenic Highway Status
Cultural Resources:	☐	☐	☐	M	We're assuming federal funds will get added to project, so Cultural will address NEPA.
Archaeological Survey Report	☐	☒	☒	L	At this time, the ASR is low risk, because no known archaeological resources within ESL. But it's dependent on cultural's investigation in 0 phase.
Historic Resources Evaluation Report	☐	☐	☒	L	2 cultural resources within ESL appear exempt under 2014 P.A. But there is potential for unrecorded or buried archaeological resources.
Historic Property Survey Report	☐	☐	☒	L	
Historic Resource Compliance Report	☒	☐	☐	L	N/A
Section 106 / PRC 5024 & 5024.5	☐	☒	☐	L	
Native American Coordination	☐	☐	☒	L	Native American consultation is documented in HPSR/ASR
Finding of Effect	☐	☐	☒	L-M	No Effect Finding is currently anticipated; written Cultural reports are required.
Data Recovery Plan	☒	☐	☐	L	At this time, not anticipated, but would apply if buried

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
					resources are discovered.
Memorandum of Agreement	☒	☐	☐	L- M	At this time, not anticipated, but would apply if buried resources are discovered.
Other:	☒	☐	☐	L	
Hydrology and Floodplain	☐	☐	☐	M-H	A portion of the ED Co. Irrigation Ditch needs to be relocated. Coordination with ED Co. is required in early 0 Phase, & may take a lot of time/negotiations. Design will need to request Hydraulics Study.
Water Quality and Stormwater Runoff	☐	☐	☒	M	
Geology, Soils, Seismic and Topography	☐	☐	☒	M	Design will need to request Geotech. studies
Paleontology	☐	☐	☐	L	According to D-6 Geotech/Geology, the possibility of encountering sensitive Paleo resources is low probability. Further study necessary.
PER	☐	☐	☒	M	If paleo resources are found, PER is required.
PMP	☐	☐	☒	M	If paleo resources are impacted by project, PMP is required.
Hazardous Waste/Materials:	☐	☐	☐	L	
ISA (Additional)	☐	☒	☐	L	
PSI	☐	☐	☒	L	Site Investigations required for ADL and NOA
Other:	☒	☐	☐	L	
Air Quality	☒	☒	☐	L	
Noise and Vibration	☐	☒	☐	L	Noise will need to consider nearby sensitive receptors (homes, businesses)
Energy and Climate Change	☐	☒	☐	L	
Biological Environment	☐	☐	☒	M	Surveys required for CRLF, VELB, and possibly CA spotted owl (nesting).
Natural Environment Study	☐	☐	☒	M	
Section 7:	☐	☐	☒	M	Suitable habitat for CRLF, VELB, and possibly CA spotted owl (nesting).within project limits.
Formal	☐	☐	☒	M	
Informal	☐	☐	☒	M	
No effect	☐	☐	☒	M	
Section 10	☒	☐	☒	L	
USFWS Consultation	☐	☒	☒	M	Likely informal consultation, but possible formal consultation.

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
NMFS Consultation	☒	☐	☒	L	
Species of Concern (CNPS, USFS, BLM, S, F)	☐	☐	☒	M	
Wetlands & Other Waters/Delineation	☐	☐	☒	M	
404(b)(1) Alternatives Analysis	☐	☐	☒	L	
Invasive Species	☐	☒	☐	L	
Wild & Scenic River Consistency	☒	☐	☐	L	N/A
Coastal Management Plan	☒	☐	☐	L	N/A
HMMP	☒	☐	☐	M	Written HMMP will be submitted with permits.
DFG Consistency Determination	☒	☐	☐	L	
2081	☒	☐	☐	L	
Other:	☐	☐	☐	L	
Cumulative Impacts	☐	☐	☒	L	
Context Sensitive Solutions	☒	☐	☒	L	
Section 4(f) Evaluation	☐	☐	☒	L	No 4(f) anticipated at this time.
Permits:					
401 Certification Coordination	☐	☐	☒	M	
404 Permit Coordination, IP, NWP, or LOP	☐	☐	☒	M	
1602 Agreement Coordination	☐	☐	☒	M	
Local Coastal Development Permit Coordination	☒	☐	☐	L	N/A
State Coastal Development Permit Coordination	☒	☐	☐	L	N/A
NPDES Coordination	☐	☐	☒	M	
US Coast Guard (Section 10)	☒	☐	☐	L	N/A
TRPA	☒	☐	☐	L	N/A
BCDC	☒	☐	☐	L	N/A

ATTACHMENT B - Environmental Resources by WBS Code

EA: 03-4E620K ED 50 Safety

NOTE: This WBS resource estimating tool is for Generalist use ONLY when a district-specific WBS estimating tool is not available. Check with your supervisor before using this form.

Description: Widen, Median Barrier, & Retaining Walls

WBS current 11/2008

Assigned Units: For K phase Unit 0280, 0386, & 0292	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise/Air	Paleo	Sup Svcs	Total	Begin Date	End Date	Duration (days)
Need unit # Units 0280, 0386, & 0292	**280**	**280**	**280**	**280**	**386**	**280**	**386**	**386**	**3657**	**292**				
Project Management														
100.05.05 – Project Init. & Plng.	2	4					4			8	18			0
100.05.10 – PID Cmpnt Exec. & Ctrl.	6	60	20	20						12	118			0
100.05.15 – PID Cmpnt Closeout											0			0
100.10.05 – PA&ED Cmpnt Init. & Plng.							12				12			0
100.10.10 – PA&ED Cmpnt Exec. & Ctrl.	24	45	32	10						12	123			0
100.10.15 – PA&ED Cmpnt Closeout										12	12			0
100.10.20 – Project Shelving (PA&ED)											0			0
100.10.25 – Project Unshelving (PA&ED)											0			0
100.10.30 – Updd Admtv Rec during PA&ED											0			0
100.10.35 – Execd Coop Agre for PA&ED Process											0			0
100.15.05 – PS&E Cmpnt Init. & Plng.							12			12	24			0
100.15.10 – PS&E Cmpnt Exec. & Ctrl.				8							8			0
100.15.15 – PS&E Cmpnt Closeout										12	12			0
100.15.20 – Project Shelving (PS&E)											0			0
100.15.25 – Project Unshelving (PS&E)											0			0
100.15.30 – Updd Admtv Rec during PS&E											0			0
100.15.35 – Execd Coop Agre for PS&E Process											0			0
100.20.05 – Const. Cmpnt Init. & Plng.	10	14					12				36			0
100.20.10 – Const. Cmpnt Exec. & Ctrl.							60				60			0
100.20.15 – Const. Cmpnt Closeout											0			0
100.20.20 – Project Shelving (Construction)											0			0
100.20.25 – Project Unshelving (Construction)											0			0
100.20.30 – Updd Admtv Rec during Const											0			0
100.20.35 – Execd Coop Agre for Const Process											0			0
100.25.05 – R/W Cmpnt Init. & Plng.											0			0
100.25.10 – R/W Cmpnt Exec. & Ctrl.											0			0
100.25.15 – R/W Cmpnt Closeout											0			0
100.25.20 – Project Shelving (Right of Way)											0			0
100.25.25 – Project Unshelving (Right of Way)											0			0
100.25.30 – Updd Admtv Rec during R/W											0			0
100.25.35 – Execd Coop Agre for R/W Process											0			0
100.25.50 – Execd Coop Agre for R/W Rlnmnt	4	10									14			0
Total Project Management	46	133	52	38	0	0	100	0	0	68	437			
Perform Preliminary Engineering Studies and Prepare Draft Project Report														
160.05.05 – Approvd PID Review	6	12					12				30			0
160.05.10 – Geotechnical Information Review											0			0
160.05.20 – Traffic Data & Forecasts Review											0			0
160.05.30 – Project Scope Review	6	12					12				30			0

160.10.20 – Value Analysis											0			0
160.10.25 – Hydraulics/Hydro Study											0			0
160.10.30 – Hwy Planting Des Concepts											0			0
160.15.20 – Draft Project Report											0			0
160.15.25 – Draft PR Circ, Rev & App	6	12									18			0
160.30.05 – Maps for ESR	10	16	10	8	8	8	8				68			0
160.30.10 – Surveys/Maps for Env Studies	2	6									8			0
160.30.15 – Prop Access Rights for Env/Eng Studie	4	24	12	12					6		58			0
160.40 – NEPA Delegation	2	6									8			0
Total Prelim Eng Studies	36	88	22	20	8	8	32	0	6	0	220			

Assigned Unit	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise/Air	Paleo	Sup Svcs	Total	Begin Date	End Date	Duration (days)
Perform Environmental Studies and Prepare Draft Environmental Document														
165.05.05 – Project Information Review	16	24	16	12		6				12	86			0
165.05.10 – Pub & Agency Scoping	14	30	16	6						12	78			0
165.05.15 – Alts for Further Study	8	12	36								56			0
165.10.15 – CIA, Land Use & Growth	10	60									70			0
165.10.25 – Noise Study								36			36			0
165.10.30 – Air Quality Study								8			8			0
165.10.35 – Water Quality Studies		16	20				144				180			0
165.10.40 – Energy/Climate Change Studies	4	16									20			0
165.10.45 – Sum Geotech Report	8	10									18			0
165.10.50 – Preliminary Site Investigation HW					10						10			0
165.10.55 – Draft R/W Relocation Impact Eval											0			0
165.10.65 – Paleontology Study									104		104			0
165.10.70 – Wild & Scenic River Coordination											0			0
165.10.75 – Envir Commitments Record		20									20			0
165.10.99 - Other Env Studies		24									24			0
165.15.05 – Biological Assessment			120								120			0
165.15.10 – Wetlands Study			120								120			0
165.15.15 – Resource Agency Coord	8	30	120								158			0
165.15.20 – NES Report			120								120			0
165.15.99 – Other Biological Studies											0			0
165.20.05 – Archaeology Survey											0			0
165.20.05.05 – APE Map				24							24			0
165.20.05.10 – NA Consultation				18							18			0
165.20.05.15 – Records & Literature Search				32							32			0
165.20.05.20 – Field Survey			60	80							140			0
165.20.05.25 – ASR				40							40			0
165.20.05.99 – Other Archy Survey Products											0			0
165.20.10 – Extended Phase I Archy Studies											0			0
165.20.10.05 – Native American Consultation				16							16			0
165.20.10.10 – Extended Phase I Proposal				40							40			0
165.20.10.15 – XP1 Field Investigation				550							550			0
165.20.10.20 – XP1 Materials Analysis				80							80			0
165.20.10.25 – Extended Phase I Report				60							60			0
165.20.10.99 – Other Phase I Archy Products											0			0
165.20.15 – Phase II Archy Studies											0			0
165.20.15.05 – NA Consultation				16							16			0
165.20.15.10 – Phase II Proposal				32							32			0
165.20.15.15 – Field Investigation				550							550			0
165.20.15.20 – Materials Analysis				60							60			0
165.20.15.25 – Phase II Report				40							40			0
165.20.15.99 – Other Phase II Archy Products											0			0
165.20.20 – Hist & Architectural Studies											0			0
165.20.20.05 – Prelim APE/Study Area Maps - Archl				40							40			0
165.20.20.10 – Hist Res Eval Rpt - Archy				200							200			0
165.20.20.15 – Hist Res Eval Rpt - Archl				200							200			0
165.20.20.20 – Bridge Evaluation											0			0
165.20.20.99 – Other H & A Study Products											0			0

165.20.25 – Cultural Res Comp Docs											0			0
165.20.25.05 – Final APE Maps				24							24			0
165.20.25.10 – PRC 5024.5 Consult				24							24			0
165.20.25.15 – HPSR/HRCR				120							120			0
165.20.25.20 – Finding of Effect				160							160			0
165.20.25.25 – Archy Data Recovery Pln				32							32			0
165.20.25.30 – MOA				40							40			0
165.20.25.99 – Other Cult Res Comp Products											0			0
165.25.05 – Draft ED Analysis	32	250								24	306			0
165.25.10 – 4(f) Evaluation											0			0
165.25.15 – CE/CE Determination											0			0
165.25.20 – Env Quality Control & Other Reviews	30	50	6	20	4		6	6		24	146			0
165.25.25 – Approval to Circ Resolution											0			0
Assigned Unit	**Senior**	**Coord**	**Biology**	**Cultural**	**Haz Waste**	**Socio-Economic**	**Storm Water**	**Noise/Air**	**Paleo**	**Sup Svcs**	**Total**	**Begin Date**	**End Date**	**Duration (days)**
165.25.30 – Env Coordination		160									160			0
165.25.99 – Other DED Products	6	12									18			0
165.30 – NEPA Delegation	6	20		16							42			0
Total Env Studies & Prep DED	130	700	628	2532	14	6	150	50	104	72	4438			
Permits, Agreements, and Route Adoptions during PA&ED Cmpnt														
170.05 - Required Permits (list)											0			0
170.10.05 - US Army Corps 404 Permit											0			0
170.10.10 - US Forest Service Permit(s)											0			0
170.10.15 - US Coast Guard Permit											0			0
170.10.20 - DFG 1600 Agreement(s)											0			0
170.10.25 - Coastal Zone Development Permit											0			0
170.10.30 - Local Agency Concurrence/Permit											0			0
170.10.40 - Waste Discharge (NPDES) Permit(s)											0			0
170.10.45 - US Fish & Wildlife Service Approval			120								120			0
170.10.50 - RWQCB 401 Permit											0			0
170.10.60 - Updated ECR		8									8			0
170.10.95 - Other Permits											0			0
170.45 - MOU from TERO Office											0			0
170.55 - NEPA Delegation	2	8									10			0
Total Permits, Agreements & Route Adoptions	2	16	120	0	0	0	0	0	0	0	138			
Circulate Draft Environmental Document and Select Preferred Project Alternative														
175.05.05 – Master Dist & Invitation Lists	4	10									14			0
175.05.10 – Notices Pub Hear & DED Avail	4	24									28			0
175.05.15 – DED Pub & Circulation		24	20	20	16	24	24	24	24	30	206			0
175.05.20 – Fed Consistency Det (Coastal)											0			0
175.05.99 – Other DED Circulation Products	12	32									44			0
175.10.05 – Need for Pub Hearing Determination				6							6			0
175.10.10 – Pub Hearing Logistics	6	16									22			0
175.10.15 – Displays for Pub Hearing											0			0
175.10.20 – 2nd Notice Pub Hear & Avail											0			0
175.10.25 – Map Display & Hearing Plan											0			0
175.10.30 – Display Pub Hear Maps											0			0
175.10.35 – Public Hearing	8	8									16			0

175.10.40 – Record of Public Hearing											0			0
175.10.99 – Other Pub Hearing Products	6	10									16			0
175.15 – Responses to Pub Hear Comments		40									40			0
175.20 – Project Preferred Alternative	4	8									12			0
175.25 – NEPA Delegation		12		2							14			0
Total DED & Preferred Alt	44	184	20	28	16	24	24	24	24	30	418			
Prepare and Approve Project Report and Final Environmental Document														
180.05.10 – Approved Project Rep							12				12			0
180.05.15 – Updated Stormwater Data Report											0			0
180.10.05 – Approved FED	32	50									82			0
180.10.05.05 – Draft FED Review	24	32		2							58			0
180.10.05.10 – Revised Draft FED	8	40									48			0
180.10.05.15 – Section 4(f) Evaluation											0			0
180.10.05.20 – Findings Report											0			0
180.10.05.25 – Statement of Overriding Consid											0			0
180.10.05.30 – CEQA Certification	4	8									12			0
180.10.05.35 – FHWA and Approval											0			0
180.10.05.40 – Section 106 Cons & MOA				32							32			0
180.10.05.45 – Section 7 Consultation											0			0
180.10.05.50 – Final Section 4(f) Statement											0			0
180.10.05.55 – Floodplain Only PAF											0			0
180.10.05.60 –Wetlands Only PAF											0			0
180.10.05.65 – Sect 404 Permit Compliance											0			0
180.10.05.70 – Mitigation Measures	6	20	30								56			0
180.10.10 – Public Dist & Resp to Comments	16	40									56			0
Assigned Unit	**Senior**	**Coord**	**Biology**	**Cultural**	**Haz Waste**	**Socio-Economic**	**Storm Water**	**Noise/Air**	**Paleo**	**Sup Svcs**	**Total**	**Begin Date**	**End Date**	**Duration (days)**
180.10.15 – Final R/W Relo Impact Document											0			0
180.10.99 – Other FED Products											0			0
180.15.05 – ROD (NEPA)											0			0
180.15.10 – NOD (CEQA)	4	10									14			0
180.15.20 – Env Commitments Record	3	12									15			0
180.15.99 – Other Complete ED Products	2	6									8			0
180.20 – NEPA Delegation	2	6		8							16			0
Total App PR & FED	101	224	30	42	0	0	12	0	0	0	409			
Update Project Info for PS&E														
185.05.05 – Project Concept Review for PS&E	2	4					6				12			0
185.05.10 – Updated Project Info for PS&E dev							6				6			0
Total Update for PS&E	2	4	0	0	0	0	12	0	0	0	18			
ROW & Excess Land														
195.40.25 – Property Maint & Rehab (non-rental)											0			0
195.40.35 – Transfer of Prop to Clear Status											0			0
195.45.05 – Excess Lands Inventory											0			0
195.45.20 – Prop Disp Units less than $15 K											0			0
195.45.25 – Prop Disp Units $15 K -$500 K											0			0
195.45.30 – Prop Disp Units over $500 K											0			0
Total ROW & Excess Land	0	0	0	0	0	0	0	0	0	0	0			

Utility Relocation														
200.15 – Approved Utility Relocation Plan				16							16			0
200.20 – Utility Relocation Package											0			0
Total Coordinate Utilities	0	0	0	16	0	0	0	0	0	0	16			
Permits, Agreements, and Route Adoptions during PS&E Cmpnt														
205.10.05 - US Army Corps 404 Permit	4	16	250								270			0
205.10.10 - US Forest Service Permit(s)											0			0
205.10.15 - US Coast Guard Permit											0			0
205.10.20 - DFG 1600 Agreement	4	16	120								140			0
205.10.25 - Coastal Development Permit											0			0
205.10.30 - Local Agency Concurrence/Permit											0			0
205.10.40 - Waste Discharge (NPDES) permit							60				60			0
205.10.45 - US Fish & Wildlife Service Approval	4	16	120								140			0
205.10.50 - RWQCB 401 Permit	4	16	250								270			0
205.10.60 - Updated ECR											0			0
205.10.95 - Other Permits			60								60			0
205.20.05 – Draft Fwy Agreement											0			0
205.20.10 – Draft Fwy Agree Review											0			0
205.20.15 – Final Fwy Agree											0			0
205.20.20 – Executed Fwy Agreement											0			0
205.40.10 - New Connections & Route Adopt Sbtl											0			0
205.55 - NEPA Delegation	3	6		8							17			0
Total Permits, Agreements, and Route Adoptions	19	70	800	8	0	0	60	0	0	0	957			

Assigned Unit	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise/Air	Paleo	Sup Svcs	Total	Begin Date	End Date	Duration (days)
Right of Way Interests														
225.55.20 – Right of Way Clearance											0			0
Total Right of Way Interests	0	0	0	0	0	0	0	0	0	0	0			
Prepare Draft PS&E														
230.05.45 – Noise Barrier Plans											0			0
230.10.05 – Hwy Planting Plans											0			0
230.10.15 – Plant List											0			0
230.35.10 – Hwy Planting Specs											0			0
230.35.35 – Water Pollution Ctrl Specs							30				30			0
230.35.40 – Erosion Control Specs							6				6			0
230.60 – Updated Proj Info for PS&E Package			10	6			6				22			0
230.60.05 - Updated Storm Water Data Report							24				24			0
230.60.10 – Other Reviews/Updates Proj Info							12				12			0
230.90 – NEPA Delegation		4									4			0
Total Prepare Draft PS&E	0	4	10	6	0	0	78	0	0	0	98			
Mitigate Environmental Impacts and Clean-up Hazardous Waste														
235.05.05 – Hist Structures Mitig											0			0
235.05.10 – Archy & Cult Mitigation				80							80			0
235.05.15 – Biological Mitigation	10	24	120							40	194			0
235.05.20 – Env Mitigation R/W work											0			0
235.05.25 – Paleontology Mitigation									50		50			0
235.05.99 - Other Env Mitigation Products								8			8			0
235.10.10 – Haz Waste Sites Survey					96						96			0
235.10.15 – Detailed HW Sites Investigation											0			0
235.15 – HW Management Plan					8						8			0
235.20 – HW PS&E											0			0
235.25 – HW Clean-up											0			0
235.30 – Certification of Sufficiency (HW)					6						6			0
235.35 – Long Term Mitigation Monitoring			120								120			0
235.40 – Updated ECR	3	6									9			0
235.45 – NEPA Delegation		4		4							8			0
Total Mitigation & HW Clean-up	13	34	240	84	110	0	0	8	50	40	571			
Permits for Subsurface Geotechnical Exploration														
240.70 – Site Ready for Subsurface Exploration											0			0
Total Geotechnical Permit	0	0	0	0	0	0	0	0	0	0	0			
Circulate, Review and Prepare Final District PS&E Package														
255.05 – Circ & Rev Draft Dist PS&E	2	24	24	10	8	6	24	6		20	124			0
255.10.25 - Updated Technical Reports		6	6	6	6	6	4	3			37			0
255.15 – Env Reevaluation	8	20		20			3				51			0
255.20.05 - Rev Plans for Stds Comp											0			0
255.40 - Res Engs Pending File	6	32									38			0
255.45 – NEPA Delegation		6									6			0
Total PS&E	16	88	30	36	14	12	31	9	0	20	256			

Assigned Unit	Senior	Coord	Biology	Cultural	Haz Waste	Socio-Economic	Storm Water	Noise/Air	Paleo	Sup Svcs	Total	Begin Date	End Date	Duration (days)
Prepare Contract Documents														
260.75 - Env Cert at RTL	10	24	6	6		6	18	12	8	12	102			0
Total Prepare Contract Documents	10	24	6	6	0	6	18	12	8	12	102			
Perform Construction Engineering and General Contract Administration														
270.20.50 – Technical Support	10	40	70	60			210	20	24	60	494			0
270.55 – Final Inspect & Accept Rec										8	8			0
270.70 – Update ECR	2	8		2							12			0
270.75 – Permit Renewal & Extension	3	6	20							6	35			0
270.80 – Long-Term Mitigation Contract	3	8	20							12	43			0
Total Const Engineering	18	62	110	62	0	0	230	20	24	86	592			
Prepare and Administer Contract Change Orders														
285.05.05 - Need for CCO Determination							6			24	30			0
285.10.15 – Other Func Support	6	16	20	20	6		6	6		24	104			0
Total CCOs	6	16	20	20	6	0	12	6	0	48	134			
Resolve Contract Claims														
290.35 – Provide Techinical Support										12	12			0
Total Contract Claims	0	0	0	0	0	0	6	0	0	12	12			
Accept Contract, Prepare Final Construction Estimate & Prepare Final Report														
295.35 – Cert of Env Compliance	6	12								30	48			0
295.40 – Long-Term Mitigation Contract	40	120	180		24	36	36	20		220	676			0
Total Final Construction	46	132	180	0	24	36	36	20	24		724			
Total Project Hours	489	1779	2268	2898	192	92	801	149	240	388	9540			

Attachment D: PEAR Environmental Commitments Cost Estimate

Standard PSR Only

(Prepare a separate form for each viable alternative described in the Project Study Report)

PART 1 PROJECT INFORMATION *rev. 11/08*

District-County-Route-Post Mile **D-3 ED 50 PMs 21.95/24.25**	EA: **03-4E620K & E-FIS: 03-14000039**
Project Description: **A Safety project that will widen U.S. Highway 50, install a median barrier, install retaining walls, and construct an undercrossing (going underneath the highway) at the Lower Carson Road and which will connect with the local roads (which are on the north side of U.S. Highway 50).**	
Form completed by (Name/District Office): **Georgette Neale/District 3 Environmental**	
Project Manager: **Clark Peri**	Phone Number: **(916) 274-0538**
Date: **1/23/15**	

PART 2 PERMITS AND AGREEMENTS

	Permits and Agreements ($$)
☒ Fish and Game 1602 Agreement	$ **4,605**
☐ Coastal Development Permit	
☐ State Lands Agreement	
☒ Section 401 Water Quality Certification	$ **3,000**
☒ Section 404 Permit – Nationwide (U.S. Army Corps)	0
☐ Section 404 Permit – Individual (U.S. Army Corps)	
☐ Section 10 Navigable Waters Permit (U.S. Army Corps)	
☐ Section 9 Permit (U.S. Coast Guard)	
☒ Other: Possible Mitigation or In-Lieu Fees	**$100,000**
Total (enter zeros if no cost)	**$107,605**

PART 3. ENVIRONMENTAL COMMITMENTS FOR PERMANENT IMPACTS

To complete the following information:

- Report costs in $1,000s.
- Include all costs to complete the commitment:
  - O.K. to break down by phase: Design, ROW, Construction, and/or provide Sub-Total.
  - Capital outlay and staff support. Refer to Estimated Resources by WBS Code. For example, if you estimated 80 hours for biological monitoring (WBS 235.35 Long Term Mitigation Monitoring), convert those hours to a dollar amount for this entry. For current conversion rates from PY to dollars, see the Project Manager.
  - Cost of right of way or easements.
  - If compensatory mitigation is anticipated (for wetlands, for example), insert a range for purchasing credits in a mitigation bank.
  - Long-term monitoring and reporting
  - Any follow-up maintenance
  - Use current costs; the Project Manager will add an appropriate escalation factor.
  - This is an estimating tool, so a range is not only acceptable, but advisable.

Environmental Commitments Alternative 1 and 2					
	Estimated Cost in $1,000's				Notes
	Phases				
	Design	ROW	Construction	Sub-Total	
Noise abatement or mitigation					
Special landscaping					
Archaeological resources					
Biological resources		**$100K**			
Historical resources					
Scenic resources					
Wetland/riparian resources		**$7.6 K**			
Res./bus. relocations					
Other: **Paleontological. We appear to have a Moderate Risk of encountering Paleo. resources.**	$15 K	$15 K	$25 K		At this time, cost for Paleontology is "ballpark" estimate. Caltrans Geologist will write report in 0 Phase to determine if potential paleo resources are likely or not.
Total (enter zeros if no cost)	$15 K	**$107 K**	$25 K		

ATTACHMENT D

PRELIMINARY DRAINAGE REPORT

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. RYAN KOHAGURA
Project Engineer
Office of Advance Planning
Division of Planning and Local Assistance

Date: January 27, 2014

File: ED-50 PM 22.0/24.1
EA 03-4E620K
Camino Safety Project
EFIS 0314000039

From: MR. SOKA H. SOKA
Hydraulics Branch Engineer
Office of Engineering Services
NR Division of Engineering

REGISTERED PROFESSIONAL ENGINEER
SOKA H. SOKA
No. 80541
Exp. 03/31/15
CIVIL
STATE OF CALIFORNIA

Soka H. Soka

Subject: PRELIMINARY DRAINAGE REPORT

This report is prepared for the above referenced project along US-50 in El Dorado County between PM 22.00 and 24.10 to provide hydraulic information, floodplain encroachments impacts and to propose required drainage facilities and their estimated cost of construction.

PROJECT UNDERSTANDING:

As proposed, the project will widen the roadway in both eastbound (EB) and westbound (WB) directions to provide auxiliary lanes and/or shoulders, construct concrete median barrier, construct retaining walls at various locations, construct Pondorado Road undercrossing to Carson Road and place HMA overlay on existing pavement surfaces.

The proposed project site is located in the Sierra Nevada Mountain range, and has been identified on the Camino USGS topographic Quadrangle map.

HISTORICAL RECORDS AND REVIEW OF EXISTING DRAINAGE FACILITIES:

The Hydraulics Branch maintains history files of flood events or drainage problems that have occurred throughout the region. The history file within the proposed project limits has been reviewed. Currently, there is no outstanding drainage issue and all of the previous complaints or problems have been addressed in the past. For example:

1) Erosion problem complaint by Mrs. Fay M. Rupley Gunby in 1966 between PM 21.90 and PM 21.97 was addressed in late 1968 under Contract No. 03112 909025 5925050.
2) Erosion problem complaint by Mr. Joseph V. Flynn, President of Camino Heights Community Services, Inc., in 1978 between PM 22.9 and PM 23.5 was addressed under contract known as Erosion Project – Camino Heights in 1978.
3) An underground water causing pavement distress and maintenance problem at PM 24.07 was addressed by Minor Contract No. 39735 in 1976.

While these records are reliable as to events noted, it should be understood that they might not represent all instances of flooding or drainage problems as events may have occurred without the benefit of being documented.

The proposed project site lies within the area of highway maintained under the supervision of Mr. Ed Ingram, District-3 Placerville Maintenance Supervisor. Mr. Ingram was contacted by e-mail at ed.ingram@dot.ca.gov to determine if there has been any drainage problem experienced in the past. Although we did not get a response from Mr. Ingram, he can be reached at (530) 622-3673 for any questions.

Also, the available As-Built plans within the proposed project limits have been reviewed and a field review was conducted on January 15, 2014 and January 18, 2014.

Table-A below provides a list of existing drainage facilities within proposed project limits. The list is limited to drainage inlets and culverts only. It does not include culverts under cross streets or driveways, asphalt concrete dikes and curb and gutter.

Table-A List of Existing Drainage Facilities

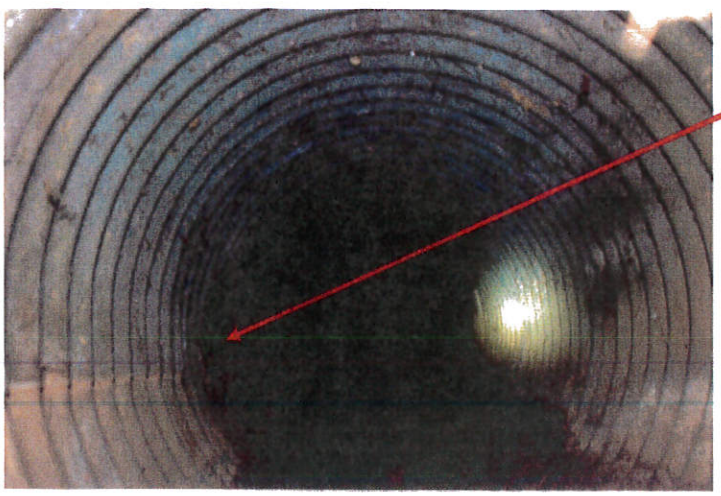
~PM	~Station	Facility Type and Size	Remarks
22.18	96+00	24" CSP and DI	Culvert across Hwy, DI on WB side shoulder
22.22	98+00	12" CSP down drain	On EB side shoulder, failed and requires repair.
22.28	101+50	24" CSP	Full of debris and soil but still can pass water
22.40	107+50	24" CSP	Rusted bottom
22.51	113+50	24" CSP	Full of debris but still can pass water
22.59	117+50	8" CSP down drain	On EB side shoulder
22.62	119+00	24" CSP	Rusted bottom
22.74	125+50	18" CSP and Down drain	Inlet has headwall and Down drain on EB side shoulder
22.82	129+50	18" CSP	
23.03	141+00	24" CSP and DI	DI on WB side shoulder
23.05	142+00	8" CSP down drain	On EB side shoulder
23.13	145+50	24" CSP and DI	DI on WB side shoulder
23.47	163+90	Median DI	On EB side of median barrier
23.47 To 23.48	163+90 To 164+50	18" CSP	Culvert runs along Median connecting two DIs
23.48	164+50	24" CSP and Median DI	DI on EB side of median barrier
23.58	169+90	18" CSP and Median DI	Culvert under EB and DI on EB side of median barrier
23.58 To 23.89	179+80 To 186+25	18" APC	Culvert runs along median
23.64	172+90	Median DI	On EB side of median barrier
23.69	175+90	Median DI	On EB side of median barrier
23.77	179+50	18" CSP and DI	Culvert under WB and DI on EB side of median barrier
23.80	181+50	24" CSP	
23.84	183+90	Median DI	On EB side of median barrier
23.87	185+00	Median DI	On EB side of median barrier
23.89	186+10	Median DIs	One on each side of median barrier

Table-A List of Existing Drainage Facilities Continued ....

~PM	~Station	Facility Type and Size	Remarks
23.89 To 23.92	186+10 To 187+60	18" APC	Culvert runs along median
23.90	186+80	Median DI	On EB side of median barrier
23.91	187+50	18" APC and DIs	Culvert under EB and one DI on each side of median barrier
23.91 To 24.05	187+60 To 194+70	18" APC	Culvert runs along EB shoulder
23.95	189+10	DI	On EB side shoulder
23.96	190+10	DI	On EB side shoulder
23.99	190+10	DI	On EB side shoulder
24.02	193+20	DI	On EB side shoulder
24.05	195+00	18" APC and DI	DI on EB shoulder and Culvert out falls

As-Built plans indicate El Dorado Irrigation District (EID) canals cross the highway at approximate PM 22.88, PM 22.97, PM 23.34, PM 23.45 and PM 23.55. For more information the El Dorado Irrigation District (EID) can be contacted at (530) 622-4513, (530) 642-4028 or (916) 965-0930.

As there might be under drains that have not been shown or indicated in As-Built plans, extra caution is required during excavation operations. An 8" under drain appears to discharge into an existing 24" culvert at PM 22.18 (see picture below).



An 8" under drain discharging point into existing 24" CSP culvert on ED-50 at PM 22.18

RECOMMENDATIONS:

Existing culverts did not show signs of failure and none appeared to require rehabilitation. However, a down drain at PM 22.22 on EB side slope has failed and erosion is occurring on the slope (see pictures below). This failure and slope erosion has been brought to the attention of Mr. Ed Ingram, District-3 Placerville Maintenance Supervisor.

Pictures of failed down drain and slope erosion on ED-50 at PM 22.22 on EB side

As there is existing concrete median barrier between approximate PM 23.46 and 23.90 with well-designed drainage systems between PM 23.46 and 24.10, no drainage facility is proposed in this section at this time.

Table-B presents a list of proposed drainage facilities for the section of project between PM 22.00 and 23.46, approximately. The determination of the proposal is made based on field review and on brief calculations of runoff for roadway drainage (see Attachment-A). It is also recommended to construct scuppers (at least 3 EA in 20 LF section) in the median barrier from Station 96+00 to 98+00 (PM 21.18 to PM 22.22) and from Station 107+50 to 113+50 (PM 22.40 to PM 22.51).

Table-B Proposed Drainage Facilities

~PM	~Station	Proposed Facility Type/Size	Quantity	Remarks
22.00	86+50	DI (Type G1)	1 EA	Slotted drain clean up DI (Tapered spacer type) on EB side of median barrier
22.00 To 22.07	86+50 To 90+00	18" Slotted CSP Drain	350 LF	Along EB side of median barrier
22.18	96+00	24" CSP	20 LF	Extend existing culvert at both ends
		DI (Type G1)	1 EA	On EB shoulder to connect to existing cross culvert
22.22	98+00	24" CSP	100 LF	Culvert to cross EB direction and out falls as down drain over the EB side slope
		DIs (Type G1)	2 EA	One DI in median on WB side of median barrier and one DI on EB shoulder
22.28	101+50	24" CSP	20 LF	Extend existing culvert at both ends
		DIs (Type G1)	2 EA	One DI in median on WB side of median barrier and one DI on EB shoulder, both to connect to existing cross culvert
22.31	103+00	24" CSP	150 LF	Culvert to pick up off-site runoff behind retaining wall on WB side, to cross the Hwy collecting runoff from DIs and to out fall as down drain over EB side slope
		DIs (Type G1)	2 EA	One DI on WB shoulder and one DI on EB shoulder
22.40	107+50	24" CSP	20 LF	Extend existing culvert at both ends
22.51	113+50	24" CSP	20 LF	Extend existing culvert at both ends
		DIs (Type G1)	2 EA	One DI in median on WB side of median barrier and one DI on EB shoulder, both to connect to existing cross culvert
22.60 To 22.62	118+00 To 119+00	24" CSP	100 LF	Culvert along WB side shoulder to pick up off-site runoff behind retaining wall and to connect to existing cross culvert at PM 22.62 (Station 119+00)

Table-B Proposed Drainage Facilities Continued ....

~PM	~Station	Proposed Facility Type/Size	Quantity	Remarks
22.62	119+00	24" CSP	20 LF	Extend existing culvert at both ends
		DI (Type GDO)	1 EA	On WB shoulder to connect to existing cross Culvert
22.73	124+50	24" CSP	20 LF	Extend existing culvert at both ends
		DI (Type GDO)	1 EA	On WB shoulder to connect to existing cross Culvert
22.86	132+00	24" CSP	50 LF	Culvert to cross WB direction and out falls to WB side ditch
		DI (Type G1)	1 EA	DI in median on EB side of median barrier to connect to new cross culvert
22.90	134+00	24" CSP	50 LF	Culvert to cross WB direction and out falls to WB side ditch
		DI (Type G1)	1 EA	DI in median on EB side of median barrier to connect to new cross culvert
23.03	141+00	DI (Type G1)	1 EA	On EB side shoulder to connect to existing cross culvert
23.13	145+50	DI (Type G1)	1 EA	On EB side shoulder to connect to existing cross culvert
23.44*	"C2" 11+00	24" CSP	40 LF	* Culvert under Sierra Blanca Rd
23.50*	"C1" 24+00	DIs (Type G1)	2 EA	* One DI on each side of the Proposed Pondorado Rd undercrossing
		24" CSP	350 LF	Culvert to connect both DIs and out falls in WB side ditch at ~Station 165+00 behind retaining wall.

COST ESTIMATE:

The initial cost estimate required is based on the above proposal. The estimates are approximate and do not represent the final details.

The total estimated cost indicated in Table-C below does not include cost to construct asphalt concrete dikes, asphalt concrete over side drains, energy dissipators, or curb and gutter. It neither includes the cost to relocate an existing EID canal at approximate PM 23.55 for constructing the proposed Pondorado Road undercrossing, nor remove existing down drains.

Table-C Cost Estimate

Code	Item Description		Quantity	Unit Cost	Total Cost
665025	24" CSP (0.138" THICK)		960 LF	$211.47	$203,011.20
510502	Minor Concrete (Type GDO for assumed H=5')	4.53CY	20 CY	$2,082.12	$41,642.40
	Minor Concrete (Type G1 for assumed H =3')	15.2CY			
750001	Miscellaneous Iron & Steel (for Type GDO DIs Grate)	1268LB	4950 LB	$3.09	$15,295.50
	Miscellaneous Iron & Steel (for Type G1 DIs Grate)	3682LB			
665718	18" Slotted CSP (.168" THICK)		350 LF	$122.82	$42,987.00
				Estimated Cost=	$302,936.10
				With 10% Contingency, Estimated Cost=	$333,229.71
				Say, Total Estimate is=	**$350,000.00**

HYDROLOGIC/HYDRAULIC CALCULATIONS:

Hydraulic calculations for cross culverts should be performed for the 10- and 100-year return storm-events and rainfall intensities (Highway Design Manual (HDM) 821.3(2),). The Rational Method described in Highway Design Manual (HDM) 819.2(1) can be used to determine design flow as the water shed of the proposed project is relatively small; less than 320 acres. If the water shed is greater than 320 acres, the Soil Conservation Service (SCS) also called the Natural Resources Conservation Services (NRCS) Method which utilizes the TR-55 Method (described in the Urban Hydrology for Small Water Sheds Manual, Technical Release 55) shall be used to calculate design discharges. When empirical methods are used to estimate design flow, it is recommended that at least two methods be tried for important culverts.

According to Highway Design Manual (HDM) Table 831.3 and Section 832.2, Roadway drainage calculations for US-50 corridor should be performed using the Rational Method for the 25-year design storm allowing for shoulder or parking lane design water spread. Water spread for Pondorado Road undercrossing should be done for 10-year design storm or using the local standard design storm. This can be obtained from El Dorado County Department of Transportation at (530) 642-4909.

The rainfall intensities for the 10, 25 and 100-year return storm events specific to the locality of the proposed project area have been determined by National Oceanographic and Atmospheric Agency (NOAA) and are provided for your use in the Table-D and Figure-1 below. You may need to interpolate for intensities for times of concentration (duration) not shown in the table.

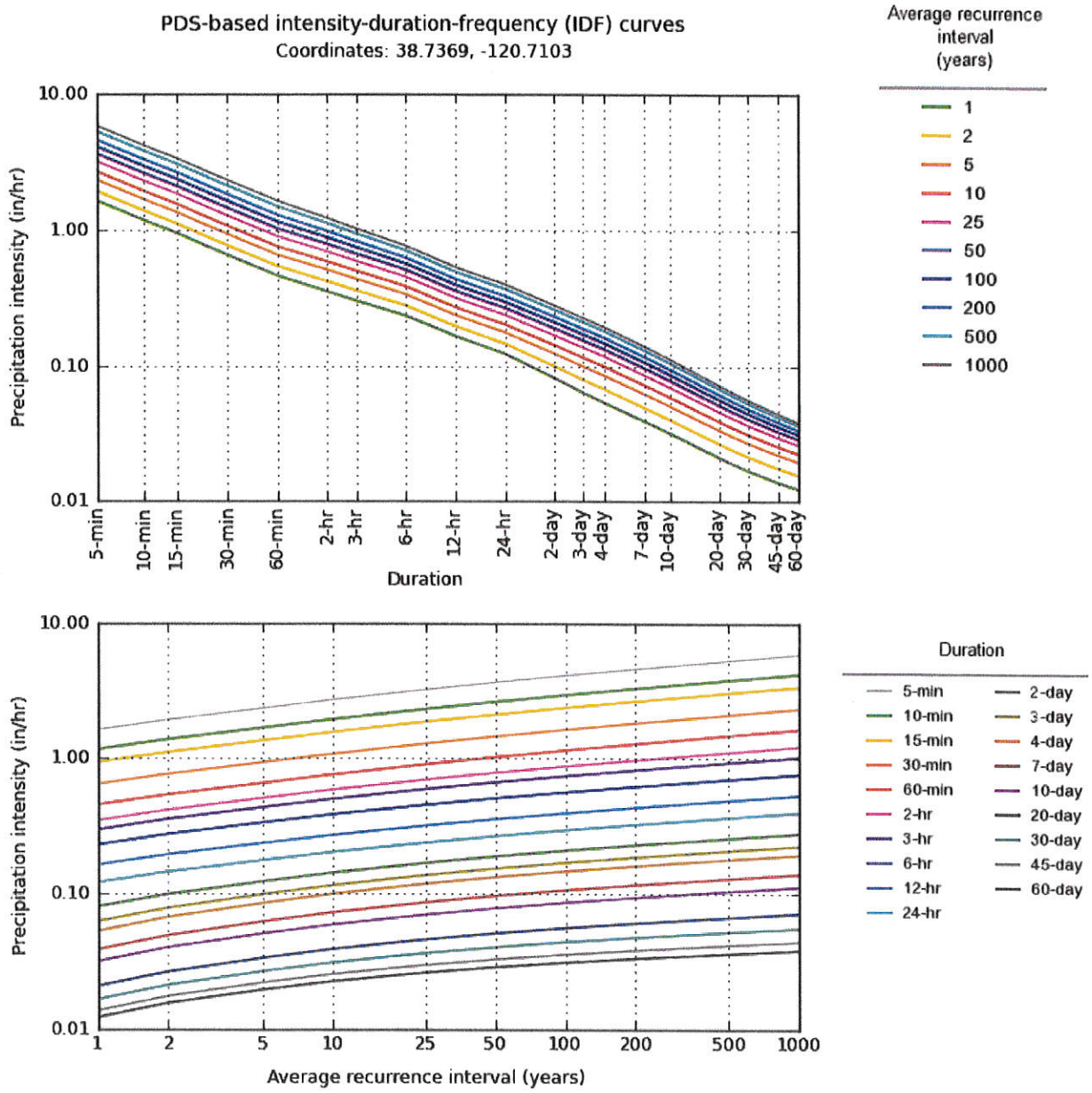
Table-D Tabular Precipitation-Frequency

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval(years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.63 (1.44-1.86)	1.93 (1.70-2.21)	2.35 (2.08-2.70)	2.71 (2.36-3.14)	3.23 (2.72-3.86)	3.65 (3.01-4.46)	4.10 (3.30-5.14)	4.58 (3.59-5.92)	5.27 (3.95-7.10)	5.84 (4.22-8.15)
10-min	1.17 (1.03-1.34)	1.39 (1.22-1.58)	1.69 (1.49-1.94)	1.94 (1.70-2.25)	2.32 (1.96-2.77)	2.62 (2.16-3.20)	2.94 (2.36-3.68)	3.28 (2.57-4.24)	3.78 (2.83-5.09)	4.18 (3.03-5.84)
15-min	0.944 (0.832-1.08)	1.12 (0.988-1.28)	1.36 (1.20-1.56)	1.57 (1.37-1.82)	1.87 (1.58-2.24)	2.11 (1.74-2.58)	2.37 (1.91-2.97)	2.65 (2.07-3.42)	3.05 (2.28-4.10)	3.37 (2.44-4.71)
30-min	0.650 (0.574-0.742)	0.770 (0.680-0.882)	0.938 (0.826-1.08)	1.08 (0.944-1.25)	1.29 (1.09-1.54)	1.45 (1.20-1.78)	1.63 (1.31-2.05)	1.82 (1.43-2.36)	2.10 (1.57-2.83)	2.33 (1.68-3.25)
60-min	0.457 (0.404-0.522)	0.542 (0.478-0.620)	0.659 (0.580-0.756)	0.760 (0.664-0.879)	0.905 (0.763-1.08)	1.02 (0.844-1.25)	1.15 (0.924-1.44)	1.28 (1.00-1.66)	1.48 (1.11-1.99)	1.64 (1.18-2.28)
2-hr	0.349 (0.308-0.398)	0.417 (0.368-0.478)	0.510 (0.449-0.585)	0.588 (0.513-0.680)	0.697 (0.588-0.835)	0.784 (0.648-0.960)	0.876 (0.705-1.10)	0.972 (0.761-1.26)	1.11 (0.831-1.49)	1.22 (0.882-1.70)
3-hr	0.298 (0.264-0.341)	0.357 (0.315-0.409)	0.436 (0.384-0.500)	0.502 (0.438-0.581)	0.594 (0.501-0.711)	0.666 (0.550-0.815)	0.741 (0.597-0.930)	0.821 (0.642-1.06)	0.930 (0.698-1.25)	1.02 (0.737-1.42)
6-hr	0.231 (0.205-0.264)	0.277 (0.244-0.316)	0.337 (0.296-0.386)	0.386 (0.337-0.447)	0.454 (0.383-0.544)	0.508 (0.419-0.621)	0.562 (0.453-0.706)	0.620 (0.485-0.800)	0.699 (0.524-0.941)	0.761 (0.551-1.06)
12-hr	0.165 (0.145-0.188)	0.196 (0.173-0.224)	0.238 (0.209-0.273)	0.272 (0.237-0.315)	0.319 (0.269-0.382)	0.356 (0.294-0.436)	0.394 (0.317-0.495)	0.434 (0.339-0.560)	0.488 (0.366-0.658)	0.532 (0.385-0.742)
24-hr	0.122 (0.109-0.139)	0.146 (0.130-0.167)	0.177 (0.158-0.204)	0.203 (0.180-0.235)	0.239 (0.204-0.286)	0.267 (0.223-0.326)	0.295 (0.241-0.369)	0.325 (0.258-0.417)	0.366 (0.279-0.489)	0.398 (0.293-0.550)
2-day	0.081 (0.072-0.093)	0.100 (0.089-0.114)	0.124 (0.110-0.142)	0.143 (0.126-0.165)	0.169 (0.145-0.202)	0.189 (0.158-0.231)	0.209 (0.171-0.261)	0.230 (0.182-0.295)	0.257 (0.196-0.344)	0.278 (0.205-0.385)
3-day	0.063 (0.056-0.072)	0.079 (0.070-0.090)	0.099 (0.088-0.114)	0.116 (0.102-0.134)	0.137 (0.117-0.164)	0.154 (0.129-0.188)	0.170 (0.139-0.212)	0.186 (0.148-0.239)	0.208 (0.159-0.279)	0.225 (0.166-0.311)
4-day	0.053 (0.048-0.061)	0.067 (0.060-0.077)	0.086 (0.076-0.098)	0.100 (0.088-0.115)	0.119 (0.101-0.142)	0.133 (0.111-0.162)	0.147 (0.120-0.183)	0.161 (0.128-0.207)	0.179 (0.137-0.240)	0.193 (0.143-0.268)
7-day	0.039 (0.035-0.044)	0.049 (0.044-0.056)	0.062 (0.056-0.072)	0.073 (0.064-0.084)	0.086 (0.074-0.103)	0.096 (0.081-0.118)	0.106 (0.087-0.133)	0.116 (0.092-0.150)	0.129 (0.099-0.173)	0.139 (0.103-0.193)
10-day	0.032 (0.028-0.036)	0.040 (0.036-0.046)	0.051 (0.045-0.058)	0.059 (0.052-0.069)	0.070 (0.060-0.084)	0.078 (0.065-0.095)	0.086 (0.070-0.108)	0.094 (0.075-0.121)	0.104 (0.079-0.139)	0.112 (0.082-0.155)
20-day	0.021 (0.019-0.024)	0.027 (0.024-0.030)	0.034 (0.030-0.039)	0.039 (0.035-0.045)	0.046 (0.039-0.055)	0.051 (0.043-0.062)	0.056 (0.046-0.070)	0.061 (0.048-0.078)	0.067 (0.051-0.089)	0.071 (0.053-0.099)
30-day	0.017 (0.015-0.019)	0.021 (0.019-0.024)	0.027 (0.024-0.031)	0.031 (0.028-0.036)	0.037 (0.031-0.044)	0.040 (0.034-0.049)	0.044 (0.036-0.055)	0.048 (0.038-0.061)	0.052 (0.040-0.070)	0.055 (0.041-0.077)
45-day	0.014 (0.012-0.016)	0.018 (0.016-0.020)	0.022 (0.020-0.025)	0.026 (0.023-0.030)	0.030 (0.025-0.036)	0.033 (0.027-0.040)	0.036 (0.029-0.045)	0.038 (0.030-0.049)	0.042 (0.032-0.056)	0.044 (0.033-0.061)
60-day	0.012 (0.011-0.014)	0.016 (0.014-0.018)	0.020 (0.017-0.022)	0.023 (0.020-0.026)	0.026 (0.022-0.031)	0.029 (0.024-0.035)	0.031 (0.025-0.039)	0.033 (0.026-0.043)	0.036 (0.028-0.048)	0.038 (0.028-0.053)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.
Please refer to NOAA Atlas 14 document for more information.

Figure-1 Graphical Precipitation-Frequency



NOAA/NWS/OHD/HDSC

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Maps & Aerials

Figure-2 Small scale terrain

Figure-3 Large scale terrain

FLOODPLAIN INFORMATION AND EVALUATION:

The Federal Emergency Management Agency (FEMA) has prepared a Flood Insurance Rate Map (FIRM) panel for this area. The proposed project site has been identified on FIRM panel 06017C0800E, dated September 26, 2008 (see FIRMette, Attachment-B). The project site is located in Zone X. Zone X is an area determined to be outside the 500-year floodplain. The proposed project will have no impact on the floodplain and there are no recorded instances of flooding within the project limits.

If there are any questions or concerns regarding the recommendations or conclusion please contact me at (530) 740-4829 or by e-mail at soka.soka@dot.ca.gov or Gurdeep Bhattal at (530) 740-4830 or by e-mail at gurdeep.bhattal@dot.ca.gov

Attachments:

Attachment-A Hydraulic Calculations
Attachment-B FIRMette

ATTACHMENT-A

HYDRAULIC CALCULATIONS

From HDM Table 819.2B Runoff Coefficient c is between 0.70 & 0.95 for 5 to 10 Yrs recurrence storm. Use 0.9.
From HDM Table 831.3 on site roadway drainage is to be designed for 25 Yrs of storm recurrence. Therefore, runoff coefficient Correction Factor is Cf=1.1
From NOAA Atlas 14 the intensity in the project site area is 3.23 in/hrs using 5 minutes & 25 Yrs of recurrence.
Discharge (Runoff) = CiA=1.1*0.9*3.23A=3.2A
Watershade Area (A) is as listed in the table below.

EASTBOUND

Remarks	Slopes		Sheet Flow directs toward	**Runoff(Q)=3.2*A**	**Total Area (Acres)**	**Area (Acres)**	Area (SQFT)	Width (FT)	Length (FT)	**Station for Eastbound**
	Longit.	Cross								
Install a clean up DI (Tapered Neck) at 86+50 and extend Slotted Drain to 90+00	5%	6%	Median -->	**1.26**	**0.39**	**0.39**	17,150	49	350	86+50/90+00
Install DI at 96+00 on EB shoulder to connect to Cross Culvert	5%	6%	Shoulder <--	**1.20**	**0.38**	**0.19**	8,200	41	200	96+00/98+00
Area from WB side 96+00/98+00 contributes to EB side through Scuppers in median barrier						**0.19**	8,200	41	200	
Install DI at 98+00 on EB shoulder to connect to new cross culvert	5%	7%	Shoulder <--	**1.05**	**0.33**	**0.33**	14,350	41	350	98+00/101+50
Install DI at 101+50 on EB shoulder	5%	8%	Shoulder <--	**0.45**	**0.14**	**0.14**	6,150	41	150	101+50/103+00
Install DI at 103+00 on EB shoulder to connect to new cross culvert	5%	8%	Shoulder <--	**1.36**	**0.42**	**0.42**	18,450	41	450	103+00/107+50
Install DI on EB side shoulder to connect to existing cross Culvert	5%	10%	Shoulder <--	**1.57**	**0.49**	**0.49**	21,320	41	520	113+50/118+70
Install DI at 132+00 on EB side of median barrier with new cross culvert under WB	5%	4%	Median -->	**0.60**	**0.19**	**0.19**	8,200	41	200	132+00/134+00
Install DI at 134+00 on EB side fo median Barrier with new cross culvert under WB	5%	6%	Median -->	**2.11**	**0.66**	**0.66**	28,700	41	700	134+00/141+00
Install DI at 141+00 on EB shoulder to connect to existing cross culvert	5%	7%	Shoulder <--	**1.36**	**0.42**	**0.42**	18,450	41	450	141+00/145+50
Install DI at 145+50 on EB shoulder to connect to existing	5%	7%	Shoulder <--	**0.45**	**0.14**	**0.14**	6,150	41	150	145+50/147+00
Install DI at 158+00 on EB side of median Barrier	5%	7%	Median -->	**1.78**	**0.56**	**0.56**	24,190	41	590	158+00/163+90

WESTBOUND

Station for Westbound	Length (FT)	Width (FT)	Area (SQFT)	**Area (Acres)**	**Total Area (Acres)**	**Runoff(Q)=3.2*A**	Sheet Flow directs toward	Slopes		Remarks
								Longit.	Cross	
87+94/96+00	806	41	33,046	**0.76**	**1.32**	**4.23**	--> Shoulder	6%	7%	Install Energy Dissipator (RSP) at 87+94
	500	49	24,500	**0.56**						Area from EB side 90+00/95+00 contributes to WB side
98+00/101+50	350	41	14,350	**0.33**	**0.33**	**1.05**	<-- Median	5%	8%	Install DI at 98+00 in median with cross culvert under EB
101+50/103+00	150	41	6,150	**0.14**	**0.14**	**0.45**	<-- Median	5%	8%	Install DI at 101+50 in median connecting to existing cross culvert
103+00/107+50	450	41	18,450	**0.42**	**0.42**	**1.36**	--> Shoulder	5%	8%	Install DI at 103+00 on WB side shoulder
107+50/113+50	Install Scuppers in the median Barrier									
113+50/119+00	550	41	22,550	**0.52**	**0.52**	**1.66**	<-- Median	5%	8%	Install DI at 113+50 in median on WB side fo Median barrier to connect to existing cross culvert
119+00/124+50	550	41	22,550	**0.52**	**0.52**	**1.66**	--> Shoulder	5%	2%	Install DI (Type GDO) at 119+00 on WB side shoulder to connect to Existing cross Culvert
124+50/128+00	350	41	14350	**0.33**	**0.33**	**1.05**	--> Shoulder	5%	2%	Install DI (Type GDO) at 124+50 on WB shoulder to connect to existing Cross culvert

ED-50 Sta 96+00/98+00 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.20	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.05	ft/ft
Road Cross Slope		0.05	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.73	ft
Intercepted Flow	1.08	ft³/s
Bypass Flow	0.12	ft³/s
Spread	2.98	ft
Depth	0.15	ft
Flow Area	0.22	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	5.41	ft/s
Splash Over Velocity	4.84	ft/s
Frontal Flow Factor	0.95	
Side Flow Factor	0.01	
Grate Flow Ratio	0.95	
Active Grate Length	0.73	ft

ED-50 Sta 98+00/101+50 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.05	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.07	ft/ft
Road Cross Slope		0.07	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.66	ft
Intercepted Flow	0.95	ft³/s
Bypass Flow	0.11	ft³/s
Spread	2.30	ft
Depth	0.16	ft
Flow Area	0.18	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	5.69	ft/s
Splash Over Velocity	4.62	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	1.00	
Active Grate Length	0.66	ft

ED-50 Sta 101+50/103+00 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		0.45	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.45	ft
Intercepted Flow	0.41	ft³/s
Bypass Flow	0.05	ft³/s
Spread	1.54	ft
Depth	0.12	ft
Flow Area	0.09	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.76	ft/s
Splash Over Velocity	3.65	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	1.00	
Active Grate Length	0.45	ft

ED-50 Sta 103+00/107+50 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.36	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.85	ft
Intercepted Flow	1.22	ft³/s
Bypass Flow	0.14	ft³/s
Spread	2.33	ft
Depth	0.19	ft
Flow Area	0.22	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.28	ft/s
Splash Over Velocity	5.22	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	0.99	
Active Grate Length	0.85	ft

ED-50 Sta 113+50/118+70 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.57	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.10	ft/ft
Road Cross Slope		0.10	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	1.04	ft
Intercepted Flow	1.41	ft³/s
Bypass Flow	0.16	ft³/s
Spread	2.14	ft
Depth	0.21	ft
Flow Area	0.23	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.88	ft/s
Splash Over Velocity	5.78	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.02	
Grate Flow Ratio	1.00	
Active Grate Length	1.04	ft

ED-50 Sta 132+00/134+00 EB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		0.60	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.04	ft/ft
Road Cross Slope		0.04	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.42	ft
Intercepted Flow	0.54	ft³/s
Bypass Flow	0.06	ft³/s
Spread	2.64	ft
Depth	0.11	ft
Flow Area	0.14	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.30	ft/s
Splash Over Velocity	3.43	ft/s
Frontal Flow Factor	0.92	
Side Flow Factor	0.00	
Grate Flow Ratio	0.98	
Active Grate Length	0.42	ft

ED-50 Sta 141+00/145+50 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.36	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.07	ft/ft
Road Cross Slope		0.07	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.82	ft
Intercepted Flow	1.22	ft³/s
Bypass Flow	0.14	ft³/s
Spread	2.53	ft
Depth	0.18	ft
Flow Area	0.22	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.07	ft/s
Splash Over Velocity	5.12	ft/s
Frontal Flow Factor	0.91	
Side Flow Factor	0.01	
Grate Flow Ratio	0.98	
Active Grate Length	0.82	ft

ED-50 Sta 145+50/147+00 EB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		0.45	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.07	ft/ft
Road Cross Slope		0.07	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.43	ft
Intercepted Flow	0.41	ft³/s
Bypass Flow	0.05	ft³/s
Spread	1.67	ft
Depth	0.12	ft
Flow Area	0.10	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.61	ft/s
Splash Over Velocity	3.50	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.00	
Grate Flow Ratio	1.00	
Active Grate Length	0.43	ft

ED-50 Sta 134+00-141+00 EB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge	0.66	ft³/s
Slope	0.05000	ft/ft
Gutter Width	5.00	ft
Gutter Cross Slope	0.06	ft/ft
Road Cross Slope	0.06	ft/ft
Roughness Coefficient	0.013	
Efficiency	90.00	%
Grate Width	2.00	ft
Grate Type	P-50 mm (P-1-7/8")	
Clogging	0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.46	ft
Intercepted Flow	0.59	ft³/s
Bypass Flow	0.07	ft³/s
Spread	2.12	ft
Depth	0.13	ft
Flow Area	0.14	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.88	ft/s
Splash Over Velocity	3.77	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.00	
Grate Flow Ratio	1.00	
Active Grate Length	0.46	ft

ED-50 Sta 158+00/163+90 EB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		1.78	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.07	ft/ft
Road Cross Slope		0.07	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	1.03	ft
Intercepted Flow	1.60	ft³/s
Bypass Flow	0.18	ft³/s
Spread	2.80	ft
Depth	0.20	ft
Flow Area	0.27	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.50	ft/s
Splash Over Velocity	5.74	ft/s
Frontal Flow Factor	0.93	
Side Flow Factor	0.02	
Grate Flow Ratio	0.96	
Active Grate Length	1.03	ft

ED-50 Sta 87+94/96+00 WB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		4.25	ft³/s
Slope		0.06000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.07	ft/ft
Road Cross Slope		0.07	ft/ft
Roughness Coefficient		0.013	
Efficiency		95.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	9.26	ft
Intercepted Flow	4.04	ft³/s
Bypass Flow	0.21	ft³/s
Spread	3.75	ft
Depth	0.26	ft
Flow Area	0.49	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	8.65	ft/s
Splash Over Velocity	28.05	ft/s
Frontal Flow Factor	1.00	
Side Flow Factor	0.62	
Grate Flow Ratio	0.87	
Active Grate Length	9.26	ft

Messages

Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).

ED-50 Sta 98+00/101+50 WB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		1.05	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.71	ft
Intercepted Flow	0.95	ft³/s
Bypass Flow	0.11	ft³/s
Spread	2.11	ft
Depth	0.17	ft
Flow Area	0.18	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	5.89	ft/s
Splash Over Velocity	4.78	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	1.00	
Active Grate Length	0.71	ft

ED-50 Sta 101+50/103+00 WB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		0.45	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.45	ft
Intercepted Flow	0.41	ft³/s
Bypass Flow	0.05	ft³/s
Spread	1.54	ft
Depth	0.12	ft
Flow Area	0.09	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.76	ft/s
Splash Over Velocity	3.65	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	1.00	
Active Grate Length	0.45	ft

ED-50 Sta 113+50/119+00 WB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		1.66	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.99	ft
Intercepted Flow	1.49	ft³/s
Bypass Flow	0.17	ft³/s
Spread	2.51	ft
Depth	0.20	ft
Flow Area	0.25	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.60	ft/s
Splash Over Velocity	5.63	ft/s
Frontal Flow Factor	0.91	
Side Flow Factor	0.02	
Grate Flow Ratio	0.99	
Active Grate Length	0.99	ft

ED-50 Sta 103+00/107+50 WB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.36	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.85	ft
Intercepted Flow	1.22	ft³/s
Bypass Flow	0.14	ft³/s
Spread	2.33	ft
Depth	0.19	ft
Flow Area	0.22	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.28	ft/s
Splash Over Velocity	5.22	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	0.99	
Active Grate Length	0.85	ft

ED-50 Sta 101+50/103+00 WB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		0.45	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.45	ft
Intercepted Flow	0.41	ft³/s
Bypass Flow	0.05	ft³/s
Spread	1.54	ft
Depth	0.12	ft
Flow Area	0.09	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.76	ft/s
Splash Over Velocity	3.65	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	1.00	
Active Grate Length	0.45	ft

ED-50 Sta 103+00/107+50 WB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.36	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.85	ft
Intercepted Flow	1.22	ft³/s
Bypass Flow	0.14	ft³/s
Spread	2.33	ft
Depth	0.19	ft
Flow Area	0.22	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.28	ft/s
Splash Over Velocity	5.22	ft/s
Frontal Flow Factor	0.90	
Side Flow Factor	0.01	
Grate Flow Ratio	0.99	
Active Grate Length	0.85	ft

ED-50 Sta 113+50/119+00 WB side sheet flows to Median

Project Description

Solve For	Grate Length

Input Data

Discharge		1.66	ft³/s
Slope		0.05000	ft/ft
Gutter Width		5.00	ft
Gutter Cross Slope		0.08	ft/ft
Road Cross Slope		0.08	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		2.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.99	ft
Intercepted Flow	1.49	ft³/s
Bypass Flow	0.17	ft³/s
Spread	2.51	ft
Depth	0.20	ft
Flow Area	0.25	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	6.60	ft/s
Splash Over Velocity	5.63	ft/s
Frontal Flow Factor	0.91	
Side Flow Factor	0.02	
Grate Flow Ratio	0.99	
Active Grate Length	0.99	ft

ED-50 Sta 119+00/124+50 WB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.66	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.02	ft/ft
Road Cross Slope		0.02	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		4.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

Grate Length	0.51	ft
Intercepted Flow	1.49	ft³/s
Bypass Flow	0.17	ft³/s
Spread	5.96	ft
Depth	0.12	ft
Flow Area	0.36	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.67	ft/s
Splash Over Velocity	4.10	ft/s
Frontal Flow Factor	0.95	
Side Flow Factor	0.00	
Grate Flow Ratio	0.95	
Active Grate Length	0.51	ft

Messages

Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).

ED-50 Sta 124+50/128+00 WB side sheet flows to Shoulder

Project Description

Solve For	Grate Length

Input Data

Discharge		1.05	ft³/s
Slope		0.05000	ft/ft
Gutter Width		8.00	ft
Gutter Cross Slope		0.02	ft/ft
Road Cross Slope		0.02	ft/ft
Roughness Coefficient		0.013	
Efficiency		90.00	%
Grate Width		4.00	ft
Grate Type	P-50 mm (P-1-7/8")		
Clogging		0.00	%

Options

Grate Flow Option	Exclude None

Results

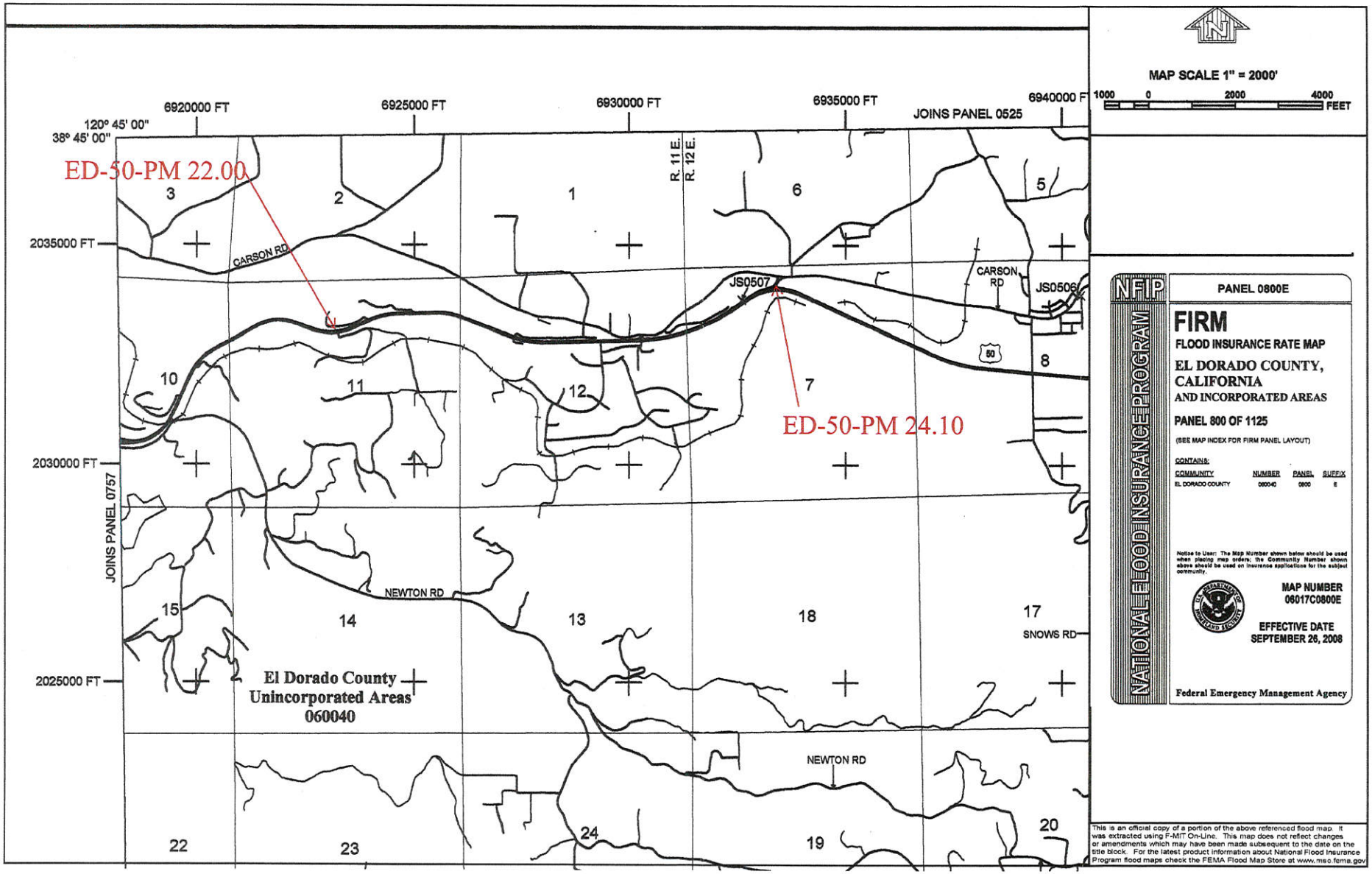
Grate Length	0.39	ft
Intercepted Flow	0.95	ft³/s
Bypass Flow	0.11	ft³/s
Spread	5.02	ft
Depth	0.10	ft
Flow Area	0.25	ft²
Gutter Depression	0.00	ft
Total Depression	0.00	ft
Velocity	4.16	ft/s
Splash Over Velocity	3.20	ft/s
Frontal Flow Factor	0.91	
Side Flow Factor	0.00	
Grate Flow Ratio	0.99	
Active Grate Length	0.39	ft

Messages

Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).

ATTACHMENT-B

FIRMette


MAP SCALE 1" = 2000'
1000 0 2000 4000 FEET
6920000 FT
6925000 FT
6930000 FT
6935000 FT
6940000 FT
JOINS PANEL 0525
120° 45' 00"
38° 45' 00"
ED-50-PM 22.00
ED-50-PM 24.10
R. 11 E.
R. 12 E.
2035000 FT
2030000 FT
2025000 FT
CARSON RD
JS0507
JS0506
50
NEWTON RD
SNOWS RD
JOINS PANEL 0757
El Dorado County
Unincorporated Areas
060040
PANEL 0800E
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
EL DORADO COUNTY, CALIFORNIA
AND INCORPORATED AREAS
PANEL 800 OF 1125
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
EL DORADO COUNTY 060040 0800 E
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.
MAP NUMBER
06017C0800E
EFFECTIVE DATE
SEPTEMBER 26, 2008
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ATTACHMENT E

RIGHT OF WAY DATA SHEET

State of California
Department of Transportation

Revised due to design change

MEMORANDUM

Serious drought
Help Save Water

To: ISAM TABSHOURI
Design Engineer
Department of Transportation

Attention: RYAN KOAHGURA
Project Engineer

Date: December 15, 2014

File: 03-ED-50-PM 21.95/24.25
EFIS No.: 03 1400 0039
EA: 4E620K
Alternate: 1A

From: JANEL D. WILSON
Assistant Chief,
North Region Right of Way
Marysville

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

Project Description: This alternative eliminates access to Highway 50 at Camino Vista and Golden Chain roads, and creates a new off ramp between the two former access points and flows into a round about at Vista Tierra Drive. This alternative may add a round about to be constructed at Vista Tierra Drive and Camino Heights Drive.

We have completed an estimate of the right of way costs for the above referenced project based on information received from you on October 1, 2014 .

Right of Way Lead Time will require a minimum of 24 months after receipt of appraisal maps, utility conflict maps, environmental clearances (HMDD) and Certificate of Sufficiency (COS). A minimum of 18 months prior to certification will be required from submittal of the last map or revision.

Current schedule is insufficient. Right of Way will look to accelerate work but most Right of Way activities require Project Approval and Environmental Clearance.

Attachments:
Right of Way Data Sheet

cc. Clark Peri

State of California - Department of Transportation
RIGHT OF WAY DATASHEET

EA: 4E620K
PROJECT NO.: 03 1400 0039
LOCATION: 03-ED-50-PM 21.95/24.25
Description: Safety Project Install Median Barrier, close Camino Heights and Golden Chain ramps, construct new ramps at Camino Hills,and Construct Undercrossing

Revised due to design change

ALTERNATE: 1A
DATE: 12/15/2014
Datasheet Type: Revision

1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	$1,555,225	5%	$1,764,156
B. Appraisal Fees Estimate	$35,000	N/A	$35,000
C. Mitigation Acquisition & Credits	$0		$0
D. Project Development Permit Fees	$6,000	5%	$6,806
Subtotal	$1,596,225		$1,805,962
E. Utility Relocation (State's Share)	$218,000	10%	$278,867
(Owner's Share: $180,000)			
F. Relocation Assistance (RAP)	$200,000	5%	$226,868
G. Clearance/Demolition	$50,000	5%	$56,717
H. Title & Escrow	$16,400	5%	$18,603
I. Total Estimated Right of Way Cost	$2,080,625	**Rounded**	**$2,387,000** *
J. Construction Contract Work	$15,000		

2. Current Date of Right of Way Certification July 15, 2017

3. Parcel Data:

Type		Dual/Appr
X	0	
A	0	
B	11	
C	1	0
D	1	0
RR	0	
Total	**13**	

Excess 1

Utilities	
U4 - 1	7
- 2	0
- 3	6
- 4	0
U5 - 7	1
- 8	0
- 9	13

Railroad	
C&M Agreement	0
Service Contract	0
Easements	0
Rights of Entry	0
Clauses	0
Phase 9	0

Areas:	
R/W	8.33 AC
TCE	N/A
Excess	0.5 AC
Mitigation	N/A

Mitigation	
Impacts	4
Parcels	0
Credits	3
Env PTE	5

Misc. R/W Work	
RAP Displacees	4
Clear/Demo	2
PTE & Construct	9
Condemnation	3
USA Involvement	No

4. **Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).**

This alternative eliminates access to Highway 50 at Camino Vista and Golden Chain roads, and creates a new off ramp between the two former access points and flows into a round about at Vista Tierra Drive. This alternative may add a round about to be constructed at Vista Tierra Drive and Camino Heights Drive. This estimate includes parcels east of Camino Heights Drive that may be required for said intersection.

This project will restrict left hand turns near Carson Road in the town of Camino. In order to maintain traffic levels, this project proposes to add an undercrossing to Carson Road and Carson Court. This may require 13 acquisitions from home sites, commercial properties, County of El Dorado, El Dorado Irrigation District, and one from the high school. The resources have been altered from the norm to accomodate an accelerated schedule and begin the Right of Way activities prior to project approval. Relocation benefits may be required as one of the acquisitions will be of an office complex that has apartments upstairs.

El Dorado County representatives have stated that the county will approve any setback variances that may be required on this project.

5. **Are any properties acquired for this project expected to be rented, leased, or sold?**

Yes X No _____

6. **Are RAP displacements required?**

Yes X No _____

No. of single family 2 No. of business/nonprofit 2

No. of multi-family 0 No. of farms 0

Based on Draft/Final Relocation Impact Statement/Study dated N/A

_____ Sufficient replacement housing will be available without last resort housing.

_____ Sufficient replacement housing will not be available without last resort housing.

7. **Is there an effect on assessed valuation?**

Yes _____ No X Not Significant _____

8. **Are there any items of Construction Contract Work?**

Yes X No _____

This project will need to conform several road approaches.

9. **Are utility facilities or rights of way affected?**

Yes X No _____

Names of Utility Companies requiring verification only.
US Department of Interior Bureau of Reclamation

Names of Utility Companies requiring involvements.
El Dorado Irrigation District (EID), PG&E, AT&T, Comcast Cable (formerly Media One)

Additional information concerning Utility Involvement on this project.
One joint pole at Carson Court (PM 23.7) will need to relocate for placement of retaining wall. 13 PG&E poles may need to be realigned to accommodate a new undercrossing at PM 23.5 and Sierra Blanca Drive. R/W Map indicates EID has easement for EID canal that runs southwesterly of US 50. EID facilities will need to be located to determine extent of conflict. Potholing funds are included for locating EID water line. US Department of Interior, Bureau of Reclamation has three Joint Utility Agreements in the project area but it is unknown if they have any utility involvement. There are five JUA's and one CCUA. One utility lid in the shoulder at PM 22.1 will require adjustment. Relocation will result in some cost to the State. There are miscellaneous boxes near the park and ride that may need to be addressed.

10. **Are railroad facilities or rights of way affected?**

Yes _____ No X Phase 4 Capital **$0**

11. **Are USA Lands or Rights Affected?**

Yes _____ No X Phase 4 Capital **$0**

Agencies Involved:

US Forest Service _____ BLM _____ Army Corps of Engineers _____

National Parks _____ BIA _____ Veterans Administration _____

US Fish & Wildlife _____ GSA _____ _____

Rights or Permissions to acquire:

Easement _____ Special Use Permit _____ Courtesy Letter _____

Right of Way Grant _____ Cooperative Work Agreement _____ Cost Recovery _____

Mineral Agreement _____ Letter of Concurrence _____ Timber Sale _____

_____

Federal Lands do not appear to be involved on this project.

12. Is an RE Office required for the project?

Yes X No _____

Type of RE Office

Modular X Move In _____

13. Were any previously unidentified sites with hazardous waste and/or material found?

Yes _____ None Evident X

14. Are there material borrow and/or disposal sites required?

No _____ Optional X Mandatory _____

The contractor will be responsible for obtaining a disposal site.

15. Are there potential relinquishments and/or abandonments?

Yes X No _____

16. Are there any existing and/or potential airspace sites?

Yes _____ No X

17. What type of mitigation is required for the project?

This project is anticipated to require Permit Numbers 1602, 401, and 404; Biological, Wetland/Riparian, and Paleontological impacts paid by RW; mitigation and PTE's (Permits to Enter).

18. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No _____

19. Indicate the anticipated Right of Way schedule and lead time requirements.

Right of Way Lead Time will require a minimum of **24** months after we receive first appraisal maps, utility conflict maps, necessary environmental clearances and freeway agreements have been approved and obtained. Additionally a minimum of **18** months will be required after receiving the last appraisal map to Right of Way for certification.

20. Assumptions and limiting Conditions: (Check boxes that apply.)

- ☑ Mapping did not provide sufficient detail to determine the limits of the right of way required.
- ☑ Transportation facilities have not been sufficiently designed to determine the damages to any of the remainder parcels affected by the project.
- ☑ Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- ☑ Design will secure necessary encroachment permits from local agencies.
- ☑ Environmental information is not known at this time. An escalated estimate using the last environment request done for a smaller scope.
- ☑ The project as allotted 10 months for Right of Way activities from the project approval date. This estimate requests 24 months. The project team is aware of risks and are identifying ways to allow Right of Way activities to begin before PAED.

Evaluation Prepared By:

Right of Way _____ Date 12/15/14
KELLY J. CUMMINGS

Reviewed By

RW Planning & Management: _____ Date 12/17/14
PAUL SLOULIN

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

_____
DOUGLAS BORTZ
Senior Right of Way Agent
Project Coordination Branch
North Region

12/16/14
Date

_____
JANEL D. WILSON
Assistant Chief
North Region Right of Way
Marysville

12-17-14
Date

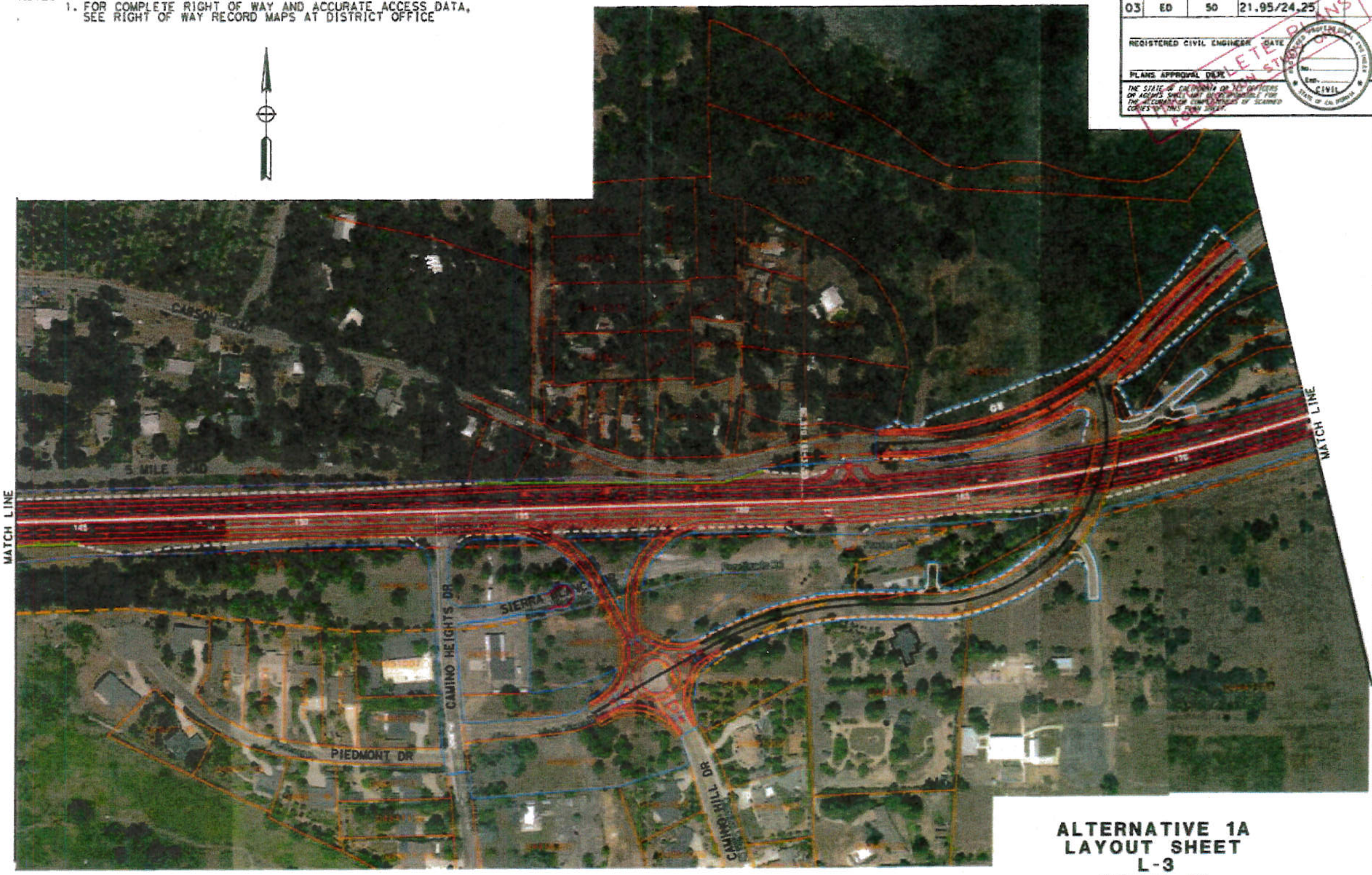
NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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



ALTERNATIVE 1A LAYOUT SHEET L-3

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY		REVISED BY	
Caltrans	I. Tabshouri	CHECKED BY	R. Kohoguro	DATE REVISED	10/15/13

BORDER LAST REVISED 7/2/2010 | USERNAME => RUSER | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE | 00000000001

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

State of California
Department of Transportation

Revised due to design change

MEMORANDUM

Serious drought
Help Save Water

To: ISAM TABSHOURI
Design Engineer
Department of Transportation

Attention: RYAN KOAHGURA
Project Engineer

From: JANEL D. WILSON
Assistant Chief,
North Region Right of Way
Marysville

Date: December 15, 2014

File: 03-ED-50-PM 21.95/24.25
EFIS No.: 03 1400 0039
EA: 4E620K
Alternate: 1B

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

Project Description: This alternative eliminates access to Highway 50 at Camino Vista and Golden Chain roads, and creates a new 'N' shaped off ramp between the two former access points that terminates at Vista Tierra Drive. This alternative may add a round about to be constructed at Vista Tierra Drive and Camino Heights Drive.

We have completed an estimate of the right of way costs for the above referenced project based on information received from you on October 1, 2014 .

Right of Way Lead Time will require a minimum of 24 months after receipt of appraisal maps, utility conflict maps, environmental clearances (HMDD) and Certificate of Sufficiency (COS). A minimum of 18 months prior to certification will be required from submittal of the last map or revision.

Current schedule is insufficient. Right of Way will look to accelerate work but most Right of Way activities require Project Approval and Environmental Clearance.

Attachments:
Right of Way Data Sheet

cc. Clark Peri

State of California - Department of Transportation

RIGHT OF WAY DATASHEET

EA: 4E620K
PROJECT NO.: 03 1400 0039
LOCATION: 03-ED-50-PM 21.95/24.25
Description: Safety Project Install Median Barrier, close Camino Heights and Golden Chain ramps, construct new ramps at Camino Hills,and Construct Undercrossing

Revised due to design change

ALTERNATE: 1B
DATE: 12/15/2014
Datasheet Type: Revision

---

1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	$1,555,225	5%	$1,764,156
B. Appraisal Fees Estimate	$35,000	N/A	$35,000
C. Mitigation Acquisition & Credits	$31,500	5%	$35,732
D. Project Development Permit Fees	$6,000	5%	$6,806
Subtotal	$1,627,725		$1,841,694
E. Utility Relocation (State's Share)	$218,000	10%	$278,867
(Owner's Share: $180,000)			
F. Relocation Assistance (RAP)	$200,000	5%	$226,868
G. Clearance/Demolition	$50,000	5%	$56,717
H. Title & Escrow	$16,400	5%	$18,603
I. Total Estimated Right of Way Cost	$2,112,125	**Rounded**	**$2,423,000** *
J. Construction Contract Work	$15,000		

2. Current Date of Right of Way Certification July 15, 2017

3. Parcel Data:

Type		Dual/Appr
X	0	
A	0	
B	11	
C	1	0
D	1	0
RR	0	
Total	**13**	

Excess 1

Utilities	
U4 - 1	7
- 2	0
- 3	6
- 4	0
U5 - 7	1
- 8	0
- 9	13

Railroad	
C&M Agreement	0
Service Contract	0
Easements	0
Rights of Entry	0
Clauses	0
Phase 9	0

Areas:

R/W	8.33 sf
TCE	N/A
Excess	0.5 sf
Mitigation	1 Ac.

Mitigation

Impacts	4
Parcels	0
Credits	3
Env PTE	5

Misc. R/W Work

RAP Displacees	4
Clear/Demo	2
PTE & Construct	9
Condemnation	3
USA Involvement	No

4. **Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).**

This alternative eliminates access to Highway 50 at Camino Vista and Golden Chain roads, and creates a new 'N' shaped off ramp between the two former access points that terminates at Vista Tierra Drive. This alternative may add a round about to be constructed at Vista Tierra Drive and Camino Heights Drive.

This project will restrict left hand turns near Carson Road in the town of Camino. In order to maintain traffic levels, this project proposes to add an undercrossing to Carson Road and Carson Court. This may require 13 acquisitions from home sites, commercial properties, County of El Dorado, El Dorado Irrigation District, and one from the high school. The resources have been altered from the norm to accomodate an accelerated schedule and begin the Right of Way activities prior to project approval. Relocation benefits may be required as one of the acquisitions will be of an office complex that has apartments upstairs.

El Dorado County representatives have stated that the county will approve any setback variances that may be required on this project.

5. **Are any properties acquired for this project expected to be rented, leased, or sold?**

Yes X No _____

6. **Are RAP displacements required?**

Yes X No _____

No. of single family 2 No. of business/nonprofit 2

No. of multi-family 0 No. of farms 0

Based on Draft/Final Relocation Impact Statement/Study dated N/A

_____ Sufficient replacement housing will be available without last resort housing.

_____ Sufficient replacement housing will not be available without last resort housing.

7. **Is there an effect on assessed valuation?**

Yes _____ No X Not Significant _____

8. **Are there any items of Construction Contract Work?**

Yes X No _____

This project will need to conform several road approaches.

9. **Are utility facilities or rights of way affected?**

Yes X No _____

Names of Utility Companies requiring verification only.
US Department of Interior Bureau of Reclamation

Names of Utility Companies requiring involvements.
El Dorado Irrigation District (EID), PG&E, AT&T, Comcast Cable (formerly Media One)

Additional information concerning Utility Involvement on this project.
One joint pole at Carson Court (PM 23.7) will need to relocate for placement of retaining wall. 13 PG&E poles may need to be realigned to accommodate a new undercrossing at PM 23.5 and Sierra Blanca Drive. R/W Map indicates EID has easement for EID canal that runs southwesterly of US 50. EID facilities will need to be located to determine extent of conflict. Potholing funds are included for locating EID water line. US Department of Interior, Bureau of Reclamation has three Joint Utility Agreements in the project area but it is unknown if they have any utility involvement. There are five JUA's and one CCUA. One utility lid in the shoulder at PM 22.1 will require adjustment. Relocation will result in some cost to the State. There are miscellaneous boxes near the park and ride that may need to be addressed.

10. **Are railroad facilities or rights of way affected?**

Yes _____ No X Phase 4 Capital **$0**

11. **Are USA Lands or Rights Affected?**

Yes _____ No X Phase 4 Capital **$0**

Agencies Involved:

US Forest Service _____ BLM _____ Army Corps of Engineers _____

National Parks _____ BIA _____ Veterans Administration _____

US Fish & Wildlife _____ GSA _____ _____

Rights or Permissions to acquire:

Easement _____ Special Use Permit _____ Courtesy Letter _____

Right of Way Grant _____ Cooperative Work Agreement _____ Cost Recovery _____

Mineral Agreement _____ Letter of Concurrence _____ Timber Sale _____

_____

Federal Lands do not appear to be involved on this project.

12. Is an RE Office required for the project?

Yes X No _____

Type of RE Office

Modular X Move In _____

13. Were any previously unidentified sites with hazardous waste and/or material found?

Yes _____ None Evident X

14. Are there material borrow and/or disposal sites required?

No _____ Optional X Mandatory _____

The contractor will be responsible for obtaining a disposal site.

15. Are there potential relinquishments and/or abandonments?

Yes X No _____

16. Are there any existing and/or potential airspace sites?

Yes _____ No X

17. What type of mitigation is required for the project?

This project is anticipated to require Permit Numbers 1602, 401, and 404; Biological, Wetland/Riparian, and Paleontological impacts paid by RW; mitigation and PTE's (Permits to Enter).

18. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No _____

19. Indicate the anticipated Right of Way schedule and lead time requirements.

Right of Way Lead Time will require a minimum of **24** months after we receive first appraisal maps, utility conflict maps, necessary environmental clearances and freeway agreements have been approved and obtained. Additionally a minimum of **18** months will be required after receiving the last appraisal map to Right of Way for certification.

20. Assumptions and limiting Conditions: (Check boxes that apply.)

- ☑ Mapping did not provide sufficient detail to determine the limits of the right of way required.
- ☑ Transportation facilities have not been sufficiently designed to determine the damages to any of the remainder parcels affected by the project.
- ☑ Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- ☑ Design will secure necessary encroachment permits from local agencies.
- ☑ Environmental information is not known at this time. An escalated estimate using the last environment request done for a smaller scope.
- ☑ The project as allotted 10 months for Right of Way activities from the project approval date. This estimate requests 24 months. The project team is aware of risks and are identifying ways to allow Right of Way activities to begin before PAED.

Evaluation Prepared By:

Right of Way _____ Date 12/15/14
KELLY J. CUMMINGS

Reviewed By

RW Planning & Management: _____ Date 12/17/14
PAUL SLOULIN

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

_____
DOUGLAS BORTZ
Senior Right of Way Agent
Project Coordination Branch
North Region

12/16/14
Date

_____
JANEL D. WILSON
Assistant Chief
North Region Right of Way
Marysville

12-17-14
Date

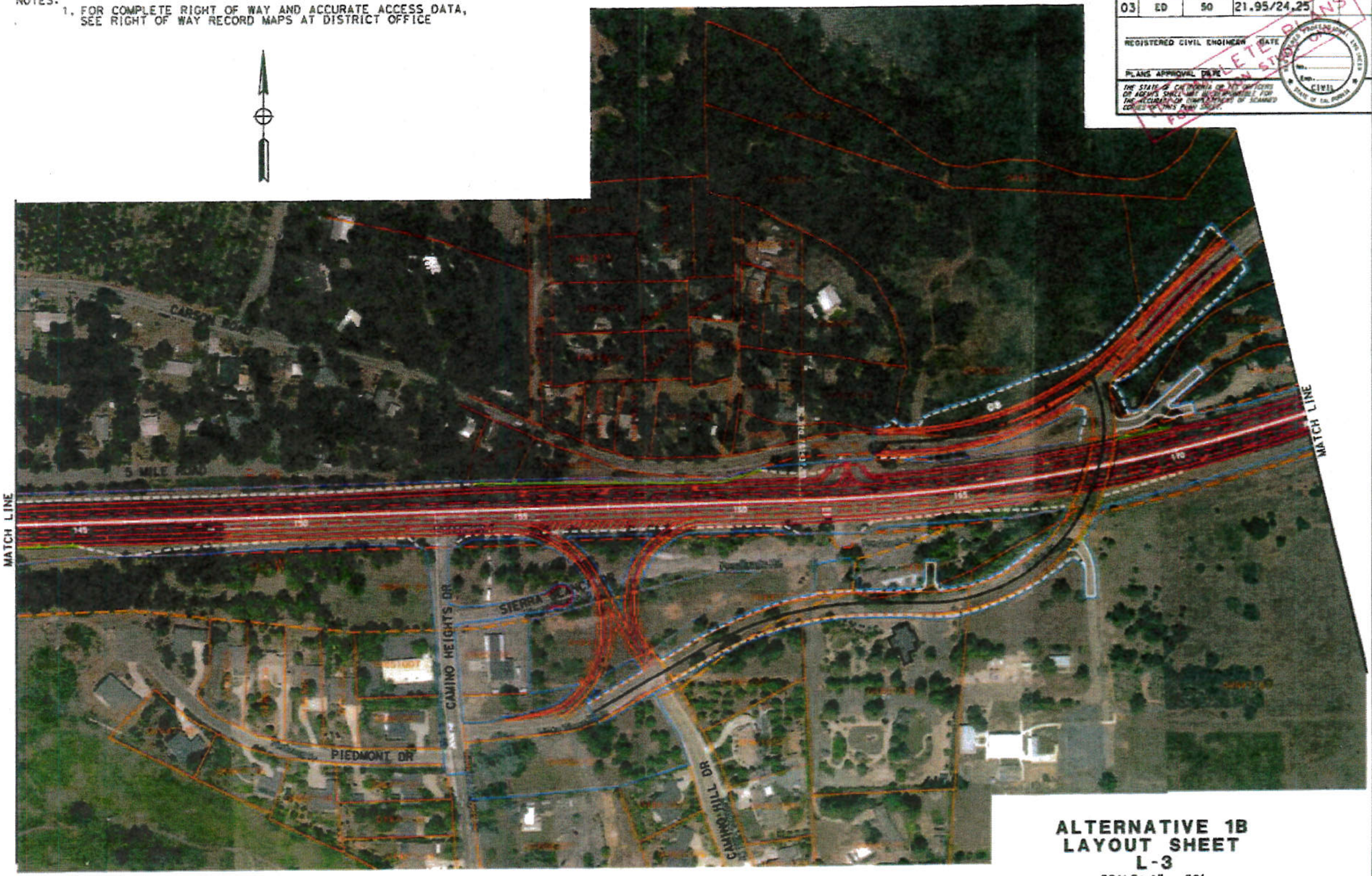
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE



ALTERNATIVE 1B
LAYOUT SHEET
L-3

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY		REVISED BY	
Caltrans	I. Tabshouri	CHECKED BY	R. Kohagura	DATE REVISED	10/15/13

RELATIVE BORDER SCALE 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 00000000001

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

State of California - Department of Transportation

RIGHT OF WAY DATASHEET

EA: 4E620K
PROJECT NO.: 03 1400 0039
LOCATION: 03-ED-50-PM 21.95/24.25
Description: Safety Project Install Median Barrier, restrict Camino Heights and Golden Chain ramps and construct Undercrossing to Carson Road

Revised due to design change

ALTERNATE: 1C
DATE: 12/15/2014
Datasheet Type: Revision

---

1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	$866,500	5%	$982,907
B. Appraisal Fees Estimate	$25,000	N/A	$25,000
C. Mitigation Acquisition & Credits	$0		$0
D. Project Development Permit Fees	$6,000	5%	$6,806
Subtotal	$897,500		$1,014,713
E. Utility Relocation (State's Share)	$218,000	10%	$278,867
(Owner's Share: $180,000)			
F. Relocation Assistance (RAP)	$200,000	5%	$226,868
G. Clearance/Demolition	$50,000	5%	$56,717
H. Title & Escrow	$13,600	5%	$15,427
I. Total Estimated Right of Way Cost	$1,379,100	**Rounded**	**$1,593,000** *
J. Construction Contract Work	$15,000		

2. Current Date of Right of Way Certification July 15, 2017

3. Parcel Data:

Type		Dual/Appr	Utilities		Railroad	
X	0		U4 - 1	7	C&M Agreement	0
A	0		- 2	0	Service Contract	0
B	9		- 3	6	Easements	0
C	1	0	- 4	0	Rights of Entry	0
D	1	0	U5 - 7	1	Clauses	0
RR	0		- 8	0	Phase 9	0
Total	**11**		- 9	13		

Excess 0

Areas:		Mitigation		Misc. R/W Work	
R/W	5.2 sf	Impacts	4	RAP Displacees	4
TCE	N/A	Parcels	0	Clear/Demo	2
Excess	N/A	Credits	3	PTE & Construct	9
Mitigation	1	Env PTE	5	Condemnation	2
				USA Involvement	No

4. **Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).**

This alternative changes access to Highway 50 at Camino Vista and Golden Chain roads. The access would be restricted to right turn off of eastbound Highway 50 and a right onto eastbound Highway 50.

This project will restrict left hand turns near Carson Road in the town of Camino. In order to maintain traffic levels, this project proposes to add an undercrossing to Carson Road and Carson Court. This may require 11 acquisitions from home sites, commercial properties, County of El Dorado, El Dorado Irrigation District, and one from the high school. The resources have been altered from the norm to accomodate an accelerated schedule and begin the Right of Way activities prior to project approval. Relocation benefits may be required as one of the acquisitions will be of an office complex that has apartments upstairs.

El Dorado County representatives have stated that the county will approve any setback variances that may be required on this project.

5. **Are any properties acquired for this project expected to be rented, leased, or sold?**

Yes X No _____

6. **Are RAP displacements required?**

Yes X No _____

No. of single family 2 No. of business/nonprofit 2

No. of multi-family 0 No. of farms 0

Based on Draft/Final Relocation Impact Statement/Study dated N/A

_____ Sufficient replacement housing will be available without last resort housing.

_____ Sufficient replacement housing will not be available without last resort housing.

7. **Is there an effect on assessed valuation?**

Yes _____ No X Not Significant _____

8. **Are there any items of Construction Contract Work?**

Yes X No _____

This project will need to conform several road approaches.

9. **Are utility facilities or rights of way affected?**

Yes X No _____

Names of Utility Companies requiring verification only.

US Department of Interior Bureau of Reclamation

Names of Utility Companies requiring involvements.

El Dorado Irrigation District (EID), PG&E, AT&T, Comcast Cable (formerly Media One)

Additional information concerning Utility Involvement on this project.

One joint pole at Carson Court (PM 23.7) will need to relocate for placement of retaining wall. 13 PG&E poles may need to be realigned to accommodate a new undercrossing at PM 23.5 and Sierra Blanca Drive. R/W Map indicates EID has easement for EID canal that runs southwesterly of US 50. EID facilities will need to be located to determine extent of conflict. Potholing funds are included for locating EID water line. US Department of Interior, Bureau of Reclamation has three Joint Utility Agreements in the project area but it is unknown if they have any utility involvement. There are five JUA's and one CCUA. One utility lid in the shoulder at PM 22.1 will require adjustment. Relocation will result in some cost to the State.

10. **Are railroad facilities or rights of way affected?**

Yes _____ No X Phase 4 Capital **$0**

11. **Are USA Lands or Rights Affected?**

Yes _____ No X Phase 4 Capital **$0**

Agencies Involved:

US Forest Service _____ BLM _____ Army Corps of Engineers _____

National Parks _____ BIA _____ Veterans Administration _____

US Fish & Wildlife _____ GSA _____ _____

Rights or Permissions to acquire:

Easement _____ Special Use Permit _____ Courtesy Letter _____

Right of Way Grant _____ Cooperative Work Agreement _____ Cost Recovery _____

Mineral Agreement _____ Letter of Concurrence _____ Timber Sale _____

_____

Federal Lands do not appear to be involved on this project.

12. Is an RE Office required for the project?

Yes X No _____

Type of RE Office

Modular X Move In _____

13. Were any previously unidentified sites with hazardous waste and/or material found?

Yes _____ None Evident X

14. Are there material borrow and/or disposal sites required?

No _____ Optional X Mandatory _____

The contractor will be responsible for obtaining a disposal site.

15. Are there potential relinquishments and/or abandonments?

Yes X No _____

16. Are there any existing and/or potential airspace sites?

Yes _____ No X

17. What type of mitigation is required for the project?

This project is anticipated to require Permit Numbers 1602, 401, and 404; Biological, Wetland/Riparian, and Paleontological impacts paid by RW; mitigation and PTE's (Permits to Enter).

18. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No _____

19. Indicate the anticipated Right of Way schedule and lead time requirements.

Right of Way Lead Time will require a minimum of **24** months after we receive first appraisal maps, utility conflict maps, necessary environmental clearances and freeway agreements have been approved and obtained. Additionally a minimum of **18** months will be required after receiving the last appraisal map to Right of Way for certification.

20. Assumptions and limiting Conditions: (Check boxes that apply.)

- ☑ Mapping did not provide sufficient detail to determine the limits of the right of way required.
- ☑ Transportation facilities have not been sufficiently designed to determine the damages to any of the remainder parcels affected by the project.
- ☑ Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- ☑ Design will secure necessary encroachment permits from local agencies.
- ☑ Environmental information is not known at this time. An escalated estimate using the last environment request done for a smaller scope.
- ☑ The project as allotted 10 months for Right of Way activities from the project approval date. This estimate requests 24 months. The project team is aware of risks and are identifying ways to allow Right of Way activities to begin before PAED.

Evaluation Prepared By:

Right of Way _____ Date 12/15/14
KELLY J. CUMMINGS

Reviewed By

RW Planning & Management: _____ Date 12/17/14
PAUL SLOULIN

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

_____
DOUGLAS BORTZ
Senior Right of Way Agent
Project Coordination Branch
North Region

12/16/14
Date

_____
JANEL D. WILSON
Assistant Chief
North Region Right of Way
Marysville

12-17-14
Date

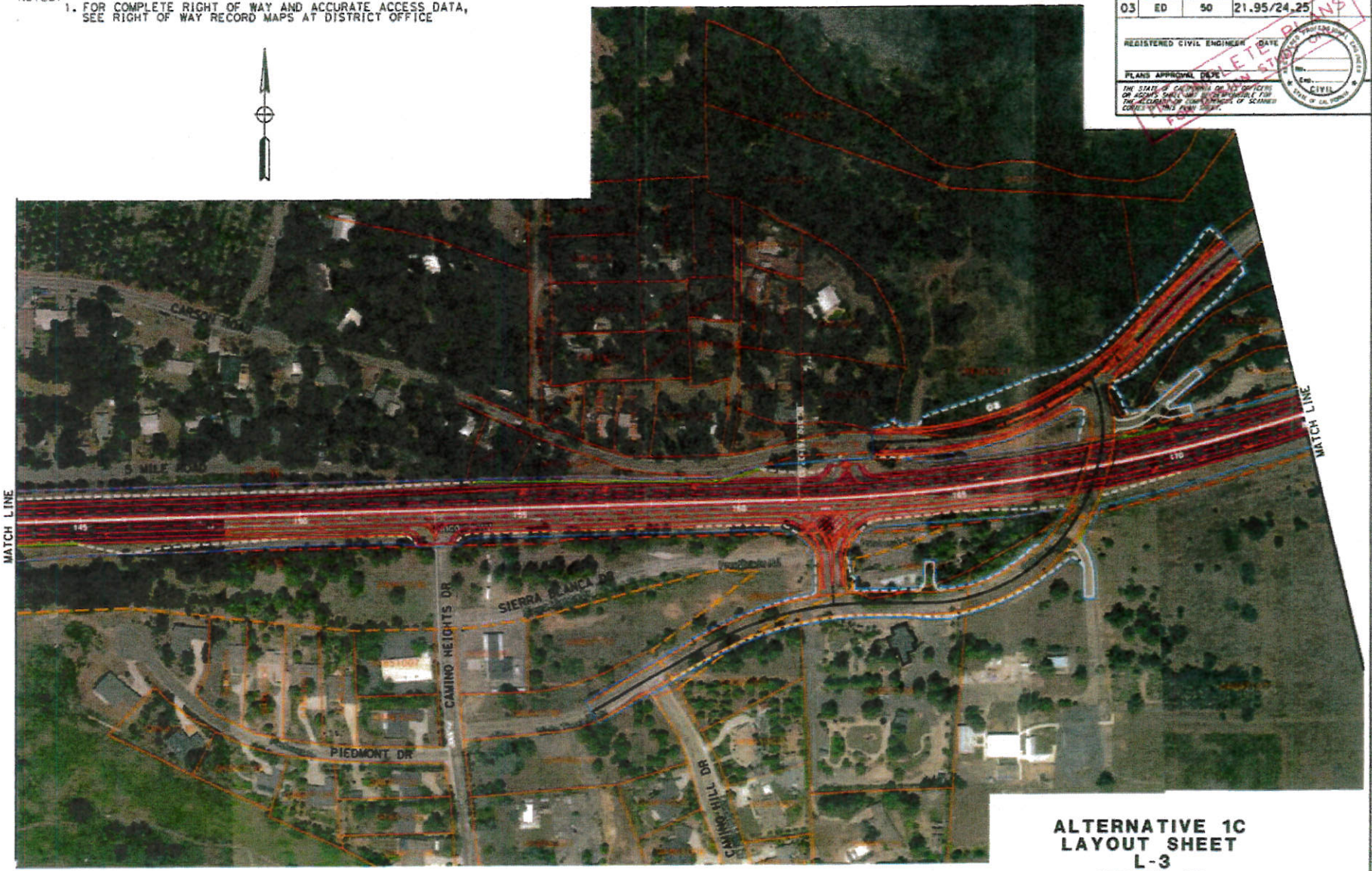
NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THESE PLANS.



ALTERNATIVE 1C
LAYOUT SHEET
L-3
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR	CALCULATED/ DESIGNED BY	REVISED BY	
I. Tabshouri	R. Kohgura	DATE REVISED	10/15/13
	CHECKED BY		

BORDER LAST REVISED 2/2/2010 | USERNAME => MUSER | RELATIVE BORDER SCALE 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE 0000000001

LAST REVISION DATE PLOTTED => 00/00/00 TIME PLOTTED => 9:11AE

State of California
Department of Transportation

Revised due to design change

MEMORANDUM

Serious drought
Help Save Water

To: ISAM TABSHOURI
Design Engineer
Department of Transportation

Attention: RYAN KOAHGURA
Project Engineer

From: JANEL D. WILSON
Assistant Chief,
North Region Right of Way
Marysville

Date: December 15, 2014

File: 03-ED-50-PM 21.95/24.25
EFIS No.: 03 1400 0039
EA: 4E620K
Alternate: 1D

Subject: CURRENT ESTIMATED RIGHT OF WAY COSTS

Project Description: This alternative changes access to Highway 50 at Camino Vista and Golden Chain roads. The access at Camino Heights would be restricted to right turn off of eastbound Highway 50 and a right onto eastbound Highway 50 . Access to Highway 50 at Gold Chain Road would be eliminated.

We have completed an estimate of the right of way costs for the above referenced project based on information received from you on October 1, 2014 .

Right of Way Lead Time will require a minimum of 24 months after receipt of appraisal maps, utility conflict maps, environmental clearances (HMDD) and Certificate of Sufficiency (COS). A minimum of 18 months prior to certification will be required from submittal of the last map or revision.

Current schedule is insufficient. Right of Way will look to accelerate work but most Right of Way activities require Project Approval and Environmental Clearance.

Attachments:
Right of Way Data Sheet

cc. Clark Peri

State of California - Department of Transportation

RIGHT OF WAY DATASHEET

EA: 4E620K
PROJECT NO.: 03 1400 0039
LOCATION: 03-ED-50-PM 21.95/24.25
Description: Safety Project Install Median Barrier, restrict Camino Heights and Golden Chain ramps and construct Undercrossing to Carson Road

Revised due to design change

ALTERNATE: 1D
DATE: 12/15/2014
Datasheet Type: Revision

---

1. Right of Way Cost Estimate:

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	$866,500	5%	$982,907
B. Appraisal Fees Estimate	$25,000	N/A	$25,000
C. Mitigation Acquisition & Credits	$0		$0
D. Project Development Permit Fees	$6,000	5%	$6,806
Subtotal	$897,500		$1,014,713
E. Utility Relocation (State's Share)	$218,000	10%	$278,867
(Owner's Share: $180,000)			
F. Relocation Assistance (RAP)	$200,000	5%	$226,868
G. Clearance/Demolition	$50,000	5%	$56,717
H. Title & Escrow	$13,600	5%	$15,427
I. Total Estimated Right of Way Cost	$1,379,100	**Rounded**	**$1,593,000** *
J. Construction Contract Work	$15,000		

2. Current Date of Right of Way Certification July 15, 2017

3. Parcel Data:

Type		Dual/Appr
X	0	
A	0	
B	9	
C	1	0
D	1	0
RR	0	
Total	**11**	

Excess 0

Utilities	
U4 - 1	7
- 2	0
- 3	6
- 4	0
U5 - 7	1
- 8	0
- 9	13

Railroad	
C&M Agreement	0
Service Contract	0
Easements	0
Rights of Entry	0
Clauses	0
Phase 9	0

Areas:	
R/W	5.2 sf
TCE	N/A
Excess	N/A
Mitigation	N/A

Mitigation	
Impacts	4
Parcels	0
Credits	3
Env PTE	5

Misc. R/W Work	
RAP Displacees	4
Clear/Demo	2
PTE & Construct	9
Condemnation	2
USA Involvement	No

4. **Provide a general description of the right of way and excess lands required (zoning, use, major improvements, critical or sensitive parcels, etc.).**

This alternative changes access to Highway 50 at Camino Vista and Golden Chain roads. The access at Camino Heights would be restricted to right turn off of eastbound Highway 50 and a right onto eastbound Highway 50 . Access to Highway 50 at Gold Chain Road would be eliminated.

This project will restrict left hand turns near Carson Road in the town of Camino. In order to maintain traffic levels, this project proposes to add an undercrossing to Carson Road and Carson Court. This may require 11 acquisitions from home sites, commercial properties, County of El Dorado, El Dorado Irrigation District, and one from the high school. The resources have been altered from the norm to accomodate an accelerated schedule and begin the Right of Way activities prior to project approval. Relocation benefits may be required as one of the acquisitions will be of an office complex that has apartments upstairs.

El Dorado County representatives have stated that the county will approve any setback variances that may be required on this project.

5. **Are any properties acquired for this project expected to be rented, leased, or sold?**

Yes X No _____

6. **Are RAP displacements required?**

Yes X No _____

No. of single family 2 No. of business/nonprofit 2

No. of multi-family 0 No. of farms 0

Based on Draft/Final Relocation Impact Statement/Study dated N/A

_____ Sufficient replacement housing will be available without last resort housing.

_____ Sufficient replacement housing will not be available without last resort housing.

7. **Is there an effect on assessed valuation?**

Yes _____ No X Not Significant _____

8. **Are there any items of Construction Contract Work?**

Yes X No _____

This project will need to conform several road approaches.

9. **Are utility facilities or rights of way affected?**

Yes X No _____

Names of Utility Companies requiring verification only.
US Department of Interior Bureau of Reclamation

Names of Utility Companies requiring involvements.
El Dorado Irrigation District (EID), PG&E, AT&T, Comcast Cable (formerly Media One)

Additional information concerning Utility Involvement on this project.
One joint pole at Carson Court (PM 23.7) will need to relocate for placement of retaining wall. 13 PG&E poles may need to be realigned to accommodate a new undercrossing at PM 23.5 and Sierra Blanca Drive. R/W Map indicates EID has easement for EID canal that runs southwesterly of US 50. EID facilities will need to be located to determine extent of conflict. Potholing funds are included for locating EID water line. US Department of Interior, Bureau of Reclamation has three Joint Utility Agreements in the project area but it is unknown if they have any utility involvement. There are five JUA's and one CCUA. One utility lid in the shoulder at PM 22.1 will require adjustment. Relocation will result in some cost to the State.

10. **Are railroad facilities or rights of way affected?**

Yes _____ No X Phase 4 Capital **$0**

11. **Are USA Lands or Rights Affected?**

Yes _____ No X Phase 4 Capital **$0**

Agencies Involved:

US Forest Service _____ BLM _____ Army Corps of Engineers _____

National Parks _____ BIA _____ Veterans Administration _____

US Fish & Wildlife _____ GSA _____ _____

Rights or Permissions to acquire:

Easement _____ Special Use Permit _____ Courtesy Letter _____

Right of Way Grant _____ Cooperative Work Agreement _____ Cost Recovery _____

Mineral Agreement _____ Letter of Concurrence _____ Timber Sale _____

_____

Federal Lands do not appear to be involved on this project.

12. Is an RE Office required for the project?

Yes X No _____

Type of RE Office

Modular X Move In _____

13. Were any previously unidentified sites with hazardous waste and/or material found?

Yes _____ None Evident X

14. Are there material borrow and/or disposal sites required?

No _____ Optional X Mandatory _____

The contractor will be responsible for obtaining a disposal site.

15. Are there potential relinquishments and/or abandonments?

Yes X No _____

16. Are there any existing and/or potential airspace sites?

Yes _____ No X

17. What type of mitigation is required for the project?

This project is anticipated to require Permit Numbers 1602, 401, and 404; Biological, Wetland/Riparian, and Paleontological impacts paid by RW; mitigation and PTE's (Permits to Enter).

18. Is it anticipated that Caltrans will perform all Right of Way work?

Yes X No _____

19. Indicate the anticipated Right of Way schedule and lead time requirements.

Right of Way Lead Time will require a minimum of **24** months after we receive first appraisal maps, utility conflict maps, necessary environmental clearances and freeway agreements have been approved and obtained. Additionally a minimum of **18** months will be required after receiving the last appraisal map to Right of Way for certification.

20. Assumptions and limiting Conditions: (Check boxes that apply.)

- ☑ Mapping did not provide sufficient detail to determine the limits of the right of way required.
- ☑ Transportation facilities have not been sufficiently designed to determine the damages to any of the remainder parcels affected by the project.
- ☑ Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.
- ☑ Design will secure necessary encroachment permits from local agencies.
- ☑ Environmental information is not known at this time. An escalated estimate using the last environment request done for a smaller scope.
- ☑ The project as allotted 10 months for Right of Way activities from the project approval date. This estimate requests 24 months. The project team is aware of risks and are identifying ways to allow Right of Way activities to begin before PAED.

Evaluation Prepared By:

Right of Way _____ Date 12/15/14

KELLY J. CUMMINGS

Reviewed By

RW Planning & Management: _____ Date 12/17/14

PAUL SLOULIN

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

_____

DOUGLAS BORTZ
Senior Right of Way Agent
Project Coordination Branch
North Region

12/16/14
Date

_____

JANEL D. WILSON
Assistant Chief
North Region Right of Way
Marysville

12-17-14
Date

NOTES:
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE

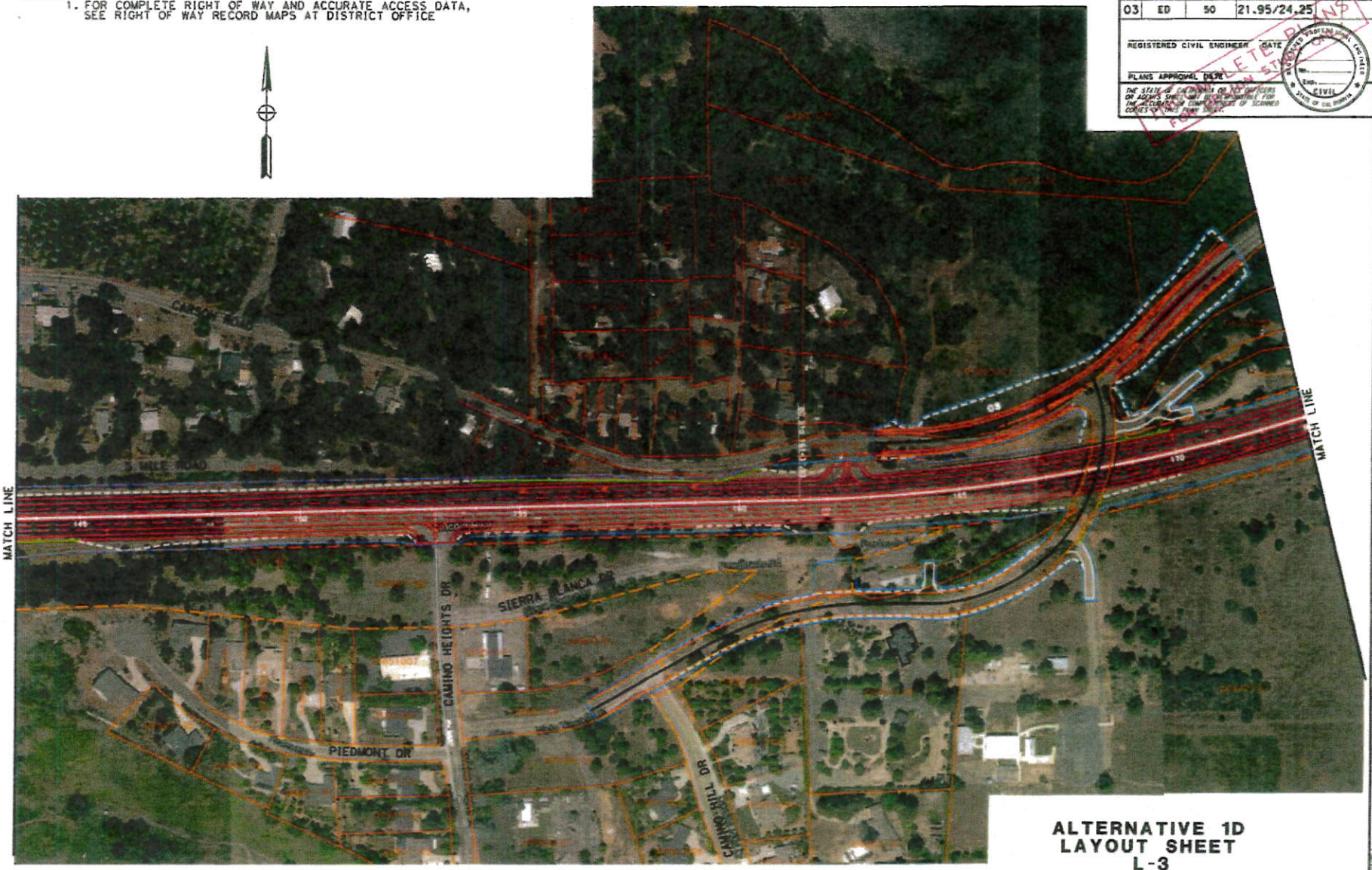
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	21.95/24.25		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

INCOMPLETE PLANS FOR PLAN STORAGE ONLY



ALTERNATIVE 1D
LAYOUT SHEET
L-3
SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

FUNCTIONAL SUPERVISOR: I. Tabshouri

CALCULATED-DESIGNED BY

CHECKED BY: R. Kohaguro

REVISED BY

DATE REVISED 10/15/13

USERNAME => USER

RELATIVE BORDER SCALE 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE 0000000000

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

ATTACHMENT F

TRAFFIC MANAGEMENT PLAN DATA SHEET

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Ryan Kohagura, P.E.
D3 Advance Planning
North Region – District 3

Date: January 7, 2014

File: 03-4E620K
ED-50-21.95/24.25
Install Median Barrier and
Construct Undercrossing

From: Bojana Gutierrez
TMP Coordinator
Transportation Management Planning

Subject: Transportation Management Plan (TMP) Data Sheet

Background

This project is located on Route 50 in the Camino area east of Placerville, El Dorado County. The project proposes installation of a Type 60 concrete median barrier and construction of an undercrossing at Pondoro Road. Two alternatives are being considered and main features of both include a partial median access opening at Still Meadows Road, intersection improvements at Pondoro Road, shoulder and acceleration/deceleration lane widening, construction of a retaining wall, overlay and widening of existing pavement, minor modifications to driveways and intersections, Carson Road realignment and improvement and related relocation of the El Dorado Irrigation District (EID) main ditch near the proposed undercrossing.

Within the project limits Highway 50 is a multi-lane highway with two lanes in each direction, acceleration and deceleration lanes and turning pockets. Highway 50 is characterized by a daily peak-hour volume (in both directions) of up to 2,900vph. For Traffic volumes refer to **Table-1**. Average truck traffic percentage of the total AADT is as shown in **Table-2**.

Table-1: Traffic Volumes
(2012 Traffic Volumes on California State Highways)

Location Description	Type of Roadway	Peak-Hour (both directions combined) (vph)	AADT (vpd)
ED-50-21.95/24.25	Multi-lane	2,900	20,600

Table-2: Truck Volumes (2012 Annual Average Daily Truck Traffic on California State Highways)	
Location Description	% Trucks of the total AADT
ED-50-21.95/24.25	7

Recommendations

- On Highway 50 in El Dorado County lane and shoulder closure will be allowed any time during the daytime hours, but may be limited during peak hours.
- On a multilane roadway, a minimum of one paved traffic lane, not less than 11 feet wide, shall be open in each direction of travel.
- Lane closures on multilane roadways will be performed in accordance with Standard Plan Sheet T11 "Traffic Control System for Lane Closure on Multilane Conventional Highways."
- The maximum length of any lane closure shall be limited to one mile.
- Access to driveways and cross streets must be maintained during construction, in accordance with traffic control standard plans or traffic handling plans.
- Pedestrian and bicycle access must be maintained during construction. Additional signs may be required to detour pedestrians and bicycle traffic.
- Portable changeable message signs (PCMS) will be required in direction of traffic during construction for each lane closure, shoulder or ramp closure.
- No lane closures, shoulder closures, or other traffic restrictions will be allowed on Special Days, designated legal holidays and the day preceding designated legal holidays, and when construction operations are not actively in progress.
- If traffic is rerouted to paved shoulders, make sure structural section is adequate to handle additional traffic.
- Work at these locations may require the assistance of COZEEP, but a full time COZEEP presence is not anticipated.
- Coordination with projects within, or nearby the project limits will be required to avoid conflicts.
- Lane closure charts will have to be developed prior to P&E.

Cost

For estimating purposes use $2,500 per traffic control day to estimate the costs that are required for the Traffic Management Plan (TMP) items. These items include Traffic Control System, Portable Changeable Message Signs, Maintain Traffic, and TMP-Public Information.

COZEEP is estimated at $1,000 per working day and $2,000 per working night whenever CHP involvement is needed during construction. COZEEP estimate should include 2 officers per vehicle when performing night work.

If there is a change in the scope of the project or the order of work (schedule), please advise the TMP unit, as this may affect the TMP estimate.

P & E Requirement

To complete a TMP for this project, please provide the following to the Office of Traffic Management Planning at least three months prior to P&E: project description, title sheet, typical cross sections, layout sheets, construction cost estimates, number of working days, number of traffic control days, project schedule, and a contact person.

Needed Resources

TMP office will need the following resources to complete our work:

Activity 160	80 hours
Activity 230	200 hours
Activity 255	80 hours
Activity 265	30 hours
Activity 270	40 hours
Activity 285	20 hours

Attachments

TMP Checklist

D-3 TRANSPORTATION MANAGEMENT PLAN CHECKLIST

District / EA: 03-4E620K
Date Prepared: January 7, 2014
Prepared By: Bojana Gutierrez
Stage of Project (X box) ☐ PID ☒ PSR ☐ PR ☐ PS&E

Co.Rte.-PM. ED-50-21.95/24.25
Location El Dorado 50 near Camino in El Dorado County

Description: Install median barrier and construct undercrossing

	REQUIRED	RECOMMENDED	NOT APPLICABLE	BEES Item No.	COMMENTS	UNIT COST	REQUIRED IN SPEC.
1.0 Public Information Strategies							
1.1 Brochures and Mailers		X			Within and near Camino limits		
1.2 Media Releases (& minority media sources)			X				
1.3 Paid Advertising			X				
1.4 Public Information Center			X				
1.5 Public Meetings/Speakers Bureau			X	066063			
1.6 Project Telephone Hotline			X				
1.7 Internet, E-Mail			X				
1.8 Local cable TV and News			X				
1.9 Notification to Impacted groups (i.e. bicycle users, pedestrians with disabilities, others)			X				
1.10 Project Web Page			X				
1.11 Caltrans Public Information Office		X		066063			
1.12 Consultant Public Information Office			X				
1.13 Other items			X				
2.0 Traveler Information Strategies							
2.1 Changeable Message Signs (permanent)			X				
2.2 Changeable Message Signs (portable)	X			128652			X
2.3 Special Construction Signs			X	120090			
2.4 Traveler Information Systems (CHIN/Internet)			X	861985			
2.5 Highway Advisory Radio "HAR" (fixed or mobile)			X	860520			
2.6 Radar Speed Sign			X	066064			
2.7 Traffic Management Team			X				
2.8 Revised Transit Schedules/ Maps			X				
2.9 Bicycle community information			X				
2.10 Other item			X				
3.0 Incident Management							
3.1 COZEEP		X		066062			
3.2 Freeway Service Patrol (tow truck service patrol)			X	066065			
3.3 Traffic Surveillance Stations (loops or CCTV)			X	066876			
3.4 Transportation Management Center			X				
3.5 Traffic Control Inspector (Caltrans)	X						
3.6 Traffic Management Team			X				
3.7 On-site Traffic Advisor (contractor)			X				
3.8 Other Items			X				
4.0 Construction Strategies							
4.1 Delay damage clause			X				
4.2 Night work			X				
4.3 Weekend Work			X				
4.4 Extended Weekend Closures			X				
4.5 Planned Lane Closures	X				Per Lane Closure Charts		X
4.6 Planned Ramp/Connector Closures			X				
4.7 Total Facility Closure			X				
4.8 Project Phasing			X				
4.9 Truck Traffic Restrictions			X				
4.10 Reduced Lane Widths			X				

	REQUIRED	RECOMMENDED	NOT APPLICABLE	BEES Item No.	COMMENTS	UNIT COST	REQUIRED IN SPEC.
4.0 Construction Strategies (Continued)							
4.11 Temporary K-Rail			X	129000			
4.12 Temporary Traffic Screens			X	129150			
4.13 Reduced Speed Zones		X					
4.14 Traffic Control Improvements			X				
4.15 Contingency Plans	X						X
4.15.1 Material Plant on standby	X						
4.15.2 Extra Critical Equipment on site	X						
4.15.3 Material Testing Plan			X				
4.15.4 Alternate Material on site			X				
(In case of failure or major delays)							
4.15.5 Emergency Detour Plan		X					
4.15.6 Emergency Notification Plan		X					
4.15.7 Weather Conditions Plan			X				
4.15.8 Delay Timing and Documentation Plan			X				
4.15.9 Late Closure Reopening Notification		X					
4.16 Signal timing modification			X				
4.17 Coordination with adjacent construction	X						X
4.18 Double Fine Zone (signs)	X						
4.19 Right of Way Delay			X	066022			
4.20 Other Items			X				
5.0 Demand Management							
5.1 HOV Lanes/Ramps			X				
5.2 Ramp metering			X				
5.3 Park-and-Ride Lots			X				
5.4 Parking Management/Pricing			X				
5.5 Rideshare Incentives			X				
5.6 Rideshare Marketing			X	066069			
5.7 Transit, Train, or Light-Rail Incentives			X	066066			
5.8 Transit Service Modification			X				
5.9 Variable Work Hours			X				
5.10 Telecommute			X				
5.11 Other Items			X				
6.0 Alternate Route Strategies							
6.1 Ramp Closures			X				
6.2 Street Improvements			X				
6.3 Reversible Lanes			X				
6.4 Temporary Lanes or Shoulders Use		X					
6.5 Freeway to freeway connector closures			X				
6.6 Encroachment Permit from City/County			X				
7.0 Other Strategies							
7.1 Application of new technology			X				
7.2 Other Items			X				

Comments: _____

ATTACHMENT G
INITIAL SITE ASSESSMENT

State of California **Business, Transportation and Housing Agency**

Memorandum

Date: February 21, 2014

File: 03-Ed-50
PM 21.95-24.25
EA 4E620K

To: Ryan Kohagura
Project Engineer

From: Rajive Chadha
North Region Office of Environmental Engineering (NROEE) - South

Subject: Initial Site Assessment

It is understood that this project proposes outside widening along the roadway and installing a concrete median barrier along the above route. Guardrail will be reconstructed and drainage facilities will be upgraded. The existing traffic stripes will be cold planned and no bridge work will take place. It is understood that additional right of way is required for this project.

The review for potential hazardous waste impacts involved the following;

1. A review of the project plans;
2. Discussions with the project engineer;
3. A review of Naturally Occurring Asbestos maps;
4. A review of Geotracker (databases of hazardous waste sites).

Based on this review, the potential for hazardous waste exists with respect to the following;

1) Lead-contaminated soil may exist within and near our R/W due to the historical use of leaded gasoline, leaded airline fuels, waste incineration, and et-cetera. The areas of primary concern in relation to highway facilities are soils along routes with historically high vehicle emissions due to large traffic volumes, congestion, or stop and go situations. Since a large quantity of soil disturbance will occur, an Aerially Deposited Lead (ADL) site investigation is required. This site investigation will determine if hazardous soils exist and what actions, if any, will need to occur during construction.

2) Naturally Occurring Asbestos (NOA) may exist within and near our R/W. Since a large quantity of soil disturbance will occur, a NOA site investigation is required. This site investigation will determine if NOA exists and what actions, if any, will need to occur during construction. This study will take place at the same time as the ADL study.

3) Hazardous levels of lead and chromium are known to exist in the yellow color traffic stripes. Since these traffic stripes will be cold planned along with the roadway, the levels of lead and chromium will become non-hazardous. These grindings (which consist of the roadway material and the yellow color traffic stripes) shall be removed and disposed of in accordance with Standard Special Provision 15-305 (Residue Containing High Lead Concentration Paints) which requires a Lead Compliance Plan (LCP). Non-hazardous levels of lead are known to exist in the white traffic striping. As such, these grindings shall be removed and disposed of in accordance with the same specification. For budgetary purposes, you can assume a cost of $ 2,000 (Use BEES item code 190110).

4) Hazardous chemicals are known to exist in the wood posts associated with metal beam guardrail. As such, if wood posts are removed, they shall be disposed of in accordance with Standard Special Provision 14-11.09 (Treated Wood Waste).

5) In the event that cured in place pipe (CIPP) will be used to rehabilitate/updrade drainage facilities, the potential for hazardous waste may exist with styrene (a highly volatile chemical used in the main liner). If groundwater is known to be present in the vicinity of a culvert or perched/spring water permeates to the inside of the culvert, NROEE recommends the use of a pre-liner instead of patching the deteriorated culvert.

6) A Hazardous Materials Disclosure Document (HMDD) will be required for attachment to the Certificate of Sufficiency (COS) before any right of way can be acquired. To provide the HMDD, Design will need to provide our office with final R/W mapping as soon as it is available.

Since construction of the proposed project cannot avoid disturbing soils, a Site Investigation (SI) is required. A SI needs to be requested by the PE or PM and takes 2 to 5 months to complete since a task order has to be prepared, approved, and issued to a contractor. The contractor is then required to prepare work plans, health and safety plans, conduct site investigations, and prepare site investigation reports for Caltrans review and approval.

The following support costs will be needed for this project;

Unit 0386 NROEE (Hazardous Waste) Resource Hour Needs			
ISA	**Site Investigation**	**Specs Prep**	**Functional Support**
165.1050	**235.10**	**230.35**	**285.10**
8	**80**	**8**	**4**

Should this project take place at locations other than those specified, another review will be required. Should you require further information or have any questions, I can be reached at (530) 741-4295.

c.c. Georgette Neale, Environmental Co-ordinator
Clark Peri, Project Manager
Douglas Coleman, NROEE - South

ATTACHMENT H

ADVANCE PLANNING STUDY

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: RYAN KOHAGURA
PROJECT ENGINEER
DISTRICT 03 – ADVANCE PLANNING

Date: APRIL 28, 2014

File: 03-ED-50-PM 21.95/24.25
EA: 03-4E620K
EFIS: 0314000039
SAFETY PROJECT
PONDORADO ROAD UC

From: DAN T ADAMS
Bridge Design Branch 10
Office of Bridge Design South 2
Structure Design
Division of Engineering Services

for Dan Adams

Subject: Advance Planning Study Transmittal

Attached is the Advance Planning Study for the above referenced project as submitted to the Division of Engineering Services by your request memo dated November 20, 2013

The forecast structure cost, including time related overhead, mobilization and contingencies, is as follows:

Structure Name	Br. No.	Estimated Cost
Pondorado Road UC	25-00xx	$3,885,000.00
Retaining Wall	25-00xx	$6,684,000.00
	Total Cost =	$10,569,000.00

The following table summarizes the projected total structure cost based on a variable escalation rate. The escalated structure cost is provided for informational purposes only and does not replace annual cost updates as required by Department policy.

Years Beyond Midpoint	Escalated Cost
1	$3,959,000
2	$4,082,000
3	$4,200,000
4	$4,280,000
5	$4,383,000

The escalated structure cost is provided for informational purposes only and does not replace annual cost updates as required by Department policy.

The total work days for the construction are 237 days.

This Advance Planning Study and associated cost estimate is based on the following assumptions:

1. The Minimum Vertical clearance of this new bridge is 16'-6". Depth of RC box girder is 7'-0". No profile of Route 50 available.

2. There are two stage constructions.

3. All foundations are spread footings.

4. The type of Retaining Wall is Soil Nail Wall. The unit cost is $120 / SF. The total area of Retaining Wall is 55,700 SF.

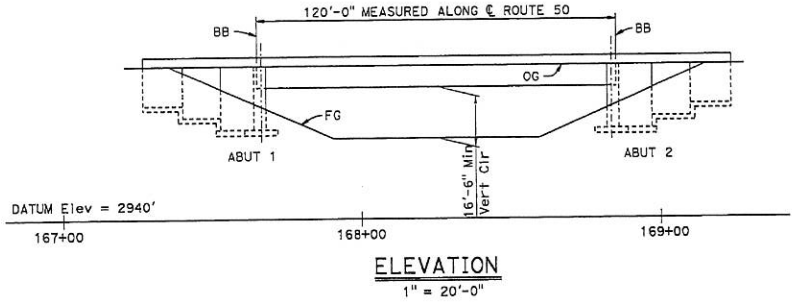
If you have any questions or if you need additional information regarding this study, please contact **Fangfei Chen** at (916) 227-8531 or **Dan Adams** at (916) 227-8358.

Attachments

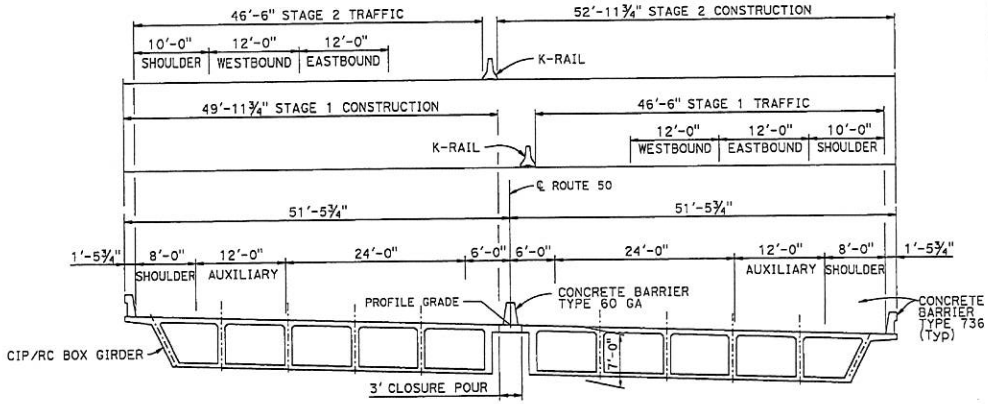
c: ESKINDER TADDESE, Project Liaison Engineer
MICHAEL DOWNS, Bridge Design Office Chief
JOHN FUJIMOTO, Technical Liaison Engineer
QUINCY WONG, Branch Chief, Bridge Architecture & Aesthetics
PETE WHITFIELD, Office Chief, Structure Maintenance & Investigations
KEVIN WALL, Program Advisor, Structure Maintenance & Investigations
JONH BABCOCK, Structure Construction Assistant Deputy Division Chief
REZA MAHALLATI, Geotechnical Services
CLARK PERI, Project Manage
ISAM TABSHOURI, Advance Planning – Branch Chief

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

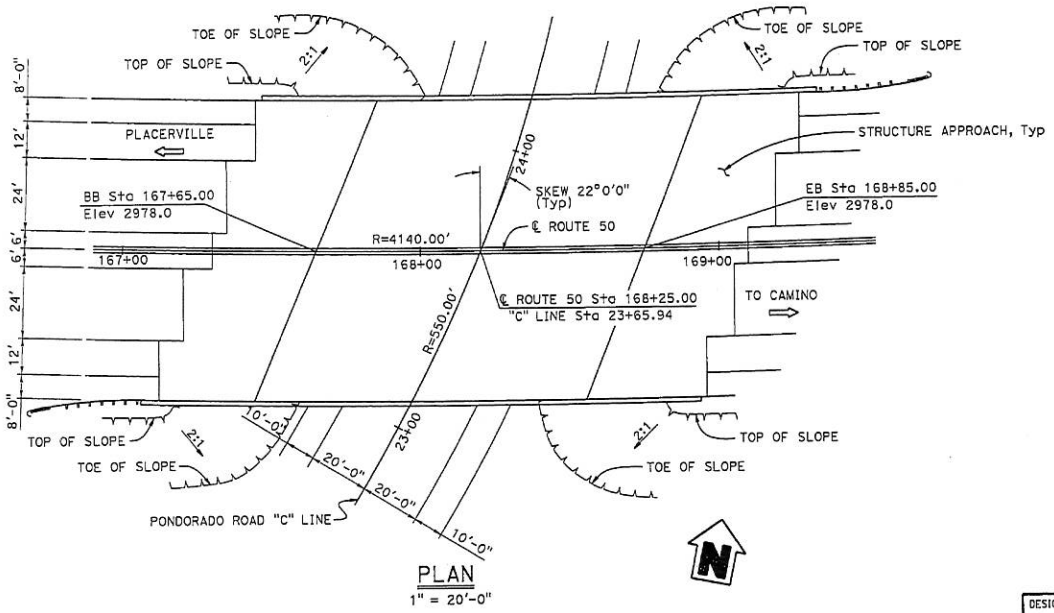
DIST	COUNTY	ROUTE	POST MILE
03	ED	50	X



ELEVATION
1" = 20'-0"



TYPICAL SECTION
⅛" = 1'-0"



PLAN
1" = 20'-0"

Vehicular Traffic

1. ___ New alignment. No traffic at the site.
2. ___ Traffic will be detoured away from the site.
3. X Traffic will be carried on the structure.
   Stage construction will/will not be required.
4. ___ Traffic will pass under the structure on _____ (Name of St. or Hwy.)
   A. ___ No falsework allowed over traffic.
   B. ___ Falsework opening(s) required:

		Temporary Vertical Clearance	Width of Traffic Opening
____	Bnd	_____	_____
____	Bnd	_____	_____
____	Two-way	_____	_____

   C. ___ Temporary traffic lane reduction needed for footing excavation.

DATE OF ESTIMATE	04-14-14
BRIDGE REMOVAL	=
STRUCTURE DEPTH	= 7.00
LENGTH	= 120.00
WIDTH	= 102.96
AREA	= 12,355
COST/ □ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= 314.45
TOTAL COST	= 3,885,000.00
TOTAL WORK DAYS	= 237

DESIGNED BY	F. Chen	DATE	X
DRAWN BY	Y. Tang	DATE	X
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

ORIGINAL SCALE IN INCHES 0 1 2 3

STRUCTURE DESIGN BRANCH 10

PLANNING STUDY
PONDORADO ROAD UC

UNIT: 3589	BRIDGE No. 25-00XX
SCALE: SHOWN	PROJECT No. & PHASE: 0314000039

FILE => hwy 50.dgn

CONTRACT No.: X

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

USERNAME => s1315%6 DATE PLOTTED => 30-APR-2014 TIME PLOTTED => 14:04

ATTACHMENT I

LANDSCAPE ARCHITECTURE ASSESSMENT SHEET

NORTH REGION
LANDSCAPE ARCHITECTURE ASSESSMENT SHEET
03-LAND-0002 (Rev. 2/13)

TO: Ryan Kohagura **FROM:** Lesley E. Phillips **Unit/Senior TE Name:** 335/Isam Tabshorui **Project Manager:** Clark Peri	**DISTRICT:** 03 **DATE: March 20, 2014** **EA: 4E620K** **EFIS ID# 0314000039**	**CO:** Ed	**RTE:** 50	**PM** 21.95-24.25
CONTRACT SEPARATION: ☒ Landscape as part of roadway work EA ☐ Landscape under separate EA (Follow-up) (See: http://www.dot.ca.gov/hq/LandArch/policy/pdf/separate_contract_policy.pdf for Separate Contract Policy	**PROJECT:** CAMINO Safety Project **FUNDING SOURCE:** NON-SHOPP/Local **PROJECT MILESTONE:** ☒ PID ☐ PA&ED ☐ PS&E **PROJECT COST** **DISTRICT** $22,310,000.00 **STRUCTURES** $4,100,000.00			

PROJECT DESCRIPTION

Install median barriers and construct undercrossing.

The first alternative is to widen Route 50 for the installation of Type 60 Concrete median barrier from Still Meadows Road (PM 22.0) to Approximately 70 feet west of Upper Carson Road (PM 24.7). A partial median access opening (westbound, left turn only) at Still Meadows Road would be maintained. The intersection at Pondorado Road would be improved on the south side of Route 50 to allow vehicles to turn right-in/right-out from Route 50 A 1,400 lf eastbound auxiliary lane on Route 50 would exit at Pondorado Road, which connects to Vista Terra Drive at an all-way stop controlled three-way intersection. Pondorado Road would extended in a northeasterly direction thru a proposed undercrossing (PM 24.0) at Route 50 with connection to Carson Road on the north side of Route 50. Carson Road would realigned and improved to accommodate traffic in this location. A portion of the El Dorado Irrigation District (EID) main ditch would need to be relocated near the proposed undercrossing.

The second alternative would incorporate all proposed improvements in Alternative 1 except it would extend the concrete median barrier further east to close the median at Upper Carson Road (PM 24.8) and restripe and confirm mainline pavement to approximately 1,500 lf east of Upper Carson Road.

Feature Common to both Alternatives:

- ¾ access to Still Meadow Road from Route 50 through right-in/right-out and left turn pocket from west bound Route 50.
- Route 50 would maintain acceleration and deceleration lanes at Still Meadows Road, Paul Bunyon Road/Five Mile Road, Camino Heights Drive, Lower Carson Road/Sierra Blanca Road and Upper Carson Road. Outside Shoulder would be widen to 8-ft on Route 50 where there are acceleration/decelerations lanes and it would be widened to 12-ft in all other location within the project.
- Re-stripe 12-ft wide traveled land and turn lanes
- Route 50 inside shoulders would be widen to 5-ft from the proposed Type-60 concrete median barrier
- Route 50 would be widen from 0 to 16 feet. The existing pavement would be overlayed with 2" AC (Type A) and the widened pavement section would be 6" HMA-A with 12" Class-2 aggregate base.
- Widened section of Route 50 would have retaining wall varying in heights from 4 to 12 feet with aesthetic treatment and 2:1 side slopes at end conditions.
- All driveways and intersection would remain open, but left turn movements may be prohibited at some locations due to proposed median barrier. Affected driveways and intersection would be slightly re-graded to conform with the widened Route 50 pavement within State Right of way.

NORTH REGION
LANDSCAPE ARCHITECTURE ASSESSMENT SHEET
03-LAND-0002 (Rev. 2/13)

SCENIC HIGHWAY STATUS ☒ **Officially Designated**
See: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm for Scenic Highway Mapping System)

NO HIGHWAY PLANTING/IRRIGATION ITEMS	☒	
LANDSCAPE FREEWAY STATUS	☐ Yes	☒ No
WARRANTED HIGHWAY PLANTING	☐ Yes	☒ No

EROSION CONTROL BACKGROUND INFO

SOIL DISTURBANCE	☒ Yes	☐ No
CONCENTRATED FLOW AREAS	☐ Yes	☒ No
SLOPE LOCATIONS	☒ Yes	☐ No
SLOPES > 2:1	☒ Yes	☐ No

AREA (Ft^2/ACRE) FOR EROSION CONTROL: **198,332.00 SQFT**

MITIGATION BACKGROUND INFORMATION

ENVIRONMENTAL COORINATOR Georgette Neale 916-274-0623 Contact Date: 3/14/2014
PROJECT BIOLOGIST Erik schwab 916-274-0585 Applicable Permits: 404 401 1602

BIOLOGICAL REVEG. REQUIRED	☒ Yes	☐ No	
VISUAL IMPACT MIT. REQUIRED	☒ Yes	☐ No	☐ Stewardship
UNIT TASKED w/ BIO. REVEG.	☐ Landscape Architecture		

PLANT COUNT FOR MITIGATION PLANTING/ N.A.

ROADSIDE MAINTENANCE SAFETY NEEDS

☒ Paving of Extended Gore Areas

(See: http://www.dot.ca.gov/hq/LandArch/policy/pdf/design_for_safety.pdf for Roadside Paving Design Memo)

ROADSIDE VEGETATION MANAGEMENT TREATMENT NEEDS

☒ Guardrails and Signs (only at bridge structure)
☒ Side Slopes/Embankment Slopes
Notes Check with maintenance for use of herbicides on roadways
(See: http://www.dot.ca.gov/hq/LandArch/roadside/index.htm for potential treatment measures)

CONTEXT SENSITIVITY

☐ It is determined that the project may involve consideration of community and local involvement.
☒ No foreseen issues with community and local involvement
(See: http://www.dot.ca.gov/hq/oppd/context/index.htm for Context Sensitive Solutions guidance)

CONSIDER ADDITIONAL AESTHETIC TREATMENT FOR:

☒ Retaining Wall
☒ Structure (Tunnel) concrete barrier
☒ Median barriers

NORTH REGION
LANDSCAPE ARCHITECTURE ASSESSMENT SHEET
03-LAND-0002 (Rev. 2/13)

HIGHWAY ARCHITECTURAL COST INFORMATION:	**Alternative 1**	**Alternative 2**
☒ Extended gore areas	(529sqyd)**$52,900.00**	(1,247sqyd) **$124,700.00**
☒ Retaining walls 55,700 SQFT Architectural treatment on face	Engineers Estimate	
HIGHWAY ARCHITECTURE		

EROSION CONTROL COST INFORMATION:	**Alternative 1 and 2 Projected cost for 2017**
198,332 sqft area disturbed	
☒ Soil Stabilization (BFM, Compost, etc.)	$ 27,912.98 $ 97,271.16
☒ Sediment Control (Fiber Rolls	$ 42,999.69
☒ Soil Building (Incorporate Materials)	$ 46,203.80
☒ Steep Slope (NETTING.)	$150,730.11
EROSION CONTROL SUBTOTAL	**$365.117.75**

See attachment for signatures

PREPARED BY: _____ DATE: _____

CONCURRED BY: _____ DATE: _____
(Project Manager)

APPROVED BY: _____ DATE: _____
(Landscape Architecture or Engineering Services Branch Chief)

ATTACHMENT

NORTH REGION
LANDSCAPE ARCHITECTURE ASSESSMENT SHEET
03-LAND-0002 (Rev. 2/13)

HIGHWAY ARCHITECTURAL COST INFORMATION:	Alternative 1	Alternative 2
☒ Extended gore areas ☒ Retaining walls 55,700 SQFT Architectural treatment on face	(529sqyd)$52,900.00 Engineers Estimate	(1,247sqyd) $124,700.00
HIGHWAY ARCHITECTURE		

EROSION CONTROL COST INFORMATION:	Alternative 1 and 2 Projected cost for 2017
198,332 sqft area disturbed	
☒ Soil Stabilization (BFM, Compost, etc.)	$ 27,912.98 $ 97,271.16
☒ Sediment Control (Fiber Rolls	$ 42,999.69
☒ Soil Building (Incorporate Materials)	$ 46,203.80
☒ Steep Slope (NETTING.)	$150,730.11
EROSION CONTROL SUBTOTAL	**$365,117.75**

PREPARED BY: Lesley E Phillips DATE: 3/24/2014

CONCURRED BY: _____ DATE: 3-24-14
(Project Manager)

APPROVED BY: _____ DATE: 3-24-14
(Landscape Architecture or Engineering Services Branch Chief)

Resources by WBS Code (Landscape Architecture - Unit 03-0381,)

	Proje	Project EA: 4E620K EFIS 0314000039	
WBS Activity	$30 Million	**Project Description: Install Median barrier & construct** undercrossing **scenic highwy**	
		Scenic Resources and Landscape Architecture Review	Estimate Hours
100	80	PROJECT MANAGEMENT	80
100.05	10	Project Management - PID component	10
100.10	30	Project Management - PA & ED Component	30
100.**15**	30	Project Management - PS&E Component	30
100.20	10	Project Management - Construction Component	10
150		DEVELOP PROJECT INITIATION DOCUMENT (PID) - These resources are provided by Planning	65
150.**15.55**		Construction Estimate	20
150.20.15		Scenic Resources and Landscape Architecture **Review**	20
150.25.05		Draft PID	10
150.25.20		PID Circulation Review and Approval	5
160	65	PERFORM PRELIMINARY ENGINEERING STUDIES AND DRAFT PROJECT REPORT	105
160.05		Updated Project Information (LAAS **resources** here)	30
160.05.35		Project Cost Estimate **Review**	10
160.10.30		Highway Planting Design Concepts (includes mitigation, replacement **and new** planting)	30
160.**15**		Draft Project Report	20
160.15.05		Cost Estimate **for Alternatives**	10
160.15.25		Draft Project Report Circulation Review & Approval	5
165	65	PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT (DED)	65
165.05.05		Project Information Review	35
165.10.20		Visual Impact Assessment and Scenic Resources Evaluation	30
180	15	PREPARE AND APPROVE PROJECT REPORT AND FINAL ENVIRONMENTAL DOCUMENT	15
180.05		**Final** Project Report	10
180.05.15		Updated Storm Water Data Report	5
185	75	PREPARE BASE MAPS and PLAN SHEETS DURING PS&E	75
185.05.10		Update Project Information *(update **of** Landscape scope and **costs for PE when** requested)*	37
185.15		Preliminary Design	38
205	50	PERMITS, AGREEMENTS and ROUTE ADOPTIONS DURING PS&E	25
205.**10**		Obtain Permits (includes attachments by Landscape to assist Enviro in obtaining permits)	25
230	450	PREPARE DRAFT PS&E	500
230.05.50		Retaining Wall Plans	200
230.10		Draft Highway Planting **Plans**	100
230.35.40		Erosion Control Specifications	100
230.40.40		Erosion Control Quantities and Estimates	70
230.60		Updated Project Information **for PS&E** Package	20
230.99		Other Draft PS&E Products *(RE File)*	10
255	95	CIRCULATE, REVIEW and PREPARE FINAL DISTRICT PS&E PACKAGE	95
255.**10.10**		Updated Highway Planting PS&E	45
255.20		Final District PS&E Package	50
260	55	CONTRACT BID DOCUMENTS "READY TO LIST"	30
260.70		**Draft Contract Comment** Resonse (DR)	30
265	10	AWARDED AND APPROVED CONSTRUCTION CONTRACT	10
265.55		Advertised Contract	10
270	35	CONSTRUCTION ENGINEERING and GENERAL CONTRACT ADMINISTRATION	35
270.20.50		Technical Support	5
270.25.**15**		Pre-Construction Meeting	5
270.60		**Plant Establishment Administration**	25
285	30	CONTRACT CHANGE ORDER ADMINISTRATION	30
285.**10**		Functional Support	30
ed Hours			**2240**

ATTACHMENT J

STORM WATER DATA REPORT

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: RYAN KOHAGURA
ADVANCE PLANNING

Date: January 9, 2014

File:

From: IRIS BISHOP
STORM WATER
ENGINEER SERVICES

Subject: **AMENDMENT TO STORM WATER DATA REPORT (SWDR) FOR 03-4E620K, 03-ED-50, PM 20.0/R24.1**

This memo to File serves to amend the SWDR to comply with the new Construction General Permit (CGP) requirements. See attached SWDR dated November 2, 2009. The project scope has not changed therefore this supplemental will only concentrate on the new CGP requirements.

1. Project Description

This project is not within an Urban MS4 Permit Area.

The total project area is approximately 97.8 acres. The existing total impervious area within the project limits is approximately 15.2 acres.

2. Define Site Data and Storm Water Quality Design Issues

The Central Valley has jurisdiction within the project limits. Project falls within Weber Creek Hydrologic Sub-Area 514.31 in South Fork American Hydrologic Area. The principal receiving water bodies are Hangtown Creek, El Dorado Irrigation Main Canal, and China Creek which are not 303(d) listed water bodies. No TMDLs are associated with this area.

5. Proposed Permanent Treatment BMPs to be used on the Project

The current treatment BMP strategy is to treat 100% of the WQV/WQF by maximizing site perviousness and the deployment of biofiltration.

6. Describe Proposed Temporary Construction Site BMPs to be used on Project

This project has been identified preliminary as Risk Level (RL) 2 using GIS Method. The Watershed Erosion Estimate is 160.44 tons/acre, which is a High Sediment Risk. The Receiving Water Risk is low since there are no discharges to water bodies with designated beneficial use within the project limits.

Construction Site BMP cost has been estimated at $330,125 using option 1, percentage of Total Construction Cost ($26,410,000) as shown in Appendix F of the PPDG and 1.75% of the total construction cost was used.

7. Maintenance BMPs (Drain Inlet Stenciling)

Pedestrian and bicycle traffic are permitted in a portion of the project therefore drain stenciling is required for DIs in this project. Maintenance pullouts will be evaluated as appropriate to facilitate BMP maintenance.

Attachments
SWDR, dated 11/2/2009

c: Wesley Faubel, Storm Water Coordinator, Engineer Services
Clark Peri, Project Manager, Project Management
Brian Toefer, Maintenance Representative, Maintenance
T. Chris Johnson, Landscape Architect Representative, Landscape
Ryan Kohagura, Project Engineer, Planning

ATTACHMENT K-1

ALTERNATIVE'S COST ESTIMATE BREAKDOWN

Preliminary Cost Estimate
Alternative 1A

PROJECT DESCRIPTION: On ED 50, from Still Meadows Road to just east of Upper Carson Road. The project proposes to install median barriers, Overlay and widen the existing pavement on ED 50. Construct Vista Terra Drive Undercrossing, frontage road and realignment of Carson road.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 20,100,000
TOTAL STRUCTURE ITEMS	$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	$ 31,100,000
TOTAL RIGHT OF WAY ITEMS	$2,388,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 33,488,000

Reviewed by District Program Manager

Signature _____ Date _____

Approved by Project Manager

Signature _____ Date _____

I. ROADWAY ITEMS

Section 1: Earthwork

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Roadway Excavation	$ 29,000	CY	$ 20	$ 580,000	
Clearing & Grubbing	$ 1	LS	$ 150,000	$ 150,000	
Develop Water Supply	$ 1	LS	$ 10,000	$ 10,000	
				Subtotal Earthwork	$ 740,000

Section 2: Pavement

Hot Mix Asphalt (Type A)	31,600	TON	$ 90	$ 2,844,000	
Aggregate Base (Class 2)	20,500	CY	$ 60	$ 1,230,000	
Tack Coat	240	Ton	$ 800	$ 192,000	
Type E Curb	5,000	LF	$ 8	$ 40,000	
Type 2 Curb & Gutter	5,300	LF	$ 15	$ 79,500	
Pavers (Roundabout)	6,700	LF	$ 15	$ 100,500	
Curb (Roundabout)	600	LF	$ 8	$ 4,800	
Minor Concrete (Sidewalk)	34,800	LF	$ 10	$ 348,000	
Remove Dike	10,400	LF	$ 2	$ 20,800	
				Subtotal Pavement Structural Sections	$ 4,859,600

Section 3: Drainage

Relocation EID Facilities	1	LS	$ 250,000	$ 250,000	
Project Drainage (Culverts, DI, etc..)	1	LS	$ 350,000	$ 350,000	
Preparation of SWPPP	1	LS	$ 10,000	$ 10,000	
Water Pollution Control (3.25%)	1	LS	$ 446,000	$ 446,000	
				$ -	
				Subtotal Drainage	$ 1,056,000

Section 4: Specialty Items

Concrete Barrier (Type 60 Series)	10,320	LF	$ 60	$ 619,200	
Metal Beam Guardrail (Steel Post)	25,000	LF	$ 35	$ 875,000	
Remove MBGR	1,420	LF	$ 15	$ 21,300	
Treatment BMP	1	LS	$ 240,000	$ 240,000	
Construction Site BMP	1	LS	$ 340,000	$ 340,000	
Lead Compliance Plan	1	LS	$ 2,000	$ 2,000	
Temporary Fence & Gate	13,000	LF	$ 10	$ 130,000	
Temporary Fence (ESA)	7,000	LF	$ 5	$ 35,000	
Erosion Control	1	LS	$ 366,000	$ 366,000	
Highway Architectural Cost (Gore)	1	LS	$ 125,000	$ 125,000	
Highway Architectural Cost Ret. Wall	56,000	SF	$ 18	$ 1,008,000	
Resident Engineer Office Space	1	LS	$ 240,000	$ 240,000	
				Subtotal Specialty Items	$ 4,001,500

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	28,000	LF	$ 2	$ 56,000	
4"Recessed Thermoplastic White Traffic Stripe	35,000	LF	$ 2	$ 70,000	
4" Recessed Thermoplastic Yellow Traffic Stripe	25,000	LF	$ 2	$ 50,000	
12" Recessed Thermoplastic Pavement Marking	10,000	SQFT	$ 8	$ 80,000	
Delineator	200	EA	$ 60	$ 12,000	
Object Markers	10	EA	$ 60	$ 600	
Mile Post Markers	10	EA	$ 80	$ 800	
Sign - One post	15	EA	$ 275	$ 4,125	
Sign - Double Post	16	EA	$ 540	$ 8,640	
Traffic Management Plan	300	WD	$ 2,500	$ 750,000	
Public Information Office (PIO)	1	LS	$ 1,500,000	$ 1,500,000	
COZEEP	300	WD	$ 1,000	$ 300,000	
Lighting	1	LS	$ 560,000	$ 560,000	
Temporary Railing (Type K)	13,000	LF	$ 10	$ 130,000	
				Subtotal Traffic Items	$ 3,522,165
				SUBTOTAL SECTIONS 1 THROUGH 5	$ 14,179,265

Section 6: Minor

					Section Cost
$ 14,179,265 (Subtotal Sections 1-5)	X	0.05	=	$ 708,963	
				Total Minor Items	$ 708,963

Section 7: Roadway Mobilization

$ 14,888,228 (Subtotal Sections 1-6)	X	0.05	=	$ 744,411	
				Total Roadway Mobilization	$ 744,411

Section 8: Roadway Additions

Supplemental Work					
$ 14,888,228 (Subtotal Sections 1-6)	X	0.05	X	$ 744,411	
Contingencies					
$ 14,888,228 (Subtotal Sections 1-6)	X	0.250	X	$ 3,722,057	
				Total Roadway Additions	$ 4,466,468
				TOTAL ROADWAY ITEMS	**$ 20,099,109**

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ 3,885,000
Retaining Walls	$ 6,684,000

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ 10,569,000
Subtotal Structures Items	$ 10,569,000

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	**$ 10,569,000**

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$1,555,225	5.00%	$1,764,156
B) Appraisal Fee Estimate	$35,000	N/A	$35,000
C) Mitigation acquisition & credits	$0	5.00%	$0
D) Project Development Permit Fees	$6,000	5.00%	$6,806
E) Utility Relocation (State share)	$218,000	5.00%	$278,867
F) Relocation Assistance (RAP)	$200,000	5.00%	$226,868
G) Clearance/Demolition	$50,000	5.00%	$56,717
H) Title and Escrow Fees	$16,400	14.63%	$18,603
J) Construction Contract Work	$15,000	N/A	
Total Estimate Right of Way Co	**$2,080,625**	**Rounded**	**$2,388,000**

Current Date of Right of Way Certification (Date to which values are escalated) July 15, 2017

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work* $ -

* 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.

Estimate Prepared By: Date:

(Print Name) Phone:

Alternative 1B

PROJECT DESCRIPTION: On ED 50, from Still Meadows Road to just east of Upper Carson Road. The project proposes to install median barriers, Overlay and widen the existing pavement on ED 50. Construct Vista Terra Drive Undercrossing, frontage road and realignment of Carson road.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 19,900,000
TOTAL STRUCTURE ITEMS	$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	$ 30,900,000
TOTAL RIGHT OF WAY ITEMS	$2,423,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 33,323,000

Reviewed by District Program Manager

_____ _____

Signature Date

Approved by Project Manager

_____ _____

Signature Date

I. ROADWAY ITEMS

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 1: Earthwork					
Roadway Excavation	$ 29,000	CY	$ 20	$ 580,000	
Clearing & Grubbing	$ 1	LS	$ 150,000	$ 150,000	
Develop Water Supply	$ 1	LS	$ 10,000	$ 10,000	
				Subtotal Earthwork	$ 740,000
Section 2: Pavement					
Hot Mix Asphalt (Type A)	31,500	TON	$ 90	$ 2,835,000	
Aggregate Base (Class 2)	20,400	CY	$ 60	$ 1,224,000	
Tack Coat	240	Ton	$ 800	$ 192,000	
Type E Curb	5,000	LF	$ 8	$ 40,000	
Type 2 Curb & Gutter	5,100	LF	$ 15	$ 76,500	
Minor Concrete (Sidewalk)	30,300	LF	$ 10	$ 303,000	
Remove Dike	10,400	LF	$ 2	$ 20,800	
				Subtotal Pavement Structural Sections	$ 4,691,300
Section 3: Drainage					
Relocation EID Facilities	1	LS	$ 250,000	$ 250,000	
Project Drainage (Culverts, DI, etc..)	1	LS	$ 350,000	$ 350,000	
Preparation of SWPPP	1	LS	$ 10,000	$ 10,000	
Water Pollution Control (3.25%)	1	LS	$ 446,000	$ 446,000	
				$ -	
				Subtotal Drainage	$ 1,056,000
Section 4: Specialty Items					
Concrete Barrier (Type 60 Series)	10,320	LF	$ 60	$ 619,200	
Metal Beam Guardrail (Steel Post)	25,000	LF	$ 35	$ 875,000	
Remove MBGR	1,420	LF	$ 15	$ 21,300	
Treatment BMP	1	LS	$ 240,000	$ 240,000	
Construction Site BMP	1	LS	$ 340,000	$ 340,000	
Lead Compliance Plan	1	LS	$ 2,000	$ 2,000	
Temporary Fence & Gate	13,000	LF	$ 10	$ 130,000	
Temporary Fence (ESA)	7,000	LF	$ 5	$ 35,000	
Erosion Control	1	LS	$ 366,000	$ 366,000	
Highway Architectural Cost Ret. Wall, Gor	1	LS	$ 125,000	$ 125,000	
Highway Architectural Cost Ret. Wall	56,000	SF	$ 18	$ 1,008,000	
Resident Engineer Office Space	1	LS	$ 240,000	$ 240,000	
				Subtotal Specialty Items	$ 4,001,500

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	28,000	LF	$ 2	$ 56,000	
4"Recessed Thermoplastic White Traffic Stripe	35,000	LF	$ 2	$ 70,000	
4" Recessed Thermoplastic Yellow Traffic Stripe	25,000	LF	$ 2	$ 50,000	
12" Recessed Thermoplastic Pavement Marking	10,000	SQFT	$ 8	$ 80,000	
Delineator	200	EA	$ 60	$ 12,000	
Object Markers	10	EA	$ 60	$ 600	
Mile Post Markers	10	EA	$ 80	$ 800	
Sign - One post	15	EA	$ 275	$ 4,125	
Sign - Double Post	16	EA	$ 540	$ 8,640	
Traffic Management Plan	300	WD	$ 2,500	$ 750,000	
Public Information Office (PIO)	1	LS	$ 1,500,000	$ 1,500,000	
COZEEP	300	WD	$ 1,000	$ 300,000	
Lighting	1	LS	$ 560,000	$ 560,000	
Temporary Railing (Type K)	13,000	LF	$ 10	$ 130,000	
				Subtotal Traffic Items	$ 3,522,165
				SUBTOTAL SECTIONS 1 THROUGH 5	$ 14,010,965

Section 6: Minor

					Section Cost
$ 14,010,965 (Subtotal Sections 1-5)	X	0.05	=	$ 700,548	
				Total Minor Items	$ 700,548

Section 7: Roadway Mobilization

$ 14,711,513 (Subtotal Sections 1-6)	X	0.05	=	$ 735,576	
				Total Roadway Mobilization	$ 735,576

Section 8: Roadway Additions

Supplemental Work					
$ 14,711,513 (Subtotal Sections 1-6)	X	0.05	X	$ 735,576	
Contingencies					
$ 14,711,513 (Subtotal Sections 1-6)	X	0.250	X	$ 3,677,878	
				Total Roadway Additions	$ 4,413,454
				TOTAL ROADWAY ITEMS	**$ 19,860,543**

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ 3,885,000
Retaining Walls	$ 6,684,000

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ 10,569,000
Subtotal Structures Items	$ 10,569,000

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	**$ 10,569,000**

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$1,555,225	5.00%	$1,764,156
B) Appraisal Fee Estimate	$35,000	N/A	$35,000
C) Mitigation acquisition & credits	$31,500	5.00%	$35,732
D) Project Development Permit Fees	$6,000	5.00%	$6,806
E) Utility Relocation (State share)	$218,000	5.00%	$278,867
F) Relocation Assistance (RAP)	$200,000	5.00%	$226,868
G) Clearance/Demolition	$50,000	5.00%	$56,717
H) Title and Escrow Fees	$16,400	14.63%	$18,603
J) Construction Contract Work	$15,000	N/A	
Total Estimate Right of Way Co	**$2,112,125**	**Rounded**	**$2,423,000**

Current Date of Right of Way Certification (Date to which values are escalated): July 15, 2017

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work*: $ -

* 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.

Estimate Prepared By: (Print Name)

Date:

Phone:

Alternative 1C

PROJECT DESCRIPTION: On ED 50, from Still Meadows Road to just east of Upper Carson Road. The project proposes to install median barriers, Overlay and widen the existing pavement on ED 50. Construct Vista Terra Drive Undercrossing, frontage road and realignment of Carson road.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 19,900,000
TOTAL STRUCTURE ITEMS	$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	$ 30,900,000
TOTAL RIGHT OF WAY ITEMS	$1,593,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 32,493,000

Reviewed by District Program Manager

Signature _____ Date _____

Approved by Project Manager

Signature _____ Date _____

I. ROADWAY ITEMS

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 1: Earthwork					
Roadway Excavation	$ 29,000	CY	$ 20	$ 580,000	
Clearing & Grubbing	$ 1	LS	$ 150,000	$ 150,000	
Develop Water Supply	$ 1	LS	$ 10,000	$ 10,000	
				Subtotal Earthwork	$ 740,000
Section 2: Pavement					
Hot Mix Asphalt (Type A)	31,200	TON	$ 90	$ 2,808,000	
Aggregate Base (Class 2)	20,200	CY	$ 60	$ 1,212,000	
Tack Coat	240	Ton	$ 800	$ 192,000	
Type E Curb	5,000	LF	$ 8	$ 40,000	
Type 2 Curb & Gutter	5,700	LF	$ 15	$ 85,500	
Minor Concrete (Sidewalk)	34,200	LF	$ 10	$ 342,000	
Remove Dike	10,400	LF	$ 2	$ 20,800	
				Subtotal Pavement Structural Sections	$ 4,700,300
Section 3: Drainage					
Relocation EID Facilities	1	LS	$ 250,000	$ 250,000	
Project Drainage (Culverts, DI, etc..)	1	LS	$ 350,000	$ 350,000	
Preparation of SWPPP	1	LS	$ 10,000	$ 10,000	
Water Pollution Control (3.25%)	1	LS	$ 446,000	$ 446,000	
				$ -	
				Subtotal Drainage	$ 1,056,000
Section 4: Specialty Items					
Concrete Barrier (Type 60 Series)	10,320	LF	$ 60	$ 619,200	
Metal Beam Guardrail (Steel Post)	25,000	LF	$ 35	$ 875,000	
Remove MBGR	1,420	LF	$ 15	$ 21,300	
Treatment BMP	1	LS	$ 240,000	$ 240,000	
Construction Site BMP	1	LS	$ 340,000	$ 340,000	
Lead Compliance Plan	1	LS	$ 2,000	$ 2,000	
Temporary Fence & Gate	13,000	LF	$ 10	$ 130,000	
Temporary Fence (ESA)	7,000	LF	$ 5	$ 35,000	
Erosion Control	1	LS	$ 366,000	$ 366,000	
Highway Architectural Cost Ret. Wall, Gor	1	LS	$ 125,000	$ 125,000	
Highway Architectural Cost Ret. Wall	56,000	SF	$ 18	$ 1,008,000	
Resident Engineer Office Space	1	LS	$ 240,000	$ 240,000	
				Subtotal Specialty Items	$ 4,001,500

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	28,000	LF	$ 2	$ 56,000	
4"Recessed Thermoplastic White Traffic Stripe	35,000	LF	$ 2	$ 70,000	
4" Recessed Thermoplastic Yellow Traffic Stripe	25,000	LF	$ 2	$ 50,000	
12" Recessed Thermoplastic Pavement Marking	10,000	SQFT	$ 8	$ 80,000	
Delineator	200	EA	$ 60	$ 12,000	
Object Markers	10	EA	$ 60	$ 600	
Mile Post Markers	10	EA	$ 80	$ 800	
Sign - One post	15	EA	$ 275	$ 4,125	
Sign - Double Post	16	EA	$ 540	$ 8,640	
Traffic Management Plan	300	WD	$ 2,500	$ 750,000	
Public Information Office (PIO)	1	LS	$ 1,500,000	$ 1,500,000	
COZEEP	300	WD	$ 1,000	$ 300,000	
Lighting	1	LS	$ 560,000	$ 560,000	
Temporary Railing (Type K)	13,000	LF	$ 10	$ 130,000	
				Subtotal Traffic Items	$ 3,522,165
				SUBTOTAL SECTIONS 1 THROUGH 5	$ 14,019,965

Section 6: Minor

					Section Cost
$ 14,019,965 (Subtotal Sections 1-5)	X	0.05	=	$ 700,998	
				Total Minor Items	$ 700,998

Section 7: Roadway Mobilization

$ 14,720,963 (Subtotal Sections 1-6)	X	0.05	=	$ 736,048	
				Total Roadway Mobilization	$ 736,048

Section 8: Roadway Additions

Supplemental Work					
$ 14,720,963 (Subtotal Sections 1-6)	X	0.05	X	$ 736,048	
Contingencies					
$ 14,720,963 (Subtotal Sections 1-6)	X	0.250	X	$ 3,680,241	
				Total Roadway Additions	$ 4,416,289
				TOTAL ROADWAY ITEMS	**$ 19,873,301**

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ 3,885,000
Retaining Walls	$ 6,684,000

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ 10,569,000
Subtotal Structures Items	$ 10,569,000

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	**$ 10,569,000**

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$866,500	5.00%	$982,907
B) Appraisal Fee Estimate	$25,000	N/A	$25,000
C) Mitigation acquisition & credits	$0	5.00%	$0
D) Project Development Permit Fees	$6,000	5.00%	$6,806
E) Utility Relocation (State share)	$218,000	5.00%	$278,867
F) Relocation Assistance (RAP)	$200,000	5.00%	$226,868
G) Clearance/Demolition	$50,000	5.00%	$56,717
H) Title and Escrow Fees	$13,600	14.63%	$15,427
J) Construction Contract Work	$15,000	N/A	
Total Estimate Right of Way Co	**$1,379,100**	**Rounded**	**$1,593,000**

Current Date of Right of Way Certification (Date to which values are escalated) July 15, 2017

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work* $ -

* 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.

Estimate Prepared By: Date:

(Print Name) Phone:

Alternative 1D

PROJECT DESCRIPTION: On ED 50, from Still Meadows Road to just east of Upper Carson Road. The project proposes to install median barriers, Overlay and widen the existing pavement on ED 50. Construct Vista Terra Drive Undercrossing, frontage road and realignment of Carson road.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 19,800,000
TOTAL STRUCTURE ITEMS	$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	$ 30,800,000
TOTAL RIGHT OF WAY ITEMS	$1,593,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 32,393,000

Reviewed by District Program Manager

Signature _____ Date _____

Approved by Project Manager

Signature _____ Date _____

I. ROADWAY ITEMS

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 1: Earthwork					
Roadway Excavation	$ 29,000	CY	$ 20	$ 580,000	
Clearing & Grubbing	$ 1	LS	$ 150,000	$ 150,000	
Develop Water Supply	$ 1	LS	$ 10,000	$ 10,000	
				Subtotal Earthwork	$ 740,000
Section 2: Pavement					
Hot Mix Asphalt (Type A)	30,900	TON	$ 90	$ 2,781,000	
Aggregate Base (Class 2)	20,000	CY	$ 60	$ 1,200,000	
Tack Coat	240	Ton	$ 800	$ 192,000	
Type E Curb	5,000	LF	$ 8	$ 40,000	
Type 2 Curb & Gutter	5,100	LF	$ 15	$ 76,500	
Minor Concrete (Sidewalk)	30,300	LF	$ 10	$ 303,000	
Remove Dike	10,400	LF	$ 2	$ 20,800	
				Subtotal Pavement Structural Sections	$ 4,613,300
Section 3: Drainage					
Relocation EID Facilities	1	LS	$ 250,000	$ 250,000	
Project Drainage (Culverts, DI, etc..)	1	LS	$ 350,000	$ 350,000	
Preparation of SWPPP	1	LS	$ 10,000	$ 10,000	
Water Pollution Control (3.25%)	1	LS	$ 446,000	$ 446,000	
				$ -	
				Subtotal Drainage	$ 1,056,000
Section 4: Specialty Items					
Concrete Barrier (Type 60 Series)	10,320	LF	$ 60	$ 619,200	
Metal Beam Guardrail (Steel Post)	25,000	LF	$ 35	$ 875,000	
Remove MBGR	1,420	LF	$ 15	$ 21,300	
Treatment BMP	1	LS	$ 240,000	$ 240,000	
Construction Site BMP	1	LS	$ 340,000	$ 340,000	
Lead Compliance Plan	1	LS	$ 2,000	$ 2,000	
Temporary Fence & Gate	13,000	LF	$ 10	$ 130,000	
Temporary Fence (ESA)	7,000	LF	$ 5	$ 35,000	
Erosion Control	1	LS	$ 366,000	$ 366,000	
Highway Architectural Cost Ret. Wall, Gor	1	LS	$ 125,000	$ 125,000	
Highway Architectural Cost Ret. Wall	56,000	SF	$ 18	$ 1,008,000	
Resident Engineer Office Space	1	LS	$ 240,000	$ 240,000	
				Subtotal Specialty Items	$ 4,001,500

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	28,000	LF	$ 2	$ 56,000	
4"Recessed Thermoplastic White Traffic Stripe	35,000	LF	$ 2	$ 70,000	
4" Recessed Thermoplastic Yellow Traffic Stripe	25,000	LF	$ 2	$ 50,000	
12" Recessed Thermoplastic Pavement Marking	10,000	SQFT	$ 8	$ 80,000	
Delineator	200	EA	$ 60	$ 12,000	
Object Markers	10	EA	$ 60	$ 600	
Mile Post Markers	10	EA	$ 80	$ 800	
Sign - One post	15	EA	$ 275	$ 4,125	
Sign - Double Post	16	EA	$ 540	$ 8,640	
Traffic Management Plan	300	WD	$ 2,500	$ 750,000	
Public Information Office (PIO)	1	LS	$ 1,500,000	$ 1,500,000	
COZEEP	300	WD	$ 1,000	$ 300,000	
Lighting	1	LS	$ 560,000	$ 560,000	
Temporary Railing (Type K)	13,000	LF	$ 10	$ 130,000	
			D		
				Subtotal Traffic Items	$ 3,522,165
				SUBTOTAL SECTIONS 1 THROUGH 5	$ 13,932,965

Section 6: Minor

					Section Cost
$ 13,932,965 (Subtotal Sections 1-5)	X	0.05	=	$ 696,648	
				Total Minor Items	$ 696,648

Section 7: Roadway Mobilization

$ 14,629,613 (Subtotal Sections 1-6)	X	0.05	=	$ 731,481	
				Total Roadway Mobilization	$ 731,481

Section 8: Roadway Additions

Supplemental Work					
$ 14,629,613 (Subtotal Sections 1-6)	X	0.05	X	$ 731,481	
Contingencies					
$ 14,629,613 (Subtotal Sections 1-6)	X	0.250	X	$ 3,657,403	
				Total Roadway Additions	$ 4,388,884
				TOTAL ROADWAY ITEMS	**$ 19,749,978**

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ 3,885,000
Retaining Walls	$ 6,684,000

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ 10,569,000
Subtotal Structures Items	$ 10,569,000

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	**$ 10,569,000**

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$866,500	5.00%	$982,907
B) Appraisal Fee Estimate	$25,000	N/A	$25,000
C) Mitigation acquisition & credits	$0	5.00%	$0
D) Project Development Permit Fees	$6,000	5.00%	$6,806
E) Utility Relocation (State share)	$218,000	5.00%	$278,867
F) Relocation Assistance (RAP)	$200,000	5.00%	$226,868
G) Clearance/Demolition	$50,000	5.00%	$56,717
H) Title and Escrow Fees	$13,600	14.63%	$15,427
J) Construction Contract Work	$15,000	N/A	
Total Estimate Right of Way Co	**$1,379,100**	**Rounded**	**$1,593,000**

Current Date of Right of Way Certification July 15, 2017
(Date to which values are escalated)

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work* $ -

* 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.

Estimate Prepared By: Date:
(Print Name) Phone:

ATTACHMENT K-2

AGENCY COST ESTIMATE BREAKDOWN

Preliminary Cost Estimate

Caltrans

PROJECT DESCRIPTION: On ED 50, from Still Meadows Road to just east of Upper Carson Road. The project proposes to install median barriers, Overlay and widen the existing pavement on ED 50.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 18,400,000
TOTAL STRUCTURE ITEMS	$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	$ 29,400,000
TOTAL RIGHT OF WAY ITEMS	$1,873,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 31,273,000

Reviewed by District Program Manager

Signature _____ Date _____

Approved by Project Manager

Signature _____ Date _____

I. ROADWAY ITEMS

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 1: Earthwork					
Roadway Excavation	$ 27,023	CY	$ 20	$ 540,460	
Clearing & Grubbing	$ 1	LS	$ 139,454	$ 139,454	
Develop Water Supply	$ 1	LS	$ 10,000	$ 10,000	
				Subtotal Earthwork	$ 689,914
Section 2: Pavement					
Hot Mix Asphalt (Type A)	29,109	TON	$ 90	$ 2,619,810	
Aggregate Base (Class 2)	18,757	CY	$ 60	$ 1,125,420	
Tack Coat	226	Ton	$ 800	$ 180,800	
Type E Curb	5,000	LF	$ 8	$ 40,000	
Type 2 Curb & Gutter	0	LF	$ 15	$ -	
Pavers (Roundabout)	0	LF	$ 15	$ -	
Curb (Roundabout)	0	LF	$ 8	$ -	
Minor Concrete (Sidewalk)	0	LF	$ 10	$ -	
Remove Dike	10,400	LF	$ 2	$ 20,800	
				Subtotal Pavement Structural Sections	$ 3,986,830
Section 3: Drainage					
Relocation EID Facilities	1	LS	$ 250,000	$ 250,000	
Project Drainage (Culverts, DI, etc..)	1	LS	$ 350,000	$ 350,000	
Preparation of SWPPP	1	LS	$ 10,000	$ 10,000	
Water Pollution Control (3.25%)	1	LS	$ 409,138	$ 409,138	
				$ -	
				Subtotal Drainage	$ 1,019,138
Section 4: Specialty Items					
Concrete Barrier (Type 60 Series)	10,320	LF	$ 60	$ 619,200	
Metal Beam Guardrail (Steel Post)	25,000	LF	$ 35	$ 875,000	
Remove MBGR	1,420	LF	$ 15	$ 21,300	
Treatment BMP	1	LS	$ 214,500	$ 214,500	
Construction Site BMP	1	LS	$ 313,650	$ 313,650	
Lead Compliance Plan	1	LS	$ 2,000	$ 2,000	
Temporary Fence & Gate	11,200	LF	$ 10	$ 112,000	
Temporary Fence (ESA)	6,460	LF	$ 5	$ 32,300	
Erosion Control	1	LS	$ 335,400	$ 335,400	
Highway Architectural Cost (Gore)	1	LS	$ 125,000	$ 125,000	
Highway Architectural Cost Ret. Wall	56,000	SF	$ 18	$ 1,008,000	
Resident Engineer Office Space	1	LS	$ 240,000	$ 240,000	
				Subtotal Specialty Items	$ 3,898,350
	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	28,000	LF	$ 2	$ 56,000	
4"Recessed Thermoplastic White Traffic Stripe	33,137	LF	$ 2	$ 66,274	
4" Recessed Thermoplastic Yellow Traffic Stripe	25,000	LF	$ 2	$ 50,000	

12" Recessed Thermoplastic Pavement Marking	8,800	SQFT	$ 8	$ 70,400
Delineator	200	EA	$ 60	$ 12,000
Object Markers	10	EA	$ 60	$ 600
Mile Post Markers	10	EA	$ 80	$ 800
Sign - One post	15	EA	$ 275	$ 4,125
Sign - Double Post	16	EA	$ 540	$ 8,640
Traffic Management Plan	300	WD	$ 2,500	$ 750,000
Public Information Office (PIO)	1	LS	$ 1,377,600	$ 1,377,600
COZEEP	300	WD	$ 1,000	$ 300,000
Lighting	1	LS	$ 560,000	$ 560,000
Temporary Railing (Type K)	12,080	LF	$ 10	$ 120,800

Subtotal Traffic Items $ 3,377,239

SUBTOTAL SECTIONS 1 THROUGH 5 $ 12,971,471

Section 6: Minor

Section Cost

$ 12,971,471 (Subtotal Sections 1-5) X 0.05 = $ 648,574

Total Minor Items $ 648,574

Section 7: Roadway Mobilization

$ 13,620,045 (Subtotal Sections 1-6) X 0.05 = $ 681,002

Total Roadway Mobilization $ 681,002

Section 8: Roadway Additions

Supplemental Work

$ 13,620,045 (Subtotal Sections 1-6) X 0.05 X $ 681,002

Contingencies

$ 13,620,045 (Subtotal Sections 1-6) X 0.250 X $ 3,405,011

Total Roadway Additions $ 4,086,013

TOTAL ROADWAY ITEMS **$ 18,387,061**

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ 3,885,000
Retaining Walls	$ 6,684,000

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ 10,569,000
Subtotal Structures Items	$ 10,569,000

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	**$ 10,569,000**

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$1,031,415	5.00%	$1,214,156
B) Appraisal Fee Estimate	$35,000	N/A	$35,000
C) Mitigation acquisition & credits	$31,500	5.00%	$35,732
D) Project Development Permit Fees	$6,000	5.00%	$6,806
E) Utility Relocation (State share)	$218,000	5.00%	$278,867
F) Relocation Assistance (RAP)	$200,000	5.00%	$226,868
G) Clearance/Demolition	$50,000	5.00%	$56,717
H) Title and Escrow Fees	$16,400	14.63%	$18,603
J) Construction Contract Work	$15,000	N/A	
Total Estimate Right of Way Co	**$1,588,315**	**Rounded**	**$1,873,000**

Current Date of Right of Way Certification (Date to which values are escalated) July 15, 2017

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work* $ -

* 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.

Estimate Prepared By: Date:

(Print Name) Phone:

Preliminary Cost Estimate

ED County

PROJECT DESCRIPTION: Construct Vista Terra Drive Undercrossing, frontage road and realignment of Carson road.

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 1,700,000
TOTAL STRUCTURE ITEMS	$ -
SUBTOTAL CONSTRUCTION COSTS	$ 1,700,000
TOTAL RIGHT OF WAY ITEMS	$550,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 2,250,000

Reviewed by District Program Manager

Signature _____ Date _____

Approved by Project Manager

Signature _____ Date _____

I. ROADWAY ITEMS

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 1: Earthwork					
Roadway Excavation	$ 2,275	CY	$ 20	$ 45,500	
Clearing & Grubbing	$ 1	LS	$ 10,546	$ 10,546	
Develop Water Supply	$ 1	LS	$ -	$ -	
				Subtotal Earthwork	$ 56,046
Section 2: Pavement					
Hot Mix Asphalt (Type A)	2,491	TON	$ 90	$ 224,190	
Aggregate Base (Class 2)	1,743	CY	$ 60	$ 104,580	
Tack Coat	14	Ton	$ 800	$ 11,200	
Type E Curb	0	LF	$ 8	$ -	
Type 2 Curb & Gutter	5,300	LF	$ 15	$ 79,500	
Pavers (Roundabout)	6,700	LF	$ 15	$ 100,500	
Curb (Roundabout)	600	LF	$ 8	$ 4,800	
Minor Concrete (Sidewalk)	34,800	LF	$ 10	$ 348,000	
Remove Dike	0	LF	$ 2	$ -	
				Subtotal Pavement Structural Sections	$ 872,770
Section 3: Drainage					
Relocation EID Facilities	1	LS	$ -	$ -	
Project Drainage (Culverts, DI, etc..)	1	LS	$ -	$ -	
Preparation of SWPPP	1	LS	$ -	$ -	
Water Pollution Control (3.25%)	1	LS	$ 36,862	$ 36,862	
				$ -	
				Subtotal Drainage	$ 36,862
Section 4: Specialty Items					
Concrete Barrier (Type 60 Series)	0	LF	$ 60	$ -	
Metal Beam Guardrail (Steel Post)	0	LF	$ 35	$ -	
Remove MBGR	0	LF	$ 15	$ -	
Treatment BMP	1	LS	$ 25,500	$ 25,500	
Construction Site BMP	1	LS	$ 26,350	$ 26,350	
Lead Compliance Plan	1	LS	$ -	$ -	
Temporary Fence & Gate	1,800	LF	$ 10	$ 18,000	
Temporary Fence (ESA)	540	LF	$ 5	$ 2,700	
Erosion Control	1	LS	$ 30,600	$ 30,600	
Highway Architectural Cost (Gore)	1	LS	$ -	$ -	
Highway Architectural Cost Ret. Wall	0	SF	$ 18	$ -	
Resident Engineer Office Space	1	LS	$ -	$ -	
				Subtotal Specialty Items	$ 103,150
	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
Section 5: Traffic Items					
4"Recessed Thermoplastic Traffic Stripe (Broken 12-3	0	LF	$ 2	$ -	
4"Recessed Thermoplastic White Traffic Stripe	1,863	LF	$ 2	$ 3,726	
4" Recessed Thermoplastic Yellow Traffic Stripe	0	LF	$ 2	$ -	

12" Recessed Thermoplastic Pavement Marking	1,200	SQFT	$ 8	$ 9,600
Delineator	0	EA	$ 60	$ -
Object Markers	0	EA	$ 60	$ -
Mile Post Markers	0	EA	$ 80	$ -
Sign - One post	0	EA	$ 275	$ -
Sign - Double Post	0	EA	$ 540	$ -
Traffic Management Plan	0	WD	$ 2,500	$ -
Public Information Office (PIO)	1	LS	$ 121,259	$ 121,259
COZEEP	0	WD	$ 1,000	$ -
Lighting	1	LS	$ -	$ -
Temporary Railing (Type K)	920	LF	$ 10	$ 9,200

Subtotal Traffic Items $ 143,785

SUBTOTAL SECTIONS 1 THROUGH 5 $ 1,212,613

Section 6: Minor

Section Cost

$ 1,212,613 (Subtotal Sections 1-5) X 0.05 = $ 60,631

Total Minor Items $ 60,631

Section 7: Roadway Mobilization

$ 1,273,244 (Subtotal Sections 1-6) X 0.05 = $ 63,662

Total Roadway Mobilization $ 63,662

Section 8: Roadway Additions

Supplemental Work

$ 1,273,244 (Subtotal Sections 1-6) X 0.05 X $ 63,662

Contingencies

$ 1,273,244 (Subtotal Sections 1-6) X 0.250 X $ 318,311

Total Roadway Additions $ 381,973

TOTAL ROADWAY ITEMS $ 1,718,879

(Subtotal Sections 1-8)

Estimate Prepared By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

Estimate Checked By: Ryan Kohagura (Print Name) Date: 11/10/2014 Phone: 530-741-5746

II. Structures Items

	Section Cost
Pondorado Road UC	$ -
Retaining Walls	$ -

(The estimated cost includes 10% Time-related overhead, 10% mobilization and 25% contingency)

Total Cost for Structure	$ -
Subtotal Structures Items	$ -

III. Railroad Related Costs

	Quantity	*Unit*	*Unit Price*	*Item Cost*	*Section Cost*
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	
			$ -	$ -	

Subtotal Railroad Costs	$ -
TOTAL STRUCTURES AND RAILROAD ITEMS	$ -

Estimate Prepared By: _____ (Print Name) Date: _____ Phone: _____

IV. Right of Way Cost Estimate:

	Current Value	*Escalation Rate*	*Escalated Value*
A) Total Acquisition Cost	$523,810	5.00%	$550,000
B) Appraisal Fee Estimate	$0	N/A	$0
C) Mitigation acquisition & credits	$0	5.00%	$0
D) Project Development Permit Fees	$0	5.00%	$0
E) Utility Relocation (State share)	$0	5.00%	$0
F) Relocation Assistance (RAP)	$0	5.00%	$0
G) Clearance/Demolition	$0	5.00%	$0
H) Title and Escrow Fees	$0	14.63%	$0
J) Construction Contract Work	$0	N/A	
Total Estimate Right of Way Co	**$523,810**	**Rounded**	**$550,000**

Current Date of Right of Way Certification July 15, 2017
(Date to which values are escalated)

Construction Contract Work:

Brief Description of Work:

Right of Way Branch Cost Estimate for Work* $ -

* 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.

Estimate Prepared By: Date:
(Print Name) Phone:

ATTACHMENT L

TRAFFIC STUDY

DKS *Associates*
TRANSPORTATION SOLUTIONS

MEMORANDUM

TO:	Judy Matsui-Drury, P.E., Loren Bloomberg, P.E., Leslie Regos		
FROM:	Kevin Stankiewicz		
DATE:	August 14, 2009		
SUBJECT:	Alternative Traffic and Safety Analysis US-50 Camino Corridor Study	P/A No.	08123-000

Introduction

The significant traffic operations and safety issues in the Camino Corridor are at the unsignalized intersections along US 50. Conflicting turning movements, primarily left turns, result in delay for drivers and a safety concern. The improvement alternatives focus on eliminating or reducing these potential conflicts to improve safety and traffic flow, while also improving connectivity between the north side and the south side of US 50 through the Camino community.

The improvement alternatives have a minimal effect on the capacity of the US 50 facility. The number of through lanes will be unchanged, and through traffic will continue to be uninterrupted (uncontrolled) in the project vicinity. US 50 through-capacity is constrained by upstream conditions in both eastbound and westbound directions. On the west end, the section of US 50 in Placerville is limited by signalized at-grade intersections. On the east end, the capacity constraint is the two-lane section east of Pollock Pines.

Methodology

The analysis of traffic operations included the following elements:

- Assembly of available traffic count data from Caltrans and El Dorado County sources.
- Assembly of crash data for the years 2003 through 2007 from Caltrans.
- Selection of appropriate performance measures to evaluate the alternatives.
- Selection of an appropriate analysis time period (seasonal, day of week, time of day).
- Collection of field data, including traffic volumes and travel time / speeds.
- Analysis of existing conditions.
- Forecasting of future traffic volumes for each alternative for the opening year (2015) and design year (2035).
- Analysis of each alternative for the opening year (2015) and design year (2035).

The travel time, turning movement delay and network travel time was calculated using the SimTraffic traffic simulation software (part of the Synchro package). This stochastic

8950 Cal Center Drive
Suite 340
Sacramento, CA 95826-3225
916 368-2000
916 368-1020

microscopic traffic simulation program models individual vehicles based on driver behavior and roadway conditions. The reported travel time, turning movement delays, and network travel time are based on the average of ten model runs due to the random nature of simulation models.

Analysis Time Periods and Performance Measures

Traffic volumes in the Camino/Apple Hill area fluctuate greatly by day of the week and by season due to recreation/tourist travel. Through traffic on US 50 to and from the Lake Tahoe area usually peaks on Friday and Sunday evenings, especially during summer and winter months, as well as days around holidays. Traffic to and from the Apple Hill area (including turns on/off US 50) is typically highest on weekends, especially during the fall harvest season and winery events. The "typical" PM peak commute hour occurs during the middle of a fall or spring week.

The Project Delivery Team (PDT) decided to use the typical PM peak commute hour during the middle of a fall week (fall Wednesday) and the combination of commute and recreational traffic on a summer Friday PM peak hour as the analysis periods for this study. The AM periods were not evaluated because of the lower volumes. Counted AM volumes were 16% lower than the middle of a fall week and 34% lower than the summer Friday PM at Camino Heights Drive. The Sunday afternoon recreational traffic return peak was considered but was dropped because volume of traffic turning onto and off of US 50 was significantly lower than the two chosen time periods.

The weekend afternoon Apple Hill Harvest Season traffic peak was also considered. However, this period of very high traffic volumes turning onto and off of US 50 occurs for just a few weekends a year and therefore will not be considered as a key demand criteria for the selection of a preferred alternative design. Information and analysis of this condition has been documented separately.

Level of Service Policies and Criteria

The Caltrans level of service (LOS) policy for the study area is detailed in the US 50 Corridor System Management Plan (May 2009). The 20 Year Concept LOS for this segment of US 50 is LOS F.

The El Dorado County General Plan (2003) also includes level of service policies. In the study area, the County's goal is LOS D.

The Caltrans LOS policy is for the US 50 through traffic; however, the focus of this study was not the capacity and LOS of US 50. This study is focused on the operations of local traffic turning off of, turning onto, and crossing US 50. For the purposes of the traffic analysis, a LOS E threshold was used; therefore, a LOS F with more than 50 seconds of delay (unsignalized intersection) was considered deficient.

This traffic analysis focuses on unsignalized intersection operations. Table 1 summarizes level of service criteria for unsignalized intersections based upon vehicle delay.

Table 1 – Level of Service Criteria, Unsignalized Intersections	
Level of Service (LOS)	**Total Delay Per Vehicle (seconds)**
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50
Source: Highway Capacity Manual, Transportation Research Board, Special Report No. 209, Washington, D.C., 2000.	

Existing Conditions

Data Collection Program

Two-hour intersection turning movement counts were performed on four different days for two hours. The dates and times were approved by the PDT. The count date and times are below:

- Summer Friday PM commute peak plus Tahoe traffic – Friday, June 20th, 2008, 4–6 PM
- Summer Sunday afternoon peak return Tahoe traffic - Sunday, June 22nd, 2008, 1–3 PM
- Fall weekend afternoon peak Apple Hill Event traffic – Saturday, Oct 18th, 2008, 2-4 PM
- Fall-Spring midweek PM commute traffic – Wednesday, October 22nd, 2008, 2-4 PM

The traffic volumes US 50 at either end of the corridor are shown in Table 2 for all considered time periods to show how much the volumes fluctuate. As noted earlier, the PDT selected the Summer Friday and the Fall-Spring midweek time periods for analysis. Typically the Fall and Spring traffic patterns are similar, with normal commute traffic and vary little Lake Tahoe tourism traffic. Winter Friday conditions may by similar to Summer Friday conditions with people diving up to Lake Tahoe for the weekend. The peak hour of each time period was analyzed.

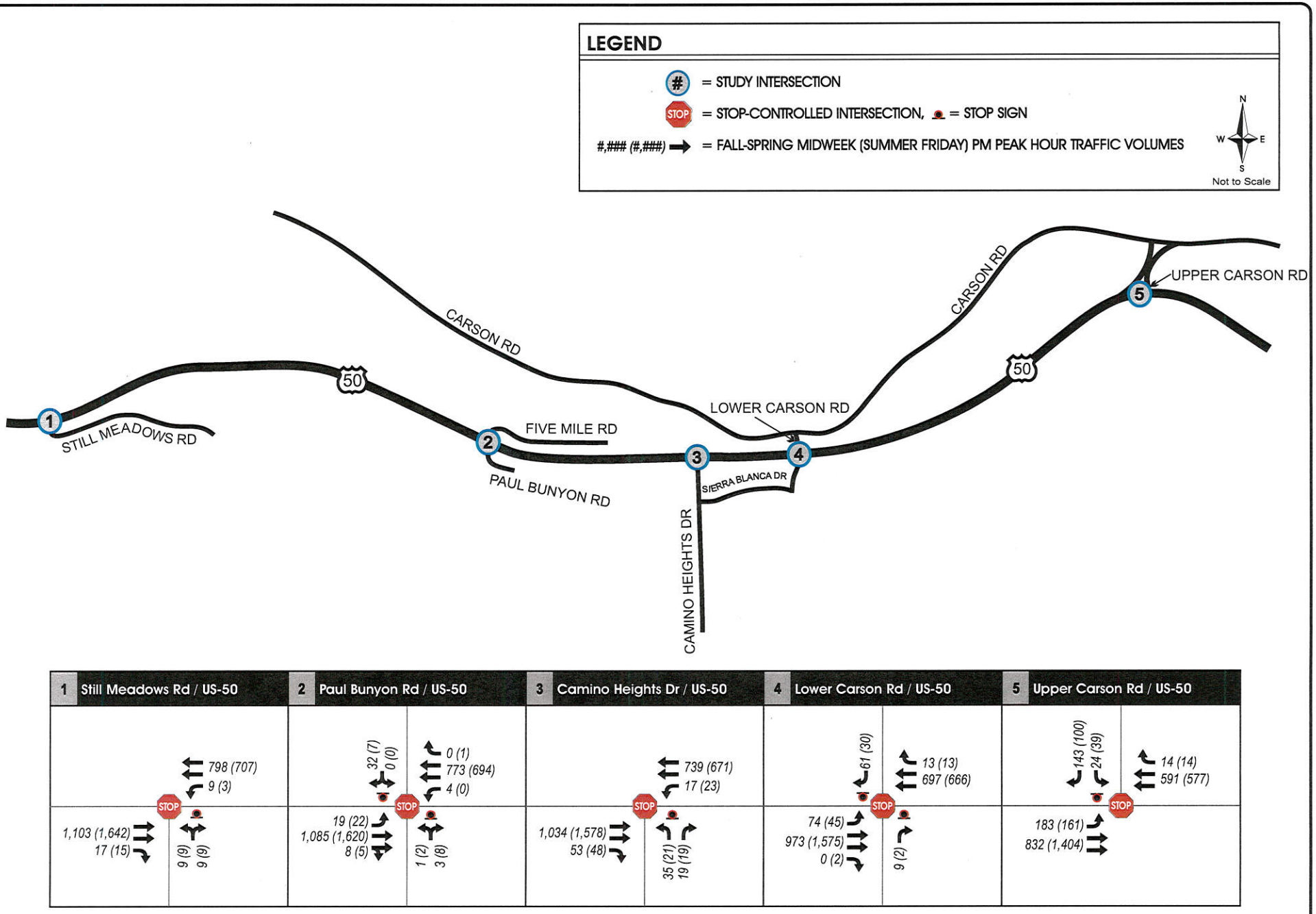
Table 2 - Existing US 50 Peak Hour Volumes (PM)					
Location	**Direction**	**Summer Friday**	**Summer Sunday**	**Fall Weekend**	**Fall-Spring Wednesday**
Still Meadows Road	**Eastbound**	1657	1026	1688	1120
	Westbound	716	1770	1311	807
	Both Directions	2373	2796	2999	1927
Upper Carson Road	**Eastbound**	1443	877	1002	856
	Westbound	591	1632	789	605
	Both Directions	2034	2509	1791	1461
Source: DKS Associates, 2009.					

Existing Traffic Operations

According to the Caltrans 2008 Traffic and Vehicle Data System, the existing daily volumes on US 50 in the study area are 25,000 ADT west of Upper Carson Road and 19,900 ADT east of Upper Carson Road. Figure 1 illustrates existing turning movement volumes in the study area for the PM peak commute hour and the summer Friday PM peak hour.

Existing US 50 peak hour through traffic average travel times and speeds are shown in Table 3. The travel time measurements were taken on an approximate 2.0 mile segment of US 50 between Still Meadows Road and Upper Carson Road. The through traffic on US 50 in the Camino (Apple Hill) area does not experience significant delays. The same is true for right-turning traffic. The posted speed limit in this area is 65 miles per hour, based on off peak surveys.

Table 3 - US 50 Peak Hour Average Travel Time and Speed through Study Area				
Year	**Season & Day**	**Direction**	**Travel Time (seconds)**	**Speed (mph)**
Existing Year 2008	Fall-Spring Midweek	Eastbound	129	56
		Westbound	126	57
	Summer Friday	Eastbound	135	53
		Westbound	125	58
Source: DKS Associates, 2009.				



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DKS Associates
TRANSPORTATION SOLUTIONS

FIGURE 1

EXISTING CONDITIONS

PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

Table 4 summarizes existing intersection turning movement delay and LOS for the study area intersections. These delays were calculated by a SimTraffic simulation. During the Fall-Spring Midweek PM peak hour, all movements are LOS C or better. During the Summer Friday PM peak hour, most movements operate at LOS C or better. However, the northbound left turns at Still Meadows Road operate at LOS F, and the northbound left turns at Paul Bunyon Road operate at LOS D.

Table 4 - Turning Movement Delay (Seconds) and Level of Service - Existing Year 2008

Intersection With US 50	Eastbound		Westbound		Northbound		Southbound	
	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn
Fall-Spring Midweek PM								
Still Meadows Road		5.4 A	7.7 A		24.1 C	5.6 A		
Paul Bunyan Road	5.3 A	1.6 A	5.5 A		10.3 B	4.0 A		4.0 A
Camino Heights Drive		2.1 A	4.7 A	0.5 A	11.9 B	0.5 A		
Lower Carson Road	3.5 A			0.1 A		0.1 A		0.4 A
Upper Carson Road	4.8 A			5.4 A			12.9 B	0.4 A
Summer Friday PM								
Still Meadows Road		6.4 A	10.3 C		**52.3 F**	10.6 B		
Paul Bunyan Road	5.7 A	3.2 A		1.2 A	30.9 D	7.5 A		3.2 A
Camino Heights Drive		3.1 A	9.7 A		20.5 C	0.5 A		
Lower Carson Road	3.3 A	1.1 A		0.0 A		0.1 A		0.4 A
Upper Carson Road	5.1 A			5.3 A			17.3 C	0.5 A

Source: DKS Associates, 2009.

History of Collision Type

The most common type of collision at intersections is a broadside collision. A broadside collision is usually caused by the driver failing to yield to opposing traffic. Table 5 summarizes crash data at the study area intersections for 2003 through 2007. There are seven broadside collisions at the Still Meadows Road intersection, six broadside collisions at the Lower Carson Road intersection, and five broadside collisions at the Upper Carson Road intersection.

Table 5 - Intersection Accidents from January 2003 to December 2007

Intersection	Broadside	Rear End	Sideswipe	Hit Object	Head On
Still Meadows Rd	7	5	2	3	0
Paul Bunyan Rd	2	1	0	0	0
Camino Heights Dr	2	1	0	2	1
Lower Carson Rd	6	2	1	0	0
Upper Carson Rd	5	2	2	5	0

Source: California Department of Transportation, 2008.

Traffic Forecasting

The PDT agreed to an opening year date of 2015 for the selected alternative, resulting in the analysis years of 2015 (opening year) and 2035 (design year). The traffic forecasts were based on the El Dorado County General Plan model. The El Dorado County model is the official forecasting model for El Dorado County and was approved for use in this project by Caltrans. The model was refined, by splitting traffic analysis zones in the study area, to better reflect traffic loading at the project intersections. Existing land use in the split zones was determined proportionally from local traffic volumes. Future growth in land use in the split zones is based on County staff estimates.

To produce 2035 traffic volumes for LOS analysis, the traffic volume growth increment (between the modified El Dorado County 1998-1999 travel demand model and the modified El Dorado County 2025 travel demand model) was added to the existing traffic counts. The growth between the existing 1998-1999 model and the general plan 2025 model was used instead of using the growth between a new 2008 model and a new 2035 model, as these counts have shown no significant growth in traffic in the Apple Hill area in the last nine years. Additional, the 2008 and 2035 versions of the El Dorado County travel demand model are not available for consideration. The number of years between the existing and future year is the same. This link and turning movement volume refinement post-processing is industry standard practice; it is

consistent with and outlined in National Cooperative Highway Research Project Report Number 255 (NCHRP 255). The forecasts for 2035 are based on the assumption that the growth in the Apple Hill area that was forecasted to occur by 2025 in the County General Plan will occur, but not until 2035. The 2015 forecasts will be based on linear interpolations of the growth between 2008 and 2035. As such, the 2015 forecast will have 26% of the 2035 growth.

The same growth increment was applied to both the fall Wednesday PM and summer Friday PM peak hours, as the growth is primarily associated with changes in local land use. The traffic generated by this local land use growth is relatively unaffected by seasonal factors when compared to the recreational tourist through traffic on US 50.

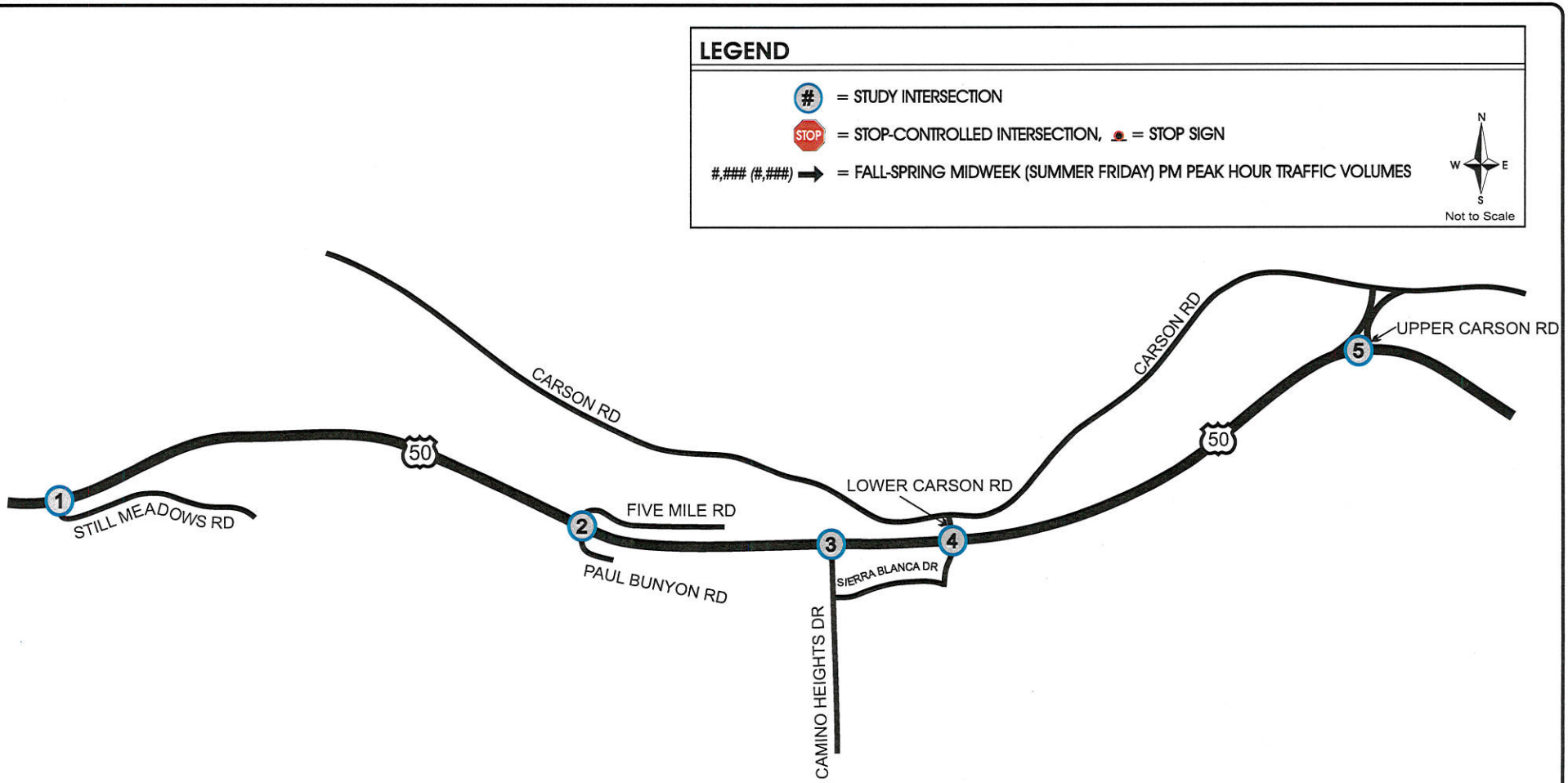
The changes in traffic volume from the "no build" condition to each alternative condition were performed by a manual rerouting of traffic based on turn prohibitions and new roads:

- In Alternative B, the northbound left turns from Still Meadows Road and Paul Bunyan Road would be converted to right turns onto the auxiliary road, left turns onto Camino Heights Drive and left turns onto US 50 at Camino Heights Drive.
- In Alternatives B, C1, and C2, the southbound left turns from Paul Bunyan Road would be converted to right turns that make a U-turn at Still Meadows Road.
- In Alternative B, the eastbound left turns at Lower Carson Road are shifted to Upper Carson Road.
- In Alternatives C1 and C2, the northbound left turns from Still Meadows Road and Paul Bunyan Road would be converted to right turns onto Sierra Blanca Road, left turns onto Vista Tierra Drive (the new undercrossing), left turns onto Carson Road, left turns onto Lower Carson Road, and right turns onto US 50 at Lower Carson Road.
- In Alternatives C1 and C2, the eastbound left turns at Lower Carson Road would be converted to right turn on Sierra Blanca Road, a left turn onto Vista Tierra Drive (the new undercrossing) and a right turn onto Carson Road.
- In Alternative C2, the eastbound left turns at Upper Carson Road would be converted to right turn on Sierra Blanca Road, a left turn onto Vista Tierra Drive (the new undercrossing), and a right turn onto Carson Road.
- In Alternative C2, the southbound left turns at Upper Carson Road would be converted to a left turn onto Vista Tierra Drive (the new undercrossing), a right turn on Sierra Blanca Road, and a right turn onto US 50.

Opening Year 2015 and Design Year 2035 Conditions

□□t□re Tr□ffi□ □per□tions

The forecasted traffic volumes for 2015 and 2035 for both a Fall-Spring midweek and summer Friday PM peak hour are shown in Figures 2 through 9.



1 Still Meadows Rd / US-50	2 Paul Bunyon Rd / US-50	3 Camino Heights Dr / US-50	4 Lower Carson Rd / US-50	5 Upper Carson Rd / US-50
946 (855) 11 (5) STOP 1,198 (1,737) 22 (20) 14 (14) 10 (10)	32 (7) 0 (0) 0 (1) 923 (844) 5 (1) STOP 19 (22) 1,181 (1,716) 8 (5) 1 (2) 3 (8)	885 (817) 20 (26) STOP 1,127 (1,671) 57 (52) 39 (25) 21 (21)	61 (30) 23 (23) 846 (815) STOP 74 (45) 1,068 (1,670) 0 (2) 9 (2)	171 (128) 29 (44) 14 (14) 721 (707) STOP 196 (174) 914 (1,486)

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FIGURE 2

OPENING YEAR 2015 NO PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

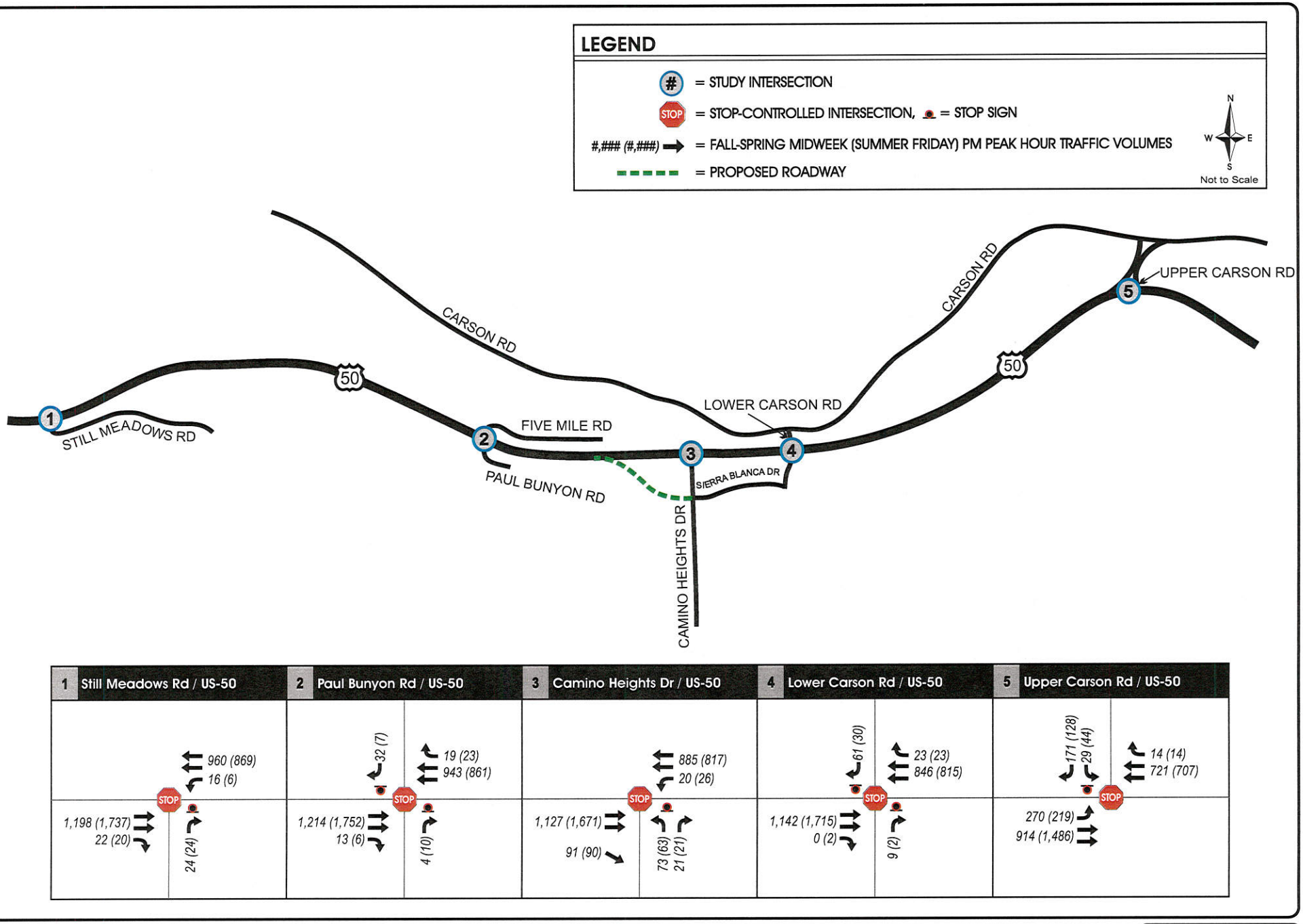

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FIGURE 3

OPENING YEAR 2015 ALTERNATIVE "B" CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

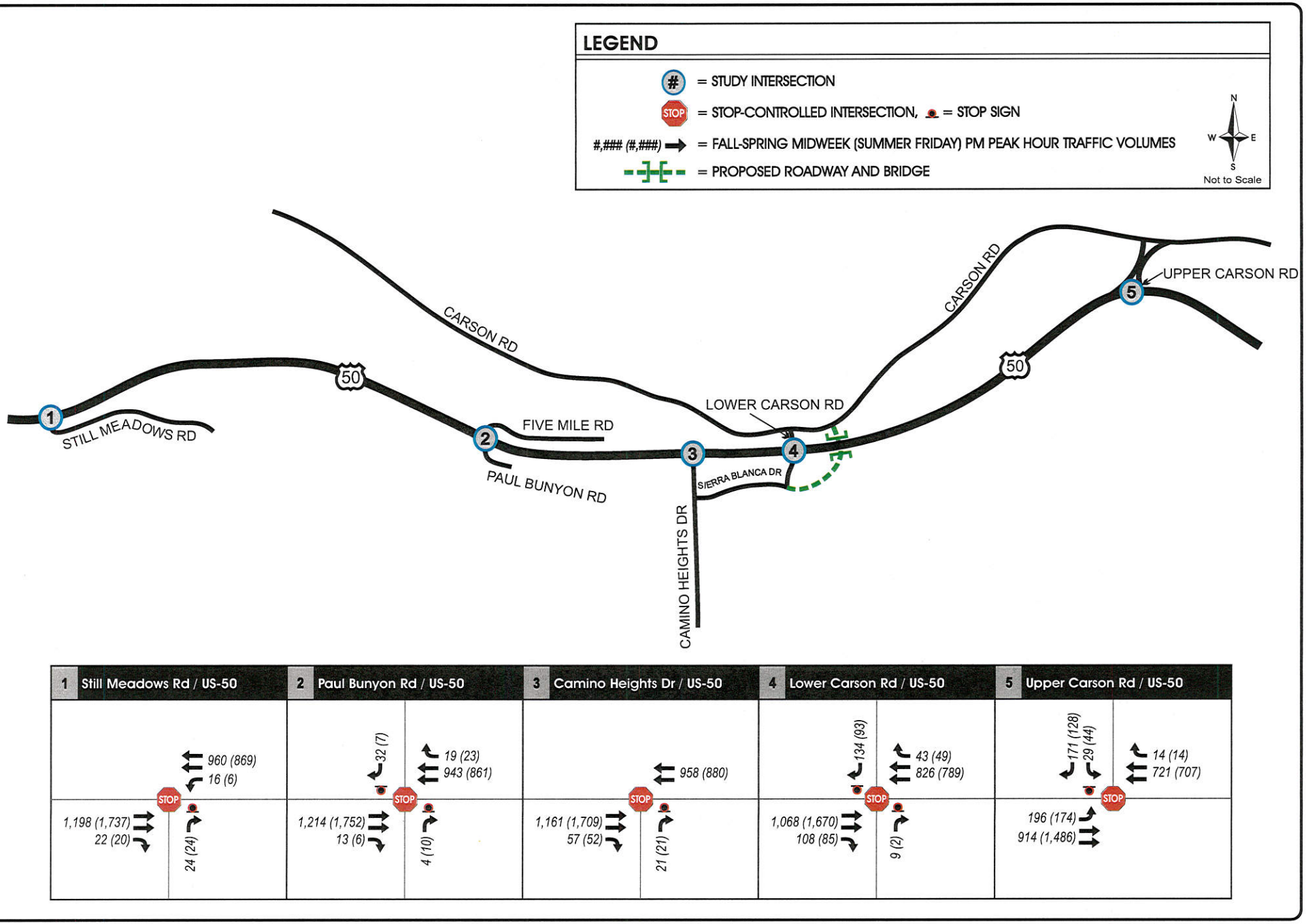

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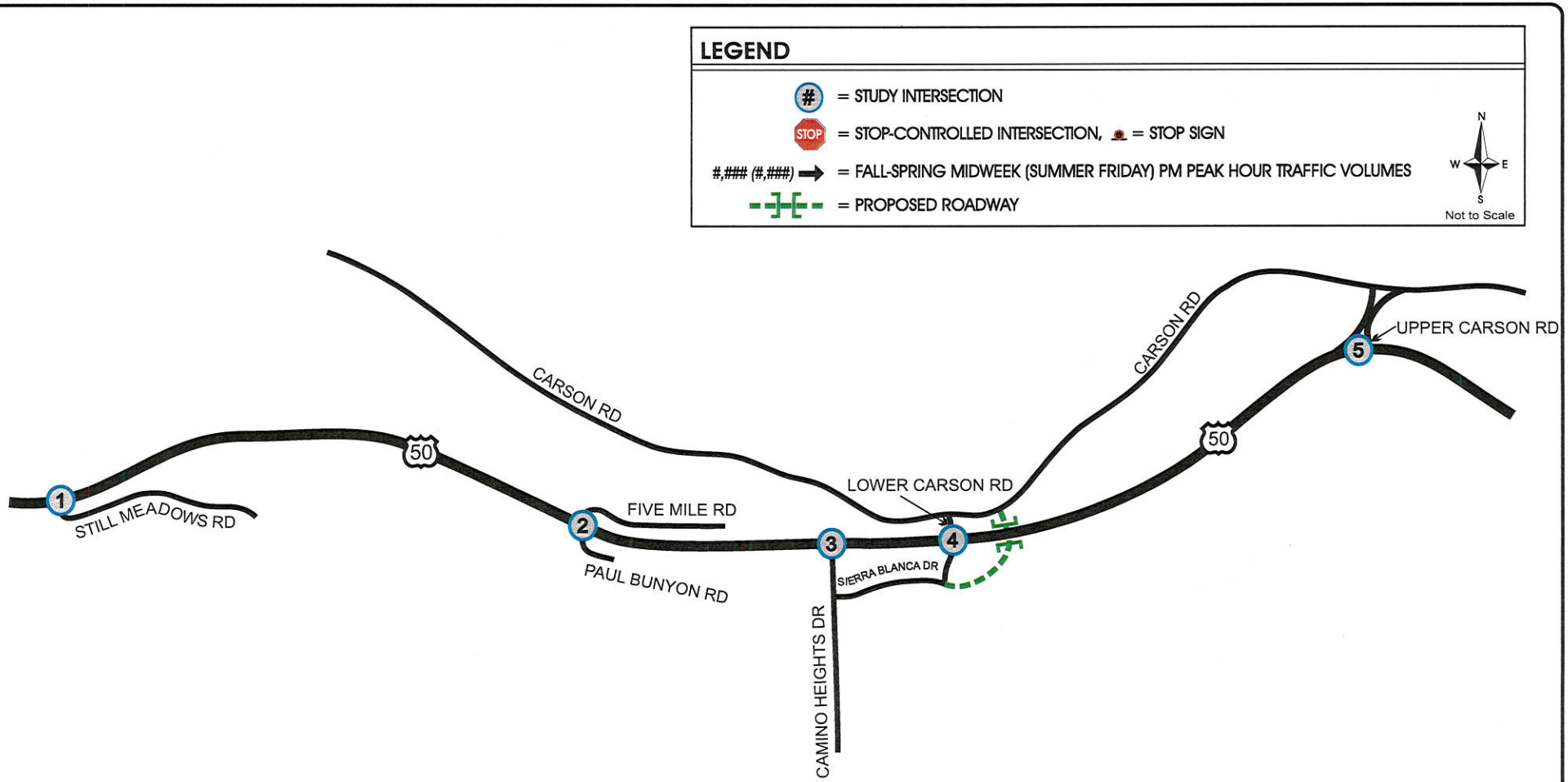
FIGURE 4

OPENING YEAR 2015 ALTERNATIVE "C1" CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY



1 Still Meadows Rd / US-50	2 Paul Bunyon Rd / US-50	3 Camino Heights Dr / US-50	4 Lower Carson Rd / US-50	5 Upper Carson Rd / US-50
960 (869) 16 (6) STOP 1,198 (1,737) 22 (20) 24 (24)	32 (7) 19 (23) 943 (861) STOP 1,214 (1,752) 13 (6) 4 (10)	958 (880) STOP 1,161 (1,709) 57 (52) 21 (21)	134 (93) 43 (49) 826 (789) STOP 872 (1,496) 304 (259) 38 (46)	171 (128) 14 (14) 721 (707) STOP 943 (1,530)

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FIGURE 5

OPENING YEAR 2015 ALTERNATIVE "C2" CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

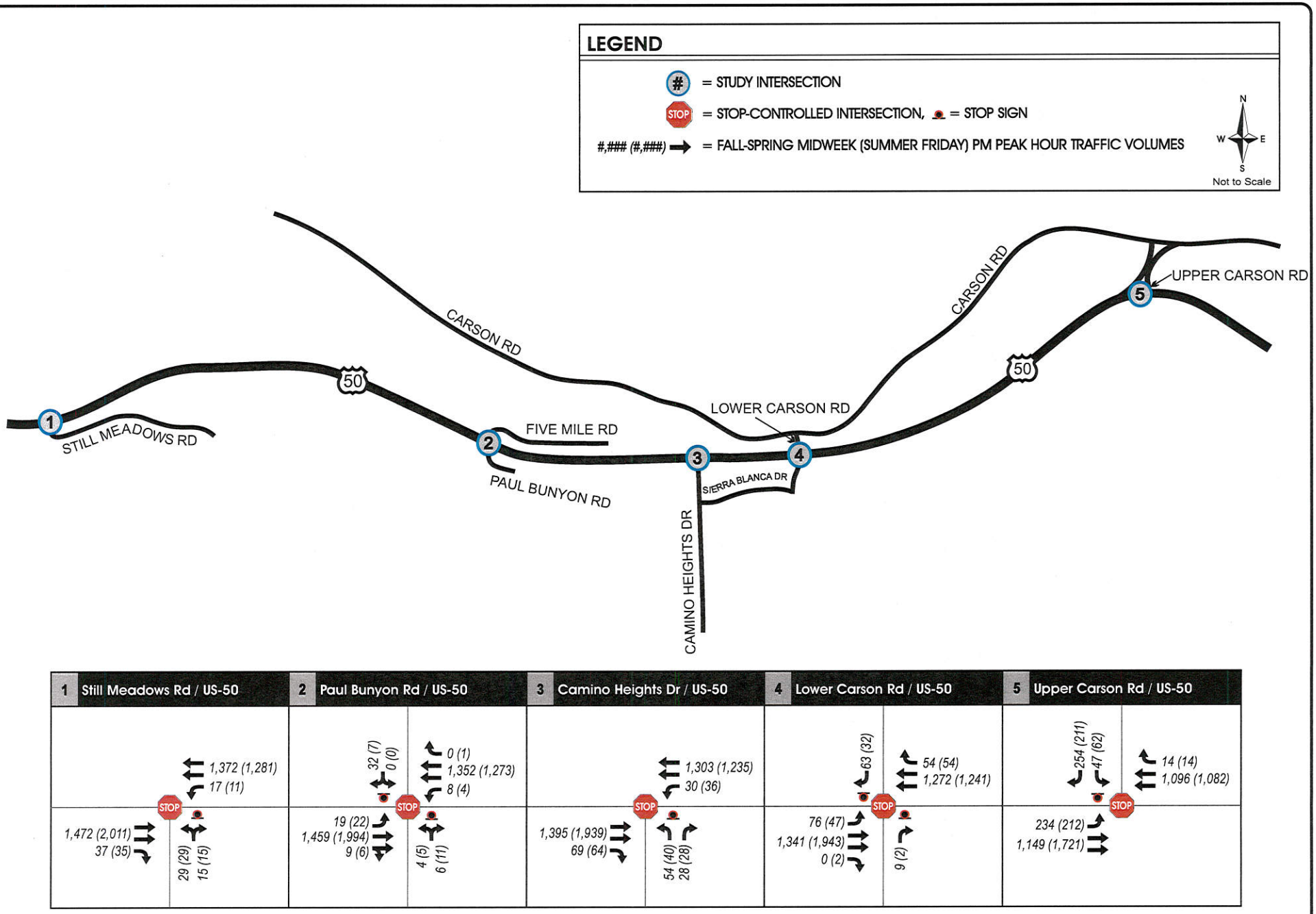

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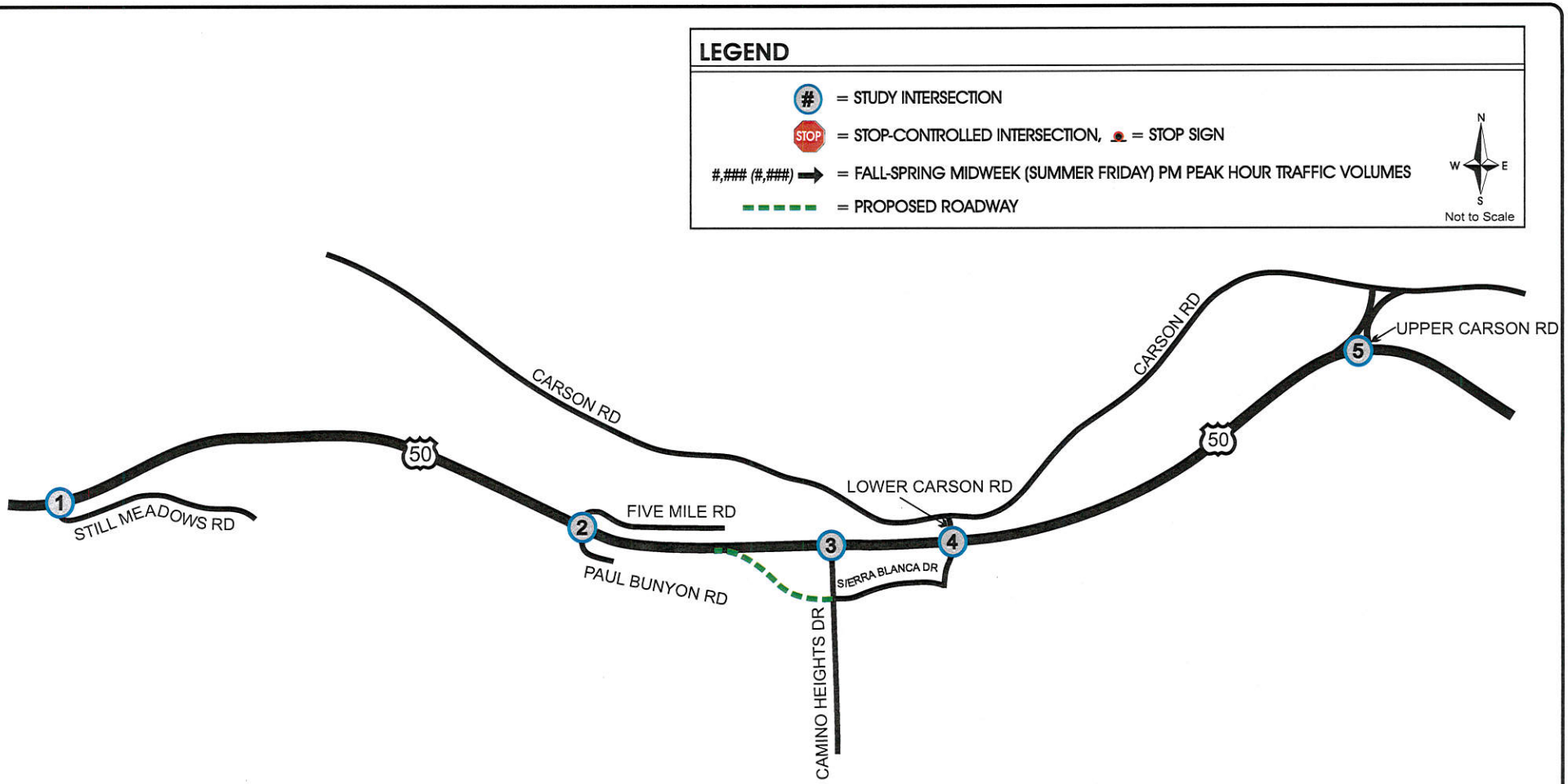
FIGURE 6

DESIGN YEAR 2035 NO PROJECT CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY



1 Still Meadows Rd / US-50	2 Paul Bunyon Rd / US-50	3 Camino Heights Dr / US-50	4 Lower Carson Rd / US-50	5 Upper Carson Rd / US-50
1,401 (1,310) 25 (15)	32 (7) 19 (23) 1,393 (1,311)	1,303 (1,235) 30 (36)	63 (32) 54 (54) 1,272 (1,241)	254 (211) 47 (62) 14 (14) 1,096 (1,082)
STOP	STOP	STOP	STOP	STOP
1,472 (2,011) 37 (35) 44 (44)	1,507 (2,045) 17 (10) 10 (16)	1,395 (1,939) 121 (120) 106 (96) 28 (28)	1,417 (1,990) 0 (2) 9 (2)	310 (259) 1,149 (1,721)

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DKS Associates
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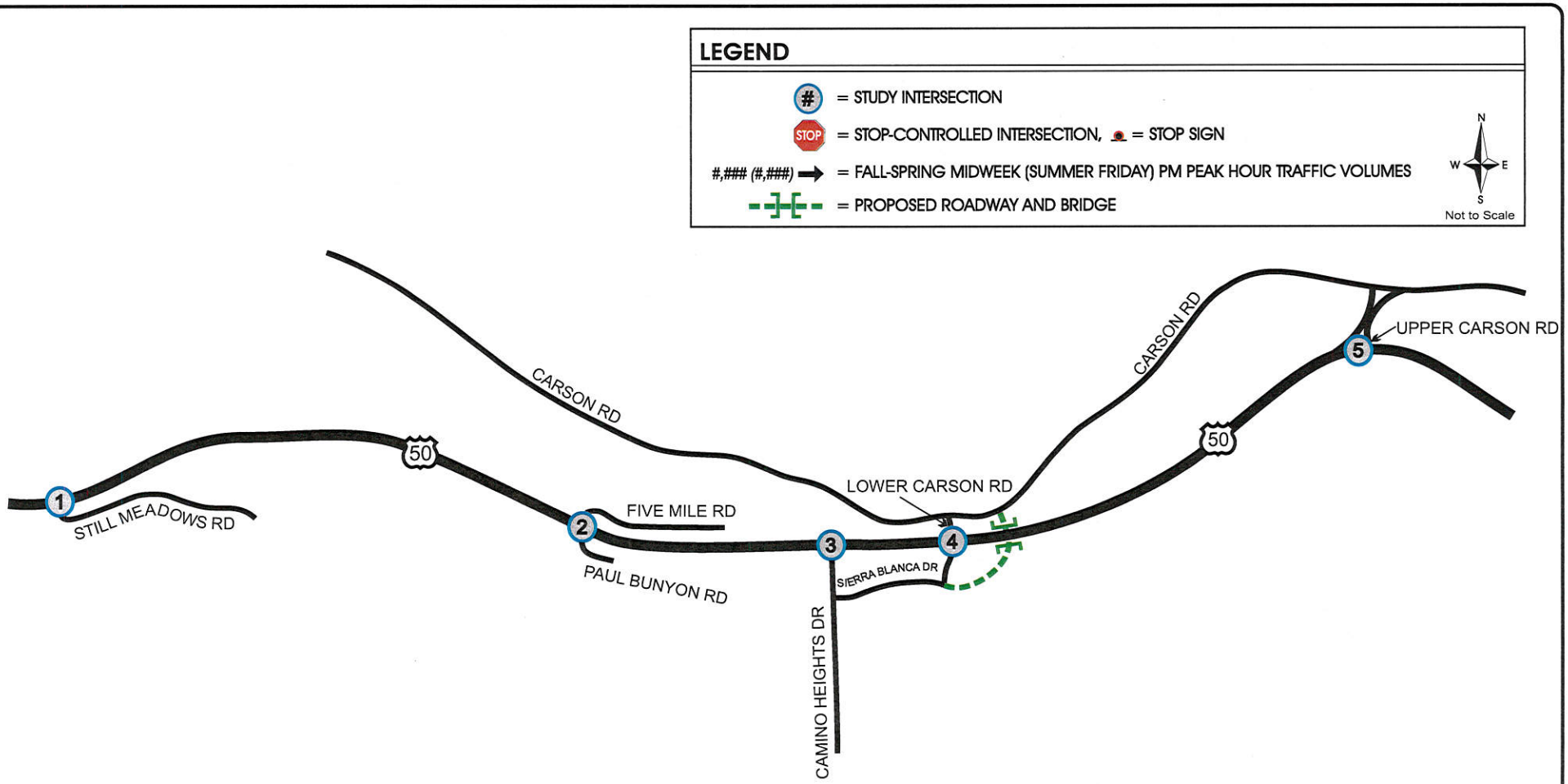
FIGURE 7

DESIGN YEAR 2035 ALTERNATIVE "B" CONDITIONS
PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY



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DKS Associates
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FIGURE 8

DESIGN YEAR 2035 ALTERNATIVE "C1" CONDITIONS

PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

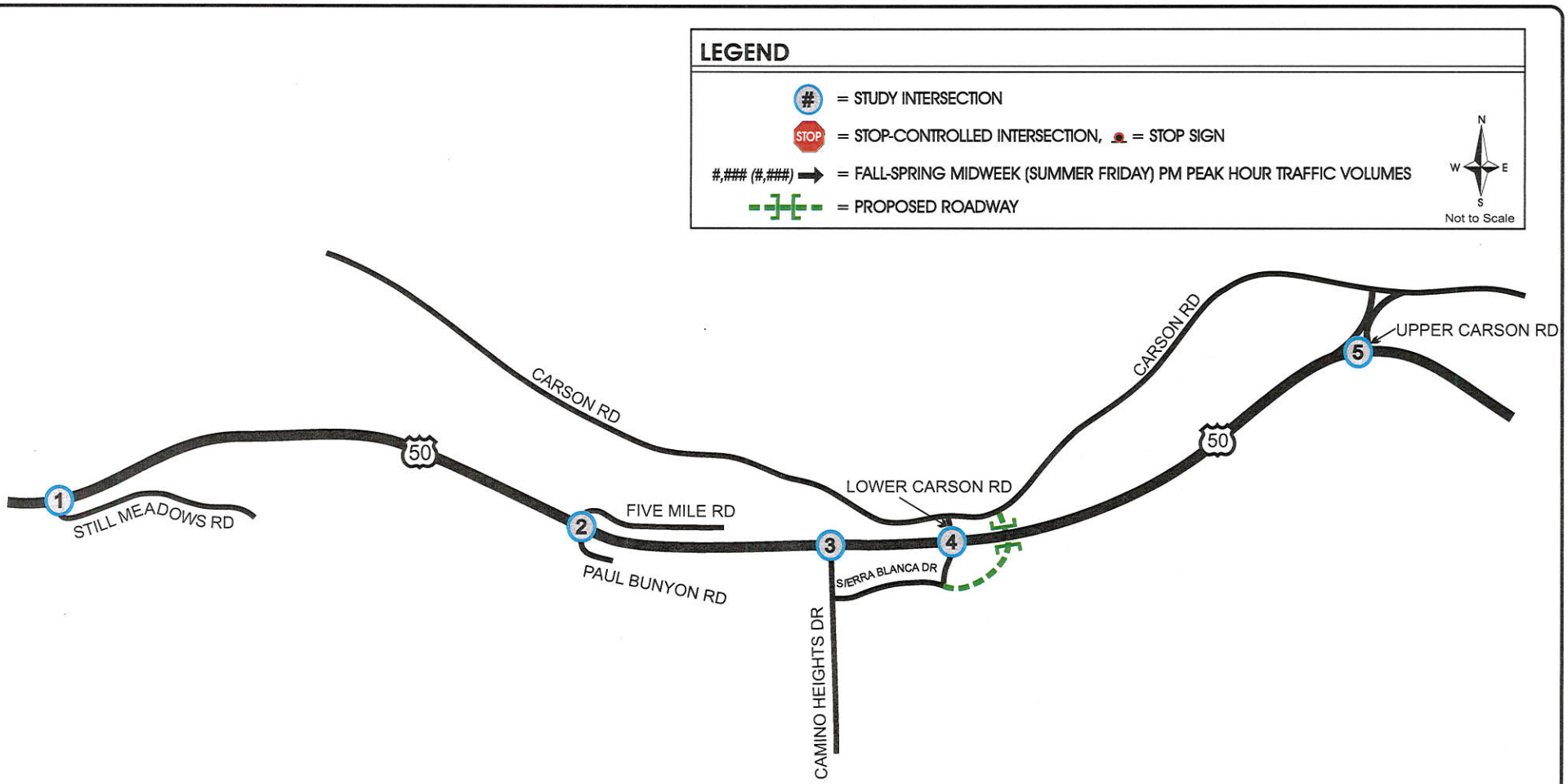

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FIGURE 9

DESIGN YEAR 2035 ALTERNATIVE "C2" CONDITIONS

PEAK HOUR TRAFFIC VOLUMES, LANE CONFIGURATIONS, AND TRAFFIC CONTROL

CAMINO CORRIDOR PROJECT STUDY

Table 6 - US 50 Travel Time (seconds) through Study Area						
Year	**Season & Day**	**Direction**	**No Build**	**Alternative B**	**Alternative C1**	**Alternative C2**
Opening Year 2015	Fall-Spring Midweek	Eastbound	130	131	130	129
		Westbound	129	128	128	128
	Summer Friday	Eastbound	136	136	135	134
		Westbound	127	127	127	127
Design Year 2035	Fall-Spring Midweek	Eastbound	132	133	132	132
		Westbound	132	133	132	132
	Summer Friday	Eastbound	138	138	137	137
		Westbound	131	132	132	131
Source: DKS Associates, 2009.						

Operations on US 50 for east-west through traffic do not significantly change by 2015 or 2035. Table 6 illustrates the minimal changes in travel time through the study area under each alternative. The slight increases in US 50 travel times are due to increases in volumes on some segments due to out of direction travel. As a highways traffic volumes increase, travel time increases and speed decreases.

Delays for left turns onto US 50 increase significantly by 2035 under the "no build" condition. The turning movement delay for the intersections on US 50 for each study year and season day of week is summarized in Tables 7 through 10.

Opening Year 2015 – Fall or Spring Midweek PM Peak Hour

All of the movements would operate at a satisfactory delay and LOS at every intersection under every scenario on Fall or Spring Midweek PM peak hour in 2015. The worst delay and LOS would be experienced by the northbound left turn at Still Meadows Road under the "no build" condition and the southbound left turn at Upper Carson Road under Alternative B. They both are projected to operate at LOS D.

Opening Year 2015 – Summer Friday PM Peak Hour

All of the movements would operate at a satisfactory delay and LOS at every intersection under every scenario on Summer Friday PM peak hour in 2015, except for one. The northbound left turn at Still Meadows Road under the "no build" condition would operate at a deficient LOS F with 79.2 seconds of delay. The northbound left turn at Paul Bunyan Road under No Build would operate at LOS D. The northbound left turn at Camino Heights Drive under Alternative B would operate at LOS D. The southbound left turn at Upper Carson Road under Alternative B would operate at LOS D.

Table 7 - Turning Movement Delay (Seconds) and Level of Service – Opening Year 2015 – Fall-Spring Midweek PM

Intersection With US 50	Scenario	Eastbound		Westbound		Northbound		Southbound	
		Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn
Still Meadows Road	No Build		5.9 A	12.2 B		29.2 D	5.8 A		
	Alternative B		6.0 A	4.8 A			0.1 A		
	Alternative C1		5.7 A	4.1 A			0.1 A		
	Alternative C2		5.6 A	5.1 A			0.1 A		
Paul Bunyan Road	No Build	7.4 A	1.7 A	4.5 A	0.0 A	6.5 A	4.2 A		4.9 A
	Alternative B		0.0 A		1.0 A		0.1 A		0.1 A
	Alternative C1		0.5 A		1.1 A		4.3 A		0.2 A
	Alternative C2		0.4 A		1.6 A		0.1 A		0.2 A
Camino Heights Drive	No Build		2.4 A	5.8 A		13.6 B	0.6 A		
	Alternative B			5.1 A		14.2 B	0.8 A		
	Alternative C1		1.6 A				0.5 A		
	Alternative C2		1.9 A				0.4 A		
Lower Carson Road	No Build	5.3 A	na		0.1 A		0.1 A		0.3 A
	Alternative B		na		0.0 A		0.1 A		0.4 A
	Alternative C1		0.9 A		0.6 A		0.5 A		0.8 A
	Alternative C2		1.5 A		0.7 A		1.7 A		2.7 A
Upper Carson Road	No Build	6.8 A			5.4 A			21.4 C	0.5 A
	Alternative B	9.1 A			5.7 A			29.7 D	0.7 A
	Alternative C1	7.2 A			5.2 A			19.9 C	0.6 A
	Alternative C2				7.3 A				1.2 A

Source: DKS Associates, 2009.

Table 8 - Turning Movement Delay (Seconds) and Level of Service – Opening Year 2015 - Summer Friday PM

Intersection With US 50	Scenario	Eastbound		Westbound		Northbound		Southbound	
		Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn
Still Meadows Road	No Build		5.9 A	17.0 C		**79.2 F**	10.9 B		
	Alternative B		6.2 A	8.9 A			0.1 A		
	Alternative C1		5.9 A	6.7 A			0.1 A		
	Alternative C2		6.0 A	8.4 A			0.1 A		
Paul Bunyan Road	No Build	7.5 A	2.9 A	9.3 B	2.4 A	29.5 D	10.2 B		3.3 A
	Alternative B		1.0 A		2.0 A		0.3 A		0.5 A
	Alternative C1		0.5 A		2.1 A		0.1 A		0.2 A
	Alternative C2		0.5 A		2.0 A		0.1 A		0.1 A
Camino Heights Drive	No Build		3.1 A	10.2 B		20.6 C	0.6 A		
	Alternative B			9.4 A		32.2 D	0.8 A		
	Alternative C1		2.0 A				0.4 A		
	Alternative C2		2.3 A				0.4 A		
Lower Carson Road	No Build	4.6 A	1.1 A		0.1 A		0.1 A		0.4 A
	Alternative B		0.1 A		0.0 A		0.1 A		0.4 A
	Alternative C1		1.1 A		0.8 A		0.5 A		0.9 A
	Alternative C2		1.4 A		0.8 A		0.6 A		0.9 A
Upper Carson Road	No Build	6.4 A			5.7 A			21.5 C	0.5 A
	Alternative B	7.6 A			5.9 A			28.7 D	0.6 A
	Alternative C1	6.6 A			5.7 A			22.0 C	0.6 A
	Alternative C2				7.6 A				1.1 A

Source: DKS Associates, 2009.

Table 9 - Turning Movement Delay (Seconds) and Level of Service – Design Year 2035 - Fall-Spring Midweek PM

Intersection With US 50	Scenario	Eastbound		Westbound		Northbound		Southbound	
		Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn
Still Meadows Road	No Build		6.3 A	13.9 B		**154.1 F**	7.5 A		
	Alternative B		6.1 A	7.9 B			0.2 A		
	Alternative C1		5.8 A	8.8 A			0.1 A		
	Alternative C2		5.9 A	7.8 A			0.1 A		
Paul Bunyan Road	No Build	10.2 B	2.8 A	10.0 A	na	**66.6 F**	7.1 A		7.3 A
	Alternative B		0.4 A		1.8 A		0.2 A		0.1 A
	Alternative C1		0.5 A		2.2 A		0.1 A		0.2 A
	Alternative C2		0.5 A		2.0 A		0.1 A		0.2 A
Camino Heights Drive	No Build		2.9 A	8.3 A		23.4 C	0.6 A		
	Alternative B			8.2 A		31.0 D	1.5 A		
	Alternative C1		2.0 A				0.5 A		
	Alternative C2		2.4 A				0.5 A		
Lower Carson Road	No Build	11.2 A			0.2 A		0.1 A		0.4 A
	Alternative B				0.8 A		0.2 A		0.7 A
	Alternative C1		0.9 A		0.9 A		0.4 A		0.9 A
	Alternative C2		1.6 A		0.9 A		0.5 A		0.7 A
Upper Carson Road	No Build	20.3 C			5.6 A			**114.0 F**	5.5 A
	Alternative B	33.4 D			5.9 A			**278.8 F**	21.2 C
	Alternative C1	17.9 C			6.1 A			**122.8 F**	6.3 A
	Alternative C2				7.5 A				1.4 A

Source: DKS Associates, 2009.

Table 10 - Turning Movement Delay (Seconds) and Level of Service – Design Year 2035 - Summer Friday PM

Intersection With US 50	Scenario	Eastbound		Westbound		Northbound		Southbound	
		Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn	Left Turn	Right Turn
Still Meadows Road	No Build		6.2 A	27.6 D		**1031.8 F**	**187.9 F**		
	Alternative B		6.3 A	15.7 C			0.1 A		
	Alternative C1		6.4 A	15.0 C			0.1 A		
	Alternative C2		6.3 A	17.9 C			0.1 A		
Paul Bunyan Road	No Build	10.0 B	4.6 A	26.1 B	1.3 A	**76.9 F**	12.4 B	na	6.4 A
	Alternative B		0.5 A		1.8 A		0.1 A		0.1 A
	Alternative C1		0.5 A		2.2 A		0.1 A		0.1 A
	Alternative C2		0.6 A		2.1 A		0.1 A		0.1 A
Camino Heights Drive	No Build		3.6 A	14.8 B		47.6 E	0.6 A		
	Alternative B			15.3 C		**136.0 F**	8.6 A		
	Alternative C1		2.7 A				1.0 A		
	Alternative C2		2.6 A				0.4 A		
Lower Carson Road	No Build	10.7 B	0.0 A		0.1 A		0.1 A		0.4 A
	Alternative B		0.6 A		0.8 A		0.2 A		0.8 A
	Alternative C1		0.9 A		1.0 A		0.5 A		0.9 A
	Alternative C2		1.5 A		1.5 A		0.5 A		0.9 A
Upper Carson Road	No Build	17.1 B			5.9 A			**139.7 F**	15.8 C
	Alternative B	19.8 C			5.6 A			**217.4 F**	31.4 D
	Alternative C1	17.0 B			6.0 A			**156.1 F**	16.3 C
	Alternative C2				7.9 A				1.3 A

Source: DKS Associates, 2009.

□e□ign Year 20□5 – Fall or Spring midweek PM Peak Hour

Alternative C2 is the only alternative that does not have a LOS F movement under Fall or Spring midweek PM peak hour conditions in 2035. Under the No Build scenario there would be a LOS F with 154.1 seconds of delay for the northbound left turn at Still Meadows Road, LOS F with 66.6 seconds of delay for the northbound left turn at Paul Bunyan Road and there would be a LOS F with 114.0 seconds of delay at the southbound left turn at Upper Carson Road. Under Alternative B there would be a LOS F with 278.8 seconds of delay at the southbound left turn at Upper Carson Road. The large increase in delay for the southbound left turn at Upper Carson Road is due to the addition of the diverted eastbound left turning vehicles from Lower Carson Road. These eastbound left turns have the right of way before the southbound left turns; therefore the southbound left turns have to wait longer for a gap. This queuing and delay is so high that vehicles that want to enter US 50 eastbound might chose to divert to Carson Road through Camino and to the Cedar Grove interchange. Operations would be LOS D at the northbound left turn at Camino Heights Drive and LOS D for eastbound left turns at Upper Carson Road under Alternative B. Under Alternative C1 there would be LOS F with 122.8 seconds of delay at the southbound left turn at Upper Carson Road. These delays are lower than Alternative B because the eastbound left turn from Lower Carson Road is diverted to the undercrossing instead. Alternative C2 would not have any LOS F movements because those movements are closed and the traffic is diverted to the undercrossing.

□e□ign Year 20□5 – Summer Friday PM Peak Hour

Alternative C2 is the only alternative that does not have a LOS F movement under Summer Friday PM peak hour conditions in 2035.

Under the "no build" condition there would be LOS F movements at three of the five intersections. At Still Meadows Road operations are projected to be LOS F, with a delay of 1031.8 seconds for the northbound left turn and there would be LOS F with 187.9 seconds of delay at the northbound right turn. The reason for the delay is the high volume of traffic on US 50, so there are not enough gaps for traffic from Still Meadows Road to make a left turn and immediately merge into westbound traffic. This high delay causes significant queuing to back up into into the Apple Hill Café parking lot and onto Still Meadows Road. The queues may be long enough to block the northbound right turns, causing delay for the right turn movement. With this projected delay for the northbound left turn, some frustrated drivers could likely make a right turn onto eastbound US 50, and turn around at Paul Bunyan Road onto westbound US 50. The westbound left turn movement would be LOS D.

At Paul Bunyan Road there would be LOS F with a delay of 76.9 seconds for the northbound left turn. This intersection has the same issue as Still Meadows Road but is projected to have much

lower volumes attempting to make the left turn onto US 50. At Camino Heights Drive operations would be LOS E for the northbound left turn because at this intersection the left turns onto US 50 enter a separate merging or acceleration lane. Drivers making this maneuver only need to look for gaps in eastbound and westbound left turn traffic, not westbound through traffic. Once entering the merging lane, drivers can accelerate to near highway speeds and find a gap in through, westbound traffic. At Upper Carson Road there would be LOS F with 139.7 seconds of delay for the southbound left turn. With this much delay, vehicles wanting to enter US 50 eastbound might divert to Carson Road through Camino and to the Cedar Grove interchange. This would cause a queue that would occasionally reach Carson Road.

Under Alternative B there would be LOS F movements at two of the five intersections. At Camino Heights Drive operations will be LOS F with 136.0 seconds of delay for the northbound left turn. This is worse than the "no build" condition because the closed left turns at Still Meadows Road and Paul Bunyan Road will cause drivers to divert to the auxiliary road and this northbound left turn movement at Camino Heights Drive; therefore increasing the volume looking for the same few gaps, resulting in increased delays. This would result in queues on northbound Camino Heights Drive that would occasionally reach the auxiliary lane. At Upper Carson Road there would be LOS F with 217.4 seconds of delay for the southbound left turn. These delays are due to the addition of the diverted eastbound left turn from Lower Carson Road. Because these drivers have the right of way before the southbound left turns, the southbound left turn will have to wait longer for a gap. This would cause a queue that backs up to Carson Road. This delay is so high that vehicles wanting to enter US 50 eastbound might divert to Carson Road through Camino and to the Cedar Grove interchange. At Upper Carson Road there would be LOS D for the southbound right turn

Under Alternative C1 there would be just one movement at LOS F. At Upper Carson Road there would be LOS F with 156.1 seconds of delay for the southbound left turn. This would cause a queue that would occasionally back up to Carson Road. This queuing and delay is so high that vehicles wanting to enter US 50 eastbound might chose to divert to either the undercrossing or Carson Road through Camino and to the Cedar Grove interchange.

In none of the alternatives do vehicles making left turns off of US 50 ever queue beyond the storage bay and into the through lanes of US 50. The maximum queue for a left turn off of US 50 is at Upper Carson Road under the 2035 Fall or Spring midweek PM scenario B, at 300 feet. It only takes up almost half of the storage and deceleration distance, leaving about 200 feet for deceleration.

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Alternative B would eliminate the high delay on the northbound left turn at Still Meadows Road; however, it is replaced by an out of direction movement. The out of direction movement is a right turn onto US 50, a right turn to the auxiliary road to Camino Heights Drive, a left turn onto northbound Camino Heights Drive, a left turn onto westbound US 50 and westbound on US 50 past Still Meadows Road. Travel times on this movement would be 206 seconds on a summer Friday in 2015 and 375 seconds on a summer Friday in 2035.

Alternative C1 would eliminate the high delay on the northbound left turn at Camino Heights Drive; however, it is replaced by an out of direction movement. Travel times on this movement would be 93 seconds on a summer Friday in 2035. With this alternative, the travel time on the Still Meadows Road out of direction movement would be 248 seconds on a summer Friday in 2035. The 248 seconds of extra travel time is less than the 1032 seconds of delay for this movement under the "no build" condition.

Neither Alternative B nor Alternative C1 relieves the large southbound left turn delay at Upper Carson Road. Alternative C2 eliminates this delay without introducing much out of direction travel. Alternative C2 does not create a significant amount of out of direction travel because the vehicles redirected from the eastbound left turn can just get off of US 50 earlier at Sierra Blanca Drive, go under the undercrossing and then take Carson Road to get to the same destination. Similarly, most of the vehicles redirected from the southbound left turn would come from Carson Road west of Upper Carson Road and can therefore get on eastbound US 50 earlier by going through the undercrossing and then turning onto Sierra Blanca Drive before turning right onto US 50. The small increase in travel time due to taking the slower local roads is offset by the not experiencing a large delay looking for a gap to make a left turn on US 50.

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The improvement alternatives eliminate the critical left turn movements that result in excessive delay and the potential for collisions. However, each alternative also introduces longer travel paths due to the turn restrictions. The combined effect of converting the high delay left turns to out of direction travel was evaluated by calculating network travel time for all vehicles (vehicle hours of travel) and network travel distance (vehicle miles of travel). The extra time that diverted vehicles take to complete their journey increases the vehicle hours of travel. The extra distance that diverted vehicles take to complete their journey increases the vehicle miles of travel. Tables 11 and 12 summarize the results of the analysis in the SimTraffic network.

The alternatives increase overall network travel time in 2015. The alternatives increase network travel time on a 2035 midweek PM peak hour and on a 2035 Friday PM peak hour; however, Alternative C2 decreases vehicle hour of travel for a Friday PM peak hour in 2035 because the

extra travel time for out of direction travel is less than the left turn movement delay experienced under the "no build" condition. All alternatives increase vehicle miles of travel.

Table 11 - Study Area Vehicle Hours Travel (VHT) – All Vehicles – Peak Hour					
Year	**Season & Day**	**No Build**	**Alternative B**	**Alternative C1**	**Alternative C2**
Opening Year 2015	Fall-Spring Midweek	111	116 +5%	119 +7%	121 +9%
	Summer Friday	135	141 +4%	143 +6%	143 +6%
Design Year 2035	Fall-Spring Midweek	161	192 +19%	171 +6%	167 +4%
	Summer Friday	196	219 +12%	199 +2%	189 -4%
Source: DKS Associates, 2009.					

Table 12 - Study Area Vehicle Miles Travel (VMT) – All Vehicles – Peak Hour					
Year	**Season & Day**	**No Build**	**Alternative B**	**Alternative C1**	**Alternative C2**
Opening Year 2015	Fall-Spring Midweek	5686	5899 +4%	5947 +5%	5920 +4%
	Summer Friday	6914	7173 +4%	7235 +5%	7130 +3%
Design Year 2035	Fall-Spring Midweek	7708	7929 +3%	8005 +4%	8014 +4%
	Summer Friday	8813	9174 +4%	9157 +4%	9201 +4%
Source: DKS Associates, 2009.					

Future Safety Implications

The volume of left turns in the study area is projected to increase slightly by 2015 and significantly by 2035. As mentioned previously in the discussion of travel forecasting, the same growth increment of local turning traffic is applied to both the fall Wednesday and summer Friday PM peak hours. These increases in conflicting volumes increase the probability of collisions. As volumes increase, so do left turn delays. Increased left turn delays often lead to impatient motorists accepting shorter gaps in traffic, resulting in an increased chance of

collisions. Increased left turn delays also lead to longer queue lengths, increasing the possibility of rear-end collisions.

The largest increase in left turns is the eastbound left turn from US 50 to Upper Carson Road. It increases by 51 vehicles per hour by 2035. The second highest left turn volume increase is the number of southbound left turns onto US 50 at Upper Carson Road. The volume increases by 23 vehicles per hour by 2035. The westbound through traffic, a conflict for both movements, increases by 505 vehicles per hour by 2035. The third and fourth highest left turn volume increases are northbound left turns onto US 50 at Still Meadows Road and Camino Heights Drive. They increase by 20 and 19 vehicles per hour, respectively, by 2035. The eastbound and westbound US 50 through traffic, a conflict for northbound Still Meadows Road left turns, increases by 951 vehicles per hour by 2035. The eastbound US 50 through traffic, a conflict for northbound Camino Heights Drive left turns, increases by 374 vehicles per hour by 2035. Northbound Camino Heights Drive left turns only conflict with eastbound US 50 traffic (and westbound left turns) because they enter a separate median acceleration merge lane.

The alternatives restrict the number of locations where left turns can be made. Reducing the number of left turns could reduce the probability of collisions. The number of left turns in each alternative is shown in Table 13.

Alternative B prohibits left turns onto US 50 at Still Meadows Road, all left turns at Paul Bunyan Road and all left turns at Lower Carson Road. In Alternative B these left turns are just moved to another intersection and the number of left turns remains the same; however, there probably will be some safety benefit as left turns onto US 50 will be moved from locations where they need to look for a gap in both directions and immediately merge with traffic to locations where they only need to look for a gap in one direction of US 50 traffic and enter a separate median acceleration merge lane.

Alternative C1 prohibits left turns onto US 50 at Still Meadows Road, all left turns at Paul Bunyan Road, all left turns at Camino Heights Drive and all left turns at Lower Carson Road. In this alternative the left turns are converted to right turns and trip using the new undercrossing. Alternative C1 reduces the number of left turns by about 40% and would likely reduce the probability of accidents from the "no build" condition.

Alternative C2 prohibits left turns onto US 50 at Still Meadows Road, all left turns at Paul Bunyan Road, all left turns at Camino Heights Drive, all left turns at Lower Carson Road and all left turns at Upper Carson Road. In this alternative the left turns are converted to right turns and trip using the new undercrossing. Alternative C2 reduces almost all left turns and would likely reduce the probability of accidents from the "no build" Project condition.

Table 13 - Safety - Number of Peak Hour Left Turns						
Year	**Season & Day**	**Intersection**	**No Build**	**Alternative B**	**Alternative C1**	**Alternative C2**
Opening Year 2015	Fall-Spring Midweek	Still Meadows Rd	25	16	16	16
		Paul Bunyan Rd	25	0	0	0
		Camino Heights Dr	59	93	0	0
		Lower Carson Rd	74	0	0	0
		Upper Carson Rd	225	299	225	0
		Total	408	408	241	16
		Percent of No Build	100%	100%	59%	4%
	Summer Friday	Still Meadows Rd	19	6	6	6
		Paul Bunyan Rd	25	0	0	0
		Camino Heights Dr	51	89	0	0
		Lower Carson Rd	45	0	0	0
		Upper Carson Rd	218	263	218	0
		Total	358	358	224	6
		Percent of No Build	100%	100%	63%	2%
Design Year 2035	Fall-Spring Midweek	Still Meadows Rd	46	25	25	25
		Paul Bunyan Rd	31	0	0	0
		Camino Heights Dr	84	136	0	0
		Lower Carson Rd	76	0	0	0
		Upper Carson Rd	281	357	281	0
		Total	518	518	306	25
		Percent of No Build	100%	100%	59%	5%
	Summer Friday	Still Meadows Rd	40	15	15	15
		Paul Bunyan Rd	31	0	0	0
		Camino Heights Dr	76	132	0	0
		Lower Carson Rd	47	0	0	0
		Upper Carson Rd	274	321	274	0
		Total	468	468	289	15
		Percent of No Build	100%	100%	62%	3%
Source: DKS Associates, 2009.						

Table 14 summarizes the number of collisions between 2003 and 2007 that could potentially have been eliminated if the improvement alternatives were in place in 2003. The potentially eliminated collisions are broadsides occurring during left turn movements. Although prohibited movement accidents would not have happened. Alternative B might just move accidents from Still Meadows Road and Paul Bunyan Road to Camino Heights Drive. Alternative C1 is more likely to prevent accidents than Alternative B, and Alternative C2 is more likely to prevent accidents than Alternative C1.

Table 14 - Accident Rate - Number of Accidents That Could Potentially Have Been Prevented – 2003 to 2007

Intersection	Existing	Alternative B	Alternative C1	Alternative C2
Still Meadows Rd		5	5	5
Paul Bunyan Rd		2	2	2
Camino Heights Dr		0	2	2
Lower Carson Rd		6	6	6
Upper Carson Rd		0	0	5
Total Preventable		13	15	20
Total Accidents	183	170	168	163
Scenario Average Rate	0.76	0.70	0.69	0.67
State Average Rate	0.67	0.67	0.67	0.67

Source: California Department of Transportation, 2008 and DKS Associates, 2009

ATTACHMENT M

RISK MANAGEMENT PLAN

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

RISK REGISTER CERTIFICATION (ACCOUNTABILITY CHECKPOINTS)

Form PM-0001 (Rev. 3/2014)

The risk register is to be approved and signed-off by the district deputies* listed below for all scalability levels. By signing this form, you are certifying that you have reviewed the risks documented in the register and agree that they have been managed to the extent possible by the PDT.

Project Information	■ Capital Project ☐ Major Maintenance Project (Check One)
Project ID/District-EA	0314000039 / 4E620
Project Description	Install median barrier and construct undercrossing
	Note: Risks 17, 18, and 19 were added due to amending into the 2014 SHOPP
Project Manager (PM)	Clark A Peri
Project Risk Manager (for Risk Level 3 Projects)	

☐ No Risk Register Certification Required -- Sign below and submit this form with PID, PA&ED, PS&E submittal, and RE Handoff File (as applicable).

Project Manager Signature _____ Date: _____

PID (Required for Capital Projects Only excluding Minor Projects)

Project Manager		Date:
Deputy District Director, Planning		Date: 10/12/15
Deputy District Director*, Design**		Date: 10/7/15
Deputy District Director*, Construction		Date: 10/8/15
Deputy District Director*, Right of Way		Date: 10-7-15
Deputy District Director*, Environmental		Date: 10-9-15
Deputy District Director*, Maintenance & Operations		Date: 10/7/15
Deputy District Director, Project Management		Date: 10/8/15

PA&ED (Required for Capital Projects Only)

Project Manager		Date:
Deputy District Director, Planning		Date:
Deputy District Director*, Design**		Date:
Deputy District Director*, Construction		Date:
Deputy District Director*, Right of Way		Date:
Deputy District Director*, Environmental		Date:
Deputy District Director*, Maintenance & Operations		Date:
Deputy District Director, Project Management**		Date:

Prior to PS&E (Required for Capital Projects and Major Maintenance Projects)

Project Manager		Date:
Deputy District Director, Planning		Date:
Deputy District Director*, Design		Date:
Deputy District Director*, Construction		Date:
Deputy District Director*, Right of Way		Date:
Deputy District Director*, Environmental		Date:
Deputy District Director*, Maintenance & Operations		Date:
Deputy District Director, Project Management		Date:

RE File Hand-off (Recommended for Capital Projects and Major Maintenance Projects)

Project Manager		Date:
Deputy District Director*, Design		Date:
Deputy District Director*, Construction		Date:
Deputy District Director*, Environmental		Date:
Deputy District Director, Project Management		Date:

*or the respective Project Delivery Division Chief signatures in the North Region

03-4E620 Camino Safety Project - ACTIVE RISK REGISTER

RBS: Construction Roundabout

Risk Type & ID: Risk 015 Status: Active Date Retired: Updated: 1-20-2015 Owner: Richard Montre

Description: Controlling this intersection could include an all way stop, one way stop or a roundabout.

Response Options: The roundabout would have a larger footprint whose impacts will need to be addressed by Environmental and Right of Way.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M
Support Cost:	$ 400,000		$ 800,000	M
Development Delay:	0 Days		0 Days	M
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status:

Assessment Notes: Mitigate

RBS: Construction Construction Impacts

Risk Type & ID: Risk 007 Status: Active Date Retired: Updated: 1-20-2015 Owner: Scott Mann

Description: As a result of seasonal traffic due to Apple Hill traffic, coordination with construction may be difficult.
Weekend traffic flows summer & winter. (Friday EB Traffic & Sunday WB Traffic)

Response Options: Traffic Management Plan.
Possible reversible 3rd lane during traffic control.
Structures APS should be able to account for traffic flow needs.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 250,000		$ 1,250,000	M
Support Cost:	$ 80,000		$ 400,000	M
Development Delay:	0 Days		0 Days	
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status: Design to coordinate with TMP and Construction prior to RTL.

Assessment Notes: Mitigate

RBS: Design Design Schedule

Risk Type & ID: Risk 019 Status: Active Date Retired: Updated: 9-25-2015 Owner: Clark Peri

Description: As a result of amending the project into the 2014 SHOPP which requires RTL in the 17/18 FY, the duration to complete Design activities is shorter than planned. This could lead to a delayed and/or failed P&E and RTL milestones

Response Options: Accelerate Design activities as much as possible. Start Design activities in the PA&ED phase if possible.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	H
Support Cost:	$ 400,000		$ 800,000	H
Development Delay:	0 Days	44 Days	88 Days	H
Construction Delay:	0 Days	44 Days	88 Days	H

Assumptions / Current Status: Amending into the 2014 SHOPP requires RTL delivery within the 2014 SHOPP cycle. The last year of the cycle is 2017/2018 FY. Planned Design duration from PA&ED to P&E is 16 months. Current duration is 12 months.

Assessment Notes: Accept.
Development Schedule: Optimistic = 0 days if current duration of 12 months is met.
Development Schedule: Pessimistic = (16mo-12mo)*22 days/month = 88 days planned duration of 16 months is needed.
Construction schedule would slip the same if Design activities are delayed.

RBS: Environmental PA&ED Schedule

Risk Type & ID: Risk 017 Status: Active Date Retired: Updated: 9-25-2015 Owner: Clark Peri

Description: As a result of amending the project into the 2014 SHOPP which requires RTL in the 17/18 FY, the duration of the PA&ED phase is shorter than requested in the PEAR. This could lead to a delayed and/or failed PA&ED milestone.

Response Options: Accelerate design and environmental studies as much as possible. Start design activities at risk during the PA&ED phase.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	H
Support Cost:	$ 400,000		$ 800,000	H
Development Delay:	0 Days	33 Days	66 Days	H
Construction Delay:	0 Days	33 Days	66 Days	H

Assumptions / Current Status: Amending into the 2014 SHOPP requires RTL delivery within the 2014 SHOPP cycle. The last year of the cycle is 2017/2018 FY. The PEAR requests 16 months to achieve environmental approval. Current target duration is 13 months.

Assessment Notes: Accept.
Development Schedule: Optimistic = 0 days if current duration of 13 months is met.
Development Schedule: Pessimistic = (16mo-13mo)*22 days/month = 66 days if requested duration of 16 months is needed.
Construction schedule would slip the same if PA&ED is delayed.

RBS: Environmental Community Impacts

Risk Type & ID: Risk 006 Status: Active Date Retired: Updated: 5-21-2014 Owner: Georgette Neale

Description: PEAR conclusions may be less accurate for community impacts due to the unknown number and types of R/W takes.

Response Options: Confirm the type and number of R/W takes early in the PA&ED phase to identify and lessen community impacts. Public outreach is necessary during PA&ED for affected parcel.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 2,500,000		$ 5,000,000	H
Support Cost:	$ 800,000		$ 1,600,000	H
Development Delay:	0 Days		0 Days	H
Construction Delay:	0 Days		0 Days	H

Assumptions / Current Status:

Assessment Notes: Accept

RBS: Environmental Environmental Permits

Risk Type & ID: Risk 009 Status: Active Date Retired: Updated: 1-20-2015 Owner: Georgette Neale

Description: RTL may be delayed if required environmental permits are not acquired at least 2 months before RTL.

Response Options: Determine need for permits early in PA&ED phase. Submit permit applications to allow sufficient time for regulatory agencies to respond.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M
Support Cost:	$ 400,000		$ 800,000	M
Development	0 Days		0 Days	M

Delay:			
Construction Delay:	0 Days	0 Days	L

Assumptions / Current Status: Project has potential wetlands and jurisdictional ditches that run into the El Dorado County Irrigation Ditch, so the 404 and 401 permits are required, and possibly a 1602 Permit if creeks/streams are present within the ESL/Limits. Environmental surveys with the current ESL/Project Limits will determine if we need a 1602.

Assessment Notes: Accept

RBS: Environmental Archeological Impacts

Risk Type & ID: Risk 010 Status: Active Date Retired: Updated: 1-20-2015 Owner: Georgette Neale

Description: Project area sensitive for historical and prehistoric archaeological deposits.

Response Options: Complete identification efforts and document. If resources are identified that cannot be avoided, testing and evaluation programs will be initiated, consultation undertaken, and the results documented. Mitigating impacts may be necessary.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M
Support Cost:	$ 400,000		$ 800,000	M
Development Delay:	0 Days		0 Days	M
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status: Monitoring during construction may be necessary. Studies may take an additional 6 to 12 months to complete.

Assessment Notes: Accept

RBS: Environmental Environmental Resource Hours

Risk Type & ID: Risk 011 Status: Active Date Retired: Updated: 5-20-2014 Owner: Georgette Neale

Description: If inadequate resource hours for Environmental studies are programmed, Environmental staff would not be able to complete necessary technical studies without over-expending their allotted resources.

Response Options: Provide adequate resources during PID development.

Risk Rating (Lvl 1):

Event Probability: Low (From 10% to 19%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 250,000		$ 1,250,000	L
Support Cost:	$ 80,000		$ 400,000	L
Development Delay:	0 Days		0 Days	L
Construction Delay:	0 Days		0 Days	L

Assumptions / Current Status:

Assessment Notes: Avoid

RBS: Environmental Paleontological Impacts

Risk Type & ID: Risk 012 Status: Active Date Retired: Updated: 1-20-2015 Owner: Georgette Neale

Description: area sensitive for paleontological deposits.

Response Options: Complete identification efforts and document. If resources are identified that cannot be avoided, testing and evaluation programs will be initiated, consultation undertaken, and the results documented. Mitigating impacts may be necessary.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone

Capital Cost:	$ 1,250,000	$ 2,500,000	M
Support Cost:	$ 400,000	$ 800,000	M
Development Delay:	0 Days	0 Days	M
Construction Delay:	0 Days	0 Days	M

Assumptions / Current Status: Monitoring during construction may be necessary. Studies may take an additional 6 to 12 months to complete.

Assessment Notes:

RBS: PPM Cost

Risk Type & ID: Risk 001 Status: Active Date Retired: Updated: 4-17-2014 Owner: Clark Peri

Description: Cost may be higher than the safety index can support.

Response Options: May look at local or additional resources for additional funds.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 0		$ 250,000	L
Support Cost:	$ 0		$ 80,000	L
Development Delay:	0 Days		0 Days	M
Construction Delay:	0 Days		0 Days	L

Assumptions / Current Status:

Assessment Notes: Accept

RBS: PPM Public Outreach

Risk Type & ID: Risk 002 Status: Active Date Retired: Updated: 4-17-2014 Owner: Clark Peri

Description: Need to provide funds for public outreach. Median barrier will cut off cross freeway traffic.

Response Options: Project will mitigate traffic impacts, but need to start public outreach efforts early in PA&ED phase. EDCTC may be able to help with this effort.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	H
Support Cost:	$ 400,000		$ 800,000	H
Development Delay:	0 Days		0 Days	H
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status:

Assessment Notes: Accept

RBS: PPM Schedule

Risk Type & ID: Risk 003 Status: Active Date Retired: Updated: 4-17-2014 Owner: Mike Hagen

Description: If project is not approved as an amendment to the 2014 SHOPP, then project will be delayed.

Response Options: Prepare Conceptual Approval Report as soon as Capital Estimate is known, prior to PID approval.

Risk Rating (Lvl 1):

Event Probability: Low (From 10% to 19%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 250,000		$ 1,250,000	L

Support Cost:	$ 80,000	$ 400,000	L
Development Delay:	0 Days	0 Days	L
Construction Delay:	0 Days	0 Days	

Assumptions / Current Status: If not programmed in 2014 SHOPP, then will have to wait for 2016 SHOPP which would risk more accidents.

Assessment Notes: Avoid

RBS: R/W RW Schedule

Risk Type & ID: Risk 018 Status: Active Date Retired: Updated: 9-25-2015 Owner: Clark Peri

Description: As a result of amending the project into the 2014 SHOPP which requires RTL in the 17/18 FY, the duration to complete RW activities is shorter than requested in the RW Data Sheet. This could lead to a delayed and/or failed RW Cert milestone.

Response Options: Accelerate RW activities as much as possible. Start RW activities in the PA&ED phase if possible.

Risk Rating (Lvl 1):

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	H
Support Cost:	$ 400,000		$ 800,000	H
Development Delay:	0 Days	121 Days	242 Days	H
Construction Delay:	0 Days	121 Days	242 Days	H

Assumptions / Current Status: Amending into the 2014 SHOPP requires RTL delivery within the 2014 SHOPP cycle. The last year of the cycle is 2017/2018 FY. RW Data Sheet requests 24 months from M225 (Regular RW/Maps Complete) to M410 (RW Cert). Current duration is 13 months.

Assessment Notes: Accept.
Development Schedule: Optimistic = 0 days if current duration of 13 months is met.
Development Schedule: Pessimistic = (24mo-13mo)*22 days/month = 242 days requested duration of 24 months is needed.

Construction schedule would slip the same if RW activities are delayed.

RBS: R/W Utility Conflicts

Risk Type & ID: Risk 004 Status: Active Date Retired: Updated: 9-29-2015 Owner: Karen Basra

Description: As a result of conflict with El Dorado Irrigation's underground water facilities, relocation may occur, which would lead to delay in schedule and increase in project expenses.

Response Options: Pothole identification of EID's facilities during Phase 0 and conflict identification during Phase 1 may allow sufficient time for EID to engineer a relocation plan prior to R/W Cert.

Risk Rating (Lvl 1): High

Event Probability: High (From 40% to 59%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	H
Support Cost:	$ 400,000		$ 800,000	H
Development Delay:	0 Days		0 Days	H
Construction Delay:	0 Days		0 Days	H

Assumptions / Current Status: EID has a JUA to traverse the freeway at one of the excavation locations. If EID is required to move, the State will bear the cost. In the R/W datasheet, I have included funds for potholing and relocation in my estimate of R/W Utility costs.

Assessment Notes: Avoid

RBS: R/W R/W Risks

Risk Type & ID: Risk 005 Status: Active Date Retired: Updated: 9-30-2015 Owner: Karen Basra

Description: Due to an accelerated lead time (project will be amended in the 2014 SHOPP), the functional units may not be able to acquire/relocate/coordinate their RW activities in time to deliver the RW Cert. The accelerated lead-time of 13 months is not sufficient for RW to follow the Condemnation process/guidelines (if necessary). Additionally, if Utilities are not cleared in time for M410, RW Cert cannot be completed until all utilities have been cleared. In the event of a scope change, an impact to the schedule and cost may occur, which may risk the delivery of RW Cert. In addition, if R/W does not receive the requested support and capital resources, delivery of R/W Cert may be at risk. Any delays in Environmental and Design deliverables can affect R/W's lead-time. Any delays in R/W Cert can influence cost, schedule, and scope.

Response Options: Research and constant communication with the PDT will help alleviate the risk. Will need to work with PM to coordinate schedule/costs and with Design on various options to reduce impacts.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 2,500,000		$ 5,000,000	H
Support Cost:	$ 800,000		$ 1,600,000	H
Development Delay:	0 Days		0 Days	H
Construction Delay:	0 Days		0 Days	L

Assumptions / Current Status: Project is still in the preliminary stages and has multiple alternatives listed. In the 0 Phase, we shall have more research and studies completed and a preferred alternative will be selected. More detailed information shall be provided in the 0 Phase and should eliminate some uncertainties.

Assessment Notes: Mitigate

RBS: R/W Banquet Hall Risk

Risk Type & ID: Risk 016 Status: Active Date Retired: Updated: 1-07-2015 Owner: Karen Basra

Description: RW take at the banquet hall building. The proposed alignment of Ponderado Rd avoids, but is close to the banquet hall building.

Response Options: Upon final design, adjust alignment as much as possible to avoid impacts to the banquet hall parcel.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M

Support Cost:	$ 400,000	$ 800,000	M
Development Delay:	0 Days	0 Days	M
Construction Delay:	0 Days	0 Days	M

Assumptions / Current Status:

Assessment Notes: Avoid

RBS: Traffic Ops Traffic - Channelization

Risk Type & ID: Risk 013 Status: Active Date Retired: Updated: 1-09-2015 Owner: Richard Montre

Description: Channelization of the Pondorado Rd/Carson Rd.

Response Options: intersection to accommodate Apple Hill traffic may require a longer structure along US50 to include a turn lane on Pondorado Rd, and a wider structure to accommodate the eastbound aux lane.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M
Support Cost:	$ 400,000		$ 800,000	M
Development Delay:	0 Days		0 Days	M
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status:

Assessment Notes: Mitigate

RBS: Traffic Ops Alternative

Risk Type & ID: Risk 014 Status: Active Date Retired: Updated: 1-09-2015 Owner: Richard Montre

Description: An alternative to a wider/longer structure is to push the intersection to the north

Response Options: This will have a larger footprint whose impacts will need to be addressed by Environmental and Right of Way.

Risk Rating (Lvl 1):

Event Probability: Moderate (From 20% to 39%)

Range:	Optimistic	Most Likely	Pessimistic	Risk Priority Zone
Capital Cost:	$ 1,250,000		$ 2,500,000	M
Support Cost:	$ 400,000		$ 800,000	M
Development Delay:	0 Days		0 Days	M
Construction Delay:	0 Days		0 Days	M

Assumptions / Current Status:

Assessment Notes: Mitigate

Prepared by Laura Lewis

ATTACHMENT N

PROGRAMMING SHEET

PROGRAMMING SHEET

EA: 03-4E620 (0314000039) County: ED Report Run Date: 12-1-15
PM: CLARK PERI Route: 50 Post Mile: 21.95/24.25
Nickname: Camino Safety Project
Program: SHOPP K-Phase Scope: Install medan barrier and construct undercrossing

Description Long	WBS ID	Finish	% Comp
ID NEED	M000	7/17/2013	100
APPROVE PID	M010	12/1/2015	0
PROG PROJ	M015	12/15/2015	0
BEGIN ENVIRO	M020	1/2/2016	0
BEGIN PROJ	M040	12/15/2015	0
CIRC DPR &DED EXT	M120	1/2/2017	0
PA & ED	M200	4/1/2017	0
BRIDGE SITE DATA RECVD	M221	4/1/2017	0
R/W REQTS	M224	5/1/2017	0
REGULAR RW	M225	8/1/2017	0
GENERAL PLANS	M275	7/1/2017	0
PS&E TO DOE	M377	6/1/2018	0
DRAFT STRUC PS&E	M378	5/1/2018	0
PROJ PS&E	M380	7/1/2018	0
R/W CERT	M410	10/1/2018	0
RTL	M460	10/1/2018	0
FUND ALLOCATION	M470	12/1/2018	0
HQ ADVERT	M480	1/2/2019	0
BIDS OPEN	M490	3/1/2019	0
AWARD	M495	5/1/2019	0
APPROVE CONTRACT	M500	6/1/2019	0
CONTRACT ACCEPT	M600	12/1/2021	0
FINAL REPORT	M700	12/1/2022	0
END PROJ	M800	12/1/2024	0

ESTIMATE	DATE	AMOUNT ($K)
ROADWAY	12/15/2014	$20,100
BRIDGE	12/15/2014	$11,000
Subtotal Const		$31,100
RIGHT OF WAY		$2,423
Subtotal RW		$2,423
GRAND TOTAL		$33,523

Existing Programming		
PA&ED		$0
PS&E		$0
RW - SUP		$0
RW - CAP		$0
CON - SUP		$0
CON - CAP		$0

Escalated Capital Cost Estimate ($K)	
Year	2019
CC Escalation Rate (%):	2.15
CC Escalated ($):	$33,818
ROW Capital:	$2,508
Total:	$36,326

PROJECT COSTS BY SB45 CATEGORY

CAPITAL COST ESTIMATE	Prior Yrs+	16/17	17/18	18/19	19/20	20/21	Future++	Total	
Right of Way							$2,550	$2,550	
Construction							$33,850	$33,850	
							Total:	**$36,400**	
SUPPORT COSTS									Sup/Cap
Escalation Rate		1.50%	1.50%	1.50%	1.50%	1.50%	1.50%		
PA&ED		$1,000	$1,000	$660	$0	$0	$0	$2,660	7.3%
PS&E		$1,200	$1,430	$1,000	$100	$0	$0	$3,730	10.2%
Right of Way		$0	$1,000	$280	$0	$0	$0	$1,280	3.5%
Construction		$0	$0	$50	$2,550	$2,600	$1,000	$6,200	17.0%
						Support Costs Total:		$13,870	38.1%
						Total Project Costs:		$50,270	

Notes: