



Project Scope Summary Report (Roadway Rehabilitation)

01-MEN-101 PM 9.2/R21.1
Program Code: 20.20.201.120
01-36291K
May 2009

to Request Programming in the 2010 SHOPP



U.S. Route 101 Looking South



U.S. Route 101 Looking North

**In Mendocino County near Ukiah on Route 101
from the Russian River Bridge #10-82 to 0.2 Miles
North of Robinson Creek Bridge #10-05**

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

Mark C. Richards

FOR Lindy K. Lee
District Division Chief – Right of Way

APPROVAL RECOMMENDED:

Steven D. Blair

Steven D. Blair
Project Manager

Royal McCarthy

Royal McCarthy
Program Advisor

APPROVED:

Charles C. Fielder

CHARLES C. FIELDER
District Director

May 21, 2009

Date

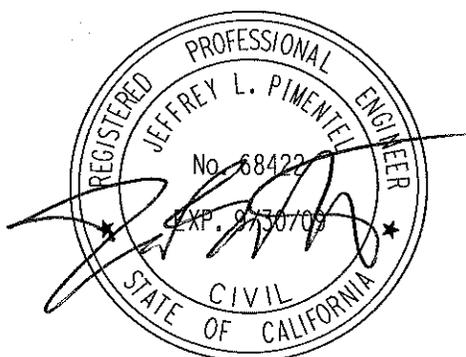
This Project Scope Summary Report has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.



JEFFREY L. PIMENTEL, P.E.
REGISTERED CIVIL ENGINEER

5/21/09

Date



1. INTRODUCTION AND BACKGROUND

Brief Project Description:

The project limits extend approximately twelve miles from the Russian River Bridge #10-0082 (PM 9.2) to 0.2 miles north of Robinson Creek (PM R21.1) on Route 101. The scope of work includes removal and replacement of deteriorated pavement structural section, crack sealing, asphalt concrete overlays, shoulder widening, metal beam guard rail and terminal section upgrades, shoulder and centerline rumble strips, culvert replacement, drainage improvements and structure widening.

Route 101 is a two-lane conventional highway from PM 9.2 to PM 17.57 and a four-lane freeway from PM 17.57 to PM R21.1. Shoulder widths within the project limits vary between 1 and 10 feet wide. Truck passing lanes exist between PM 13.4 to PM 14.1 and PM 14.7 to PM 15.6. The route passes through mostly flat terrain with segments of rolling terrain. The proposed improvements meet the criteria for 3R (Resurfacing, Restoration and Rehabilitation) projects as specified in Design Information Bulletin 79-03.

This project will be funded from the 201.120 program (3R Program) in the 2010 SHOPP cycle. The total cost including right of way is \$51,200,000 million (2013/2014 fiscal year). In order to provide fundable segments of the overall project, the project has been split into three segments.

For specific items of work included in each of the three segments of the project see the cost estimate, included as Attachment E.

Project Limits [Dist., Co., Rte., PM]	01-MEN-101, PM 9.2 - R21.1
Capital Costs:	\$46,700,000 (2013/2014 fiscal year)
Right of way Costs:	\$4,497,000 (2013/2014 fiscal year)
Funding Source:	SHOPP
Number of Alternatives:	2
Recommended Alternative (for programming and scheduling):	1
Type of Facility (conventional, expressway, freeway):	Conventional Highway/Freeway
Number of Structures:	3
Anticipated Environmental Determination/Document:	IS/ND – CEQA EA/FONSI – NEPA
Legal Description	In Mendocino County near Ukiah on Route 101 from the Russian River Bridge #10-82 to 0.2 Miles North of Robinson Creek Bridge #10-05

2. RECOMMENDATION

It is recommended that the cost associated with Alternative 1 (\$51.2 million – 2013/2014 fiscal year) be programmed into the 2010 SHOPP and proceed with the preparation of the environmental document. In the event the project is programmed in segments, segment 1 is recommended to be programmed first since it is in greater need of rehabilitation.

3. PURPOSE AND NEED STATEMENT

Need:

This segment of Route 101 exhibits deteriorated roadway pavement, narrow shoulder widths, drainage deficiencies, non-standard metal beam guard rail, and other roadway features that are in need of improvement as part of this RRR project.

Purpose:

The purpose of the project is to preserve and extend the design life of the existing highway for a minimum of ten years and enhance highway safety.

4. EXISTING FACILITY, DEFICIENCIES AND TRAFFIC DATA

4A. ROADWAY GEOMETRIC INFORMATION (CONVENTIONAL HIGHWAY, PM 9.2 – 17.57)

	Facility (1)	Minimum	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4)	Shoulder is a Bicycle Lane (5)	Other Bicycle Lane Width (6)	Bicycle Route (7)	Facilities Adjacent to the Roadbed (8)
	Location	Curve Radius	No. of Lanes	Lane Width	Type	Left (SB)	Right (NB)	Width	(Y/N)	Width	(Y/N)	(Code/Width)
Existing	9.2 – 9.24		2	12'	Flexible	4' – 8'	4' – 6'	None	Y	None	Y	None
Proposed	9.2 – 9.24		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min. 3R Stds.		2	12'	Flexible	8'	8'					
Existing	9.24 – 9.45		2	12'	Flexible	5'	5'	None	Y	None	Y	None
Proposed	9.24 – 9.45		2	12'	Flexible	5'	5'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	9.45 – 9.53		2	12'	Flexible	4' -8'	4' – 6'	None	Y	None	Y	None
Proposed	9.45 -9.53		2	12'	Flexible	8'	8'	None	Y	None	Y	None
			2	12'	Flexible	8'	8'					
Existing	9.53 – 9.86	3000'	2	12'	Flexible	1' – 2'	2' – 3'	None	Y	None	Y	None
Proposed	9.53 – 9.86	3000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	1000'	2	12'	Flexible	8'	8'					
Existing	9.86 – 10.19		2	12'	Flexible	1' – 2'	2' – 3'	None	Y	None	Y	None
Proposed	9.86 – 10.19		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	10.19 – 10.38	3000'	2	12'	Flexible	1' – 2'	2' – 3'	None	Y	None	Y	None
Proposed	10.19 – 10.38	3000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	1000'	2	12'	Flexible	8'	8'					
Existing	10.38 – 10.75		2	12'	Flexible	1' – 8'	2' – 8'	None	Y	None	Y	None
Proposed	10.38 – 10.75		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					

	Facility	Minimum	Through Traffic Lanes			Paved Shoulder Width		Median	Shoulder is a	Other Bicycle	Bicycle	Facilities Adjacent
	(1)		(2)			(3)			(4)			
	Location	Curve Radius	No. of Lanes	Lane Width	Type	Left (SB)	Right (NB)	Width	(Y/N)	Width	(Y/N)	(Code/Width)
Existing	10.75 – 10.88	2800'	2	12'	Flexible	8'	8'	None	Y	None	Y	P/4'
Proposed	10.75 – 10.88	2800'	2	12'	Flexible	8'	8'	None	Y	None	Y	N/A
	Min 3R Stds.	425'	2	12'	Flexible	8'	8'					
Existing	10.88 – 10.95		2	12'	Flexible	8'	8'	None	Y	None	Y	P/4'
Proposed	10.88 – 10.95		2	12'	Flexible	8'	8'	None	Y	None	Y	N/A
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	10.95 – 11.04	1200'	2	12'	Flexible	8'	8'	None	Y	None	Y	P/4'
Proposed	10.95 – 11.04	1200'	2	12'	Flexible	8'	8'	None	Y	None	Y	N/A
	Min 3R Stds.	425'	2	12'	Flexible	8'	8'	None	Y			
Existing	11.04 – 11.23		2	12'	Flexible	8'	8'	None	Y	None	Y	P/4'
Proposed	11.04 – 11.23		2	12'	Flexible	8'	8'	None	Y	None	Y	N/A
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	11.23 – 11.40	1150'	2	12'	Flexible	1'	1'	None	Y	None	Y	None
Proposed	11.23 – 11.40	1000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	700'	2	12'	Flexible	8'	8'					
Existing	11.40 – 11.49		2	12'	Flexible	1'	1' – 2'	None	Y	None	Y	None
Proposed	11.40 – 11.49		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	11.49 – 11.61	1800'	2	12'	Flexible	1'	1' – 2'	None	Y	None	Y	None
Proposed	11.49 – 11.61	2000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	700'	2	12'	Flexible	8'	8'					
Existing	11.61 – 12.05		2	12'	Flexible	1' – 2'	1' – 3'	None	Y	None	Y	None
Proposed	11.61 – 12.05		2	12'	Flexible	8' (10'*)	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	12.05 – 12.24	16000'	2	12'	Flexible	1' – 2'	1' – 3'	None	Y	None	Y	None
Proposed	12.05 – 12.24	16000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	1000'	2	12'	Flexible	8'	8'					

* PM 11.64 - 11.68 – 10' shoulder adjacent to proposed retaining wall

	Facility	Minimum	Through Traffic Lanes			Paved Shoulder Width		Median	Shoulder is a	Other Bicycle	Bicycle	Facilities Adjacent
	(1)		(2)			(3)			(4)			
	Location	Curve Radius	No. of Lanes	Lane Width	Type	Left (SB)	Right (NB)	Width	(Y/N)	Width	(Y/N)	(Code/Width)
Existing	12.24 – 12.37		2	12'	Flexible	1' – 2'	1' – 3'	None	Y	None	Y	None
Proposed	12.24 – 12.37		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	12.37 – 12.57	3000'	2	12'	Flexible	1' – 2'	1' – 3'	None	Y	None	Y	None
Proposed	12.37 – 12.57	3000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	1000'	2	12'	Flexible	8'	8'					
Existing	12.57 – 12.65		2	12'	Flexible	1' – 2'	1' – 3'	None	Y	None	Y	None
Proposed	12.57 – 12.65		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	12.65 – 13.16	3600'	2	12'	Flexible	1' – 3'	1' – 6'	None	Y	None	Y	None
Proposed	12.65 – 13.16	3000'	2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.	1000'	2	12'	Flexible	8'	8'					
Existing	13.16 – 13.38		2	12'	Flexible	3'	2' – 6'	None	Y	None	Y	None
Proposed	13.16 – 13.38		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	13.38 – 13.65		4	12'	Flexible	3' – 4'	1' – 4'	None	Y	None	Y	None
Proposed	13.38 – 13.65		4	12'	Flexible	4'*	4'*	None	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	4'*	4'*					
Existing	13.65 – 13.81	12000'	4	12'	Flexible	1' - 4'	1' – 4'	None	Y	None	Y	None
Proposed	13.65 – 13.81	12000'	4	12'	Flexible	4'*	4'*	None	Y	None	Y	None
	Min 3R Stds.	1000'	4	12'	Flexible	4'*	4'*					
Existing	13.81 – 14.03		4	12'	Flexible	4'	4'	None	Y	None	Y	None
Proposed	13.81 – 14.03		4	12'	Flexible	4'*	4'*	None	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	4'*	4'*					
Existing	14.03 – 14.69		2	12'	Flexible	8'	2' – 3'	None	Y	None	Y	None
Proposed	14.03 – 14.69		2	12'	Flexible	8'	8' (4'*)	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8' (4'*)					

* 4' shoulders on right side of passing lane

	Facility (1)	Minimum Curve Radius	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4) Width	Shoulder is a Bicycle Lane (5)	Other Bicycle Lane Width (6)	Bicycle Route (7)	Facilities Adjacent to the Roadbed (8)
	Location		No. of Lanes	Lane Width	Type	Left (SB)	Right (NB)		(Y/N)	Width	(Y/N)	(Code/Width)
Existing	14.69 – 15.10		4	12'	Flexible	4' – 8'	1' – 4'	None	Y	None	Y	None
Proposed	14.69 – 15.10		4	12'	Flexible	8' (4'*)	4'*	None	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	8' (4'*)	4'*					
Existing	15.10 – 15.25	8000'	4	12'	Flexible	1'	1'	None	Y	None	Y	None
Proposed	15.10 – 15.25	8000'	4	12'	Flexible	4'*	4'*	None	Y	None	Y	None
	Min 3R Stds.	1000'	4	12'	Flexible	4'*	4'*					
Existing	15.25 – 15.64		4	12'	Flexible	1' – 4'	1' – 8'	None	Y	None	Y	None
Proposed	15.25 – 15.64		4	12'	Flexible	4'*	8' (4'*)	None	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	4'*	8' (4'*)					
Existing	15.64 – 15.75		2	12'	Flexible	5' – 8'	8'	None	Y	None	Y	None
Proposed	15.64 – 15.75		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					
Existing	15.75 – 17.57		2	12'	Flexible	8'	8'	None	Y	None	Y	None
Proposed	15.75 – 17.57		2	12'	Flexible	8'	8'	None	Y	None	Y	None
	Min 3R Stds.		2	12'	Flexible	8'	8'					

Column "Other Bicycle Lane Width": Width of a bicycle lane that is outside the shoulder and is part of the traveled way.

Code for Column "Facilities Adjacent to the Roadbed":

P: Pedestrian Walkway

* 4' shoulders on right side of passing lane

4B. ROADWAY GEOMETRIC INFORMATION (FREEWAY, PM 17.57 – R21.1)

	Facility (1)	Minimum Curve Radius	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4) Width	Shoulder is a Bicycle Lane (5) (Y/N)	Other Bicycle Lane Width (6) Width	Bicycle Route (7) (Y/N)	Facilities Adjacent to the Roadbed (8) (Code/Width)
	Location		No. of Lanes	Lane Width	Type	Inside (NB/SB)	Outside (NB/SB)					
Existing	17.57 – 17.79		4	12'	Flexible	1' – 3'	8'	46'	Y	None	Y	None
Proposed	17.57 – 17.79		4	12'	Flexible	5'	10'	42'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				
Existing	17.79 – 18.0	5000'	4	12'	Flexible	1' – 3'	8'	46'	Y	None	Y	None
Proposed	17.79 – 18.0	5000'	4	12'	Flexible	5'	10'	42'	Y	None	Y	None
	Min 3R Stds.	1625'	4	12'	Flexible	5'	10'	22'				
Existing	18.0 – 18.22		4	12'	Flexible	1' – 3'	8'	46'	Y	None	Y	None
Proposed	18.0 – 18.22		4	12'	Flexible	5'	10'	42'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				
Existing	18.22 – 18.37	2500'	4	12'	Flexible	1' – 3'	6' – 8'	46'	Y	None	Y	None
Proposed	18.22 – 18.37	2500'	4	12'	Flexible	5'	10'	42'	Y	None	Y	None
	Min 3R Stds.	1625'	4	12'	Flexible	5'	10'	22'				
Existing	18.37 – 18.45		4	12'	Flexible	1' – 3'	8' – 10'	46'	Y	None	Y	None
Proposed	18.37 – 18.45		4	12'	Flexible	5'	10'	42' – 44'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				
Existing	18.45 – 18.63	2500'	4	12'	Flexible	1' – 3'	8' – 10'	46'	Y	None	Y	None
Proposed	18.45 – 18.63	2500'	4	12'	Flexible	5'	10'	42' – 44'	Y	None	Y	None
	Min 3R Stds.	1625'	4	12'	Flexible	5'	10'	22'				
Existing	18.63 – 19.12		4	12'	Flexible	1' – 3'	8' – 10'	46'	Y	None	Y	None
Proposed	18.63 – 19.12		4	12'	Flexible	5'	10'	42' – 44'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				
Existing	19.12 – 19.35		4	12'	Flexible	1' – 3'	8' – 10'	46'	Y	None	Y	None
Proposed	19.12 – 19.35		4	12'	Flexible	5'	10'	44' – 46'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				

	Facility (1)	Minimum Curve Radius	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4)	Shoulder is a Bicycle Lane (5)	Other Bicycle Lane Width (6)	Bicycle Route (7)	Facilities Adjacent to the Roadbed (8)
	Location		No. of Lanes	Lane Width	Type	Inside (NB/SB)	Outside (NB/SB)	Width	(Y/N)	Width	(Y/N)	(Code/Width)
Existing	19.35 – 20.72		4	12'	Flexible	1' – 5'	8' – 10'	46'	Y	None	Y	None
Proposed	19.35 – 20.72		4	12'	Flexible	5'	10'	44' – 46'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				
Existing	20.72 – 20.88	10000'	4	12'	Flexible	1' – 5'	8' – 10'	46'	Y	None	Y	None
Proposed	20.72 – 20.88	10000'	4	12'	Flexible	5'	10'	44'	Y	None	Y	None
	Min 3R Stds.	1625'	4	12'	Flexible	5'	10'	22'				
Existing	20.88 – 21.1		4	12'	Flexible	1' – 5'	10'	46'	Y	None	Y	None
Proposed	20.88 – 21.1		4	12'	Flexible	5'	10'	46'	Y	None	Y	None
	Min 3R Stds.		4	12'	Flexible	5'	10'	22'				

Column "Other Bicycle Lane Width": Width of a bicycle lane that is outside the shoulder and is part of the traveled way.

Code for Column "Facilities Adjacent to the Roadbed":

P: Pedestrian Walkway

Remarks:

A safety analysis was performed by District 1 Traffic Safety for the subject project and found all horizontal and vertical curves within the project limits to meet current design standards.

4C. CONDITION OF EXISTING FACILITY

(1) Traveled Way Data (Collection Date: 09/24/07)

PM		Lane	Alligator Cracking			Slab Cracking			Faulting	Patching	Rutting	Bleeding	PMS	IRI	Ride
From	To		A%	B%	C (Y/N)	1st %	3rd %	Corner %	(Y/N)	Area %	(Y/N)	(Y/N)	Cat.	Score	Score
9.2	9.24	L1	13	19	N	0	0	0	N	0	N	N	9	N/A	N/A
9.2	9.24	R1	0	0	N	0	0	0	N	0	N	N	98	N/A	N/A
9.24	9.45	RUSSIAN RIVER BRIDGE (#10-0082)													
9.45	9.46	L1	13	19	N	0	0	0	N	0	N	N	9	N/A	N/A
9.45	9.46	R1	0	0	N	0	0	0	N	0	N	N	98	N/A	N/A
9.46	9.53	L1	13	19	N	0	0	0	N	0	N	N	3	349	72
9.46	9.53	R1	0	0	N	0	0	0	N	0	N	N	98	N/A	N/A
9.53	9.59	HOPLAND OVERHEAD (#10-0081)													
9.59	9.71	L1	13	19	N	0	0	0	N	0	N	N	9	176	28
9.59	9.71	R1	0	0	N	0	0	0	N	0	N	N	98	176	28
9.71	10.16	L1	13	19	N	0	0	0	N	0	N	N	9	157	23
9.71	10.16	L2	0	0	N	0	0	0	N	0	N	N	98	106	10
9.71	10.16	R1	0	0	N	0	0	0	N	0	N	N	98	198	33
10.16	10.46	L1	13	19	N	0	0	0	N	0	N	N	9	186	30
10.16	10.46	L2	0	0	N	0	0	0	N	0	N	N	98	113	12
10.16	10.46	R1	0	0	N	0	0	0	N	0	N	N	33	190	31
10.46	10.47	ROSETTI CREEK BRIDGE (#10-0087)													
10.47	10.68	L1	13	19	N	0	0	0	N	0	N	N	3	224	40
10.47	10.68	R1	0	0	N	0	0	0	N	0	N	N	33	202	34
10.68	10.74	FELIZ CREEK BRIDGE (#10-0003)													
10.74	10.89	L1	13	19	N	0	0	0	N	0	N	N	3	273	52
10.74	10.89	R1	0	0	N	0	0	0	N	0	N	N	33	222	39
10.89	11.46	L1	0	0	N	0	0	0	N	0	N	N	33	192	32
10.89	11.46	R1	0	0	N	0	0	0	N	0	N	N	33	167	25
11.46	11.66	L1	0	47	N	0	0	0	N	0	N	N	7	201	34
11.46	11.66	R1	0	0	N	0	0	0	N	0	N	N	33	208	36
11.66	12.76	L1	0	47	N	0	0	0	N	0	N	N	7	173	27
11.66	12.76	R1	47	0	N	0	0	0	N	0	N	N	32	212	37

PM		Lane	Alligator Cracking			Slab Cracking			Faulting	Patching	Rutting	Bleeding	PMS	IRI	Ride
From	To		A%	B%	C (Y/N)	1st %	3rd %	Corner %	(Y/N)	Area %	(Y/N)	(Y/N)	Cat.	Score	Score
12.76	12.96	L1	0	0	N	0	0	0	N	0	N	N	98	165	25
12.76	12.96	R1	47	0	N	0	0	0	N	0	N	N	5	251	47
12.96	14.36	L1	0	0	N	0	0	0	N	0	N	N	98	123	14
12.96	14.36	R1	0	16	N	0	0	0	N	30	N	N	7	167	25
12.96	14.36	R2	0	0	N	0	0	0	N	0	N	N	98	102	9
14.36	14.62	L1	47	0	N	0	0	0	N	0	N	N	32	119	13
14.36	14.62	R1	0	0	N	0	0	0	N	0	N	N	98	161	24
14.62	14.63	CRAWFORD CREEK BRIDGE (#10-0168)													
14.63	15.76	L1	47	0	N	0	0	0	N	0	N	N	32	147	20
14.63	15.76	L2	0	0	N	0	0	0	N	0	N	N	98	114	12
14.63	15.76	R1	0	0	N	0	0	0	N	0	N	N	98	169	26
14.63	15.76	R2	0	0	N	0	0	0	N	0	N	N	98	152	22
15.76	15.86	L1	0	0	N	0	0	0	N	95	N	N	98	178	28
15.76	15.86	R1	0	0	N	0	0	0	N	0	N	N	5	259	49
15.86	15.94	L1	0	0	N	0	0	0	N	95	N	N	98	178	28
15.86	15.94	R1	0	42	N	0	0	0	N	30	N	N	1	299	59
15.94	15.95	MCNAB CREEK BRIDGE (#10-0004)													
15.95	17.01	L1	0	0	N	0	0	0	N	95	N	N	98	205	35
15.95	17.01	L2	0	0	N	0	0	0	N	0	N	N	98	122	14
15.95	17.01	R1	0	42	N	0	0	0	N	30	N	N	1	226	40
17.01	17.46	L1	0	13	N	0	0	0	N	0	N	N	9	213	37
17.01	17.46	L2	0	0	N	0	0	0	N	0	N	N	98	132	17
17.01	17.46	R1	0	28	N	0	0	0	N	0	N	N	3	267	51
17.01	17.46	R2	0	0	N	0	0	0	N	0	N	N	98	178	28
17.46	18.52	L1	0	13	N	0	0	0	N	0	N	N	9	155	22
17.46	18.52	L2	0	0	N	0	0	0	N	0	N	N	98	104	9
17.46	18.52	R1	0	0	N	0	0	0	N	0	N	N	33	165	25
17.46	18.52	R2	0	25	N	0	0	0	N	0	N	N	9	134	17
18.52	18.86	L1	0	0	N	0	0	0	N	0	N	N	33	173	27
18.52	18.86	L2	0	47	N	0	0	0	N	0	N	N	7	N/A	N/A
18.52	18.86	R1	0	0	N	0	0	0	N	0	N	N	5	235	43
18.52	18.86	R2	0	25	N	0	0	0	N	0	N	N	9	134	17
18.86	19.56	L1	0	0	N	0	0	0	N	0	N	N	33	149	21

PM		Lane	Alligator Cracking			Slab Cracking			Faulting	Patching	Rutting	Bleeding	PMS	IRI	Ride
From	To		A%	B%	C (Y/N)	1st %	3rd %	Corner %	(Y/N)	Area %	(Y/N)	(Y/N)	Cat.	Score	Score
18.86	19.56	L2	0	47	N	0	0	0	N	0	N	N	7	N/A	N/A
18.86	19.56	R1	4	0	N	0	0	0	N	0	N	N	5	240	44
18.86	19.56	R2	0	0	N	0	0	0	N	0	N	N	33	119	13
19.56	20.36	L1	0	0	N	0	0	0	N	0	N	N	32	132	17
19.56	20.36	L2	0	0	N	0	0	0	N	0	N	N	32	88	5
19.56	20.36	R1	4	0	N	0	0	0	N	0	N	N	32	154	22
19.56	20.36	R2	0	0	N	0	0	0	N	0	N	N	33	95	7
20.36	20.91	L1	0	0	N	0	0	0	N	0	N	N	32	156	23
20.36	20.91	L2	0	0	N	0	0	0	N	0	N	N	32	96	7
20.36	20.91	R1	0	0	N	0	0	0	N	0	N	N	98	168	26
20.36	20.91	R2	7	0	N	0	0	0	N	0	N	N	32	120	14
20.91	20.94	ROBINSON CREEK BRIDGE (#10-0005L / #10-0005R)													
20.94	21.04	L1	0	0	N	0	0	0	N	0	N	N	32	124	15
20.94	21.04	L2	0	0	N	0	0	0	N	0	N	N	32	80	5
20.94	21.04	R1	0	0	N	0	0	0	N	0	N	N	98	171	26
20.94	21.04	R2	7	0	N	0	0	0	N	0	N	N	32	160	24
21.04	21.10	L1	0	0	N	0	0	0	N	0	N	N	32	201	34
21.04	21.10	L2	0	0	N	0	0	0	N	0	N	N	32	146	20
21.04	21.10	R1	0	0	N	8	0	0	Y	0	N	N	9	174	25
21.04	21.10	R2	0	0	N	38	19	29	Y	0	N	N	7	167	22

Locations(s) of subsurface or ponded surface-water problem:

District 1 Materials Laboratory reported twelve locations that are exhibiting pumping through the structural section (Attachment J). The proposed pipe underdrains are expected to lower the water table beneath the structural section to alleviate the pumping and migration of fines to the surface.

Deflection Study Results:

A deflection study was performed on May 8, 2007 between PM 8.8 and PM 17.6 under project 01-2921U and serves as the basis for the overlay recommendation for the subject project.

(2) Shoulder Data

Condition:

The existing shoulder pavement exhibits areas of deterioration.

Deficiencies:

In many locations existing shoulder widths do not meet the design standards as specified in Section 302.1, Highway Design Manual (HDM) for the freeway segment and Section 307.3 for two lane cross sections on RRR projects. This project proposes to widen shoulders in accordance with current design standards. The following location does not meet the current standard for shoulder widths and a mandatory design exception has been approved:

- Russian River Bridge (#10-0082) at PM 9.24

(3) Pedestrian Facility Data

Facility Type and Location(s)	Meets ADA Standards?	If Facility does not meet ADA Standards, what feature(s) are not ADA compliant?	Status of Each Noncompliant Location
<p>Sidewalks: PM 10.82 – 11.18</p>	No	Continuity, width, slope	This work is outside the scope of this project. This facility and its location have been documented in the Project History File and this information was submitted to the District ADA Coordinator on December 15 th , 2008 for inclusion in the Department's Transition Plan.
<p>Curb Ramps: PM 10.82 – 11.18</p>	No	Slope, detectable warning surfaces	Will be corrected as part of the subject project
<p>Crosswalks: PM 10.82 -11.18</p>	No	Signs within crosswalk at intersection of Route 101/175	Will be corrected as part of the subject project
<p>Driveways: PM 10.82 – 11.18</p>	No	Slope, width	This work is outside the scope of this project. This facility and its location have been documented in the Project History File and this information was submitted to the District ADA Coordinator on December 15 th , 2008 for inclusion in the Department's Transition Plan.

4D. STRUCTURES INFORMATION

Structures Name (No./PM)	Width Between Curbs			Replace Bridge Railings (Y or N)	Vertical Clearance			Work Identified in STRAIN (Y or N)	Replace Bridge Approach Rail (Y or N)	Replace Bridge Approach Slab	
	Exist	3R Std	Prop		Exist	3R Std	Prop			(Y/N)	#
Russian River Bridge (10-0082/PM 9.24)	34'	40'	N/A	N	N/A	N/A	N/A	N	N	N	N/A
Hopland OH (10-0081/PM 9.53)	32'	40'	40'	Y	N/A	N/A	N/A	N	Y	N	N/A
Rosetti Creek Bridge (10-0087/PM 10.46)	38'	40'	40'	Y	N/A	N/A	N/A	Y	Y	N	N/A
Feliz Creek Bridge (10-0003/PM 10.68)	52'	52'	N/A	N	N/A	N/A	N/A	N	N	N	N/A
Crawford Creek Bridge (10-0168/PM 14.62)	40'	40'	N/A	N	N/A	N/A	N/A	N	N	N	N/A
McNab Creek Bridge (10-0004/PM 15.94)	40'	40'	N/A	N	N/A	N/A	N/A	N	N	N	N/A
Robinson Creek Bridge (10-0005R/PM 20.71)	37'	39'	39'	Y	N/A	N/A	N/A	N	Y	N	N/A

Remarks:

1. The Russian River Bridge (#10-0082) is a steel through-truss span structure with multiple beam approaches and a reinforced concrete deck. Structures Design stated the existing structure would need to be replaced in order to achieve standard shoulder widths. It is out of scope of the subject project to replace the structure and an approved Mandatory Design Exception can be found in the project files.
2. Structures that will not receive new bridge rails will need to have the existing asphalt concrete cold planed in order to maintain adequate rail height over the final roadway surface once the proposed asphalt concrete overlay is placed.

4E. VEHICLE TRAFFIC DATA

The current and forecasted traffic data is listed in the table below:

Base Year ADT (2007)	15,500
Construction Year ADT (2014)	19,200
10-Year ADT	24,500
20-Year ADT	29,700
DHV	1670
D	60%
Trucks	8%
T.I. (10-Year)	10.5
T.I. (20-Year)	11.5
ESAL (10-Year)	4,308,800
ESAL (20-Year)	8,617,600

Safety Field-Review: 5/27/08 & 5/28/08

Collision Data:

Collision Data Summary (10/1/02 to 9/30/07)							
Location	Total	Fatal	Injury	PDO	MV	Wet	Dark
PM 9.17 – 17.57 (2-lane conventional hwy)	144	4	58	82	89	30	44
PM 17.57 – R21.1 (4-lane freeway)	59	2	26	31	17	11	27

PDO = Property Damage Only

MV = Multiple Vehicle Accident

The most common Primary Collision Factor (PCF) within the two-lane conventional highway segment is “Speeding,” which accounts for 41 of the 144 total collisions. The most common type of collision within the two-lane conventional highway segment is “Hit Object” at twenty-eight percent while “Rear End” type collisions account for twenty-six percent. In addition, thirty-one percent of the collisions occurred under dark conditions.

The most common PCF within the four-lane freeway segment is “Improper Turn”, which accounts for 21 of the 59 total collisions. The most common type of collision within the four-lane freeway segment is “Hit Object” as reported by sixty-three percent and of those, twenty-eight percent reported the object struck was another vehicle. In addition, forty-six percent of the collisions occurred under dark conditions.

Collision Rates* (10/1/02 to 9/30/07)						
Location	Actual			State Average		
	Fatal	F+I	Total	Fatal	F+I	Total
PM 9.17 – 17.57 (2-lane conventional hwy)	0.018	0.28	0.64	0.039	0.58	1.17
PM 17.57 – R21.1 (4-lane freeway)	0.021	0.30	0.62	0.017	0.22	0.47

* Rates are per million vehicles

Collision rates for the segment from PM 9.17 to PM 17.57 are less than the corresponding statewide average. Collision rates for the segment from PM 17.57 to PM R21.1 are higher than the corresponding statewide average for all categories. The total collision rate for the four-lane freeway segment is 1.32 times the statewide average.

Collision concentration locations:

PM 11.02 -11.09:

The first location identified is between PM 11.02 and PM 11.09 (between Center Street and First Street) in Hopland. Twelve of the seventeen collisions reported in this segment were in the southbound direction. Thirteen of the seventeen collisions had a PCF of “Speeding,” twelve of seventeen were rear end type collisions, fifteen of seventeen occurred during daylight conditions and twelve of fifteen were on a dry roadway surface. Currently there is

adequate signing for the 35 mph zone, however, signing for the pedestrian crossing needs to be updated to the current standard as specified in the CA MUTCD. The project proposes to update the pedestrian crossing signage to meet the requirements of the CA MUTCD.

PM 15.05 – 15.10:

The second location identified is between PM 15.05 and PM 15.10. In the northbound direction the shoulder width is approximately 0.5' and is adjacent to a steep cut slope. Three collisions occurred at this location during the most recent 5 year period, all of which hit the cut slope. The project proposes to construct the standard shoulder width of 4 feet through this section of the route.

PM 17.94:

The last location identified is at PM 17.94, where three reported collisions involved a culvert in the median. The culvert is within the clear recovery zone (CRZ). The existing inlet structure of the culvert extends above the existing ground and is covered with a wooden drainage inlet cover. The project proposes to lower the drainage structure and replace the wooden cover with a steel cover.

Lane reductions:

Traffic Safety has also identified collision concentrations at locations where lanes reduce from 2 lanes to 1 lane of traffic. District 1 Traffic Safety recommends all lane reduction signs and markings be updated to meet the current CA MUTCD standards. The project proposes to follow Traffic Safety's recommendation at these locations.

Other locations reviewed:

A private driveway located at PM 15.32 on the west side of Route 101 was discussed in the safety analysis prepared by District 1 Traffic Safety as a location of concern. The concern at this location involves northbound Route 101 vehicles having adequate vertical sight distance of a vehicle turning north onto Route 101 from the private driveway. Based upon the safety analysis the curve geometry meets the design standards found in the Highway Design Manual. The most recent 5 year collision history does not report any collisions involving vehicles entering or exiting the private driveway. The existing shoulder just south of the private driveway will be widened from 1 foot to 4 feet. In order to widen the shoulder south of the driveway, the existing cut slope will be excavated to a width and length of approximately 3 feet and 25 feet, respectively. The excavation just south of the driveway will enhance the sight distance at this location.

The safety analysis identified an existing headwall within the CRZ at PM 19.43. The headwall is approximately 15 feet from the edge of traveled way. The headwall faces northbound traffic and presents itself as a fixed object. A concrete lined ditch leads into the culvert and headwall, which then drains into a drainage structure located approximately 15 feet north of the headwall structure. The project proposes to replace the existing headwall with a drainage inlet structure that will accept drainage from the existing concrete lined ditch. The drainage pipe and drainage structure to the north of the headwall will need to be replaced and lowered as a result of this modification. As a result of this improvement the headwall will be eliminated as a fixed object and a drainage inlet structure would remain, which would be flush with the existing ground.

The project proposes to remove all trees within the CRZ. In addition to tree removal an existing light pole located at approximately PM 11.18 on the east side of the route will be relocated to the east to meet the CRZ design requirement.

At the direction of Traffic Safety metal beam guard rail is proposed between PM 11.63 and PM 11.73 in the northbound direction at the edge of pavement due to an existing side slope that leads to a drainage channel. This location is opposite Hewlitt & Sturtevant Road.

4F. MATERIALS

The existing pavement exhibits areas of nearly continuous transverse and longitudinal cracking, intermittent to continuous alligator cracking and occasional rutting and pumping. The District 1 Materials Lab has provided a preliminary materials recommendation, which is included as Attachment J.

A rubberized bonded wearing course was placed in 2008 under EA 01-478904 from PM 11.7 to PM R21.1. Materials has recommended to cold plane the existing bonded wearing course and existing open graded asphalt concrete prior to the needed repairs and additional asphalt concrete placement for the project.

Materials provided four rehabilitation strategies for the subject project. A Life Cycle Cost Analysis was completed to evaluate the economic impact of the various strategies. See Section 6A (Rehabilitation Strategy) for details of the selected rehabilitation strategy.

5. CORRIDOR AND SYSTEM COORDINATION

Route 101 traverses the entire length of District 1 from the Mendocino/Sonoma County line to the Oregon border. Route 101 is the primary north-south transportation corridor. Route 101 is of interregional and interstate significance, and is designated as a High Emphasis Focus Route in the State Interregional Transportation Strategic Plan (ITSP) with relatively high traffic volumes and heavy use by both truck and tourist traffic. The route is used for the transportation of intercity/interstate commerce to Gateways, and is the lifeline of the north coast connecting rural areas to and through urban centers. The level of service (LOS) concept is C for four-lane segments in rural areas, and D for urban areas and two-lane segments in rural areas. The Concept for Route 101 is a four-lane freeway/expressway within the project limits.

A Reconstruct Metal Beam Guard Railing Project (01-46430K) and Hopland Four Lane Freeway/Expressway Project (EA 2921U) are planned for this region. Project 01-46430K is scheduled to precede construction of the Hopland Rehab Project (01-36291K). 01-36291K will raise the guardrail installed under 01-46430K since the guardrail will not meet the design standard for height once the asphalt concrete overlay is placed.

As the Hopland Rehab Project proceeds through the project development process, coordination of the project scope and schedule will need to occur on a continual basis with Hopland Four Lane Freeway/Expressway Project (EA 2921U).

6. ALTERNATIVES

6A. REHABILITATION STRATEGY:

The recommended rehabilitation strategy for Alternative 1 is the 20 year design life – strategy 1 as outlined in the materials recommendation (Attachment J). The four rehabilitation strategies provided by District 1 Materials were compared utilizing Life Cycle Cost Analysis and the selected strategy had the lowest Equivalent Uniform Annual Cost (EUAC). The results of the Life Cycle Cost Analysis are included as Attachment L.

The recommended rehabilitation strategy consists of cold planning any existing bonded wearing course material and open graded asphalt concrete in the areas that have been identified in the materials recommendation (Attachment J). Following the cold planning, dig out and repair areas with rutting greater than 0.05 feet or loose spalling pavement to a depth of 0.35 feet (mill & fill with Hot Mix Asphalt – Type A) and seal all cracks wider than 0.25 inches by route and seal method. Then place 0.15 feet of Hot Mix Asphalt – Type A (HMA-A), followed by 0.20 feet of Rubberized Hot Mix Asphalt – Type G (RHMA-G) and 0.13 feet of Rubberized Hot Mix Asphalt Bonded Wearing Course, Open Graded.

Between PM 10.50 and 11.61 dense graded material (HMA-A) will be placed in lieu of open graded material due to the slow turning movements through this segment of Route 101.

A new structural section for mainline and shoulders is also provided in the materials recommendation. For shoulder widening and/or mainline realignment a structural section of 0.10 feet Bonded Wearing Course, 0.60 feet HMA-A and 2.10 feet Aggregate Base – Class 2 has been selected.

The project proposes to widen the existing shoulders to meet current design standards with the exception of the Russian River Bridge at the south end of the project. A mandatory design exception has been approved for the existing 5 foot shoulders on the Russian River Bridge, which will remain post project. Due to the existing structure type, in order to widen the existing shoulders to the current standard of 8 feet the structure would need to be replaced. Replacement of the structure is not economically feasible and is not proposed with the subject project.

In order to avoid impacting the existing cut and fill slopes between PM 17.57 and PM R21.1 all shoulder widening within the freeway section of the route will occur within the existing median. Once the overlay is placed in the freeway section, the lanes will be shifted with new striping to provide a standard 5 foot inside shoulder and 10 foot outside shoulder. The locations of proposed shoulder widening are included as Attachment O.

A retaining wall is proposed between PM 11.64 and PM 11.68 on the west side of the route in order to provide standard shoulder width. The existing shoulder width in the southbound direction of travel through the above mentioned section is 1 foot. The project proposes to construct 10 foot shoulders in this location per the Highway Design Manual requirement for shoulder widths adjacent to retaining walls. The wall height ranges between 8 feet and 18 feet and is approximately 250 feet in length. The office of Geotechnical Design recommended constructing a retaining wall due to the unstable cut slope at this location.

The Hopland Overhead (#10-0081), Rosetti Creek Bridge (#10-0087) and Robinson Creek Bridge (#10-0005R) will be widened to provide standard shoulder widths and upgrade the existing barrier rails. The Structures Advance Planning Study has been included as Attachment D.

The project proposes to realign two sections of Route 101 within the project limits. The first location of realignment is proposed between PM 11.23 and PM 11.61. A large cut slope exists between PM 11.23 and PM 11.39. In order to avoid impacts to the existing slope the project proposes to shift centerline to the east within the existing pullout section by approximately 12 feet and modify the curve radius from 1150 feet to 1000 feet. The modified radius will meet the design speed through this section of roadway. Between PM 11.39 and PM 11.49 an existing railroad line runs parallel to Route 101. The existing fill slope in the northbound direction of travel is approximately 2:1 with an existing shoulder width between 1 and 2 feet. In order to construct a standard shoulder width of 8 feet and provide a standard fill slope of 4:1 without impacting railroad right of way, centerline will be shifted west approximately 10.5 feet. As a result of shifting mainline through this segment, the existing curve radius between PM 11.49 and PM 11.61 will be modified from 1800 feet to 2000 feet, which meets the design speed of this segment of roadway.

The second location of realignment is proposed between PM 12.8 and PM 12.97. Realignment at this location is intended to avoid impacts to a large cut slope between PM 12.89 and PM 12.94 in the southbound direction of travel. A large pull out area exists on the opposite side of the large cut slope which will be utilized to shift mainline. As a result of shifting mainline through this segment the existing curve radius will be modified from 3600 feet to 3000 feet, which meets the design speed of this segment of roadway.

The left turn lanes at the intersection of Route 101/Henry Station Road will be lengthened to meet current design standards. Two to three feet of widening will be required to provide left turn lanes and tapers that meet current design standards at this location.

Rumble strips will be installed at both centerline and outside the edge of traveled way based upon a recommendation by District 1 Traffic Safety. In addition to rumble strips the project proposes to update existing metal beam guard rail terminal sections and reconstruct existing metal beam guard rail to meet height requirements.

Sidewalks and driveways do not meet ADA standards and are not included in the scope. Locations of sidewalk and driveways needing improvement have been identified and sent

to the District 1 ADA coordinator in a memorandum dated December 15, 2008. The memorandum recommends the identified ADA deficiencies be added to the State's ADA Transition Plan. The project proposes to replace all curb ramps not meeting ADA standards within the town of Hopland. The project does not propose improvements to the southwest corner of Walker Street and the northeast corner of 1st Street within the town of Hopland since ADA improvements are proposed under EA 01-483500. The project proposes to place structural section at an existing maintenance vehicle pullout location at PM 17.4 in the northbound direction of travel.

A total of fifteen culverts are proposed for replacement within the project limits. In addition to culvert replacement the project proposes other drainage improvements, which include overside drains, rock slope protection, ditches, ac dike and replacement of existing wooden drainage inlet covers. Twenty percent of the culvert costs were added to the estimate to account for additional culverts determined to need replacement or lengthening. Specific locations of drainage improvements can be found in the Preliminary Drainage Recommendations, included as Attachment N. A list of the existing culverts within the project limits is included as Attachment P.

6B. SEGMENTS:

The total cost including right of way of segments 1, 2 and 3 is \$46.7 million (2013/2014 fiscal year).

Segment 1 (PM 9.2 – 13.6), \$16.6 million (2013/2014 fiscal year):

The scope of work for segment 1 includes removal and replacement of deteriorated pavement structural section, crack sealing, asphalt concrete overlays, shoulder widening, metal beam guard rail and terminal section upgrades, shoulder and centerline rumble strips, drainage improvements, ADA improvements, structure widening and a retaining wall along this two-lane conventional highway segment of Route 101. A cost estimate for segment 1 is included as Attachment E.

Segment 2 (PM 13.6 – 17.5), \$11.6 million (2013/2014 fiscal year):

The scope of work for segment 2 includes removal and replacement of deteriorated pavement structural section, crack sealing, asphalt concrete overlays, shoulder widening, metal beam guard rail upgrades, shoulder and centerline rumble strips and drainage improvements along this two-lane conventional highway segment of Route 101. A cost estimate for segment 2 is included as Attachment E.

Segment 3 (PM 17.5 -21.1), \$23 million (2013/2014 fiscal year):

The scope of work for segment 3 includes removal and replacement of deteriorated pavement structural section, crack sealing, asphalt concrete overlays, shoulder widening, metal beam guard rail upgrades, shoulder rumble strips, drainage improvements, slide

repair and structure widening along this four-lane freeway segment of Route 101. A cost estimate for segment 3 is included as Attachment E.

6C. DESIGN EXCEPTIONS:

The following mandatory design exceptions have been executed:

- Shoulder widths (DIB 79-03) along the Russian River Bridge (#10-0082).
- Stopping sight distance (Section 201.1 – Table 201.1) at intersection of Route 101/Center Street.

The following advisory design exceptions have been executed:

- Corner sight distance (Section 405.1 – Table 405.1A) at intersection of Route 101/Center Street.
- Clear Recovery Zone (Section 309.1 – Section 2) between PM 12.2 and 12.66.
- Median width (Section 305.1 – Section 1) between PM 17.5 and 21.1

The approved fact sheets for the mandatory and advisory design exceptions can be found in the project files.

Note: In order to improve stopping sight distance and corner sight distance, parking restrictions at the southeast corner of Route 101/Center Street will be studied at the next stage of the project.

6D. ENVIRONMENTAL COMPLIANCE:

A Preliminary Environmental Assessment Report (PEAR) was prepared and is included as Attachment F. The anticipated environmental approval under the California Environmental Quality Act (CEQA) is an Initial Study/Negative Declaration (IS/ND). The anticipated environmental approval under the National Environmental Policy Act (NEPA) is an Environmental Assessment/Finding of No Significant Impacts (EA/FONSI). It is estimated that completion of the environmental document process will require approximately 16-18 months.

Mitigation may be necessary to reduce any impact to less than significant. It is not anticipated that adverse effects will result from this project after all mitigation has been included. In the event that technical studies detect an impact that cannot be alleviated below the level of significance or found to be adverse, then an Environmental Impact Report (EIR) and an Environmental Impact Statement (EIS) must be prepared under CEQA and NEPA, respectively. Project specific mitigation will be determined at the time of project implementation; however, the PEAR recommends avoidance and minimization measures for jurisdictional waters, mammals, sensitive fish species, sensitive and migratory

birds, sensitive reptiles and amphibians, riparian vegetation, native oak trees, cultural resources and hazardous waste.

Caltrans is required to complete an assessment of potential barriers to anadromous fish prior to commencing any project using state or federal transportation funds. Environmental staff prepared a list of potential fish passage locations within the project limits. District 1 Hydraulics reviewed the identified locations and determined that all locations either did not present a barrier or were not fish passage locations. A summary of the fish passage assessment can be found in the PEAR as Attachment F.

6E. HAZARDOUS WASTE DISPOSAL SITE REQUIRED?

An Initial Site Assessment (ISA) was completed on November 12, 2008 and is included as Attachment G. The ISA stated the project limits fall within an area identified by the Mendocino Air Quality Management District as possibly containing naturally occurring asbestos. Naturally occurring asbestos, aerially deposited lead and asbestos containing construction material were identified as potential hazardous waste issues. A Preliminary Site Investigation (PSI) will be required and once requested will take 2 to 4 months to complete and prepare a final report. The PSI will need to be initiated at the PA&ED phase of the project.

6F. OTHER AGENCIES INVOLVED (PERMITS/APPROVALS FROM FISH & GAME, CORPS OF ENGINEERS, COASTAL COMMISSION, ETC.):

The following permits will be required for the project:

- Permit 404 (U.S. Army Corps of Engineers)
- Permit 401 (Regional Water Quality Control Board)
- Permit 1602 (California Department of Fish and Game)

The project will require consultations with the following agencies:

- U.S. Fish and Wildlife Service
- California Department of Fish and Game
- National Marine Fisheries Service

6G. MATERIALS AND OR DISPOSAL SITE NEEDS AND AVAILABILITY?

A disposal site is required for the project and will be identified at the next stage of the project.

6H. HIGHWAY PLANTING AND IRRIGATION:

Replacement plantings consisting of shrub and grass species will likely be required at areas temporarily disturbed/cleared during construction.

6I. ROADSIDE DESIGN AND MANAGEMENT:

All Metal Beam Guardrail will be reset to achieve standard railing heights after the pavement overlay. Most terminal sections will be brought to current standards under EA 01-46430, which is projected for project delivery in the 2009/2010 fiscal year. The remaining terminal sections not included in EA 01-46430 are included in the subject project, which include terminal sections at the Feliz Creek Bridge.

6J. STORMWATER COMPLIANCE:

A Storm Water Data Report was prepared and is included as Attachment M. The North Coast Regional Water Quality Control Board (NCRWQCB) requires Treatment BMP consideration on all projects as a condition of the 401 permit certification. The methods to treat storm water runoff from the project site will be evaluated during the PA&ED and PS&E phases of the subject project. Temporary construction site BMPs will be deployed as necessary under a contractor prepared Storm Water Pollution Prevention Plan (SWPPP) and as required by the contract special provisions.

6K. RIGHT OF WAY ISSUES:

A Right of Way Data Sheet was prepared for this project on December 29th, 2008 and is included as Attachment H. The total estimated Right of Way cost is \$4,497,000 (2013/2014 fiscal year), which includes \$240,028 for Right of Way Acquisition, \$4,039,676 for Mitigation Acquisition and Credits, \$206,914 for Project Development Permit Fees, and \$9,960 for Title and Escrow Fees. Utility relocation will be required at the northeast and southeast corners of the Route 101/175 intersection.

Right of Way lead time will require a minimum of twenty months after submitting appraisal maps, utility conflict maps, and the necessary environmental clearance has been approved and obtained. In addition, a minimum of fourteen months will be required after submitting the last appraisal map for certification.

6L. RAILROAD INVOLVEMENT:

Coordination with the North Coast Railroad Authority will be required in order to facilitate the widening of the Hopland Overhead (#10-0081). The existing railroad line passes underneath the existing structure. A Railroad Right of Entry will be required on both sides

of the Hopland Overhead for construction access. The State's existing rights for the structure are through an "Agreement" with the former railroad operator and should be perfected to "Highway Easement" for the existing and widened portions of the bridge structure. The railroad associated costs of the project total \$165,000. A Railroad Information Sheet is included in the Right of Way Data Sheet package included as Attachment H.

6M. SALVAGING AND RECYCLING OF HARDWARE AND OTHER NON-RENEWABLE RESOURCES:

All materials and hardware removed from this project will become the property of the contractor.

6N. PROLONGED TEMPORARY RAMP CLOSURES:

There are on/off-ramps located at the Robinson Creek and El Roble interchanges. Temporary ramp closures will occur as a result of paving operations near the ramps. Signs will be installed advising drivers of detour routes.

6O. RECYCLED MATERIALS:

Rubberized asphalt concrete, which consists of recycled rubber, is recommended for this project. The primary reason for using rubberized asphalt is that it provides significantly improved engineering properties over conventional paving grade asphalt.

6P. LOCAL AND REGIONAL INPUT:

Mendocino County may elect to be involved with the project as it relates to improved pedestrian facilities within Hopland. The subject project proposes to replace substandard curb returns within Hopland, but does not propose to bring existing sidewalk and driveways to current ADA standards.

6Q. WHAT ARE THE CONSEQUENCES OF NOT DOING THIS ENTIRE PROJECT?

If the subject project were not completed the existing roadway will continue to deteriorate and the rehabilitation and maintenance costs will continue to increase. In addition to further roadway deterioration, safety conditions will not be improved.

6R. LIST ALL ALTERNATIVES STUDIED, COST, REASONS NOT RECOMMENDED, ETC.:

Alternative 1 (20-year rehabilitation strategy) and Alternative 2 (no-build) were studied with the PSSR. Alternative 2 was not selected as the recommended alternative since it did not meet the need and purpose of the project.

7. TRANSPORTATION MANAGEMENT**7A. TRANSPORTATION MANAGEMENT PLAN**

A Transportation Management Plan (TMP) was prepared for this project and is included for reference as Attachment K. Significant traffic impacts are not anticipated provided the recommendations in the TMP are incorporated into the project.

A minimum of one paved traffic lane, not less than 12 feet wide with a 2 foot contiguous paved shoulder, shall be open for use by public traffic. The maximum length of one-way traffic control closure is 1000 feet. Work that requires a lane closure within the freeway section shall be in conformance with Caltrans Standard Plan T-10, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS." Work that requires a lane closure within the two-lane conventional highway section shall be in conformance with Caltrans Standard Plan T-11, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS." Work that occurs within 15 feet of the traveled way shall require a shoulder closure in conformance with Caltrans Standard Plan T-10. A minimum of one Portable Changeable Message Sign (PCMS) in advance of both ends of the construction site shall be required in order to notify the public of the closures related to the project.

7B. VEHICLE DETECTION SYSTEMS

At the direction of Traffic Operations there are two existing count stations needing repair and upgrades. The two count stations are CS 914 (PM 9.14) and CS 937 (PM 17.28). CS 914 will require replacement of four detector loops and installing both power and telephone utilities to the existing cabinet. CS 937 will require replacement of three detector loops and cabinet as well as installing both power and telephone utilities to the replacement cabinet.

8. ENVIRONMENTAL DETERMINATION/DOCUMENT

The anticipated environmental approval document for the subject project will be an Initial Study/Negative Declaration (IS/ND) under CEQA and an Environmental Assessment/Finding of No Significant Impact (EA/FONSI) under NEPA.

9. FUNDING/SCHEDULING**9A. COST ESTIMATE**

<u>Pavement Work</u>	<u>Lane-Miles</u>	<u>Number</u>	<u>Cost (\$1000)</u>
Flex Overlay of Flex Pavement (recycle not included)	35	--	13,721
Hot Recycled AC	--	--	--
Cold Recycled AC	--	--	--
Ramps and OC/UC Approaches	--	--	--
Total Lane-Miles of Rehabilitation	35	--	--

SUBTOTAL 1 13,721

<u>Does the Project Include?</u>	<u>Yes/No</u>	<u>Cost (\$1000)</u>
Main Line Widening (lanes and/or shoulders)	Yes	2,560
Bridge Widening and Rail Upgrade	Yes	2,454
Vertical Clearance Adjustment	No	--
Drainage Rehabilitation	--	--
Culvert Replacement	Yes	230
Underdrains	Yes	789
Miscellaneous Drainage Improvements	Yes	307
Slope Repair	Yes	3,420
Water Pollution Control	Yes	225
Pedestrian Facilities		
Alternations Required (List):		
Pedestrian Curb Ramps/Crosswalks	Yes	29

Safety

Rumble Strip	Yes	78
Superelevation Correction	No	--
Vertical Alignment	No	--
Horizontal Alignment	Yes	(213)*
Left/Right-Turn Storage/Widening/Lengthening	Yes	80
Signal Upgrade	No	--
Median Barrier	No	--
Metal Beam Guardrails (New & Reconstruct)	Yes	126
Concrete Guardrail (New)	No	--
Roadside Cleanup	No	--
Gore Cleanup	No	--
Electroliers	No	--
Retaining Wall	Yes	314

(*cost in parenthesis accounted for in other item)

<u>Roadside Management</u>	<u>Yes/No</u>	<u>Cost (\$1000)</u>
Gore Area Pavement	No	--
Pavement beyond Gore Area	No	--
Miscellaneous Paving	No	--
Maintenance Vehicle Pull outs	Yes	95
Off-Freeway Access (gates, stairways, etc.)	No	--
Roadside Facilities	No	--
<u>Traffic Control</u>	Yes	1,524
<u>Other:</u>		
Maintain Traffic	Yes	1,565
Minor Items	Yes	1,271
Roadway Mobilization	Yes	2,670
Erosion Control/Highway Planting	Yes	242
COZEEP	Yes	135
	SUBTOTAL 2	18,114
	25% Contingency	6,798
(contingency does not include: structures, roadway mobilization, COZEEP)		
<u>Utility Relocation (state share)</u>	No	--
<u>Railroad Agreements</u>	Yes	165
<u>Right of Way</u>	Yes	196
<u>Environmental Compliance</u>	Yes	3,806

TOTAL PROJECT COST (2009) 42,800

CALL \$42,800,000

9B. PROJECT SUPPORT:

A Programming Sheet has been prepared for the project and is included as Attachment S.

9C. PROJECT SCHEDULE:

Milestones	Delivery Date (Month, Day, Year)
Begin Environmental	9/1/10
Circulate DED	11/1/11
PA & ED	2/1/12
Project PS&E	10/1/13
Right of Way Certification	1/1/14
Ready to List	2/1/14
Approve Contract	7/1/14
Contract Acceptance	11/1/15
End Project	11/1/15

A completed Project Quality Matrix (PQM) can be found on the Project Focus database.

10. FEDERAL COORDINATION

No FHWA action required for this project.

11. SCOPING TEAM FIELD REVIEW ATTENDANCE ROSTER:

Scoping team field review attendance roster is included as Attachment Q.

12. PROJECT REVIEWED BY:

Field Review	<u>PDT</u>	Date	<u>04/30/08</u>
District Maintenance	<u>Daniel R. Ramirez</u>	Date	<u>03/09/09</u>
District Safety	<u>Steven Hughes</u>	Date	<u>03/10/09</u>
District Materials	<u>Wesley Johnson</u>	Date	<u>03/09/09</u>
HQ Design Coordinator/Reviewer	<u>John Steele/Heidi Sykes</u>	Date	<u>03/10/09</u>
HQ Maintenance Program	<u>Ron Jones</u>	Date	<u>03/10/09</u>
Advance Planning	<u>Ilene Poindexter</u>	Date	<u>02/24/09</u>

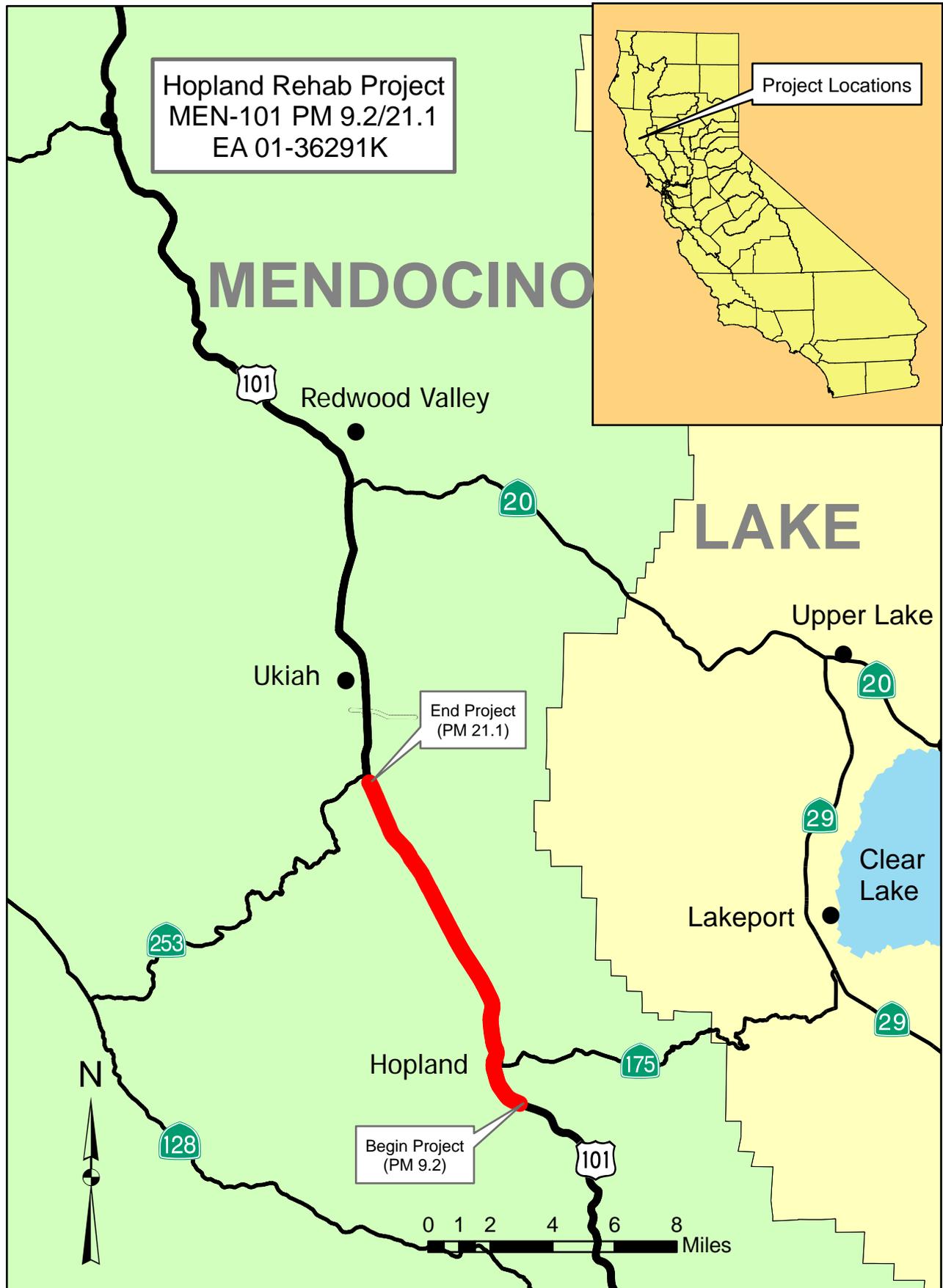
13. ATTACHMENTS

- A. Project Location Map
- B. Typical Sections
- C. Project Layouts
- D. Structures Advance Planning Study
- E. PSSR Cost Estimate (Segment 1,2 and 3)
- F. Preliminary Environmental Assessment Report
- G. Initial Site Assessment
- H. Right of Way Data Sheet
- I. Landscape Architecture Assessment Sheet
- J. Preliminary Materials Recommendation
- K. Transportation Management Plan
- L. Life Cycle Cost Analysis Results
- M. Storm Water Data Report
- N. Preliminary Drainage Recommendations
- O. Proposed Shoulder Widening Locations
- P. Culvert Locations
- Q. Scoping Team Field Review Attendance Roster
- R. Risk Management Plan
- S. Programming Sheet

ATTACHMENT A

PROJECT LOCATION MAP

Project Location Map



ATTACHMENT B

TYPICAL SECTIONS

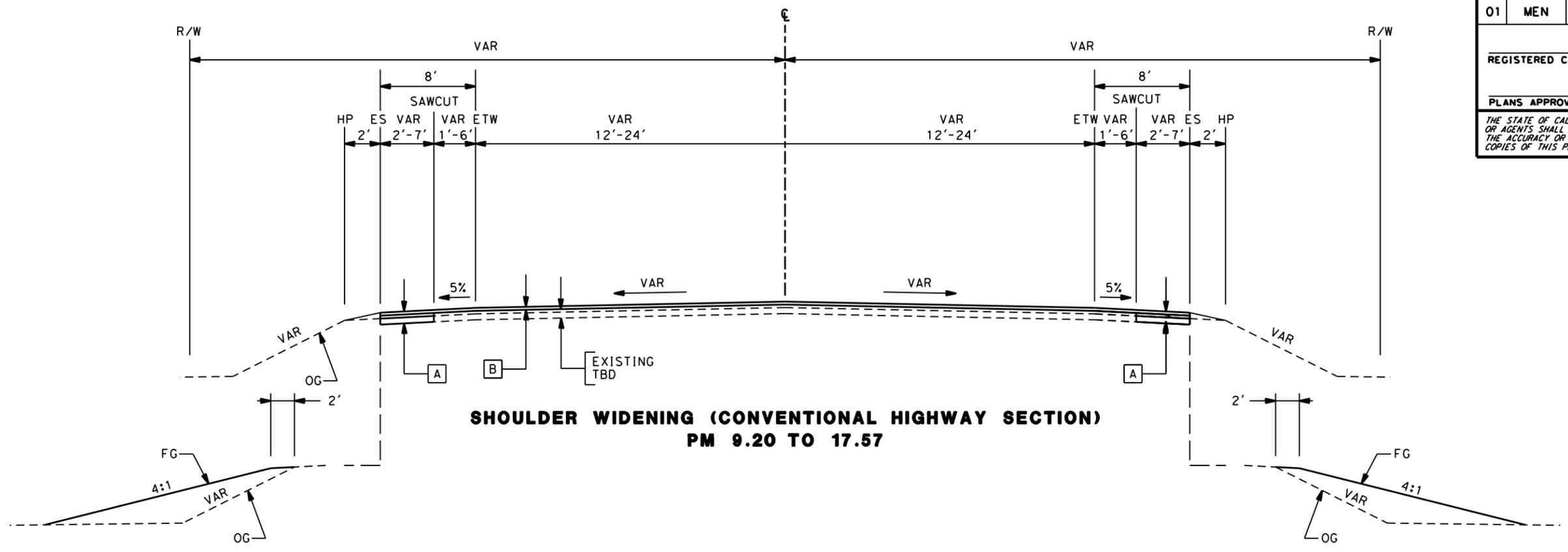
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	MEN	101	9.2/21.1	1	1

REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

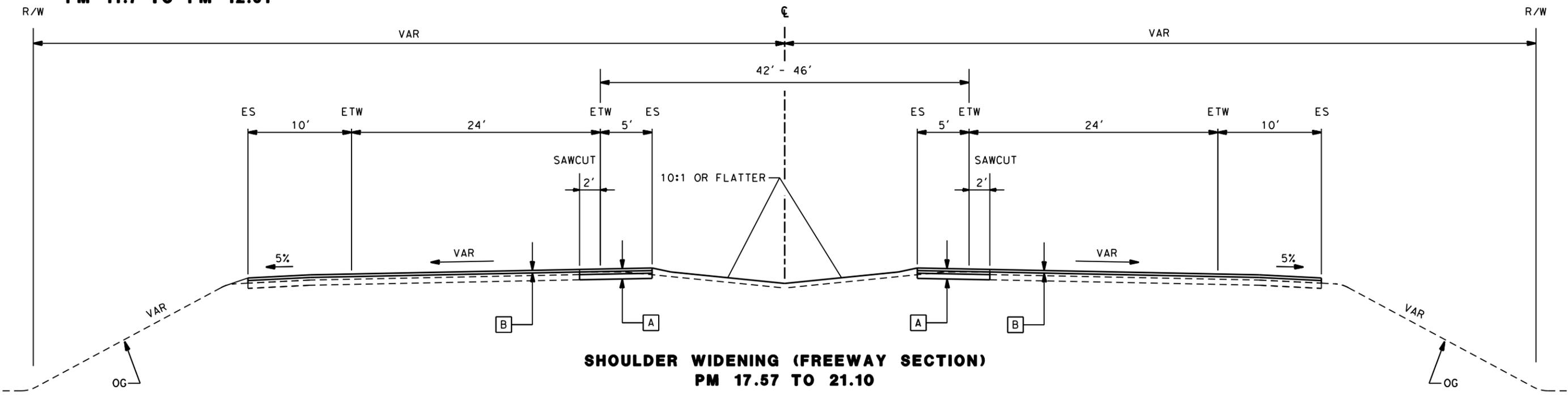
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PM 13.20 TO PM 13.27
PM 11.7 TO PM 12.61

PM 11.39 TO PM 11.49



NO SCALE
ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

STRUCTURAL SECTION

- A [0.13' RUBBERIZED HMA (BONDED WEARING COURSE, OG)
0.20' RUBBERIZED HMA (TYPE G)
0.40' HMA (TYPE A)
2.10' AB (CLASS 2)
- B [0.13' RUBBERIZED HMA (BONDED WEARING COURSE, OG)
0.20' RUBBERIZED HMA (TYPE G)
0.15' HMA (TYPE A)

DESIGN STUDY ONLY

TYPICAL SECTIONS

REVISOR BY
DATE

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR

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Caltrans

ATTACHMENT C

PROJECT LAYOUTS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	1	24

REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

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STATE OF CALIFORNIA



PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
9.20	9.23	4-6	8	NB
9.47	9.51	4	8	NB
9.61	10.45	2-3	8	NB
9.45	9.52	4	8	SB
9.59	10.45	1-2	8	SB



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

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HOPLAND REHAB PROJECT
01-MEN-101-36291K
PM 9.1/9.6

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DATE REVISED _____

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	2	24

REGISTERED CIVIL ENGINEER DATE _____

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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
9.61	10.45	2-3	8	NB
9.59	10.45	1-2	8	SB



 TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

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01-MEN-101-36291K
PM 9.6 / 10.1

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	3	24

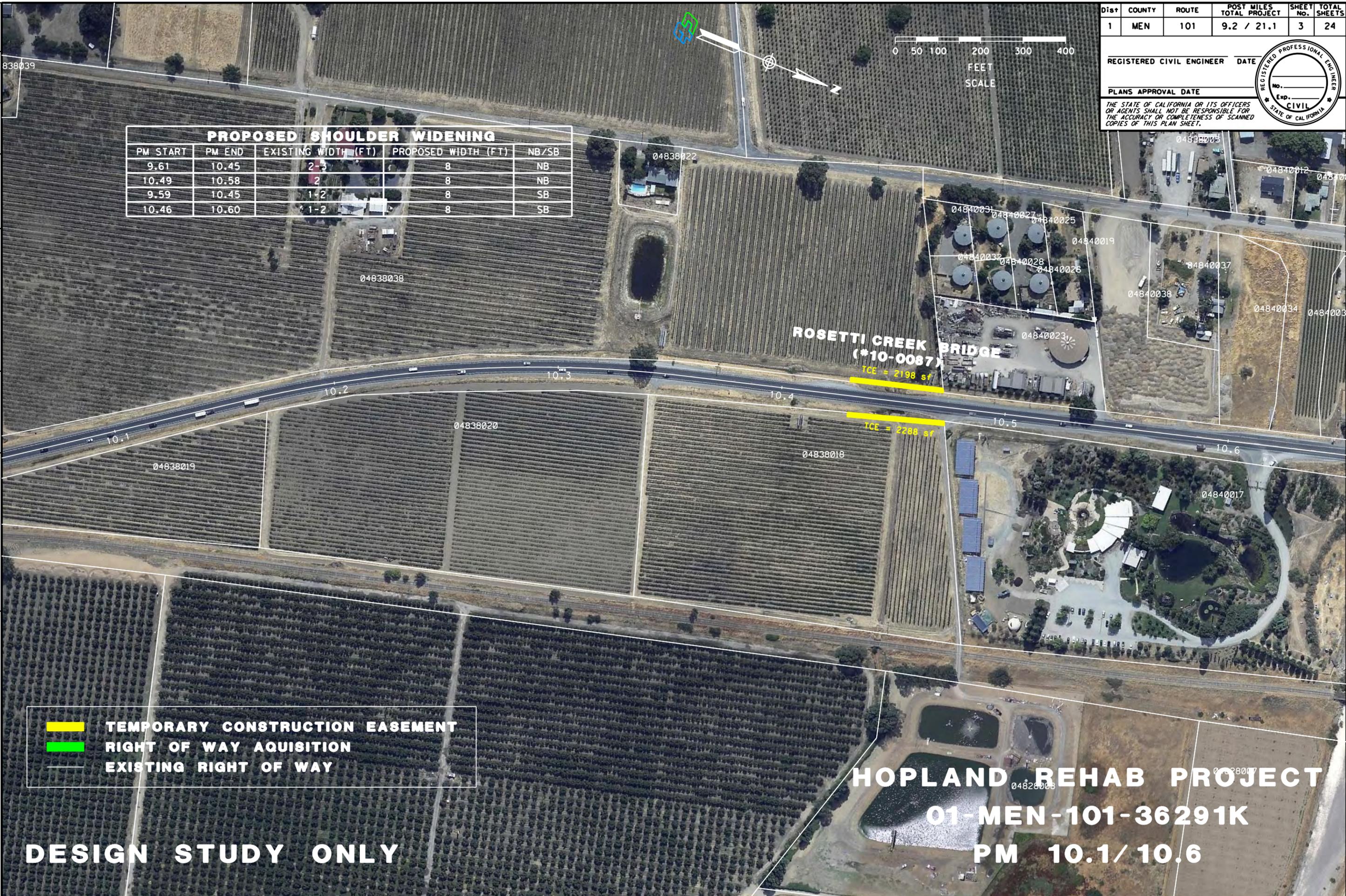
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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
9.61	10.45	2-3	8	NB
10.49	10.58	2	8	NB
9.59	10.45	1-2	8	SB
10.46	10.60	1-2	8	SB



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TEMPORARY CONSTRUCTION EASEMENT

RIGHT OF WAY AQUISITION

EXISTING RIGHT OF WAY

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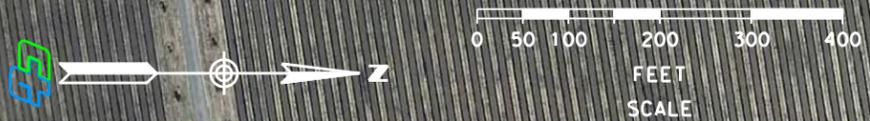
PM 10.1/10.6

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 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	7	24

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
11.74	12.80	1-3	8	NB
11.69	12.80	1-2	8	SB



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 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
14.03	14.08	3	8	NB

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	11	24

REGISTERED CIVIL ENGINEER DATE _____

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PM 14.1/14.6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	13	24

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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
15.03	15.06	1	4	NB
15.06	15.28	1	4	NB
15.53	15.58	3	8	NB
15.20	15.40	1	8	NB
15.40	15.48	1	4	NB
15.98	15.08	1	8	SB
15.27	15.29	1	4	SB
15.61	15.64	3	4	SB

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 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	14	24

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
15.06	15.28	1	4	NB
15.53	15.58	3	8	NB
15.61	15.64	3	4	SB
15.64	15.72	3	8	SB



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
NO SHOULDER WIDENING				

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	16	24

REGISTERED CIVIL ENGINEER DATE _____

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HOPLAND REHAB PROJECT
01-MEN-101-36291K
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	17	24

REGISTERED CIVIL ENGINEER DATE _____
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PROPOSED SHOULDER WIDENING					
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB	
17.50	18.40	5-7	10	NB	
17.45	17.49	6	8	SB	
17.50	20.91	1	5	NB (INSIDE)	
17.50	19.60	1-3	5	SB (INSIDE)	

NOTE: ALL WIDENING WITHIN MEDIAN

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 DEPARTMENT OF TRANSPORTATION



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

HOPLAND REHAB PROJECT
01-MEN-101-36291K
PM 17.1/17.6

DESIGN STUDY ONLY

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	20	24

REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

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CIVIL
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PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
18.70	19.00	6	10	NB
19.10	19.20	7	10	NB
18.78	18.84	8	10	SB
17.50	20.91	1	5	NB (INSIDE)
17.50	19.60	1-3	5	SB (INSIDE)

NOTE: ALL WIDENING WITHIN MEDIAN

REVISOR: _____ DATE: _____

DESIGNER: _____ CHECKED BY: _____

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HOPLAND REHAB PROJECT
01-MEN-101-36291K
PM 18.6/19.1

DESIGN STUDY ONLY

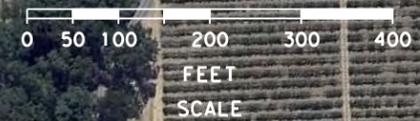
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	21	24

REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

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



PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
19.10	19.20	7	10	NB
19.60	20.75	6	10	SB
17.50	20.91	1	5	NB (INSIDE)
17.50	19.60	1-3	5	SB (INSIDE)

NOTE: ALL WIDENING WITHIN MEDIAN

REVISOR: _____ DATE: _____

DESIGNER: _____ CHECKED BY: _____

FUNCTIONAL SUPERVISOR: _____

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

HOPLAND REHAB PROJECT
01-MEN-101-36291K
PM 19.1/19.6

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	22	24

REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
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PROPOSED SHOULDER WIDENING

PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
19.60	20.75	6	10	SB
17.50	20.91	1	5	NB (INSIDE)

NOTE: ALL WIDENING WITHIN MEDIAN



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY AQUISITION
 EXISTING RIGHT OF WAY

DESIGN STUDY ONLY

**HOPLAND REHAB PROJECT
 01-MEN-101-36291K
 PM 19.6/20.1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR
 CALCULATED-DESIGNED BY
 CHECKED BY
 REVISED BY
 DATE REVISED

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	23	24

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.



PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
19.60	20.75	6	10	SB
17.50	20.91	1	5	NB (INSIDE)

NOTE: ALL WIDENING WITHIN MEDIAN



TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY ACQUISITION
 EXISTING RIGHT OF WAY

DESIGN STUDY ONLY

**HOPLAND REHAB PROJECT
 01-MEN-101-36291K
 PM 20.1/20.6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR
 CALCULATED-DESIGNED BY
 CHECKED BY
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
1	MEN	101	9.2 / 21.1	24	24

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.



PROPOSED SHOULDER WIDENING				
PM START	PM END	EXISTING WIDTH (FT)	PROPOSED WIDTH (FT)	NB/SB
19.60	20.75	6	10	SB
20.94	21.10	2	5	NB (INSIDE)

NOTE: ALL WIDENING WITHIN MEDIAN

TEMPORARY CONSTRUCTION EASEMENT
 RIGHT OF WAY AQUISITION
 _____ EXISTING RIGHT OF WAY

DESIGN STUDY ONLY

**HOPLAND REHAB PROJECT
 01-MEN-101-36291K
 PM 20.6/21.1**

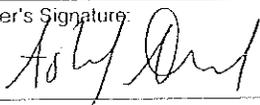
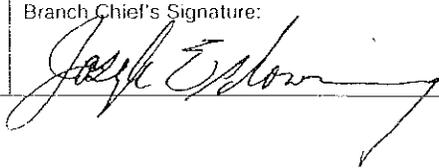
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 00-00-00 TIME PLOTTED => \$TIME

ATTACHMENT D

STRUCTURES ADVANCE PLANNING STUDY

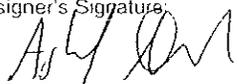
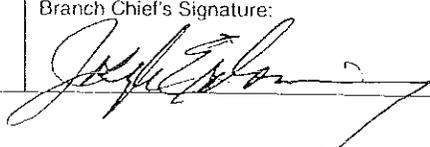
ADVANCE PLANNING STUDY ESTIMATE CHECKLIST

Please complete, sign and submit to the Cost Estimates Section when requesting an estimate for an Advance Planning Study or a General Plan.

Date: 8/28/08	Design Branch 03	Prepared by: A.Ahmed	Phone No: 916-227-8452	Estimate Completion Desired Date: 09/15/2007
EA: 01-36290k	County: MEN	Rte: 101	PM 20.91	
Bridge No: 10-0005R	Bridge Name: Robinson Creek Bridge			
Total Number Of Bridges in this Project: 1		Total Number of Alternative Designs: 1		
Drawings and Quantities Attached: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Site Photos Available: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
Remove Existing Bridge YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Total Deck Area: 6108 ft2		
Preliminary Geology Report (PGR) Available? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <i>(Attach copy if PGR is available)</i>				
Piling Required? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If piling is required indicate Type, Length and Location)</i>				
<u>Location</u>	<u>Type of Piling</u>	<u>Total Length</u>		
Scour Critical? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/>		If Yes indicate Location:		
Type A Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		If Yes indicate Location:		
Type D Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		If Yes indicate Location:		
Hazardous or Contaminated Material? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		If Yes indicate Location:		
Number of Construction Stages 2		Don't Know <input type="checkbox"/>	Seasonal Work YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Falsework Height N/A	Site Accessibility			
Any Adjacent Retaining Walls? YES <input type="checkbox"/> NO <input type="checkbox"/> Don't Know <input checked="" type="checkbox"/>		Who is Responsible? DIST <input checked="" type="checkbox"/> OSD <input type="checkbox"/>		
Approach Slabs? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Type _____		Slope Paving? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/>		
Maintenance Issues? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If Yes Indicate Type and Location)</i>				
<u>Location</u>	<u>Maintenance Issue</u>			
Barrier Rail	Upgrade Barrier to type 732			
Confidence Level of APS or GP		Low 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> High		
Designer's Signature: 		Branch Chief's Signature: 		

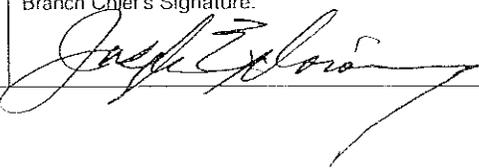
ADVANCE PLANNING STUDY ESTIMATE CHECKLIST

Please complete, sign and submit to the Cost Estimates Section when requesting an estimate for an Advance Planning Study or a General Plan.

Date: 8/28/08	Design Branch 03	Prepared by: A.Ahmed	Phone No: 916-227-8452	Estimate Completion Desired Date: 09/15/2007
EA: 01-36290k		County: MEN	Rte: 101	PM 10.46
Bridge No: 10-0005R		Bridge Name: Rosetti Creek Bridge		
Total Number Of Bridges in this Project: 1			Total Number of Alternative Designs: 2	
Drawings and Quantities Attached: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			Site Photos Available: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Remove Existing Bridge YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Total Deck Area: 1285 ft ²		
Preliminary Geology Report (PGR) Available? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <i>(Attach copy if PGR is available)</i>				
Piling Required? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If piling is required indicate Type, Length and Location)</i>				
<u>Location</u>	<u>Type of Piling</u>	<u>Total Length</u>		
Scour Critical? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/>			If Yes indicate Location:	
Type A Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			If Yes indicate Location:	
Type D Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			If Yes indicate Location:	
Hazardous or Contaminated Material? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			If Yes indicate Location:	
Number of Construction Stages 2		Don't Know <input type="checkbox"/>	Seasonal Work YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Falsework Height N/A		Site Accessibility		
Any Adjacent Retaining Walls? YES <input type="checkbox"/> NO <input type="checkbox"/> Don't Know <input checked="" type="checkbox"/>			Who is Responsible? DIST <input checked="" type="checkbox"/> OSD <input type="checkbox"/>	
Approach Slabs? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Type _____		Slope Paving? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/>		
Maintenance Issues? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If Yes Indicate Type and Location)</i>				
<u>Location</u>	<u>Maintenance Issue</u>			
Barrier Rail	Upgrade Barrier to type 732			
Confidence Level of APS or GP Low 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> High				
Designer's Signature: 			Branch Chief's Signature: 	

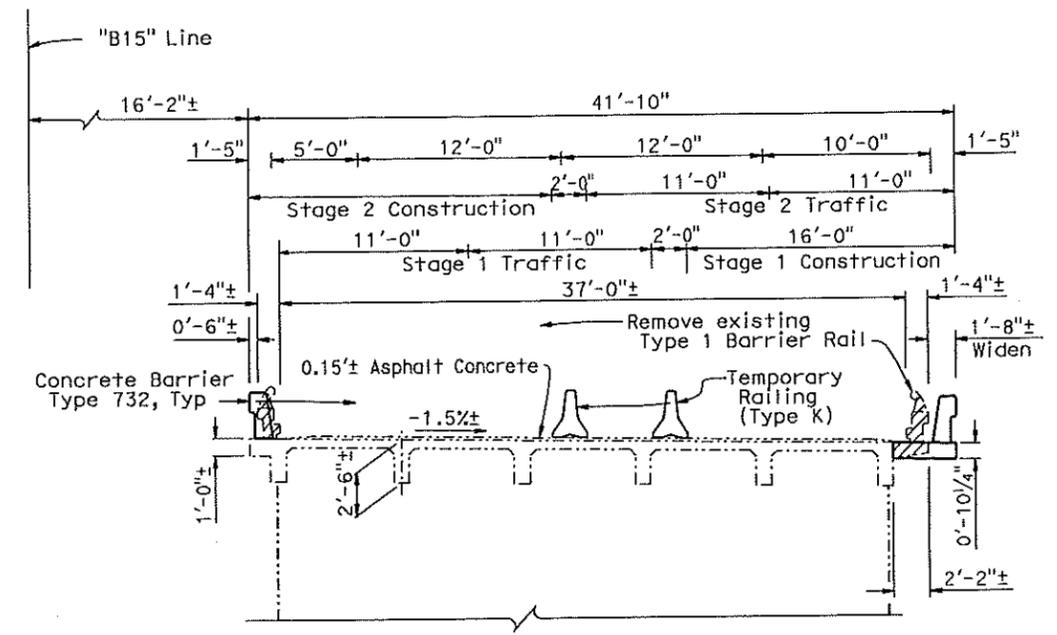
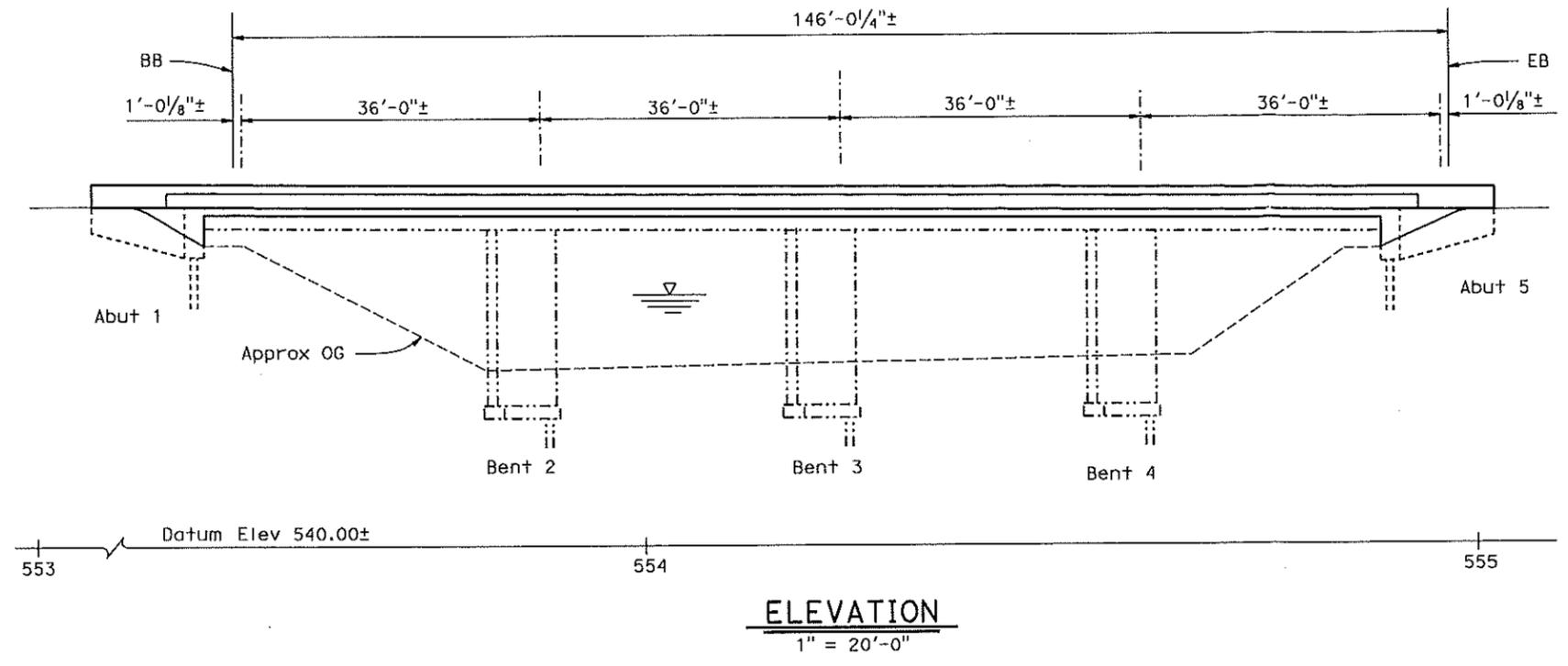
ADVANCE PLANNING STUDY ESTIMATE CHECKLIST

Please complete, sign and submit to the Cost Estimates Section when requesting an estimate for an Advance Planning Study or a General Plan.

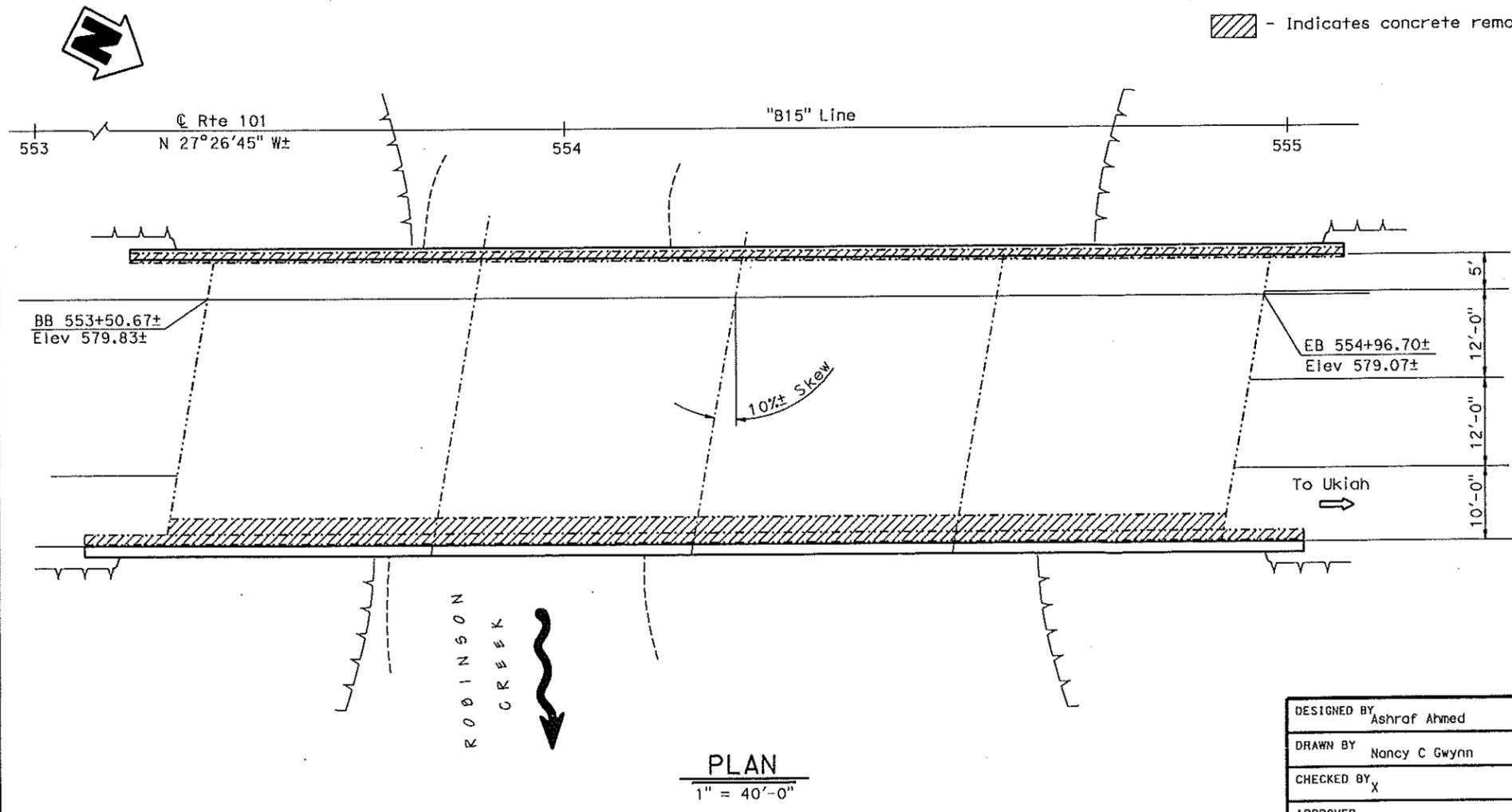
Date: 8/28/08	Design Branch 03	Prepared by: A.Ahmed	Phone No: 916-227-8452	Estimate Completion Desired Date: 09/15/2007
EA: 01-36290k		County: MEN	Rte: 101	PM 9.53R
Bridge No: 10-0081		Bridge Name: Hopland OH		
Total Number Of Bridges in this Project: 1			Total Number of Alternative Designs: 2	
Drawings and Quantities Attached: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			Site Photos Available: YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Remove Existing Bridge YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		Total Deck Area: 13334 ft2		
Preliminary Geology Report (PGR) Available? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> <i>(Attach copy if PGR is available)</i>				
Piling Required? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If piling is required indicate Type, Length and Location)</i>				
<u>Location</u>	<u>Type of Piling</u>	<u>Total Length</u>		
Bents	CISS	30 feet		
Abutment 1	CISS	30 feet		
Scour Critical? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/> If Yes indicate Location:				
Type A Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> If Yes indicate Location:				
Type D Excavation? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> If Yes indicate Location:				
Hazardous or Contaminated Material? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> If Yes indicate Location:				
Number of Construction Stages 2		Don't Know <input type="checkbox"/>	Seasonal Work YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>	
Falsework Height N/A		Site Accessibility		
Any Adjacent Retaining Walls? YES <input type="checkbox"/> NO <input type="checkbox"/> Don't Know <input checked="" type="checkbox"/> Who is Responsible? DIST <input checked="" type="checkbox"/> OSD <input type="checkbox"/>				
Approach Slabs? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Type _____ Slope Paving? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Don't Know <input type="checkbox"/>				
Maintenance Issues? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> Don't Know <input type="checkbox"/> <i>(If Yes Indicate Type and Location)</i>				
<u>Location</u>	<u>Maintenance Issue</u>			
1. Bridge Deck	Placing ¾ " Polyester concrete			
2. Barrier Rail	Upgrade Barrier to type 732			
Confidence Level of APS or GP Low 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input checked="" type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> High				
Designer's Signature: 			Branch Chief's Signature: 	

DIST	COUNTY	ROUTE	POST MILE
01	Men	101	20.91

To get to the Caltrans web site, go to: <http://www.dot.ca.gov>



Note:
 - Indicates concrete removal



DATE OF ESTIMATE	11 - 27 2008
BRIDGE REMOVAL	= 0
STRUCTURE DEPTH	= 2'-6"
LENGTH	= 146.02'
WIDTH	= 1.67
AREA	= 244
COST/ □ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$ 646.9
TOTAL COST	= \$ 158,000

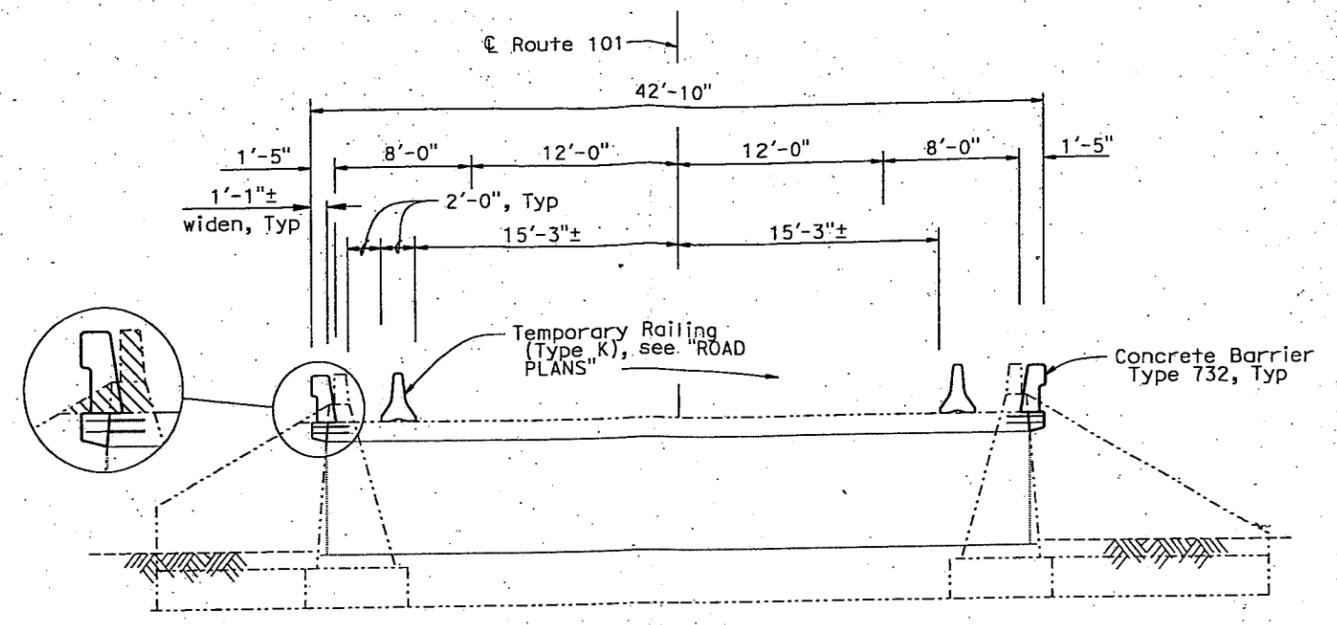
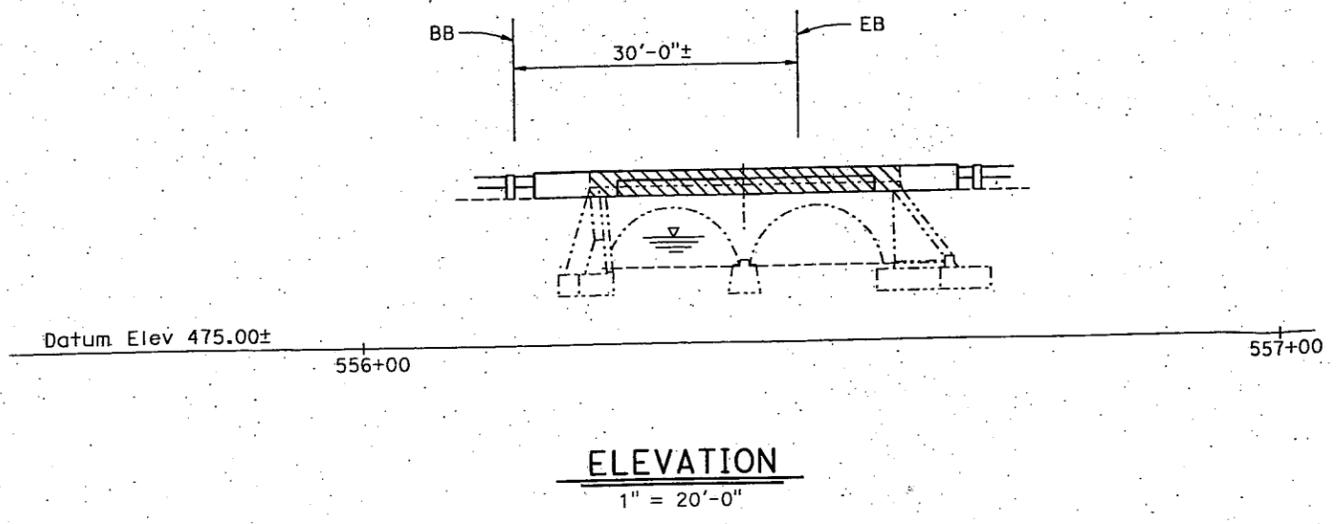
DESIGNED BY	Ashraf Ahmed	DATE	8-20-08
DRAWN BY	Nancy C Gwynn	DATE	8-20-08
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

STRUCTURE DESIGN BRANCH
3

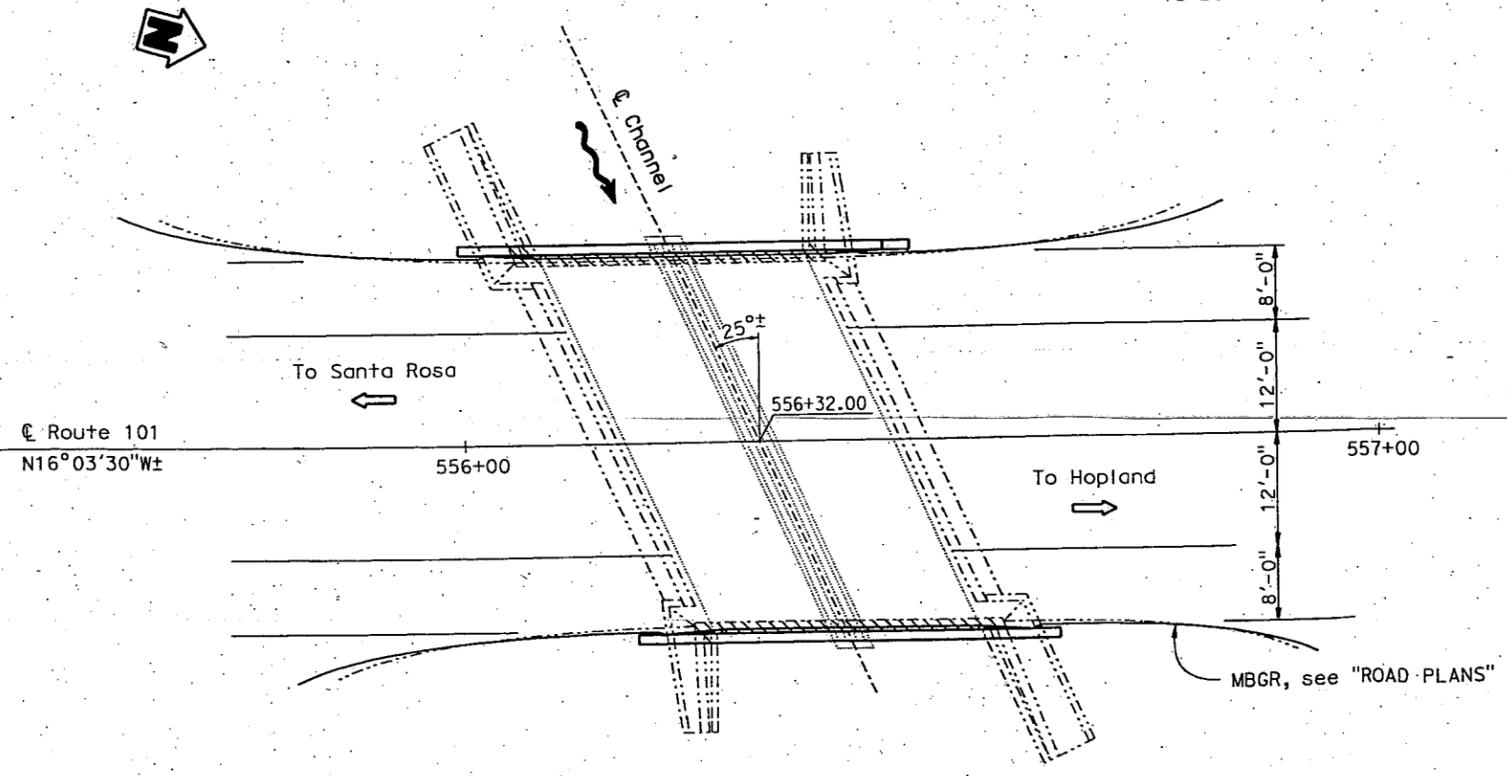
PLANNING STUDY	
ROBINSON CREEK BRIDGE (WIDEN)	
BRIDGE NO. 10-0005R	CU 01
SCALE: AS NOTED	EA 36291K

DIST	COUNTY	ROUTE	POST MILE
01	Men	101	10.46

To get to the Caltrans web site, go to: <http://www.dot.ca.gov>



Note:
 - Existing rail and concrete to be removed



DATE OF ESTIMATE	9-17-2008
BRIDGE REMOVAL	= 0
STRUCTURE DEPTH	= 2'-4"
LENGTH	= 44'
WIDTH	= 1.08'
AREA	= 48
COST / □ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$ 858.00
TOTAL COST	= \$ 41,000

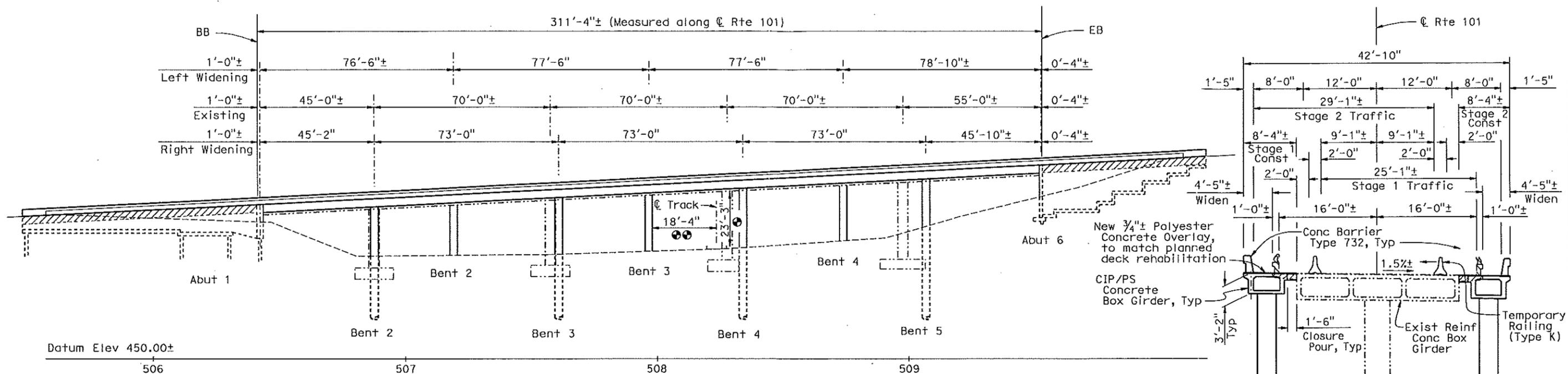
DESIGNED BY	Ashraf Ahmed	DATE	8-18-08
DRAWN BY	Nancy C Gwynn	DATE	8-18-08
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

STRUCTURE DESIGN BRANCH
3

ALTERNATIVE 2	
PLANNING STUDY	
ROSETTI CREEK BRIDGE (WIDEN)	
BRIDGE NO. 10-0087	CU-01
SCALE: as noted	EA 36291K

DIST	COUNTY	ROUTE	POST MILE
01	Men	101	9.53R

To get to the Caltrans web site, go to: <http://www.dot.ca.gov>

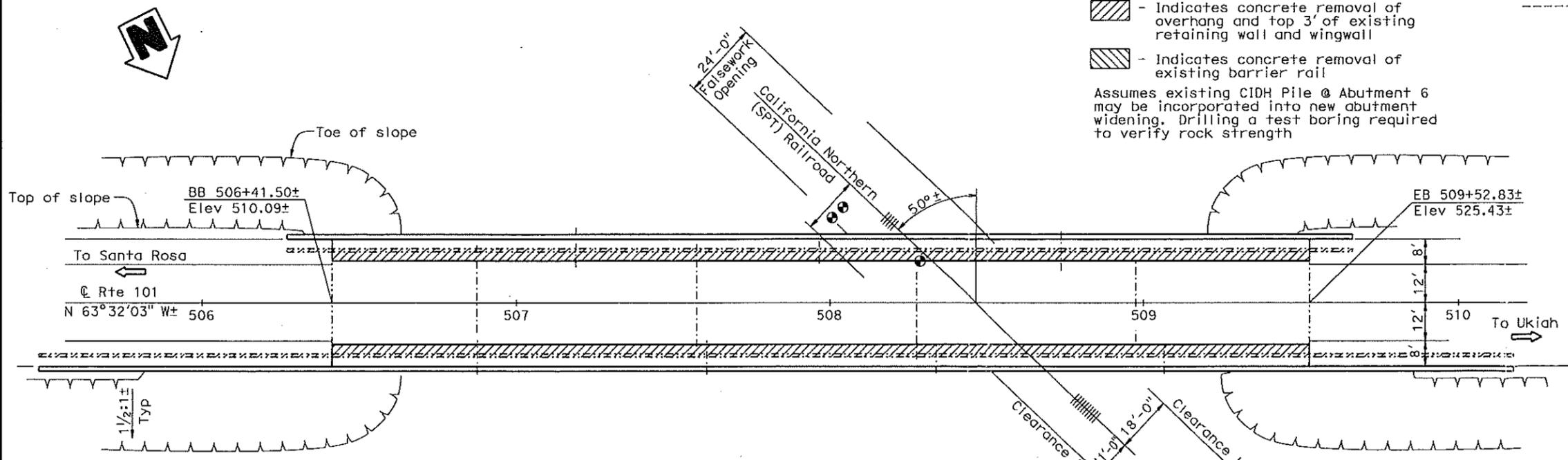


ELEVATION
1" = 40'-0"

- Notes:
- - Indicates Min Vert Cir
 - - Indicates Min Horiz Cir
 - [Hatched] - Indicates concrete removal of overhang and top 3' of existing retaining wall and wingwall
 - [Hatched] - Indicates concrete removal of existing barrier rail
- Assumes existing CIDH Pile @ Abutment 6 may be incorporated into new abutment widening. Drilling a test boring required to verify rock strength

TYPICAL SECTION
1/16" = 1'-0"

DATE OF ESTIMATE	9-17-2008
BRIDGE REMOVAL	= 0
STRUCTURE DEPTH	= 3'-2"
LENGTH	= 311.33'
WIDTH	= 13.66'
AREA	= 4,253
COST/□ INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	= \$530.00
TOTAL COST	= \$2,256,000.00



PLAN
1" = 40'-0"

DESIGNED BY	Ashraf Ahmed	DATE	8-18-08
DRAWN BY	Nancy C Gwynn	DATE	8-18-08
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

STRUCTURE DESIGN BRANCH

3

ALTERNATIVE 1	
PLANNING STUDY	
HOPLAND OVERHEAD (WIDEN)	
BRIDGE NO. 10-0081	CU 01
SCALE: AS NOTED	EA 36291K

ATTACHMENT E

PSSR COST ESTIMATE (Segment 1, 2 &3)

HOPLAND REHAB PROJECT

Segment 1 - PM 9.2 - 13.6

District - County - Route: 01-MEN-101
PM: 9.2/21.1
EA: 36291K
Program Code: 201.120

PROJECT DESCRIPTION:

Limits:

In Mendocino County along Route 101 from the Russian River Bridge to 1.0 miles south of the Crawford Creek Bridge

Proposed Improvement (Scope):

Shouldering widening, overlay, structure widening, drainage improvements, MBGR, ADA improvements, retaining wall

SUMMARY OF ESTIMATED COST

TOTAL ROADWAY ITEMS	\$10,249,000
TOTAL STRUCTURE ITEMS	\$2,296,000
SUBTOTAL CONSTRUCTION COSTS	\$12,545,000
TOTAL RIGHT OF WAY ITEMS	\$1,373,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$13,918,000
CALL	\$13,920,000

Reviewed by District Program Manager _____ Date _____

Approved by Project Manager _____ Date _____

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Item Cost
Clearing & Grubbing	1	LS	\$100,000	\$100,000
Roadway Excavation	26,998	CY	\$14	\$377,972
Subtotal Earthwork				\$477,972

Section 2 Pavement Structural Section	Quantity	Unit	Unit Price**	Item Cost
Hot Mix Asphalt - Type A	17,352	TON	\$85	\$1,474,920
Rubberized Hot Mix Asphalt - Type G	13,060	TON	\$90	\$1,175,400
Rubberized HMA - Bonded Wearing Course - Open Graded	6,700	TON	\$165	\$1,105,500
Aggregate Base (Class 2)	17,372	CY	\$45	\$781,740
Minor Concrete (Sidewalk, Curb and Ramps)	31	CY	\$850	\$26,350
Pavement Reinforcing Fabric	9,503	SQYD	\$2.00	\$19,006
Paint Binder (Tack Coat)	42	TON	\$125	\$5,250
Cold Plane AC	33,639	SQYD	\$3	\$100,917
Subtotal Pavement Structural Section				\$4,689,083

Section 3 Drainage	Quantity	Unit	Unit Price	Item Cost
24" CSP Culvert	228	LF	\$130	\$29,640
30" CSP Culvert	70	LF	\$140	\$9,800
8" Perforated Plastic Pipe Underdrain	2,429	LF	\$50	\$121,450
Subtotal Drainage				\$160,890

Section 4 Specialty Items	Quantity	Unit	Unit Price	Item Cost
Progress Schedule (Critical Path)	1	LS	\$20,000	\$20,000
Water Pollution Control/Sediment Control	1	LS	\$75,000	\$75,000
Erosion Control and Highway Planting	1	LS	\$90,000	\$90,000
Prepare Storm Water Pollution Prevention Plan	1	LS	\$10,000	\$10,000
Mitigation Planting and Watering	1	LS	\$178,000	\$178,000
Construction Contract Work	1	LS	\$10,400	\$10,400
Retaining Wall (Type 1)	1	LS	\$314,000	\$314,000
Transition Railing (Type WB)	4	EA	\$5,000	\$20,000
Reconstruct Metal Beam Guard Railing	1,014	LF	\$25	\$25,350
Centerline Rumble Strip (HMA, ground-in indentations)	227	STA	\$40	\$9,080
Shoulder Rumble Strip (HMA, ground-in indentations)	454	STA	\$40	\$18,160
Shoulder Backing	664	TON	\$42	\$27,888
Subtotal Specialty Items				\$797,878

Section 5 Traffic Items	Quantity	Unit	Unit Price	Item Cost
Thermoplastic Striping (4")	93,658	FT	\$0.35	\$32,780
Thermoplastic Striping (8")	634	FT	\$2.00	\$1,268
Thermoplastic Pavement Marking	375	SQFT	\$8.00	\$3,000
Pavement Marker (Retroreflective)	1,769	EA	\$5.00	\$8,845
Portable Changeable Message Sign (PCMS)	4	EA	\$6,500	\$26,000
Relocate Roadside Sign	1	LS	\$7,500	\$7,500
Remove Roadside Sign	1	LS	\$5,000	\$5,000
Install Roadside Sign	1	LS	\$5,000	\$5,000
Construction Area Signs	1	LS	\$20,000	\$20,000
Subtotal Traffic Items				\$109,393

Traffic Additions (Added in "TOTAL SECTIONS 1 thru 5)				
Traffic Control System	1	LS	(6% Item Subtotal)	\$521,800
Maintain Traffic	1	LS	(7% Item Subtotal)	\$436,500

SUBTOTAL	\$6,235,216
TOTAL SECTIONS 1 thru 5	\$7,193,516

Section 6 Minor Items	
\$7,193,516 x (5%) = (Subtotal Sections 1 thru 5)	\$359,676
TOTAL MINOR ITEMS	\$359,676

Section 7 Roadway Mobilization	
\$7,553,192 x (10%) = (Subtotal Sections 1 thru 6)	\$755,319
TOTAL ROADWAY MOBILIZATION	\$755,319

Section 8 Roadway Additions	Quantity	Unit	Unit Price	Item Cost
Supplemental Work				
(Subtotal Sections 1 thru 6)				
Contingencies				
\$7,553,192 x (25%) =				\$1,888,298
	\$ Per Hour	Hours Per Day	Work Days	
COZEEP setups @ \$100 per Hour Working 10 Hour Days	\$100	9	20	\$18,000
COZEEP setups @ \$200 per Hour Working 10 Hour Nights	\$200	9	15	\$27,000
Construction Office		RE Office (\$2200/month for 3 months)		\$6,600
(Subtotal Sections 1 thru 6)				\$7,553,192
TOTAL ROADWAY ADDITIONS (Sections 7 & 8)				\$2,695,217

TOTAL ROADWAY ITEMS	\$10,249,000
----------------------------	---------------------

II. STRUCTURES ITEMS

Bridge Name	Hopland Overhead (#10-0081)
Structure Type	RC Box Girder
Width (out to out) - (ft)	42.83
Length (begin to end bridge) - (ft)	311.33
Span Lengths - (ff)	45.16' - 73' - 73' - 73' - 45.83'
Total Area - (SF)	4,253
Footing Type (pile/spread)	pile
Cost per SF (includes 10% mobilization & 25% contingency)	\$530.52
Total Structure Cost =	\$2,256,000
Bridge Name	Rosetti Creek Bridge (#10-0087)
Structure Type	RC Slab
Width (out to out) - (ft)	42.83
Length (begin to end bridge) - (ft)	44.00
Span Lengths - (ff)	45.16' - 73' - 73' - 73' - 45.83'
Total Area - (SF)	48
Footing Type (pile/spread)	spread
Cost per SF (includes 10% mobilization & 25% contingency)	\$823.89
Total Structure Cost =	\$40,000

SUBTOTAL STRUCTURES ITEMS \$2,296,000
 (Sum of Total Cost for Structures)

Railroad Related Costs:	\$165,000
--------------------------------	------------------

SUBTOTAL RAILROAD ITEMS \$165,000

TOTAL STRUCTURES ITEMS	\$2,461,000
-------------------------------	--------------------

III. RIGHT OF WAY ITEMS

A. Acquisition, including excess lands,	\$141,000
B. Mitigation acquisition & credits	\$1,169,698
C. Project Development Permit Fees	\$60,000
D. Utility Relocation (State share)	\$0
E. Relocation Assistance (RAP)	\$0
F. Clearance/Demolition	\$0
G. Title and Escrow Fees	\$2,600

TOTAL RIGHT OF WAY ITEMS	\$1,373,000
---------------------------------	--------------------

Anticipated Date of Right of Way Certification N/A
 (Date to which Values are Escalated)

Estimate Prepared By: Jeffrey Pimentel Phone # 707-445-6358

HOPLAND REHAB PROJECT

Segment 2 - PM 13.6 - 17.5

District - County - Route: 01-MEN-101
PM: 9.2/21.1
EA: 36291K
Program Code: 201.120

PROJECT DESCRIPTION:

Limits:

In Mendocino County along Route 101 from 1.0 miles south of the Crawford Creek Bridge to 1.6 miles north of the McNab Creek Bridge

Proposed Improvement (Scope):

Shouldering widening, overlay, drainage improvements, MBGR

SUMMARY OF ESTIMATED COST

TOTAL ROADWAY ITEMS	\$8,527,000
TOTAL STRUCTURE ITEMS	\$0
SUBTOTAL CONSTRUCTION COSTS	\$8,527,000
TOTAL RIGHT OF WAY ITEMS	\$1,139,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$9,666,000
CALL	\$9,670,000

Reviewed by District Program Manager _____ Date _____

Approved by Project Manager _____ Date _____

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Item Cost
Clearing & Grubbing	1	LS	\$100,000	\$100,000
Roadway Excavation	12,043	CY	\$14	\$168,602
Subtotal Earthwork				\$268,602

Section 2 Pavement Structural Section	Quantity	Unit	Unit Price**	Item Cost
Hot Mix Asphalt - Type A	15,762	TON	\$85	\$1,339,770
Rubberized Hot Mix Asphalt - Type G	14,810	TON	\$90	\$1,332,900
Rubberized HMA - Bonded Wearing Course - Open Graded	7,675	TON	\$165	\$1,266,375
Aggregate Base (Class 2)	3,342	CY	\$45	\$150,390
Pavement Reinforcing Fabric	657	SQYD	\$2.00	\$1,314
Paint Binder (Tack Coat)	46	TON	\$125	\$5,750
Cold Plane AC	33,017	SQYD	\$3	\$99,051
Subtotal Pavement Structural Section				\$4,195,550

Section 3 Drainage	Quantity	Unit	Unit Price	Item Cost
24" CSP Culvert	125	LF	\$130	\$16,250
30" CSP Culvert	65	LF	\$140	\$9,100
42" CSP Culvert	100	LF	\$200	\$20,000
8" Perforated Plastic Pipe Underdrain	5,544	LF	\$50	\$277,200
Subtotal Drainage				\$322,550

Section 4 Specialty Items	Quantity	Unit	Unit Price	Item Cost
Progress Schedule (Critical Path)	1	LS	\$20,000	\$20,000
Water Pollution Control/Sediment Control	1	LS	\$75,000	\$75,000
Erosion Control and Highway Planting	1	LS	\$80,000	\$80,000
Prepare Storm Water Pollution Prevention Plan	1	LS	\$10,000	\$10,000
Mitigation Planting and Watering	1	LS	\$158,000	\$158,000
Construction Contract Work	1	LS	\$10,400	\$10,400
Reconstruct Metal Beam Guard Railing	376	LF	\$25	\$9,400
Terminal System (Type ET)	1	EA	\$4,500	\$4,500
Terminal Anchor Assembly (Type SFT)	1	EA	\$1,200	\$1,200
Centerline Rumble Strip (HMA, ground-in indentations)	165	STA	\$40	\$6,600
Shoulder Rumble Strip (HMA, ground-in indentations)	330	STA	\$40	\$13,200
Shoulder Backing	102	TON	\$42	\$4,284
Subtotal Specialty Items				\$392,584

Section 5 Traffic Items	Quantity	Unit	Unit Price	Item Cost
Thermoplastic Striping (4")	91,264	FT	\$0.35	\$31,942
Thermoplastic Striping (8")	317	FT	\$2.00	\$634
Thermoplastic Pavement Marking	634	SQFT	\$8.00	\$5,072
Pavement Marker (Retroreflective)	1,443	EA	\$5.00	\$7,215
Portable Changeable Message Sign (PCMS)	4	EA	\$6,500	\$26,000
Relocate Roadside Sign	1	LS	\$7,500	\$15,000
Remove Roadside Sign	1	LS	\$5,000	\$5,000
Install Roadside Sign	1	LS	\$5,000	\$5,000
Construction Area Signs	1	LS	\$35,000	\$20,000
Subtotal Traffic Items				\$115,863

Traffic Additions (Added in "TOTAL SECTIONS 1 thru 5)				
Traffic Control System	1	LS	(6% Item Subtotal)	\$317,800
Maintain Traffic	1	LS	(7% Item Subtotal)	\$370,700

SUBTOTAL \$5,295,149

TOTAL SECTIONS 1 thru 5	\$5,983,649
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Section 6 Minor Items	
\$5,983,649 x (5%) = (Subtotal Sections 1 thru 5)	\$299,182
TOTAL MINOR ITEMS	\$299,182

Section 7 Roadway Mobilization	
\$6,282,832 x (10%) = (Subtotal Sections 1 thru 6)	\$628,283
TOTAL ROADWAY MOBILIZATION	\$628,283

Section 8 Roadway Additions	Quantity	Unit	Unit Price	Item Cost
Supplemental Work				
(Subtotal Sections 1 thru 6)				
Contingencies				
\$6,282,832 x (25%) =				\$1,570,708
	\$ Per Hour	Hours Per Day	Work Days	
COZEEP setups @ \$100 per Hour Working 10 Hour Days	\$100	9	20	\$18,000
COZEEP setups @ \$200 per Hour Working 10 Hour Nights	\$200	9	15	\$27,000
(Subtotal Sections 1 thru 6)				\$6,282,832
TOTAL ROADWAY ADDITIONS (Sections 7 & 8)				\$2,243,991

TOTAL ROADWAY ITEMS	\$8,527,000
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II. STRUCTURES ITEMS

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SUBTOTAL STRUCTURES ITEMS \$0
(Sum of Total Cost for Structures)

Railroad Related Costs:	\$0
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SUBTOTAL RAILROAD ITEMS \$0

TOTAL STRUCTURES ITEMS \$0

III. RIGHT OF WAY ITEMS

A. Acquisition, including excess lands,	\$46,968
B. Mitigation acquisition & credits	\$1,036,777
C. Project Development Permit Fees	\$53,150
D. Utility Relocation (State share)	\$0
E. Relocation Assistance (RAP)	\$0
F. Clearance/Demolition	\$0
G. Title and Escrow Fees	\$2,600

TOTAL RIGHT OF WAY ITEMS \$1,139,000

Anticipated Date of Right of Way Certification N/A
(Date to which Values are Escalated)

Estimate Prepared By: Jeffrey Pimentel Phone # 707-445-6358

HOPLAND REHAB PROJECT

Segment 3 - PM 17.5 - 21.1

District - County - Route: 01-MEN-101
PM: 9.2/21.1
EA: 36291K
Program Code: 201.120

PROJECT DESCRIPTION:

Limits:

In Mendocino County along Route 101 from 1.6 miles north of the McNab Creek Bridge to 0.2 miles north of the Robinson Creek Bridge

Proposed Improvement (Scope):

Shouldering widening, overlay, structure widening, drainage improvements, slide repair, MBGR

SUMMARY OF ESTIMATED COST

TOTAL ROADWAY ITEMS	\$18,043,000
TOTAL STRUCTURE ITEMS	\$158,000
SUBTOTAL CONSTRUCTION COSTS	\$18,201,000
TOTAL RIGHT OF WAY ITEMS	\$1,009,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	\$19,210,000
CALL	\$19,210,000

Reviewed by District Program Manager _____ Date _____

Approved by Project Manager _____ Date _____

I. ROADWAY ITEMS

Section 1 Earthwork	Quantity	Unit	Unit Price	Item Cost
Clearing & Grubbing	1	LS	\$200,000	\$200,000
Roadway Excavation	50,451	CY	\$14	\$706,314
Subtotal Earthwork				\$906,314

Section 2 Pavement Structural Section	Quantity	Unit	Unit Price**	Item Cost
Hot Mix Asphalt - Type A	20,589	TON	\$85	\$1,750,065
Rubberized Hot Mix Asphalt - Type G	22,239	TON	\$90	\$2,001,510
Rubberized HMA - Bonded Wearing Course - Open Graded	11,550	TON	\$165	\$1,905,750
Aggregate Base (Class 2)	8,813	CY	\$45	\$396,585
Pavement Reinforcing Fabric	7,064	SQYD	\$2.00	\$14,128
Paint Binder (Tack Coat)	69	TON	\$125	\$8,625
Cold Plane AC	7,064	SQYD	\$3	\$21,192
Subtotal Pavement Structural Section				\$6,097,855

Section 3 Drainage	Quantity	Unit	Unit Price	Item Cost
24" CSP Culvert	889	LF	\$130	\$115,570
30" CSP Culvert	214	LF	\$140	\$29,960
8" Perforated Plastic Pipe Underdrain	9,414	LF	\$50	\$470,700
Miscellaneous Drainage items	1	LS	\$307,200	\$307,200
Subtotal Drainage				\$923,430

Section 4 Specialty Items	Quantity	Unit	Unit Price	Item Cost
Progress Schedule (Critical Path)	1	LS	\$20,000	\$20,000
Water Pollution Control/Sediment Control	1	LS	\$75,000	\$75,000
Erosion Control and Highway Planting	1	LS	\$73,000	\$73,000
Prepare Storm Water Pollution Prevention Plan	1	LS	\$10,000	\$10,000
Mitigation Planting and Watering	1	LS	\$145,000	\$145,000
Construction Contract Work	1	LS	\$10,400	\$10,400
Rock Slope Protection (1/4 Ton)	39,763	CY	\$70	\$2,783,410
Reconstruct Metal Beam Guard Railing	517	LF	\$25	\$12,925
Shoulder Rumble Strip (HMA, ground-in indentations)	769	STA	\$40	\$30,760
Shoulder Backing	316	TON	\$42	\$13,272
Subtotal Specialty Items				\$3,173,767

Section 5 Traffic Items	Quantity	Unit	Unit Price	Item Cost
Thermoplastic Striping (4")	115,950	FT	\$0.35	\$40,583
Thermoplastic Pavement Marking	301	SQFT	\$8.00	\$2,408
Pavement Marker (Retroreflective)	2,415	EA	\$5.00	\$12,075
Portable Changeable Message Sign (PCMS)	4	EA	\$6,500	\$26,000
Relocate Roadside Sign	1	LS	\$7,500	\$15,000
Remove Roadside Sign	1	LS	\$5,000	\$5,000
Install Roadside Sign	1	LS	\$5,000	\$5,000
Construction Area Signs	1	LS	\$35,000	\$20,000
Subtotal Traffic Items				\$126,066

Traffic Additions (Added in "TOTAL SECTIONS 1 thru 5)				
Traffic Control System	1	LS	(6% Item Subtotal)	\$683,200
Maintain Traffic	1	LS	(7% Item Subtotal)	\$786,000

SUBTOTAL	\$11,227,432
TOTAL SECTIONS 1 thru 5	\$12,696,632

Section 6 Minor Items	
\$12,696,632 x (5%) = (Subtotal Sections 1 thru 5)	\$634,832
TOTAL MINOR ITEMS	\$634,832

Section 7 Roadway Mobilization	
\$13,331,463 x (10%) = (Subtotal Sections 1 thru 6)	\$1,333,146
TOTAL ROADWAY MOBILIZATION	\$1,333,146

Section 8 Roadway Additions	Quantity	Unit	Unit Price	Item Cost
Supplemental Work				
(Subtotal Sections 1 thru 6)				
Contingencies				
\$13,331,463 x (25%) =				\$3,332,866
	\$ Per Hour	Hours Per Day	Work Days	
COZEEP setups @ \$100 per Hour Working 10 Hour Days	\$100	9	20	\$18,000
COZEEP setups @ \$200 per Hour Working 10 Hour Nights	\$200	9	15	\$27,000
(Subtotal Sections 1 thru 6)				\$13,331,463

TOTAL ROADWAY ADDITIONS (Sections 7 & 8) \$4,711,012

TOTAL ROADWAY ITEMS \$18,043,000
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II. STRUCTURES ITEMS

Bridge Name	Robinson Creek Bridge (#10-0005R)
Structure Type	RC T-Beam
Width (out to out) - (ft)	41.83
Length (begin to end bridge) - (ft)	146.02
Span Lengths - (ff)	36' - 36' - 36' - 36'
Total Area - (SF)	244
Footing Type (pile/spread)	pile
Cost per SF (includes 10% mobilization & 25% contingency)	\$646.90
Total Structure Cost =	\$158,000

SUBTOTAL STRUCTURES ITEMS \$158,000
 (Sum of Total Cost for Structures)

Railroad Related Costs:

SUBTOTAL RAILROAD ITEMS \$0

TOTAL STRUCTURES ITEMS \$158,000

III. RIGHT OF WAY ITEMS

A. Acquisition, including excess lands,	\$0
B. Mitigation acquisition & credits	\$957,025
C. Project Development Permit Fees	\$48,886
D. Utility Relocation (State share)	\$0
E. Relocation Assistance (RAP)	\$0
F. Clearance/Demolition	\$0
G. Title and Escrow Fees	\$2,600

TOTAL RIGHT OF WAY ITEMS \$1,009,000

Anticipated Date of Right of Way Certification N/A
 (Date to which Values are Escalated)

Estimate Prepared By: Jeffrey Pimentel Phone # 707-445-6358

ATTACHMENT F

**PRELIMINARY ENVIRONMENTAL
ASSESSMENT REPORT**

Preliminary Environmental Analysis Report

Project Information

District 01 County MEN Route 101 Post Mile 9.2/21.1 EA 01-36291K

Project Title: MEN 101 Rehabilitation

Project Manager Steven Blair Phone # (707) 441-5899

Project Engineer Jeffery Pimentel Phone # (707) 445-6358

Environmental Office Chief Sandra Rosas Phone # (530) 741-4017

Environmental Generalist Cassandra Pitts Phone # (530) 741-4139

Project Description

Purpose and Need:

The purpose of the Resurfacing, Restoration and Rehabilitation project is to preserve and extend the design life of the existing highway for a minimum of ten years and enhance highway safety.

This segment of Route 101 exhibits deteriorated roadway pavement, narrow shoulder widths, drainage deficiencies, non-standard metal beam guard rail, and other roadway features that are in need of improvement as part of this Resurfacing, Restoration and Rehabilitation project.

Description of Work:

The project proposes to rehabilitate an 11.9 mile section of US 101 in Mendocino County, California. The project area extends from the Russian River Bridge north through the town of Hopland to 0.2 miles north of the Robinson Creek Bridge. The project scope includes:

- Pavement dig outs and asphalt concrete overlays.
- Shoulder widening.
- Bridge structure widening.
- Upgrade sections of metal beam guardrail.
- Drainage improvements.

Pile driving and construction access roads will be built to facilitate the construction of the Hopland Overhead widening. Even though the railroad runs parallel and in close proximity to US 101, the project is not expected to impact the railroad between those limits. However, railroad involvement will be required with the widening of the Hopland Overhead since the railroad passes beneath the existing structure. Utility poles will be relocated at the north east and south east corners of the US 101/State Route 175 intersection, a light pole will be relocated on the north side of Hopland and tree removal will be required in order to meet the standard for Clear Recovery Zone.

Alternatives: There are two alternatives considered for this project, the “Build” Alternative and the “No Build” Alternative.

Alternative 1: Build Alternative –The project will include bridge structure widening, structural section repairs, pavement overlays, rumble strip, reconstructing metal beam guardrail and terminal sections, culvert replacement, shoulder widening and a retaining wall.

Alternative 2: No Build Alternative – This alternative would not eliminate future degradation of the roadway and pavement or improve drainage to bring the roadway and features up to the current standards. This alternative does not meet the project “Purpose and Need”.

Anticipated Environmental Approval

- | <u>CEQA</u> | <u>NEPA</u> |
|-------------------------------------|------------------------------------|
| o Categorical/Statutory Exemption | o Categorical Exclusion |
| ➔ Negative Declaration / focused ND | ➔ Finding of No Significant Impact |
| o Environmental Impact Report | o Environmental Impact Statement |

The anticipated environmental approval for the proposed project is an Initial Study/Negative Declaration (IS/ND)/Environmental Assessment/Finding of No Significant Impact (EA/FONSI) pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), respectively. Mitigation may be necessary to reduce any impact to less than significant. It is not anticipated that adverse effects will result from this project after all mitigation has been included. However, if the technical studies detect an impact(s) that cannot be alleviated below the level of significance or found to be adverse, then a Negative Declaration (ND)/Finding of No Significant Impact (FONSI) cannot be prepared. An Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) must be prepared pursuant to CEQA and NEPA.

Pursuant to Section 6005 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), and the SAFETEA-LU Pilot Program Memorandum of Understanding (MOU) effective July 1, 2007, the Federal Highway Administration (FHWA) has assigned, and Caltrans has assumed, all the US Department of Transportation Secretary’s responsibilities under the National Environmental Policy Act (NEPA). The assignment applies to all projects on the State Highway System (SHS), and all Local Assistance projects off the SHS within the State of California, with the exception of the responsibilities concerning certain categorical exclusions, which were assigned to the Department under the June 7, 2007 MOU, projects excluded by definition, and specific project exclusions. When determining the class of action (Routine Environmental Assessment vs. Complex Environmental Assessment), the districts must now obtain concurrence from the Headquarters Environmental Coordinators.

It is estimated that completion of the environmental document process will require approximately 16-18 months. This time period includes field reviews, preparation of the technical reports, agency consultation, environmental document preparation, circulation of the document to the public and any revisions.

PSR Summary Statement

In order to identify environmental issues, constraints, costs, and resource needs, the Office of Environmental Management prepared a Preliminary Environmental Analysis Report (PEAR) for the project. Preliminary environmental studies consist of windshield surveys and a review of records and databases. Due to the potential need to provide mitigation measures, it is anticipated that an Initial Study (IS)/Environmental Assessment (EA) is necessary to determine the appropriate environmental document for this project. The environmental approval is expected to be an Initial Study/Negative Declaration (ND) pursuant to the California Environmental Quality Act (CEQA) and an Environmental Assessment/Finding of No Significant Impacts pursuant to the National Environmental Policy Act (NEPA). It is estimated that approximately 16-18 months will be required to complete the environmental process.

Anticipated Project Mitigation (for standard PSR only)

Project specific mitigation would be determined at the time of project implementation; however, the following recommendations include general avoidance and minimization measures and approximate cost estimates:

Jurisdictional Waters

Avoid impacts and in-stream work (fill and excavation). Direct impacts should be compensated per the US Army Corps of Engineers, California Department of Fish and Game and the Regional Water Quality Control Board criteria. Project cost is estimated at \$150,000/acre. Avoidance measures would be incorporated into the project.

Mammals

Avoid impacts to bats, ringtails and Pacific Fisher. Work would be scheduled outside of the bats migratory roosting period (August 15 to February 1). Work that may impact the ringtails or their denning areas (California Protected Species) and the Pacific fisher (Federal Species of Concern), will require consultation with the California Department of Fish & Game. Avoidance measures would be incorporated into the project.

Sensitive Fish Species

Avoid impacts to in-water work, or work within the bed, banks, or riparian corridors of waterways. Consultation will be required with the National Marine Fisheries Service, California Department of Fish & Game, and US Fish & Wildlife Service. Work should be scheduled from July 1 to September 15. Avoidance measures would be incorporated into the project.

Sensitive and Migratory Birds

Work would be scheduled outside of the nesting period (August 15 to February 1). Avoidance measures would be incorporated into the project.

Sensitive Reptiles and Amphibians

Avoid impacts and in-stream work (fill and excavation). Direct impacts should be compensated per US Fish and Wildlife Service and/or California Department of Fish & Game. Avoidance measures would be incorporated into the project.

Riparian Vegetation

Avoid or minimize riparian vegetation. All mitigation will require consultation with the California Department of Fish & Game. On-site or near-site replanting is recommended. Project cost is estimated at \$225,000/acre to compensate for direct impacts with US Army Corp of Engineers. Avoidance measures would be incorporated into the project.

Native Oak Trees

Avoid or minimize tree removal. All mitigation will require consultation with the California Department of Fish & Game. On-site or near-site replanting is recommended. Project cost is estimated at \$20,000-60,000/acre to acquire parcels and perform oak planting and monitoring.

Cultural Resources

Portions of 12 prehistoric and historic archaeological sites are known to extend within the ESL and more may be present. There are also 3 additional historic architectural sites located along US 101: the Northwestern Pacific Depot and Railroad in Hopland and a residence. Evaluation of these potential resources and mitigation costs could range up to \$1,000,000.

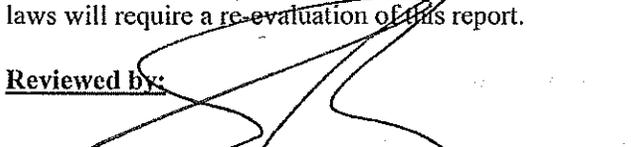
Hazardous Waste

Three potential hazardous waste issues were identified: (1) naturally occurring asbestos, (2) aerially deposited lead, and (3) asbestos containing construction material. Therefore, a Preliminary Site Investigation (PSI) is required for this project. Costs could range up to \$18,500.

Disclaimer

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

Reviewed by:



Environmental Office Chief

Date: 3/24/09



Project Manager

Date: 3-25-09

Environmental Technical Reports or Studies Required

	Study	Document	N/A
Community Impact Study	➔	0	0
Farmland	➔	0	0
Section 4(f) Evaluation	0	0	0
Visual Resources	➔	➔	0
Water Quality	➔	➔	0
Floodplain Evaluation	➔	➔	0
Noise Study	➔	➔	0
Air Quality Study	➔	➔	0
Paleontology	0	0	➔
Wild and Scenic River Consistency	➔	0	0
Cumulative Impacts	➔	0	0
Cultural			
ASR	0	➔	0
HSR	0	➔	0
HASR	0	➔	0
HPSR	0	➔	0
Section 106 / SHPO	0	➔	0
Native American Coordination	0	➔	0
Other			
Finding of Effect_____	0	0	0
Data Recovery Plan_____	0	0	0
Hazardous Waste			
ISA (Additional)	➔	➔	0
PSI	➔	➔	0
Other			
_____	0	0	0
Biological			
Endangered Species (Federal)	➔	➔	0
Endangered Species (State)	➔	➔	0
Species of Concern (CNPS, USFS, BLM, S, F)	➔	➔	0
Biological Assessment (USFWS, NMFS, State)	➔	➔	0
Wetlands	➔	0	0
Invasive Species	➔	0	0
Natural Environment Study	➔	➔	0
NEPA 404 Coordination	0	0	0
Other			
_____	0	0	0
Permits			
401 Permit Coordination	0	➔	0
404 Permit Coordination	0	➔	0
1602 Permit Coordination	0	➔	0
City/County Coastal Permit Coordination	0	0	0
State Coastal Permit Coordination	0	0	0
NPDES Coordination	0	➔	0
US Coast Guard (Section 10)	0	0	0

Discussion of Technical Review

Socio-Economic and Community Effects. The project is not expected to have any effects on the local community or the economy.

Farmlands. N/A

4(f) Impacts. Section 4(f) is a national policy created by the US Department of Transportation to preserve the natural beauty of public parks, recreational lands, wildlife and waterfowl refuges, and historic sites. Unless this project impacts a historic site on or eligible for the National Register, not readily identified through the record search, Section 4(f) is not applicable to this project.

Visual Effects. Upon review of the project scope, a Visual Impact Assessment will be required for this project. A Visual Impact Assessment report with mapping will identify the locations of significant visual resources, identify and quantify potential impacts, and point out areas of high and low priority. The inventory of visual resources may include:

- Positive and negative views;
- Town of Hopland;
- Aesthetic treatment for proposed retaining wall;
- Aesthetic treatment for bridge barriers for several bridges;
- Cut and fill impacts; and
- Soil over Rock Slope Protection (RSP).

The Visual Impact Analysis will evaluate how much vegetation, landscaping, and plantings would be impacted, the effect the project would have on the visual setting and the scenic resources, aesthetic treatment for retaining walls and bridge structures, and other appropriate mitigation measures within the project limits.

The visual assessment would be used to design mitigation measures by showing the areas of high and low visual impact. Mitigation can include avoiding, minimizing, and reducing impacts as well as rectifying or compensating for them.

Water Quality and Erosion. There are potentially significant impacts to water quality that can be mitigated to less than significant levels. Given the scope of the project, an evaluation of post construction treatment Best Management Practices will be required to demonstrate that the project has limited pollutants in storm water discharges to the maximum extent practicable. The project will need to obtain coverage under the statewide construction general permit for storm water discharges related to construction activities.

The project is located in the Russian River watershed, a 303(d) listed water body, impaired for sediment and temperature. Removal of riparian vegetation and hydromodification are listed as potential sources contributing to the temperature impairment. Construction, land development, removal of riparian vegetation, streambank modification/destabilization, drainage/filling of wetlands, highway maintenance and runoff are listed as potential sources for the sedimentation/siltation impairment.

Floodplain. No impacts or increase in floodwater elevations are expected due to this project because the proposed width of the floodplain encroachment by the project is minimal in relation

to the total floodplain width and would not result in a measurable increase of the Base Flood Elevations.

Air Quality. This project is exempt from all air quality conformity analysis requirements. The contractor is required to conform with the Caltrans Standard Specifications which includes Section 7-1.01F, “Air Pollution Control” and Section 10, “Dust Control” that require the contractor to comply with all pertinent rules, regulations, ordinances, and statues of the local air district in order to minimize any potential temporary construction-related emission impacts.

Noise. This project is not anticipated to be a Type I project as defined by 23 CFR section 772 and Caltrans’ Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects. No project level noise analysis is required.

Cultural Resources. The project area encompasses ten bridge structures, and three of these structures will be widened as part of the undertaking. All ten of these structures were assessed as Category 5 – not eligible – during the updated 2006 Statewide Historic Bridge Inventory.

All proposed work would take place within the existing and proposed right-of-way and temporary construction easements (TCEs). The Environmental Study Limits (ESL) for this project varies from (75.00-125.00 ft) from the existing centerline on both sides of the highway. The proposed project, which will receive federal and state funding, represents a federal undertaking subject to regulatory requirements set forth under Section 106 of the National Historic Preservation Act (36 CFR Part 800), which is currently governed by stipulations of the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federally-Aided Highway Program in California* (PA).

The evaluation is based on an examination of preliminary plans; Caltrans project files; the Hopland, Purdys Gardens, and Elledge Peak, Calif. 7.5 minute USGS topographic quadrangles; and highway As-built plans. Additionally, a review was conducted of resources listed on the National Register of Historic Places (United States Government 1979 and supplements to date), California Historical Landmarks (State of California 1990 and supplemental information to date), California Points of Historical Interest (State of California 1992 and supplemental information to date), California Register of Historic Resources (State of California 1997 and supplemental information to date), and the Caltrans Historic Bridge Inventory (California Department of Transportation 1986).

Caltrans previously studied about 70% of the current project area limits in conjunction with the proposed Hopland Bypass project.

One property that is listed on the National Register of Historic Places, the Thatcher Hotel at 13401 US 101 in the town of Hopland, is within the project area limits. Additionally, the architectural survey for the bypass project identified two eligible properties that are within the current project area: (1) the Northwestern Pacific Depot and Railroad in Hopland and (2) a residence at 13100 South US 101. An examination of aerial photographs and USGS topographic quadrangles suggests that 20 previously unevaluated parcels within the ESL need to be studied by an architectural historian.

The archaeological survey for the Hopland bypass identified 12 sites that appear to extend within the current project area limits. Most of these sites appear to represent prehistoric lithic scatters, although three sites might contain midden deposits. Additionally, there are a number of features or properties (such as culverts and right-of-way markers) that appear to extend into the current project area limits, but meet criteria for Attachment 4 of the PA (Properties Exempt from Evaluation). Approximately 30% of the current project area limits were not covered by the Hopland bypass survey, and those unsurveyed areas exist within downtown Hopland and north of Robinson Creek. A records search at the Northwest Information of the California Historical Resources Information System at Sonoma State University is needed to determine whether any portions of the project area were ever surveyed in conjunction with non-Caltrans projects and if any sites were previously recorded in these areas.

The following tasks are required to comply with Section 106 of the National Historic Preservation Act:

- Conduct a records search to fully identify all previously recorded archaeological sites and prior archaeological studies;
- Consult with local historical societies, the Mendocino County Archaeological Commission; the Native American Heritage Commission, and local Native American representatives;
- Obtain Permits to Enter for unsurveyed portions of the ESL;
- Conduct an archaeological survey of all areas not previously examined and prepare an Archaeological Survey Report;
- Fully define the vertical and horizontal extent of ground disturbance needed for project construction and delineate an Area of Direct Impacts (ADI);
- Prepare a task order and state cost estimate for a Phase II investigation of those portions of sites within the ADI (including a proposal, fieldwork, laboratory analysis, and Phase II report);
- Conduct consultant oversight for Phase II investigation;
- Prepare a Historic Resources Evaluation Report (HRER) for architectural and historic period archaeological sites (if necessary); and
- Prepare a Historic Property Survey Report (HPSR).
- Prepare a Finding of Effects (FOE) document if historic properties (i.e., resources that are eligible for listing on the National Register of Historic Places) are present and will potentially be affected by the undertaking; and
- Submit documents to the State Historic Preservation Officer (SHPO) for a 30-day review period under the PA.

If the FOE concludes that the project would have an adverse effect on the qualities that make a resource eligible for listing, Caltrans is also required to:

- Prepare a Memorandum of Agreement (MOA) laying out the measures that will be implemented to avoid, minimize, or mitigate the adverse effects on a historic property and establishing responsibility for implementing each of the measures; and
- Consult with the SHPO regarding the terms of the MOA. Resolution of the terms of the MOA may take 6-18 months, depending on the complexity of issues and the feasibility of proposed mitigation measures.

For purposes of this PEAR, optimistic and pessimistic scenarios are assessed in relation to workload time and costs. The most optimistic scenario is that no other resources beyond the 12

archaeological sites exist within the ESL/APE and none of these are eligible for National Register listing. The most pessimistic scenario is that 24 archaeological sites are present and that more than one site is eligible for National Register listing. The most likely scenario is that 16 archaeological sites are present within the ESL/APE (based on an assumption that sites within the unsurveyed 30% of the ESL/APE turn up at the same rate as within the 70% already surveyed by Caltrans) and that at least one site is eligible. Estimated hours range from approximately 1,368 to 2,816 hours. Estimated hours for Phase II archaeological studies consists only of those hours needed for a Caltrans archaeologist to oversee a consultant. Because portions of 12 archaeological sites are known to extend within the ESL and more may be present, the schedule for completing Section 106 studies will extend from three to five years to allow for evaluation of resources as well as possible impact mitigation. Evaluation and mitigation costs range up to \$1,000,000. If project plans change, the conclusions of this PEAR Evaluation may be invalidated and potential impacts to cultural resources may need to be re-examined.

Native American Coordination. Coordination will occur with Native American groups and individuals as appropriate throughout the environmental process.

Hazardous Waste/Materials. The Initial Site Assessment (ISA) indicates that the soil and vegetation will be disturbed during construction. Excess soil material will need to be disposed of offsite. New right-of-way may be required. The project limits fall within an area identified by the Mendocino Air Quality Management District that may contain naturally occurring asbestos.

Based on this review and previously general sampling conducted within the project limits there are three potential hazardous waste issues, (1) naturally occurring asbestos, (2) aerially deposited lead, and (3) asbestos containing construction material. Therefore, a Preliminary Site Investigation (PSI) is required for this project.

Biological Resources. This project may affect the following sensitive biological resources:

Mammals

Bat surveys were conducted in and around Hopland between June 2002 and July 2003 by California State University, Sacramento. These surveys included the Hopland overhead bridge and the US 101 “green bridge” of the Russian River. Surveys will be required at the remaining structures including McNab Creek, Feliz Creek and Robinson Creek. The ringtail (California “Fully Protected” Species) and the Pacific fisher (Federal Species of Concern) may be present within the ESL.

Potential Impacts and Consultation: Construction activities (vegetation removal, work on bridges, buildings, or other structures) have the potential to directly or indirectly impact mammal species (bats) or habitat required for their reproductive success, including potential roosting areas in oak woodland and on structures. Impacts to bat species will require consultation with California Department of Fish & Game and the US Fish & Wildlife Service. Work on substrates suitable for bat day roosts may be restricted to the seasonal migrational period for many bat species. Impacts to ringtails or ringtail denning areas will require consultation with the California Department of Fish & Game. No direct or indirect impacts to Pacific fisher are expected to occur as a result of the proposed project. No surveys for this species are recommended.

Birds

It is anticipated that bird species and raptors protected by the Migratory Bird Treaty Act may try to nest within the project area between February 15 and September 1. Surveys for nesting birds shall be performed if vegetation removal or work on structures that support bird nests is

scheduled to commence between February 15 and September 1, when nesting migratory birds are assumed to be present within the project area.

Potential Impacts and Consultation: By implementing the recommended avoidance and minimization measures, construction activities are not likely to directly impact bird species or habitat required for their reproductive success, including potential nesting areas in existing vegetation, or on Caltrans structures. Impacts to sensitive or migratory bird species will require consultation with the US Fish and Wildlife Service and the California Department of Fish & Game.

Fish

The Russian River and its tributaries are known to support populations of central coast chinook salmon, central California coast steelhead, California coast chinook salmon (federally listed “threatened” species), green sturgeon (a candidate for federal listing), Russian River tule perch and Navarro roach (California species of special concern). No surveys for sensitive species will be required, as the above species are known to inhabit fish bearing waters of the Russian River system.

Several culverted crossings of ephemeral, intermittent and perennial waters were noted during surveys conducted for the proposed Hopland bypass project. Potentially fish bearing drainages are listed in appendix 1.

Potential Impacts: In-water work, or work within the bed, banks, or riparian corridors of waterways within the project area has the potential to directly or indirectly impact sensitive aquatic resources including sensitive fish species. In water work will require the consultation with US Fish & Wildlife Service, California Department of Fish & Game, US Army Corps of Engineers, Regional Water Quality Control Board, and the National Marine Fisheries Service. In-stream work is likely to be restricted to between July 1st and September 15 of a given construction season.

Fish Passages

Caltrans is required to complete an assessment of potential barriers to anadromous fish prior to commencing any project using State or Federal transportation funds, and is required to construct projects without presenting barriers to fish passage, and to pursue remediation of existing barriers. Caltrans is required to develop necessary passage corrections during project development in consultation with the California Department of Fish & Game.

A total of twelve (12) systems within the proposed Hopland Highway Rehabilitation project ESL were evaluated for fish passage by the Caltrans Hydraulics Design Department in January of 2009. The results of the assessment are included in Appendix 1 (pages 18-21).

None of the culverts evaluated posed fish passage barriers, the remaining culverts were in areas where fish habitat was non existent or very poor. The invert of the 36” culvert at PM 14.73 is in poor condition. The proposed project recommends replacing this culvert with a 42” alternate pipe culvert (APC).

Amphibians and Reptiles

Ephemeral, intermittent and perennial waters located near and within the project area have the potential to provide breeding habitat or movement corridors for foothill yellow legged frogs and western pond turtles. Western pond turtles were observed at several locations within or adjacent to the ESL of the proposed Hopland Bypass Project during field surveys conducted between 2003 and 2005.

Areas where the ESL for proposed project overlaps with the ESL for the proposed Hopland Bypass Project (PM 9.1-17.6) will require a re-evaluation to confirm the resources that were inventoried and mapped as part of the proposed bypass project. Areas within the Hopland Highway Rehabilitation Project ESL that are located outside of the ESL of the proposed Hopland Bypass project (PM 17.60-21.90) will require complete biological inventory, including surveys for sensitive reptile and amphibians. Surveys for sensitive reptiles and amphibians should be conducted between the months of March and June.

Potential Impacts and Consultation: In-water work, or work within the bed, banks, or riparian corridors of waterways within the project area has the potential to directly or indirectly impact sensitive aquatic resources including sensitive amphibians and reptiles (western pond turtle). In-water work affecting these species will require the consultation with the California Department of Fish & Game, US Army Corps of Engineers, and the Regional Water Quality Control Board. In-stream work is likely to be restricted to between July 1 and September 15 of a given construction season.

Invertebrates

Although no California Natural Diversity Data Base (CNDDDB) records for listed and special status vernal pool invertebrates (fairy shrimp, tadpole shrimp, etc) exist in the project vicinity, or within Mendocino County proper, these species may potentially occur within seasonal wetlands located within the project vicinity in appropriate habitat. Surveys will be required to identify, inspect and map appropriate seasonal wetland areas that may function as habitat for special status vernal pool invertebrates. The project area and ESL are outside of the known range of the California freshwater shrimp and no surveys for this species are recommended.

Vegetation / Sensitive Plants

Habitat conditions exist for one or more special status plant species within the project area and the ESL is known to support oak and riparian woodlands.

Surveys were conducted and mapping was produced documenting the presence and locations of oak woodlands (blue, interior live, scrub, and black oaks), riparian woodlands, and sensitive plant species within the ESL of the proposed Hopland Bypass project (MEN 101, PM 8.00 to 17.60) during field surveys conducted between 2003 and 2005.

Areas where the ESL for the proposed Hopland Rehabilitation Project overlaps with the ESL for the proposed Hopland Bypass Project will require a re-evaluation to confirm the resources that were inventoried and mapped as part of the proposed Hopland Bypass project and still exist on site. Areas within the Hopland Highway Rehabilitation project ESL that are located outside of the ESL of the proposed Hopland Bypass project will require complete biological inventory, including surveys to identify, map and measure oak trees and riparian vegetation, and surveys to identify and map special status plant species. It is recommended that surveys for special status plant species are conducted throughout the entire ESL, including the previously surveyed area of overlap with the proposed Hopland Bypass Project ESL (due to annual variability in plant

populations), and plant surveys should be conducted during the appropriate blooming periods (approximately February to June).

Potential Impacts and Consultation: Because habitat conditions exist for one or more special status plant species within the project area, vegetation removal or groundbreaking activities have the potential to directly or indirectly impact special status plant species. Impacts to federally listed plant species or plant species of federal concern will require consultation with the US Fish & Wildlife Service. Impacts to state listed, state special concern or otherwise rare California Native Plant Society (CNPS) plant species will require consultation with the California Department of Fish & Game.

Impacts to native oak trees will require consultation with the California Department of Fish & Game and mitigation in compliance with Senate Concurrent Resolution #17 (Oak Woodlands). On-site or near site mitigation is recommended. Project costs should incorporate the purchase of additional right of way, mitigation banking credit, or other land acquisition that will be required for performing oak mitigation, as well as costs for long term (up to 5 years) mitigation monitoring.

Impacts to riparian vegetation will require consultation with the California Department of Fish & Game and mitigation in compliance with sections 1600-1616 of the California Fish and Game Code, section 13260 of the California Water Code, and sections 401 and 404 of the Clean Water Act. On-site or near site mitigation is recommended. Project costs should incorporate the purchase of additional right of way, mitigation banking credit, or other land acquisition that will be required for performing riparian woodland mitigation, as well as costs for long term (up to 5 years) mitigation monitoring.

Wetlands

Surveys were conducted and mapping was produced documenting the presence and locations of potential wetlands, potential “other waters” of the United States, and potential “waters of the State of California” within the ESL of the proposed Hopland Bypass during field surveys conducted between 2003 and 2005.

Areas where the ESL for the proposed project overlaps with the ESL for the proposed Hopland Bypass project (PM 9.1-17.6) will require a re-evaluation to confirm the resources that were inventoried and mapped as part of the proposed Bypass Project and still exist on site. Areas within the Hopland Highway Rehabilitation project ESL that are located outside of the ESL of the proposed Hopland Bypass project (PM 17.60-21.90) will require complete biological inventory, including surveys to identify, map and measure potentially jurisdictional wetlands and other waters. United States Geological Survey topographic maps indicate that at least two unnamed intermittent drainages, and one named intermittent stream (Robinson Creek) cross US 101 within the ESL of the currently proposed Hopland Highway Rehabilitation project between PMs 17.6 and 21.9. It is recommended that surveys for potentially jurisdictional wetlands and other waters are conducted between March and June

Potential Impacts and Consultation: In-stream work and impacts to jurisdictional wetlands are expected to occur during the course of drainage improvement activities. Any impacts to jurisdictional waters (including fill or excavation within wetlands or other waters), or water quality will require consultation with the US Army Corps of Engineers, California Department of Fish & Game and the Regional Water Quality Control Board.

Invasive Pest Plant Species. Executive Order 13112 requires that any federal action may not cause or promote the spread or introduction of invasive species. Implementation of this project may result in the removal of existing vegetation. During construction, every effort will be made to minimize the spread or introduction of invasive species.

Right-of-Way Relocation or Staging Area. New right-of-way is needed for this project. Construction access roads will be made to facilitate the construction of the Hopland Overhead widening. These roads will need to be identified as part of the environmental study request. There will also be railroad involvement with the widening of the Hopland Overhead since the railroad passes beneath the existing structure. The equipment staging area will most likely be one of the large pull out sections located at PM 9.65, 12.9 or 17.4. The railroad runs parallel and in close proximity to US 101 from PM 11.2 to 12.7. Impacts to the railroad between those limits are not expected. Utility poles will be relocated at the Northeast and Southeast corners of US 101/State Route 175 intersection. A light pole will be relocated at PM 11.18 (north side of Hopland). Pile driving will occur as a result of the Hopland Overhead widening. This project will have surplus material that will need to be hauled off-site. The contractor will use some surplus material to construct slopes as needed; all other excess materials will become the property of the contractor who will be solely responsible for removal from the project site.

Permits. Under the current scope of the project the following permits are needed. Consultation for these permits could take up to 12 months.

Permits to enter for unsurveyed portions of the Environmental Study Limit;
US Army Corps of Engineers (USACE) Nationwide Permit, Under the 404 Permit;
Regional Water Quality Control Board (RWQCB) 401 Permit;
California Department of Fish and Game (California Department of Fish & Game) 1602 Permit;
National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS) Biological Opinion; and
Section 7 consultation with US Fish & Wildlife Service (if in-stream work is proposed in any perennial waterway, or if impacts to fish bearing water).

Coastal Zone. N/A

List of Preparers

Hazardous Waste Review by Mark Melani	Date 11/12/08
Biological Review by Jason Meigs	Date 12/05/08
Water Quality/Storm Water Review by Alex Arevalo	Date 11/26/08
Cultural Resources/Architectural History Review by Jeff Haney	Date 10/29/08
Noise Review by Benjamin Tam	Date 12/01/08
Air Quality Review by Sharon Tang	Date 12/01/08
Floodplain Review by Fernando Manzanera	Date 11/26/08
Landscape Architecture Review by Laura Lazzarotto	Date 12/11/08

Attachment A - PEAR Mitigation and Compliance Cost Estimate*(Standard PSRs Only)

Dist.-Co.-Rte.-KP/PM: 01-MEN-101/PM 9.2-21.1 EA: 36291K

Project Description: The project proposes to rehabilitate an 11.90 mile section of US 101 in Mendocino County, California. The project area extends from the Russian River Bridge north through the town of Hopland to 0.20 miles north of the Robinson Creek Bridge. The project scope includes: Pavement dig outs and asphalt concrete overlays; shoulder widening by 8.00 ft along sections of conventional highway and 10.00 ft along freeway sections; structure widening/replacement; upgrade sections of metal beam guardrail; and drainage improvements.

Person completing form/Dist. Office.:Cassandra Pitts – District 3

Project Manager: Steven Blair Phone number: (707) 441-5899

Date: December 19, 2008

	Mitigation			Compliance
	Project Feature ¹	Enviro. Obligation ²	Statutory Require. ³	Permit & Agreement ⁴
Fish & Game 1602 Agreement				137,500
Coastal Development Permit				
State Lands Agreement				
NPDES Permit				
COE 404 Permit- Nationwide				
COE 404 Permit- Individual				
COE Section 10 Permit				
COE Section 9 Permit				
RWQCB – Section 401				24,536
Noise attenuation				
Special landscaping				
Archaeological	1,000,000			
Biological				
Wetlands	1,035,000			
Riparian	1,350,000			
Oak	240,000			
Historical				
Scenic resources				
Hazardous Waste	18,500			
TOTAL (Enter zeros if no cost)	3,643,500	0	0	162,036

Costs are to be reported in \$1,000's.

Costs are to include all costs to complete the commitment including: 1) cost of right-of-way or easements; 2) long-term monitoring and reporting; and 3) any follow-up maintenance.

¹ Mitigation that Caltrans would normally do if not required by a permit or environmental agreement.

² Mitigation that Caltrans would not normally do but is required by conditions of a permit or environmental agreement.

³ Mitigation that Caltrans would not normally do and is not required by a permit or Enviro. Agreement, but is required by a law.

⁴ Non-mitigation Caltrans would not normally do but is required by conditions of a permit or agreement.

*Prepare a separate form for each practicable alternative in the PSR.

APPENDIX 1

**Table 1:
Culverts Evaluated Within Hopland Rehabilitation Project ESL****

Location	Resource	Priority Ranking (North Coast Pilot Research Study, 2001)	Notes	Drainage work currently proposed at this location (01-36291K)	Candidate for Fish Passage Improvement Study in “K” Phase? (01-36291K)
Post Mile 20.91	Robinson Creek	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	Bridge, natural bottom. Topo map suggests approximately several miles of upstream habitat available. This system was not evaluated during studies for Hopland Bypass or during 2001 fish passage assessment for State Highway culverts. Stream is known to support fisheries.	None	No. Current bridge spans Robinson Creek, no fish passage barriers.
Post Mile 19.80	Unnamed Tributary To Russian River	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	18” Culvert. Topo map suggests approximately 1.4 miles of upstream habitat available. This system was not evaluated during studies for Hopland Bypass or during 2001 fish passage assessment for State Highway culverts.	None	No. System is not a barrier to fish passage.
Post Mile 19.57	Unnamed Tributary To Russian River	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	6.0’ x 7.9’ Oval SSPP 378’ long. Topo map suggests approximately 1.9 miles of upstream habitat available. This system was not evaluated during studies for Hopland Bypass or during 2001 fish passage assessment for State Highway culverts.	None	No. System is not a barrier to fish passage.

**Table 1:
Culverts Evaluated Within Hopland Rehabilitation Project ESL****

Location	Resource	Priority Ranking (North Coast Pilot Research Study, 2001)	Notes	Drainage work currently proposed at this location (01-36291K)	Candidate for Fish Passage Improvement Study? (01- 36291K)
Post Mile 18.18	North Fork McNab creek	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	24" Culvert part of storm drain system, not a natural drainage.	None	No. System is not a barrier to fish passage.
Post Mile 16.73	Tributary to North Fork McNab Creek	Gray*	8x5 RCB Invert covered with substrate. Topo map suggests approximately 1.9 miles of upstream habitat available. Species diversity assumed by presence in downstream confluence channel (tributary to McNab Creek).	None	No. System is not a barrier to fish passage.
Post Mile 15.95	McNab Creek	Green*	Existing bridge spans McNab Creek, no fish passage issues. Stream is known to support fisheries.	None	No. Current bridge spans McNab Creek, no fish passage barriers.
Post Mile 14.73	Crawford Irrigation Ditch	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	36" CSP Culvert. No upstream habitat. Several culverts and the railroad levee are located downstream of highway culvert.	Replace with APC culvert	No. System is not a barrier to fish passage.
Post Mile 14.62	Crawford Creek	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	Bridge (natural bottom). Several culverts and the railroad levee are located downstream of highway culvert.	None	No. System is not a barrier to fish passage.

**Table 1:
Culverts Evaluated Within Hopland Rehabilitation Project ESL****

Location	Resource	Priority Ranking (North Coast Pilot Research Study, 2001)	Notes	Drainage work currently proposed at this location (01-36291K)	Candidate for Fish Passage Improvement Study? (01- 36291K)
Post Mile 12.76	Tributary to Sanel Diversion Ditch	Gray*	4x4 RCB Outlet drains to another 4x4 RCB from old highway alignment then through 2-36" RCP under railroad. (HSU Study Site). Downstream barriers include several culverts and railroad line. Stream eventually tributary to the "Sanel Diversion Ditch" and Sanel Creek. Sanel Creek is impounded into a series of irrigation ponds and no longer reaches the Russian River. Approximately 0.44-mile of dry streambed between historic Russian River confluence and lowest impoundment.	None	No. Stream eventually tributary to the "Sanel Diversion Ditch" and Sanel Creek. Sanel Creek is impounded into a series of irrigation ponds and no longer reaches the Russian River.
Post Mile 11.72	Sanel Creek	Assessment Required	5x5 RCB. Rock Weir at Railroad culvert backwaters both Railroad and Caltrans culverts. Sanel Creek is impounded into a series of irrigation ponds and no longer reaches the Russian River. Approximately 0.44-mile of dry streambed between historic Russian River confluence and lowest impoundment.	None	No. Sanel Creek is impounded into a series of irrigation ponds downstream of Hwy 101 and no longer reaches the Russian River.

**Table 1:
Culverts Evaluated Within Hopland Rehabilitation Project ESL****

Location	Resource	Priority Ranking (North Coast Pilot Research Study, 2001)	Notes	Drainage work currently proposed at this location (01-36291K)	Candidate for Fish Passage Improvement Study? (01- 36291K)
Post Mile 10.06	Duncan Springs Creek	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	10x6 RCB. Invert covered with substrate. Stream is ditched for drainage. One potential downstream barrier at railroad culvert.	None	No. System is not a barrier to fish passage.
Post Mile 9.87	Duncan Springs Creek Tributary	Culvert not evaluated during 2001 fish passage assessment for State Highway culverts.	8x7 RCB. Invert covered with substrate. Downstream of culvert stream runs under Railroad. Stream is ephemeral and assumed insignificant for fish passage.	None	No. Stream is ephemeral and assumed insignificant for fish passage. Entire upstream area available is approximately 1,000 feet

* Please refer to the North Coast Pilot Research “Lang Study” study for definition of colors codes.

**The existing culverts listed in Appendix 1 above have been reviewed and/or studied for potential Fish Passage along SR-101. These locations are not a candidate for fish passage.

ATTACHMENT G

INITIAL SITE ASSESSMENT

M e m o r a n d u m

To: Jeffrey L. Pimentel
Project Engineer
1656 Union Street
Eureka CA 95501

Date: November 12, 2008

File No: 01-Men-101
PM 9.2/21.1
Rehabilitation Project

EA: 01-36291K

From: DEPARTMENT OF TRANSPORTATION
Office of Environmental Engineering – South (OEES)

Subject: Initial Site Assessment (ISA)

Per your October 3, 2008 request, OEES has prepared this ISA for the above referenced project. The project includes: widening and replacement of structures, pavement dig outs, asphalt/concrete overlay, shoulder widening, MBGR upgrade, and drainage improvements. Soil and vegetation will be disturbed during construction. Excess soil material will need to be disposed of offsite. New right-of-way may be required. The project limits fall within an area identified by the Mendocino Air Quality Management District as "may contain naturally occurring asbestos".

Based on this review and previous general sampling conducted within the project limits three potential hazardous waste issues, naturally occurring asbestos, aerially deposited lead, and asbestos containing construction material, were identified for the proposed project. Therefore, a Preliminary Site Investigation (PSI) is required for this project. Please include 180 hours under WBS 235.10 and \$18,500 in the project budget to cover our time and the consultants cost to complete the PSI. Once requested, it will take from 2 to 4 months to complete the PSI and final report.

If there are any significant changes to the project scope, or if new information is identified, please contact the OEES, as soon as reasonably possible so the significance of the information and the need for additional studies can be assessed. If you have any questions or comments, please feel free to call me at (530) 741-4556.



Mark Melani,
Office of Environmental Engineering – South

cc: File
Karen Pommerenck, Assistant Environmental Planner

ATTACHMENT H

RIGHT OF WAY DATA SHEET

Memorandum

*Flex your power!
 Be energy efficient!*

To: Steven Blair
 Project Manager

Date: December 29, 2008

Attention: Assistant Project Manager

File: 01-MEN-101-PM 9.2/ 21.1
 E.A 36291K
 In Mendocino County near Ukiah on Rt. 101
 from Russian River BR. # 10-82 to .2 miles
 N. of BR. # 10-5

From: WALTER E. BIRD,
 North Region Right of Way Manager
 Project Delivery Branch

Subject: XPM Resource hours for RW

Please adjust the hours in XPM for this project as follows and remove all other resource line items except those previously charged to.

Task	Resource ID	Task Description	Hrs
100	03.400	Perform Project Management	653
150	03.400	Develop Project Initiation Document (PID) - PSR Stage	400
160	03.400	Perform Preliminary Engineering Studies & Prepare Draft Project Report	170
165	03.400	Perform Environmental Studies & Prepare Draft Environmental Document (DED) PR Stage	323
170	03.400	Permits, Agreements, and Route Adoptions during PA&ED Component	0
175	03.400	Circulate DED & Select Preferred Project Alternative	0
180	03.400	Prepare & Approve Project Report & Final Environmental Document (FED)	0
185	03.400	Prepare Base Maps & Plan Sheets, Utility verification and potholing	164
195	03.400	Right of Way Property Management & Excess Lands	380
200	03.400	Coordinate Utilities	432
205	03.400	Obtain Permits, Agreements & Route Adoptions	191
220	03.400	Perform Right of Way Engineering	0
225	03.400	Obtain R/W Interests for Project R/W Certification	4,011
230	03.400	Prepare Draft PS&E	0
235	03.400	Mitigate Environmental Impacts and Clean Up Hazardous Waste	500
245	03.400	Post Right of Way Certification Work	446
255	03.400	Circulate, Review, and Prepare Final District PS&E Package	0
270	03.400	Perform Construction Engineering and General Contract Administration	0
285	03.400	Prepare & Administer Contract Change Orders	0
Total for this project			7,670

Memorandum

*Flex your power!
Be energy efficient!*

To: Ilene Poindexter
Advanced Planning Branch Chief, D1
Department of Transportation, District 3

Attention Jeffrey Pimentel, Project Engineer
Project Engineer

Date: December 29, 2008

File: 01-MEN-101-PM 9.2/ 21.1
E.A. 36291K
Alternate No. 1

From: WALTER E. BIRD,
North Region Right of Way Manager
Eureka/Redding

In Mendocino County near
Ukiah on Rt. 101 from
Russian River BR. # 10-82 to
.2 miles N. of BR. # 10-5

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project based on information received from you on November 7, 2008, and the following assumptions and limiting conditions.

\$480,000 estimated in connection with mitigation for planting and watering was not included because these funds are to come from Landscaping.

Right of Way Lead Time will require a minimum of **20** months after we receive project first appraisal maps, utility conflict maps, and the necessary environmental clearance and freeway agreements have been approved and obtained. Additionally a minimum of **14** months will be required after receiving the last appraisal map to Right of Way for certification. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.



WALTER E. BIRD,

North Region Right of Way Manager
Eureka/Redding

Attachments:

Right of Way Data Sheet
Railroad Information Sheet
Utility Information Sheet
Mitigation Information Sheet

cc. Steven Blair

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
RIGHT OF WAY DATA SHEET



Date: December 29, 2008

01-MEN-101-PM 9.2/ 21.1
 E.A. 36291K
 In Mendocino County near Ukiah on Rt. 101 from
 Russian River BR. # 10-82 to .2 miles N. of BR. #
 10-5

1. Right of Way Cost Estimate: **Alternate No. 1**

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	\$187,968	5%	\$240,028
B. Mitigation acquisition & credits	\$3,163,500	5%	\$4,039,676
C. Project Development Permit Fees	\$162,036	5%	\$206,914
Subtotal	\$3,513,504		\$4,486,618
D. Utility Relocation (State Share) (Owner's share: \$30,000)			
E. Relocation Assistance (RAP)			
F. Clearance/Demolition			
H. Title & Escrow	\$7,800	5%	\$9,960
I. Total Estimated Right of Way Cost	\$3,521,304		Rounded \$4,497,000 *
J. Construction Contract Work	\$10,400		

2. Current Date of Right of Way Certification

January 1, 2014

3. Parcel Data:

Type	Dual/Appr	Utilities	RR Involvements
X		U4 - 1 2	None
A 17		- 2	C&M Agrmt 1
B 2		- 3	Svc Contract 1
C		- 4	Easements 1
D		U5 - 7 6	Rights of Entry 1
		- 8	Clauses 1
Total 19		- 9 2	
Areas:			
R/W:	0.95 Ac.		RAP Displ N/A
Excess:	N/A	No. Excess Pcls:	Clear/Demo N/A
Mitigation:	24.9 Ac.		Const Permits N/A
			Condemnation 2
			USA Involvement No

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
RIGHT OF WAY DATA SHEET

4. Are there any major items of construction contract work?
Yes X No _____

Removal/ reinstallation of several property fences will be required.

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

The zoning of the required parcels include a combination of RL (160), AG(40), C1, C2, RR, & UR(40). Land uses include vineyard, range land, service station, super market, restaurant, & residential.

6. Are any properties acquired for this project expected to be rented, leased, or sold?
Yes _____ No X

7. Is there an effect on assessed valuation? Yes _____ Not Significant _____
No X

8. Are utility facilities or rights of way affected? Yes X No _____

All locations in town at temporary easments are beyond ramp areas & will not need relocation.

Aerial lines across wall site (PM 11.6/11.7) in conflict with construction equipment (crane etc.) should be able to be temporarily re-routed during construction.

9. Are railroad facilities or rights of way affected? Yes X No _____
North Coast Railroad Authority (NCRA) tracks at the Hopland Overhead PUC# 0098.70A DOT# 499068U.

10. Were any previously unidentified sites with hazardous waste and/or material found?
Yes _____ None Evident X

11. Are RAP displacements required? Yes _____ No X

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

No. of multi-family _____ No. of farms _____

Based on Draft/Final Relocation Impact Statement/Study dated N/A
it is anticipated that sufficient replacement housing (will/will not) be available without Last Resort Housing.

12. Are there material borrow and/or disposal sites required?
Yes _____ No X

13. Are there potential relinquishments and/or abandonments?
Yes _____ No X

14. Are there any existing and/or potential airspace sites?
Yes _____ No X

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
RIGHT OF WAY DATA SHEET

15. What type of mitigation is required for the project?
Archaeological & Biological (Waters of the U.S., Wetlands, Oak Canopy (non-riparian), Valley Foothill Riparian, & Valley Oak Riparian). Also, a Preliminary Site Investigation (PSI) for Hazardous Waste is required and estimated to cost \$18,500 (which is included in the mitigation estimate).

16. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if district proposes less than PMCS lead time and/or if significant pressures for project advancement are anticipated.)

Right of Way Lead Time will require a minimum of 20 months after we receive first appraisal maps, utility conflict maps, and the necessary environmental clearance and freeway agreements have been approved and obtained. Additionally a minimum of 14 months will be required after receiving the last appraisal map to Right of way for certification.

17. Is it anticipated that Caltrans will perform all Right of Way work?
Yes X No

Evaluation Prepared By:

Right of Way: Brett Benson
Brett Benson

Date 12/31/08

Reviewed By:

RW Project Coordinator: Audrey E Oakley
Audrey Oakley

Date 1/13/09

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.

RECOMMENDED FOR APPROVAL

Mark C Ricards
MARK C. RICARDS,
Senior Right of Way Agent
Project Delivery Branch
Eureka

1-5-09
Date

APPROVED:

Walter E Bird
WALTER E. BIRD,
North Region Right of Way Manager
Eureka/Redding

1/21/09
Date

1. Describe railroad facilities or right of way affected:

North Coast Railroad Authority (NCRA) tracks at the Hopland Overhead PUC# 0098.70A DOT# 499068U.

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail service?

Yes ___ No ___ N/A X

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

Railroad Right of Entry (TCE) – required on both sides of the existing structure for contractors access.
Easement – State’s existing rights for structure are via an “Agreement” with the former railroad operator. State’s rights should be perfected to “Highway Easement” for the existing and widened portions of the bridge structure.

Construction and Maintenance Agreement/Service Contract – Project will require entering into a new Construction and Maintenance Agreement with Service Contract as an attachment. Documents will provide delineation of cost responsibilities and future maintenance obligations of State and Railroad.

4. Remarks: (Non-operating railroad right of way involved?) Yes X No ___

State’s existing Hopland Overhead BOH Structure was originally constructed using an “Agreement” between the former railroad owner/operator and State. Widening of the existing structure will require perfection of State’s rights with purchase of a “Highway Easement.” Estimated Phase-9 cost of easement = \$10,000. A Railroad Right of Entry (Temporary Construction Easement) will also be required to provide for contractors access to areas not covered by Highway Easement. Estimated Phase-9 cost = \$5,000. A Construction and Maintenance Agreement including Service Contract will be required for all work required to be performed by railroad (plan review and approval, construction inspection and railroad flagging required during construction). Estimated Phase-4 cost of C&M/Service Contract = \$150,000.

5. PMCS Input Information:

<u>RR Involvements</u>		<u>Estimated Railroad Costs</u>
None	___	Phase - 9 = \$ 15,000
C&M Agreement	<u>1</u>	Phase - 4 = \$150,000
Service Contract	<u>1</u>	Total cost = <u>\$165,000</u>
Design	<u>X</u>	
Construction	<u>X</u>	
Right of Entry	<u>1</u>	
Easement	<u>1</u>	
Clauses	<u>1</u>	

Prepared by:

Original signed by

12/12/2007 (revisited 03/16/09)

TOM GANYON
 Regional Railroad Agent

 Date

1. Name of Utility Companies Requiring Verification Only:

Hopland Public Utilities District - Water
Hopland Public Utilities District - Sewer
AT&T Aerial Communications
AT&T Fiber Optics
PG&E Gas
PG&E Electric

2. Name of Utility Companies Requiring Relocations:

PG&E Aerial Electric
AT&T Aerial Communications

Number of JUA's or CUA's required for this project:

N/A

3. Additional information concerning utility involvements on this project:

All locations in town at temporary easements are beyond ramp areas & will not need relocation.

Aerial lines across wall site (PM 11.6/11.7) in conflict with construction equipment (crane etc.) should be able to be temporarily re-routed during construction.

4. PMCS Input Information

Total estimated cost of State's obligation for utility relocation on this project:

Potholing: \$ _____

Relocation \$ _____

Total: \$ _____

Escalation Rate 5 %.

(Owner's Share: \$ 30,000)

Utility Involvements

U4-1	<u>2</u>	U5-7	<u>6</u>
-2	_____	-8	_____
-3	_____	-9	<u>2</u>
-4	_____		

Prepared By:

Leota Lovelace
Leota Lovelace
Right of Way Utility Estimator

30 Dec 08
Date

1. Is mitigation required for the project?

Yes, per Cassandra Pitts, Environmental Coordinator at @ (530) 741-4139.

2. What type of mitigation is needed for the project?

Archaeological & Biological (Waters of the U.S., Wetlands, Oak Canopy (non-riparian), Valley Foothill Riparian, & Valley Oak Riparian). Also, a Preliminary Site Investigation (PSI) for Hazardous Waste is required and estimated to cost \$18,500 (which is included in the mitigation estimate).

3. List any Resource Agency that will be involved with mitigation.

US Army Corps of Engineers
North Coast Regional Water Quality Control Board
CA Dept of Fish and Game
National Marine Fisheries Service

4. What is the method of Mitigation?

Number of fee acquisition parcels, Conservation Easements, and/or Option agmts required: _____

Mitigation Bank: (yes/no) _____

In-lieu payment: (yes/no) _____

Other: (describe) _____

5. PMCS Input Information

Number of Acres/Credits _____

Estimated Cost \$3,163,500

Prepared By:


Right of Way Mitigation Estimator

ATTACHMENT I

**LANDSCAPE ARCHITECTURE
ASSESSMENT SHEET**



**NORTH REGION
LANDSCAPE ARCHITECTURE ASSESSMENT SHEET**
03-LAND-0002 (Rev. 3/03)

COST INFORMATION:	
<input checked="" type="checkbox"/> Revegetation	\$ 55,000.00
<input type="checkbox"/> ___ year Plant Establishment	
<input checked="" type="checkbox"/> Erosion Control - incl. soil over RSP	\$162,000.00
<input checked="" type="checkbox"/> Slope Protection - Fiber Rolls	\$ 25,000.00
<input checked="" type="checkbox"/> Aesthetic Treatment - architectural treatment on retaining wall - Type ST-20 barrier rail with bike rail	Structures to provide estimate \$ range for wall: \$20-30 per square foot \$ range for barrier rail: \$165-240 per linear foot
TOTAL \$242,000.00	

OTHER RELATED INFORMATION:

Landscape Architecture Resource Estimate:

ROADSIDE VEGETATION MANAGEMENT TREATMENT NEEDS:

- Extended Gore Areas
- Guardrails and Signs
- Medians
- Road Edge
- Side Slopes/Embankment Slopes

(See: <http://www.dot.ca.gov/hq/LandArch/roadside/index.htm> for potential treatment measures)

PREPARED BY: Laura Lazzarotto DATE: 12.12.08 CONCURRED BY: [Signature] DATE: 12/12/08
(Project Manager)

APPROVED BY: [Signature] DATE: 12/12/08
(Landscape Architecture or Engineering Services Branch Chief)

ATTACHMENT J

PRELIMINARY MATERIALS RECOMMENDATION

Memorandum

To: Ilene Poindexter, Chief
Advance Planning, Eureka

Date: July 15, 2008

Attn: Jeffrey Pimentel

File: 01-Men-101-PM 9.2/21.1
01-36291K
Hopland Rehabilitation

From: DEPARTMENT OF TRANSPORTATION - North Region
Michael Stapleton - North Region, Eureka Materials Engineer

Subject: Preliminary Materials Recommendation

In response to your request dated March 26, 2008, personnel from the Eureka Materials Lab conducted a field review within the limits of this project as well as reviewing pertinent information from current and previous project files to determine this preliminary materials recommendation.

Contained within this preliminary recommendation are an overlay recommendation, thickness requirements for any new structural section placement, underdrain placement recommendations, an alternate pipe culvert recommendation, and materials specifications.

Overlay Recommendation

This overlay recommendation is based on two factors:

1. Previous deflection testing and pavement coring completed on May 8, 2007, under project 01-2921U0 between post mile 8.8 to 17.6.
2. An estimation of the overlay thicknesses that will be required based on the Division of Design Pavement Technical Note, "Alternative Procedure to Estimate Flexible Pavement Rehabilitation Requirements".



Overlay Recommendation (Continued):

From previous deflection testing completed between post mile 8.8 to 17.7, under contract 01-2921U0, eleven test sections were selected within this project location with deflection measurements taken at 0.01 mile intervals within each test section. The evaluated (80th percentile) deflections ranged from 0.010" to 0.024" with an overall average of 0.017". The tolerable deflection level for this section of highway is 0.011" over areas with aggregate base and 0.010' over cement treated base. Also included within the tolerable deflection level and the overlay requirement is, the average AC thickness from cores of 0.86' and the 10 year traffic index of 10.5.

During deflection testing and our reviews, the existing pavement exhibited areas of nearly continuous transverse and longitudinal cracking, intermittent to continuous alligator cracking and occasional rutting and pumping.

According to the 2007 Pavement Condition Survey Inventory, the maximum ride score within this project is 72, with an average of 28. Ride scores of 45 or higher will generally "trigger" a project to alleviate roughness.

Analysis of the evaluated deflection levels along the existing mainline between post mile 8.8 and 17.6 shows no need of a hot mix asphalt (HMA) overlay for ride quality, 0.25' is needed for structural integrity with a 10 year design life, and 0.35' HMA-A or equivalent is needed for reflective crack retardation with a 10 year design life.

Using the Alternate Procedure to Estimate Flexible Pavement Rehabilitation Requirements for Project Scoping dated November 1, 2006, this area warrants an HMA-A layer placed at 0.40' for a 10 year design life and 0.50' for a 20 year design.

Existing Surface Materials

This section of roadway is currently scheduled to have a rubberized bonded wearing course, very similar to a rubberized open graded friction course, placed in 2008, at a lift thickness of 0.06' under project 01-478904 between post miles R0.1 to 9.2 and post miles 11.7 to R21.1. With the amount of needed repairs that currently exist and will not be repaired under project 01-478904, it is recommended to cold plane the areas where the new bonded wearing course is placed to the minimum placement depth of 0.06'. Also, within the limits of this project are areas where open graded asphalt concrete currently exists that should also be removed by cold planning beyond the depth of the bonded wearing course. The depth of open graded asphalt concrete placed below the bonded wearing course is 0.08' minimum, and is located at the following locations:

<u>Post Mile</u>	<u>AC Type</u>	<u>Year Placed</u>	<u>Depth</u>	<u>Project</u>
9.20/9.24	OGAC	2004	0.08'	301704
9.58/11.34	OGAC	2001	0.08'	414504
14.60/15.71	OGAC	2001	0.08'	414504

Existing Surface Materials (Continued):

Cold planning of the bonded wearing course and open graded asphalt concrete should be from edge of pavement to edge of pavement, prior to needed repairs, or additional asphalt concrete placement under this project (01-36291K).

Overlay Design Life Thicknesses

Under Caltrans current policy, the minimum design life for roadway rehabilitation projects with a current annual average daily traffic (AADT) of less than 15,000 shall be 20 years. Roadway rehabilitation projects with current average annual daily traffic of 15,000 or more require a life cycle cost analysis to be performed, comparing a pavement design life of 20 years with a pavement design life of 40 years. For roadways with the current AADT higher than 15,000, the design representing the lower of the two life-cycle costs shall be selected. Because there is currently a project in design to bypass Hopland (01-2921U0) and the fact that areas of this roadway will most likely become frontage road, and/or be given to Mendocino County, a 40 year overlay design is not given.

10 Year Design Life Overlay Recommendation

Based on Table 1 contained within the Alternative Procedure to Estimate Pavement Rehabilitation Requirements and a reliability estimate of 80% with a 10 year traffic index of 10.5 the following overlay is needed for mainline and shoulders:

Strategy 1 (preferred):

Cold plane any existing bonded wearing course material and open graded asphalt concrete in areas as identified within "Existing Surface Materials", above. Following the cold planning, conduct a field review locating areas of severe failure identified by rutting greater than 0.05' and/or loose spalling pavement. Dig out and repair the localized failed areas to a depth of 0.35' (mill & fill with HMA-A) and seal all cracks wider than 1/4" by route and seal method. Then place 0.15' hot mix asphalt (HMA-A), followed by 0.15' rubberized hot mix asphalt (RHMA-G) and 0.10' rubberized hot mix asphalt bonded wearing course, open graded.

Strategy 2:

Cold plane, repair localized failed areas and seal cracks as defined in alternate 1, then place 0.40' HMA-A followed by 0.10' polymerized hot mix asphalt bonded wearing course, open graded.

Overlay Design Life Thicknesses (Continued):**20 Year Design Life Overlay Recommendation**

Based on Table 1 contained within the Alternative Procedure to Estimate Pavement Rehabilitation Requirements and a reliability estimate of 80% with a 20 year traffic index of 11.5 the following overlay is needed for mainline and shoulders:

Strategy 1 (preferred):

Cold plane any existing bonded wearing course material and open graded asphalt concrete in areas as identified within "Existing Surface Materials", above. Following the cold planning, conduct a field review locating areas of severe failure identified by rutting greater than 0.05' and/or loose spalling pavement. Dig out and repair the localized failed areas to a depth of 0.35' (mill & fill with HMA-A) and seal all cracks wider than 1/4" by route and seal method. Then place 0.15' hot mix asphalt (HMA-A), followed by 0.20' rubberized hot mix asphalt (RHMA-G) and 0.10' rubberized hot mix asphalt bonded wearing course, open graded.

Strategy 2:

Cold plane, repair localized failed areas and seal cracks as defined in alternate 1, then place 0.50' HMA-A followed by 0.10' polymerized hot mix asphalt bonded wearing course, open graded.

Notes:

- Other pavement rehabilitation strategies were considered, but were eliminated. With the varying areas of cement treated base within the existing structural section, the option to use cold-foam recycling was eliminated as an option. In-place cold and hot recycling were also eliminated due to the amount of existing dig-outs, which causes varying existing binder asphalt consistency during the recycling process.
- The 1/2" bonded wearing course was chosen as the upper friction course for this project. 1" open grade friction course was not chosen because this area does not have the high rainfall as with other areas within District 1.
- Although the District 1 Materials Laboratory strongly encourages the use of rubberized asphalt concrete pavement, a life cycle cost analysis should be performed by the project engineer in accordance with the Highway Design Manual Topic 619 to determine the cost of each alternative given. It should be noted that a rubberized asphalt layer of 1/2 the thickness or greater than that thickness of conventional asphalt concrete will show similar results in reflective crack retardation. Field evaluation and research indicates that the performance of rubberized asphalt may be even greater than that reported with respect to crack retardation and thus results in a longer pavement life than that of conventional asphalt pavements.

Overlay Design Life Thicknesses

Notes: (Continued)

- Routing Cracks: Route cracks $\frac{1}{4}$ " wide and wider. The width of the routing should be $\frac{1}{4}$ " wider than the crack width. The depth should be equal to the width of the routing plus $\frac{1}{4}$ ". In order to alleviate the potential bump in the overlay from the crack sealant, leave the crack sealant $\frac{1}{4}$ " below grade to allow for expansion. (Please see "Attachment A" for details)
- During a field review in April of 2008, approximately 5.0 lane miles of this project was noted as having alligator cracks at a stage where dig-outs should take place ranging from 6' to 12' wide.

New Structural Section for Mainline and Shoulders

Although soil samples within the limits of this project were not taken to determine the R-value (resistance to deformation) for this recommendation, previous testing in the vicinity of this project and within the limits of this project have shown R-values with an average of 10.

With the soft nature of the soils, as previously tested and encountered within this location, two options are given which may give a potential cost savings. Option 1 is intended for a structural section built directly over the existing soils encountered and Option 2 is with the use of subgrade enhancement geotextile placed over the existing soils prior to placement of the new structural section.

Option 1 (Without Subgrade Enhancement Geotextile)

Based on previous testing of existing soils, the following equivalent structural sections are recommended for any areas where new structural sections are needed for mainline and/or shoulder traffic and the existing soils will be used for embankment. Calculations are based on an R-value of 10 and a 20 year Traffic Index for this location of 11.5.

Alternative	<u>BWC</u>	<u>HMA (Type A)</u>	<u>AB (Cl 2)</u>	<u>AS (Cl 2)</u>
1	0.10'	0.60	0.95'	1.30'
2	0.10	0.60'	2.10'	---
3	0.10'	1.50'	---	---

Option 2 (With Subgrade Enhancement Geotextile)

The following equivalent structural sections are recommended for any areas where new structural sections are needed for mainline and/or shoulder traffic and where subgrade enhancement fabric will be placed over the existing soils followed by one of the below alternatives.

New Structural Section for Mainline and Shoulders

Option 2 (With Subgrade Enhancement Geotextile) (Continued):

Calculations are based on an increased R-value of 20 from utilizing subgrade enhancement geotextile and a 20 year Traffic Index of 11.5.

Alternative	<u>BWC</u>	<u>HMA (Type A)</u>	<u>AB (Cl 2)</u>	<u>AS (Cl 2)</u>
1	0.10'	0.60	0.95'	0.90'
2	0.10	0.60'	1.75'	---
3	0.10'	1.35'	---	---

New Structural Section for Maintenance Vehicle Turnout @ PM 17.5

The following equivalent structural sections are recommended for any areas where new structural sections are needed for maintenance vehicle turnouts. Each is based on previous soil testing within and in the vicinity of this project having an R-value of 10 and a 20 year Traffic Index for this location of 6.0. The traffic index of 6.0 is typical for occasional truck parking areas. If it is felt this turnout will be used on more than an occasional basis, a thicker structural section should be used.

Alternative	<u>HMA (Type A)</u>	<u>AB (Cl 2)</u>	<u>AS (Cl 2)</u>
1	0.25'	0.55'	0.60'
2	0.25'	1.05'	---
3	0.70'	---	---

Notes (for all new structural sections):

- Imported borrow used to construct embankment must meet a minimum R-value of 25 when placed within 4 feet of finished grade.
- The alternative to use full depth HMA (Type A) should be considered for special situations only. This would include, but not limited to, narrow widening, or fill over shallow utilities.

Material Specifications

- Rubberized Hot Mix Asphalt (RHMA): Shall be Type G (RHMA-G), conforming to Section 39 of the Standard Specifications. See "Attachment A" for RHMA-G lift thickness versus specified grading.
- Hot Mix Asphalt (HMA): Shall be Type A (HMA-A), conforming to Section 39 of the Standard Specifications. See "Attachment A" for hot mix asphalt lift thicknesses versus specified grading.

Material Specifications (Continued):

- Bonded Wearing Course, Open Graded (BWC-O): Bonded wearing course shall conform to the Standard Special Provisions for such and meet the 1/2" sieve size specification within Section 39 of the Standard Specifications. Asphalt binder used for the bonded wearing course shall be rubberized or polymer modified.
- Asphalt Binder:
 - Rubberized: Asphalt binder mixed with asphalt modifier and crumb rubber modifier (CRM) for asphalt rubber binder shall be PG 64-16 for RHMA-G and RBWC-O. The estimated percentage of asphalt rubber binder to be added to each, per dry weight of aggregate, is 8.0% for RHMA-G and 7.0% for RBWC-O. RBWC-O shall be treated with liquid anti-strip at a rate of 0.5% by mass of asphalt binder (PG 64-16).
 - Polymer Modified: Asphalt binder to be used for HMA-A, or RBWC-O, shall be PG 64-28PM. The estimated percentage of asphalt to dry weight of aggregate is 5.5% for 3/4" HMA-A, 5.8% for 1/2" HMA-A, and 5.8% for BWC-O material. BWC-O shall be treated with liquid anti-strip at a rate of 0.5% by mass of asphalt binder (PG 64-16).
- Paint Binder (Tack Coat): Shall conform to Section 39 of the Standard Specifications.
- Aggregate Base (AB): Shall be Class 2, conforming to Section 26 of the Standard Specifications with the following changes: The minimum loose unit weight per CTM-212 (Rodding Method) shall be 105 lbs./ft³. The durability index shall be 25 minimum.
- Aggregate Subbase (AS): Shall be Class 2, conforming to Section 25 of the Standard Specifications.
- Shoulder Backing: Shall conform to the requirements within the Standard Special Provisions for shoulder backing, with the following change: The minimum loose unit weight per CTM-212 (Rodding Method) shall be 105 lbs./ft³.
- Asphalt Concrete Dike: Hot mix asphalt used in the construction of dikes shall be Type A, 3/8", conforming to Section 39 of the Standard Specifications. Asphalt binder shall conform to the Standard Special Provisions for PG 70-10. See "Attachment B" for Dike Details.

Recommendation for Pumping Areas

The following is a list of areas within the project limits that are exhibiting pumping through the structural section and would benefit from having underdrains installed. The drainage should lower the water table beneath the structural section and provide needed drainage to alleviate the pumping and migration of fines to the surface.

- Post Mile 11.24 to 11.46 (Left)
- Post Mile 11.56 to 11.72 (Left)
- Post Mile 12.90 to 12.98 (Left) along cut bank
- Post Mile 13.68 to 13.84 (Right) along cut bank
- Post Mile 13.68 to 13.87 (Left) along cut bank

Recommendation for Pumping Areas (Continued):

- Post Mile 15.11 to 15.32 (Left & Right) along cut bank
- Post Mile 15.66 to 15.80 (Left & Right) along cut bank
- Post Mile 18.17 to 18.37 (Right) along cut bank
- Post Mile 18.37 to 18.43 (Left)
- Post Mile 18.41 to 19.00 (Right) along cut bank
- Post Mile 18.60 to 19.00 (Left)
- Post Mile 19.19 to 19.42 (Left) along cut bank

Note:

Although there are other locations within the limits of this project where slight pumping is taking place, it is felt the above recommended overlay thicknesses will currently be adequate to retard this pumping.

Alternate Pipe Culvert Recommendation

Based on previous pH and resistivity testing on soil samples (7.1 pH, 1700 ohm resistivity) near the vicinity of this project, the following alternate pipe culverts may be used for any new or modified culverts within the limits of this project and are given for estimating purposes only with a 50 year design life. Further testing will need to take place from each culvert location when this project reaches the design phase.

- Reinforced Concrete Pipe: Shall contain Type II modified or Type IP modified cement and conform to Section 90 of the Standard Specifications.
- Galvanized, corrugated steel pipe, 0.138" thick (10 gage), conforming to Section 66 of the Standard Specifications.

Alternate Pipe Culvert Recommendation (Continued):

- Galvanized, polymeric sheet coated, corrugated steel pipe, 0.079" thick (14 gage), conforming to Section 66 of the Standard Specifications.
- Plastic pipe - Shall be high density polyethylene (HDPE), conforming to Section 64 of the Standard Specifications.

Steel pipe downdrains shall conform to Section 69 "Overside Drains", of the Standard Specifications. Based on pH and resistivity testing on the soil samples taken, a galvanized, corrugated steel pipe, 0.064" thick (16 gage) may be used. Per Section 852.1(2) of the Highway Design Manual, the option above is designed with an anticipated design life of 25 years minimum for downdrains buried less than 3' deep, or with no cover.

Notes:

- Plastic pipe should not be used as tapered inlets, or downdrains at this location.
- Downdrains, or overside drains buried more than 3' shall be designed with the 50 year design life thicknesses.

See "Attachment C" or "D" for Culvert Installation Detail.

If you have any questions, please call Dave Waterman at 707-445-6355.

Attachments

DW:dw

c: S. Blair
J. Pimentel
Lab Files

Attachment A

Layer Thickness vs. Specified Aggregate Gradation

01-Men-101-PM 9.2/21.1

01-36291K

Hot Mix Asphalt - Type A (HMA-A)

Use the following table to determine the grading:

Lift Thickness Range	Grading
0.08 foot – 0.125 foot	3/8 inch
0.125 foot – 0.20 foot	1/2 inch
0.20 foot and above	3/4 inch

Rubberized Hot Mix Asphalt – Gap Graded (RHMA-G)

Use the following table to determine the grading:

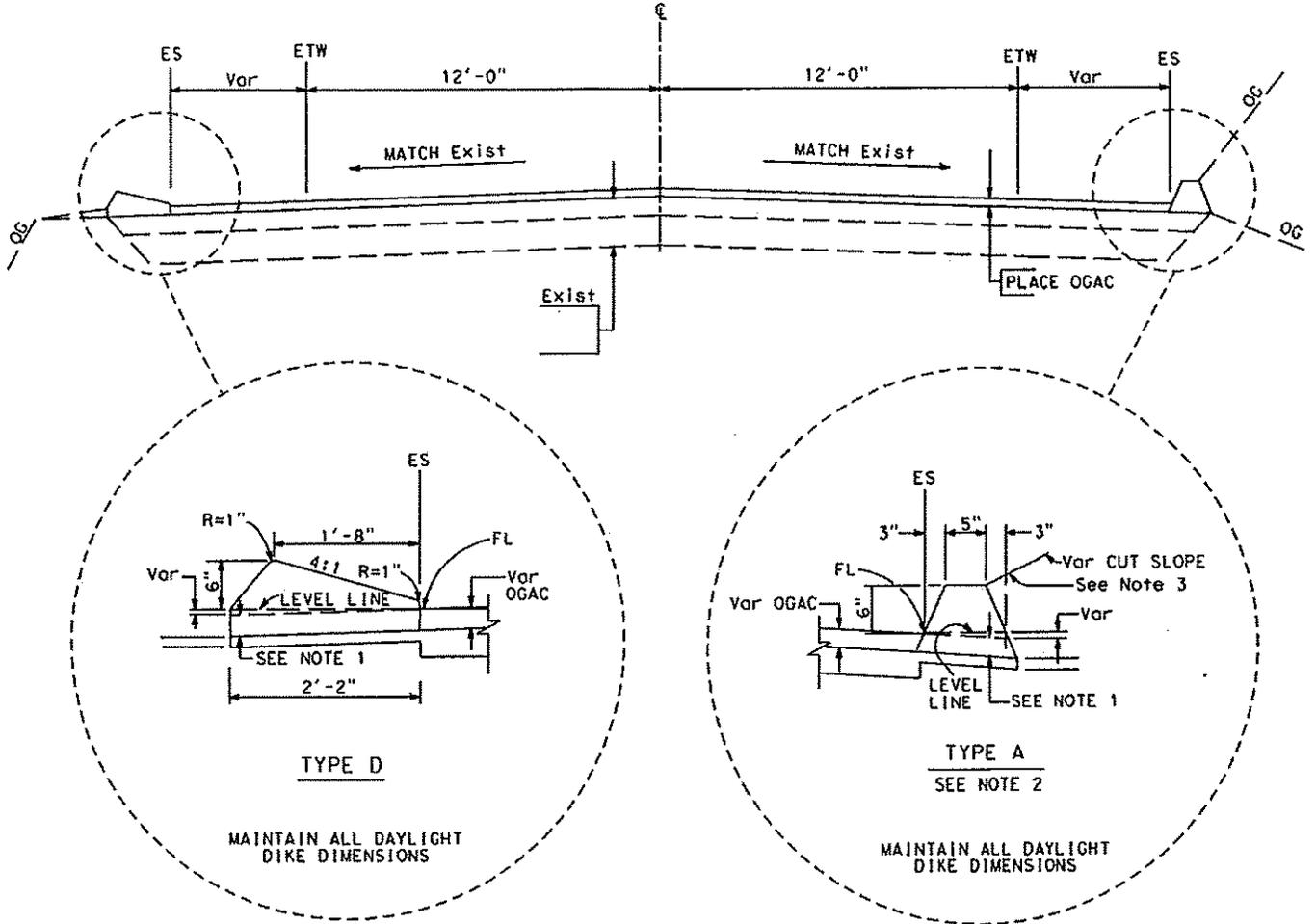
Lift Thickness Range	Grading
0.125 foot – 0.20 foot	1/2 inch
0.20 foot and greater	3/4 inch

Attachment B

01-Men-101-PM 9.2/21.1

01-36291K

Modified Dike Detail



ASPHALT CONCRETE DIKE TYPICAL
WHEN PLACED WITH OGAC

DIKE QUANTITIES

TYPE	CUBIC YARDS PER LINEAR FOOT
A	* 0.0135
C	* 0.0038
D	* 0.0293
E	* 0.0130
F	* 0.0066

QUANTITIES BASED ON 5% CROSS SLOPE.

* ADJUST QUANTITY TO COMPENSATE FOR OGAC DEPTH/AC DIKE HEIGHT EXTENSION

NOTES:

1. THE ADDITIONAL HEIGHT OF DIKE SHALL BE EQUIVALENT TO THE DEPTH OF OGAC.
2. TYPE A DIKE ONLY TO BE USED WHERE RESTRICTIVE SLOPE CONDITIONS DO NOT PROVIDE ENOUGH WIDTH TO USE TYPE D OR TYPE E DIKE.
3. FILL AND COMPACT WITH EXCAVATED MATERIAL TO TOP OF DIKE.

NO SCALE

Attachment C

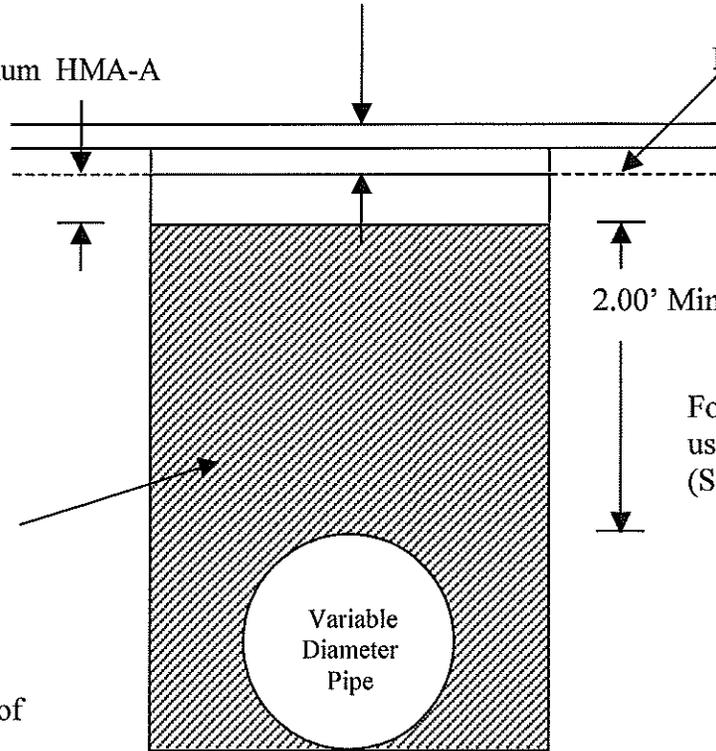
Structure Backfill, or Slurry Cement Backfill

01-Men-101-PM 9.2/21.1
01-36291K

New
0.10' RBWC-O, or BWC-O
0.20' RHMA-G or HMA-A

0.30' Minimum HMA-A

Existing Grade



2.00' Min.

Structure Backfill
95% Relative Compaction
(Or Slurry Cement Backfill)

For cover less than 2.00'
use Minor Concrete Backfill
(See Attachment D)

Note 1:

Structure Backfill

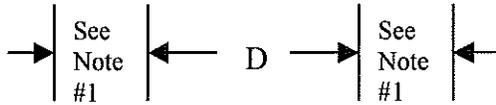
Trench width shall have a minimum of 2.00' of clear distance between the outside of the pipe and the side of the excavation on each side.

Note 2:

See Std. Plan A62F
for Excavation and
Backfill Details

Slurry Cement Backfill

Trench width shall be a minimum of 0.50' beyond outside edge of pipe and the side of excavation on each side for pipe for diameters up to and including 42", or 1.00' for pipes over 42" in diameter. See Standard Specifications, 19-3.062

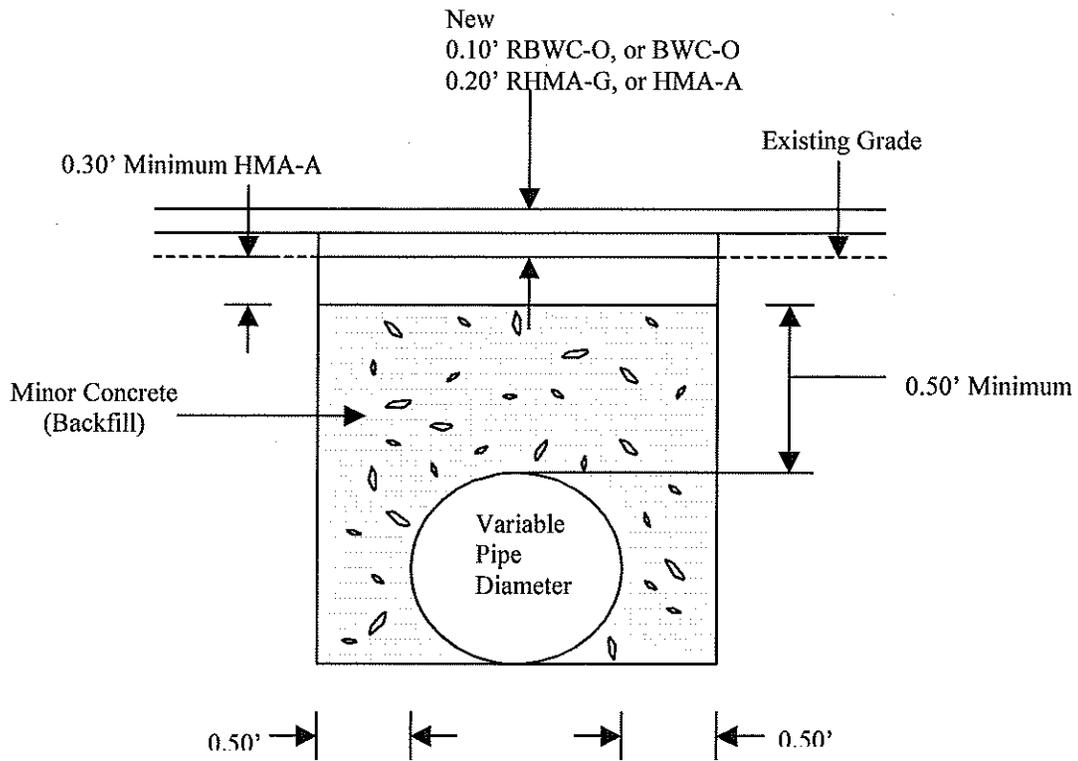


NO SCALE

Attachment D

Minor Concrete (Backfill)

01-Men-101-PM 9.2/21.1
01-36291K



NO SCALE

ATTACHMENT K

TRANSPORTATION MANAGEMENT PLAN

TRANSPORTATION MANAGEMENT PLAN

To: Jeffery Pimentel
Project Engineer

Date: April 22, 2008
File: MEN-101 PM 9.2/21.1
EA: 01-36291K
SR 101 Rehab Project

From: Troy Arseneau, Chief 
District 1 Office of Traffic Operations

Project Information

Location: In Mendocino County from the Russian River Bridge to 0.2 miles north of Robinson Creek Bridge.

Type of Work: Pavement digouts, AC overlay, shoulder widening, structure replacement, upgrade MBGR, and drainage improvements.

Anticipated Traffic Control: One-way reversible traffic control.
Lane reduction.

Estimated Maximum Delay: 5 minutes.

Peak Hour Traffic Volumes: 1700 vph.

Lane Requirement Charts
Included: Yes.

Number of Working Days: TBD

Next Major Milestone and Date: PSR - January/2009

RTL Date: TBD

District Traffic Manager/ TMP
Manager: Troy Arseneau (707) 445-6377
TMP Coordinator: Jamie Lusk (707) 445-6419

Anticipated Traffic Impacts

Significant traffic impacts are not anticipated provided that the following recommendations are incorporated into the project. In conformance with Deputy Directive-60, District Lane Closure Review Committee approval is not required for projects with anticipated traffic delay less than 30 minutes.

Recommendation

A request for an updated Transportation Management Plan shall be made during the design phase.

Hours of Work

- See Lane Requirement Chart No.1 for work hour restrictions.

Public Notice

- Upon receipt of notice that the traveled way for a direction of travel will be narrowed to less than 16 ft, the Resident Engineer shall promptly notify the District Permits Engineer.
- The District Public Information Office, (707) 445-6444, shall be contacted two weeks in advance of the start of construction.
- Any emergency service agency whose ability to respond to incidents will be affected by any lane closure must be notified prior to that closure.
- Work shall be coordinated with the local busing system (including school buses and public systems) to minimize impact on their bus schedules.
- The Resident Engineer shall provide information to residents and businesses before and during project work that may represent a negative impact on commerce and travel surrounding the zone of construction.
- Include in a memo to the Resident Engineer that at least 5 days in advance of excavation work in the vicinity of possible Caltrans facilities, that Maintenance-Electrical Supervisor (825-0233) shall be contacted to locate existing Caltrans underground electrical facilities.

Traffic Control

- One closure is permitted within the project limits.
- One-way traffic control shall be in conformance with the Caltrans Standard Plan T-13, "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS."
 - A minimum of one paved traffic lane, not less than 12 ft wide with 2 ft contiguous paved shoulder, shall be open for use by public traffic.
 - The maximum length of one-way traffic control closure is 1000 ft.
 - During one-way traffic control, additional advance flaggers will be required. All flaggers shall have continuous radio contact with personnel in the work area.

- “Watch for Bicycles” signs shall be placed, in each direction of travel, prior to the construction zone.
- Work that requires a lane closure shall be in conformance with the Caltrans Standard Plan T-10, “TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS.”
- Work that occurs within 15 ft of the traveled way shall require a shoulder closure in conformance with the Caltrans Standard Plan T-10, “TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS.”
- Work that requires a lane closure shall be in conformance with the Caltrans Standard Plan T-11, “TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS.”
 - A minimum of one paved traffic lane in each direction of travel, not less than 12 ft wide with 2 ft contiguous paved shoulder, shall be open for use by public traffic.
- Work that requires closing half the roadway shall be in conformance with the Caltrans Standard Plan T-12, “TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS.”
- A minimum of one PCMS in advance of both ends of the construction site shall be required in order to notify the public of the closures related to this project.
- Access to side roads and residences shall be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control will be required at the intersection.
- If traffic is to be placed on unpaved surfaces over night, advanced flashing beacons on the advance signing as shown in Standard Plan T-13 shall be required. Flashing beacons on all three-advance signs shall be required where possible. When placing flashing beacons, care shall be taken to avoid impacting inhabited dwellings with the light.
- Pedestrian detour signing shall be provided to direct the pedestrians to the nearest crossing.
- Crosswalks shall be maintained through the work zone until the tack coat has been placed. Barricades or caution tape shall be placed along work area to keep pedestrians from crossing the highway where the tack coat has been placed.

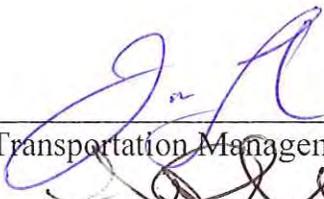
- Pedestrian detours shall be required when sidewalks are not available for public travel and shall be in conformance with TA-28 "Sidewalk Closures and Bypass Sidewalks" in the MUTCD 2003 (pg 6H-60/61).
- If persons with disabilities (e.g. hearing, visual, or mobility) are found to use this facility, the temporary traffic control measures mentioned in the California MUTCD Chapter 6D shall be incorporated to accommodate disabled pedestrians through the work zone.
- COZEEP is recommended for this project based on risk factors associated with this project and the COZEEP Guidelines (CA DOT Construction Manual Section 2-215A). The associated risk factors include: lane closure with one-way traffic control, workers exposed to traffic, night construction activities, end of queue management, speed management, and significant truck volumes.

Contingency Plan

The contractor shall prepare a contingency plan for reopening closures to public traffic. The Contractor shall submit the contingency plan for a given operation to the Engineer within one working day of the Engineer's request. Contingencies for unanticipated delays, emergencies, etc. shall be coordinated between the RE and the Contractor.

Approval

Approved by:



Transportation Management Plan Coordinator

Approved by:



District Traffic/ TMP Manager

TAA/pwh

CC: 1)TAArseneau, 2)JCandalot
1)RMMartinelli, 2) MABrady, 3)MGDavenport
IPointexter
SBlair
HLQuintrell
RLingford
AJones

Chart No. 1 Lane Requirements																									
County: MEN					Route: 101										PM: 9.2/21.1										
FROM HOUR TO HOUR	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	
Fridays	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2										
Saturdays																									
Sundays																							1	1	1
Day before designated legal holiday																									
Designated legal holidays																									
Legend:																									
1	A minimum of one paved traffic lane, not less than 12 ft wide with 2 ft contiguous paved shoulder, shall be open for use by public traffic. The maximum lane closure length is 1000 ft.																								
2	A minimum of one paved traffic lane in each direction, not less than 12 ft wide with 2 ft contiguous paved shoulder, shall be open for use by public traffic. The maximum lane closure length is 1000 ft.																								
	No closures allowed.																								
<ul style="list-style-type: none"> The full width of the traveled way shall be open for use by public traffic when construction operations are not actively in progress. If a legal holiday falls on a Monday, the full width of the traveled way shall be open on the preceding Friday. No work shall take place on the day preceding a 3-day weekend. 																									

ATTACHMENT L

LIFE CYCLE COST ANALYSIS RESULTS

LIFE CYCLE COST ANALYSIS RESULTS SUMMARY

Rehabilitation Strategy	Initial Construction Cost (\$1000)	LCCA Present Value Total Cost (\$1000)	LCCA Total Equivalent Uniform Annual Cost (\$1000)
10 year – strategy 1	\$40,460	\$55,719	\$4,100
10 year – strategy 2	\$43,170	\$58,971	\$4,339
20 year – strategy 1	\$42,800	\$50,930	\$3,748

Note: A description of the above rehabilitation strategies can be found in Attachment J

ATTACHMENT M

STORM WATER DATA REPORT

Long Form - Storm Water Data Report



Dist-County-Route: 01-MEN-101

Post Mile (Kilometer Post) Limits: PM 9.2 - 21.1

Project Type: RRR

EA: 01-36291K

RU: 01-216

Program Identification:

Phase: PID PA/ED PS&E

Regional Water Quality Control Board(s): North Coast

Is the project required to consider incorporating Treatment BMPs? Yes No

If yes, can Treatment BMPs be incorporated into the project? Yes No

If No, a Technical Data Report must be submitted to the RWQCB at least 60 days prior to PS&E Submittal. List submittal date:

Total Disturbed Soil Area: 17.4 acres

Estimated Construction Start Date: 6/1/14 Construction Completion Date: 10/1/15

Notification of Construction (NOC) Date to be submitted: N/A

Notification of ADL reuse (if Yes, provide date) Yes Date: No

Separate Dewatering Permit (if Yes, permit number) Yes Permit #: No

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

Jeffrey L. Pimentel, Registered Project Engineer/Landscape Architect 3/29/09 Date

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



Steven D. Blair Project Manager 4-2-09 Date

Brett Johnson Designated Maintenance Representative 4-3-09 Date

Laura Lazzarotto Designated Landscape Architect Representative 4-2-09 Date

Ted Schultz District/Regional SW Coordinator or Designee 3-27-09 Date

STORM WATER DATA INFORMATION

1. Project Description

The purpose of this project is to repair the existing roadway pavement, provide standard shoulder widths, restore drainage facilities, upgrade existing metal beam guardrail and construct other roadway features that will improve the condition and safety of this segment of Route 101. The limits of this project extend from the Russian River Bridge #10-0082 (PM 9.2) to 0.32 km (0.2 mi) north of Robinson Creek (PM R21.1) on Route 101. The scope of the work includes removal and replacement of deteriorated pavement structural section, crack sealing, asphalt concrete overlays, shoulder widening, metal beam guard rail and terminal section upgrades, drainage improvements and bridge widening/replacement. The entirety of this work will be funded under the 201.120 program (3R Program) of the 2014 SHOPP cycle.

Excepting the proposed improvements of this project that will affect drainage facilities or factor into storm water management matrices, specific details of the proposed improvements are deferred to the PSSR. Otherwise, these details are presented below.

Drainage improvements within the project limits include culvert replacements and linings, but also consist of miscellaneous other drainage facility repair/replacements work such as replacing/repairing over-side drains, rock lining ditches and replacing drop inlet covers. Figures 1 & 2 provide graphics, that map the locations of proposed culvert replacements and miscellaneous drainage effects that the project is comprised of. These drainage improvements were recommended by the District 1 Hydraulics Unit, which based these recommendations on a combination of field inspections and review of the Hydraulics Maintenance database.

Bridge widening/replacement alternatives were not considered as part of the project for the purposes of increasing the drainage capacity of the structures. Rather, the bridges were considered for the purpose of providing the facility with standard shoulders and clear recovery zones. Although there are multiple structures crossing the alignment along this segment, only four of the existing bridges were identified as needing modification.

The first bridge, which is located on the southern end of the project limits (PM 9.24), crosses over the Russian River and is constructed of steel trusses. Because of the type of this structure, widening of the deck was not an option and replacement of the structure is not economically feasible. Therefore, a Design Exception for this structure is being sought.

Long Form - Storm Water Data Report

The second bridge considered along this segment is named the Hopland Overhead. This structure provides the highway with a crossing over the Northwest Pacific Railroad line at approximately Post Mile 9.53. Because this structure is over a railroad line, construction activities (falsework, grading etc) and the actual widened structure will not directly impact any streambeds below. Storm water quality best management practices will need to be considered and implemented to minimize erosion and address any increase in the impervious area of the watershed.

The third bridge is over Rosetti Creek at Post Mile 10.46. The widening of this structure can be accomplished with the selection of one of two alternatives presented by the Structures Unit. The first alternative calls for the replacement of the existing bridge and would require major, temporary and permanent work in the channel. The second alternative approach would preserve most of the existing bridge, but would widen the deck with only temporary falsework and/or scaffolding in the streambed. In either case, storm water quality best management practices will need to be considered and implemented to minimize erosion and address any increase in the impervious area of the watershed.

The fourth bridge considered for this project is located at Post Mile 20.91 and crosses over Robinson Creek. Although there are two structures at this location, one for northbound and one for southbound traffic, only the northbound structure is being considered for widening. The southbound structure is being upgraded under a separate project (EA 01-29302k). Just one alternative for widening this structure was provided by Caltran's Structures Unit. This alternative calls for the installation of temporary falsework and/or scaffolding within the channel. This would be temporary, but would require consideration and implementation of best management practices to address potential erosion from construction activities and increases in impervious areas.

Over the entire segment of the proposed project, the widening of the shoulder and in some cases the realignment of the highway will increase the impervious area and require that the existing surface be disturbed. The degree to which the proposed project will increase the impervious area and disturb the existing soils has been preliminarily quantified and summarized below.

MEN 101 SEGMENT	PRE PROJECT IMPERVIOUS AREA	POST PROJECT IMPERVIOUS AREA	DISTURBED AREA
PM 9.2/21.1	81.6 ACRES	88.4 ACRES	17.4 ACRES ¹

1. 11.9 ACRES OF SHOULDER, 5.5 ACRES OF CUT/FILL SLOPE

The Hopland Rehab project limits are not within any urban MS4 area.

2. Define Site Data and Storm Water Quality Design Issues (refer to Checklists SW-1, SW-2, and SW-3)

- SW2-1. All culverts and bridges along the project segment have been identified as being within the Upper Russian River Hydrologic Area, and in Sub-Area Ukiah (114.31). The distance to this Hydrologic Unit varies, but the project's facilities are within a range of 0.1 to 1 miles from the Russian River. In the majority of locations where drainage facilities are being updated, the first identified stream or USGS blue line is the Russian River.
- SW2-2. The entire Hopland Rehab project drains into the Russian River, a 303(d) listed water body as impaired for sedimentation/siltation and temperature, water.
- SW2-3. Based on the FY 2006-2007 Regional Work Plan listing, no high-risk areas are located within the project limits.
- SW2-4. The North Coast Regional Water Quality Control Board (NCRWQCB) approved Resolution R1-2004-0087, Total Maximum Daily Load Policy Statement for Sediment Impaired Waters in the North Coast Region on November 29, 2004. The Policy identifies existing permitting and enforcement tools, specifically Section 401 Water Quality Certifications, as methods to control sediment pollution. The NCRWQCB 401 Certification states, "Proposed Storm Water Treatment Measures (Describe the methods proposed to treat storm water runoff from the project site prior to entering the storm drain system, wetlands, streams, etc.)"
- SW2-5. Environ. Seasonal construction and construction exclusion dates are unknown at this time.
- SW2-6. With the previously described work in the streambed of the creeks, culverts and ditches, a Regional Water Quality Control Board 401 Certification is expected to be required for this project. Additionally, a 1601 Permit from California Department of Fish & Game, and a Section 404 Permit from the US Army Corp of Engineers is expected to be required as part of this project's scope of work. Consultations with US Fish & Wildlife Service, California Department of Fish and Game, Section 7 Consultation and National Marine Fisheries Service (NMFS) are also anticipated
- SW2-7. The rainy season dates for this project location is from October 1 thru May 1.
- SW2-8. The hydrological climate of the region was quantified in the CT Floodplain Analysis report prepared for this project on November 11, 2008. Based on the findings of that review, the project area has an annual rainfall depth of approximately 37.1 inches. The report also states "no impacts or increases in floodwater elevations are expected due to this project...". The project lies within a longitudinal encroachment of the base floodplain and covers Zones A, A4, A5, A8, A9, B and C

Long Form - Storm Water Data Report

SW2-9. Properties of the existing soils were investigated using the U.S Department of Agriculture, Natural Resources Conservation Service's website. The Services' site provides a searchable database for multiple properties of the existing soils in a given area. Relevant properties that are available from this resource as they relate to the needs of this SWDR are hydraulic conductivity (permeability), erodibility and Hydrological Soil Group (HSG).

Because this project is over such a long segment of highway, three sample areas were used to determine the soil characteristics within the project limits. These properties were extracted from the reports generated by the website and are summarized in the table below.

Based on the records of measurements for multiple locations of ground water well, the depth to the ground water varies along the project limits. Generally, the depth varies from about 3' when measurements were taken during the rainy season to about 20' during the dry summer months. Because of geologic and topographic conditions, the measured depths also vary from one well location to another.

SEGMENT	LENGTH	HSG ¹		Saturated Hydraulic Conductivity (ksat) ³		Soil Erosion Factor (K) ⁴	
		Group	% of Total Area ²	Range	% of Total Area ²	Range	% of Total Area ²
LOWER	1.9 miles	B	53.7	4.8 < (ksat) < 53	53.7	0.3 < K < 0.39	65.8
		C	37.2	4.2	37.2	0.2 < K < 0.29	19.5
MIDDLE	3.0 miles	C	75.3	1.3 < (ksat) < 4.1	75.3	0.2 < K < 0.29	16.2
		D	12.5	0.9 < (ksat) < 1.3	12.5	0.3 < K < 0.39	83.1
UPPER	2.5 miles	B	89.8	4.8 < (ksat) < 9	89.8	0.2 < K < 0.29	27.5
		C	7.4	1.3 < (ksat) < 4.3	7.4	0.3 < K < 0.39	70.4

1. HSG = Hydrological Soil Group

2. First and Second largest classes.

3. units are micrometers per second
 Very Low 0.00 to 0.01
 Moderately Low 0.1 to 1.0
 High 10 to 100

Low 0.01 to 0.1
 Moderately High 1 to 10
 Very High 100 to 705

4. Whole Soil Erodibility Factor Ranges from 0.02 to 0.69, 0.69 being most susceptible to erosion.

SW2-10. An Initial Sight Assessment was completed for this project on November 12, 2008. The findings of that assessment determined that the project sight has three potential hazardous waste issues: naturally occurring asbestos, aerial deposited lead and asbestos containing construction materials.

SW2-11. The total disturbed soil of the project has been estimated at 17.4 acres.

SW2-12. Generally, the topography of the land adjacent to the project is mostly flat with some minor hillsides encroaching into the highway alignment. As a result, the highway alignment along this project is mostly level with some elevation gains where the roadway rises over the encroaching hills rather than having been cut through. The elevation range over the course is between 475 and 625 feet and the maximum slope along the centerline is about 6%. Hillside cuts have slopes as steep as a 1:1 ratio.

SW2-13. Right of Way issues for the project include the need for an encroachment permit from the North Coast Railroad Authority (NCRA) for work at the Hopland Overhead Bridge, Temporary Construction Easements and permanent ROW for the construction of a retaining wall and slope setbacks along the frontages. The cost of obtaining these easements and permits are included in the cost estimate for the project.

SW2-14. ROW required for BMP maintenance and construction is not anticipated.

SW2-15. ROW Certification is required for this project and will be provided by January 1, 2014.

- SW2-16. ROW for this project will be required for setbacks from tops of slope banks to the ROW lines. Total take will be 1500 square feet on two properties.
- SW2-17. To increase the shoulder width along this segment of highway, some cut and fill slopes will need to be graded. Along these areas, the potential of the soil to erode and cause water quality issues will be a concern. Excepting one location in the southbound direction and between PM 11.7 and 12.6, most of the fill slope locations are minor. The total fill volume will be about 3400 cubic yards. The total estimated cut slopes volume is about 10,000 cubic yards with 80% of that located in two locations (PM 13.7 and PM 13.0).
- SW2-18. Due to the terrain, city boundaries, and zoning ordinances, the land use along this corridor varies considerably. In general though, the majority of the segment is open space used for agriculture, viticulture and livestock grazing. Within Hopland, the land use is primarily commercial/retail.
- SW2-19. No dry weather flows have been identified.
- As this SWDR is being prepared at the PID stage and the current Permit with the Water Quality Control Board is currently revising and updating Caltrans' permit, significant changes to the runoff requirements of the new Permit may be included in the new Permit. Consequently, a strong possibility exists that this project will be subject to additional hydromodification criteria and more stringent requirements may also be placed on the project.
 - Erosion potential will be a concern where new culverts and overside drains will be constructed with this project. The erodibility of the native soils is discussed below.
 - Because this project is at the PID stage, specific BMP for avoiding or reducing potential storm water impacts have not been selected. However, common practice is to defer work in channels and with culverts until the dry season. In lieu of a deferred construction schedule, construction BMP can be utilized to prevent contamination or degradation of the water quality as a result of construction activities.
- SW3-1. The project as envisioned at the PID stage has changed the alignment of the roadway at some locations to lessen the impact (cut and fill) to existing hillsides. With further information (topographic, environmental and geotechnical) the alignment may be further refined to lessen impacts to the critical areas.
- SW3-2. The three structures proposed for widening have alternatives associated with them. The alternatives chosen at this stage have the least impact on the streambeds and are temporary impacts. Final design will benefit from greater detail of the constraints along the streams and will, thereby, have an opportunity to lessen the effects even more.
- SW3-3. Most of the items listed under Option 3 of SW-3 are measures that have the option of being implemented at the design level as a means to reducing the project's impact on the storm water. The exception being the acquisition of right of way to perform grading operations.
- SW3-4. The project design will consider maintenance of all BMP.
- SW3-5. Construction scheduling can be performed so that the subject storm water conveyance conduits (streams, ditches, culverts etc) have the least exposure to storm water. Such scheduling would likely include measures such as those that reduce the risk of rainfall events coinciding with high-risk construction activities.
- SW3-6. Permanent storm water pollution measures such as slope grading and erosion controls can be implemented early on in the construction process. Stabilizing these slopes early on in the project will reduce erosion risk.

3. Regional Water Quality Control Board Agreements

- The North Coast Regional Water Quality Control Board approved Resolution R1-2004-0087, Total Maximum Daily Load Policy Statement for Sediment Impaired Waters in the North Coast Region on November 29, 2004. The Policy identifies existing permitting and enforcement tools, specifically Section 401 Water Quality Certifications, as methods to control sediment pollution. Additionally, the 401 certification requires consideration of, "Proposed Storm Water Treatment Measures (Describe the methods proposed to treat storm water runoff from the project site prior to entering the storm drainage system, wetland, streams, etc. Please include proper design calculations to indicate that the proposed methods will treat runoff from the 85th percentile/24-hour storm event See SUSMP Guidelines ...)".

4. Describe Proposed Design Pollution Prevention BMPs to be used on the Project.

Downstream Effects Related to Potentially Increased Flow, Checklist DPP-1, Parts 1 and 2

Based on the increase in impervious area along the project's limits, a slight increase in runoff volume and velocity is expected as a result of the proposed construction. However, the entire project lies within a single watershed (Russian River) and the cumulative effect the project will have on that watershed is negligible compared to the overall basin.

On a local level, the flow entering the sub-areas of the watershed will experience a more measurable although negligible increase in runoff as a result of this project. These increases in local runoff rates are naturally dissipated due to the linear nature of the project. That is, because the project extends over several sub-areas, the entire increase in flow is not concentrated into one single channel or culvert. Therefore, the increase in flow is distributed to several conveyance systems rather than just one. Such a distribution lessens the erosion potential of the project because the increase is not concentrated to a single conveyance system.

The local erosion potential on the existing conveyance systems can be avoided or minimized with BMPs such as erosion control materials, rock lining ditches, energy dissipaters, etc. Field review by the Hydraulic Unit identified the critical locations and specific BMP will be detailed at design stage for items on Checklist DPP-1, Part 2-5.

Slope/Surface Protection Systems, Checklist DPP-1, Parts 1 and 3

The proposed areas of cut and fill were quantified within the discussion for SW-2, 17 of this document and a map highlighting these locations has been included as well (see Figure 3). At the PID stage, the slopes, heights, and lengths of these areas are estimates. With further project development (i.e. PA&ED, PS&E), the specific details of these slopes will become more refined. These details would include design considerations such as rounding slopes, benches or stabilized channels, which are identified in the Slope/Surface Protection Systems section of DPP-1, Part 3.

The total increase in impervious area was quantified at 6.8 acres distributed uniformly of the 11.9 mile length of the project.

Some existing vegetated surfaces along the project have been identified in the environmental document and concentrations of these surfaces can be seen on the aerial photos of the PSSR. Areas of these vegetated surfaces that include sensitive habitats, if any, are identified in the

Environmental Document. Revegetation of any disturbed areas, sensitive or not, will be required and will be identified at later stages of the project. Cost estimates for revegetation and erosion control are included in the Landscape Architect's estimates. Estimation of the amount of time that will be required for the disturbed areas to reestablish cover will be determined at design stage. Design of open channels will be addressed in later stages and will include features that minimize concentrated flow velocities and depths.

Concentrated Flow Conveyance Systems, Checklist DPP-1, Parts 1 and 4

Ditches, berms, dikes and swales are expected to be features incorporated into the final design of the project. Where the installation of these elements is warranted, the specifics of the design will provide details and specifications that will address Design Pollution Prevention BMP to minimize scour, consider off-site runoff contributions, avoid overtopping, flow backups and washouts. The use of sheet flow drainage patterns will be maximized as feasible.

The preliminary scope of the project calls for the installation and/or repair and replacement of some of the existing paved spillways and down drains. Final design will further investigate the appropriate installations of these features.

Although not identified as being a feature at the PID level, flared culvert end section may be incorporated into the final design when the conditions call for such structures. Inclusion of these structures would satisfy design pollution prevention BMP consideration requirements.

At the PID stage, the Hydraulics Unit has identified outlet protection/velocity dissipation devices that need either repair or replacement. The costs associated with these repairs or replacements have been included in the estimate of the project.

Preservation of Existing Vegetation, Checklist DPP-1, Parts 1 and 5

Although specific measures to reduce the amount of clearing and grubbing will primarily be implemented at the design stage, some preliminary practices have been considered at the PID stage of the project. Specifically, the cut and fill slopes have been minimized to reduce the amount of exposed (un-vegetated, cleared) ground surfaces.

The PID document has also identified a location within the project limits where the installation of a retaining wall will be required. And although the primary purpose of this structure is to avoid a cut into an unstable hillside, the construction of this wall will preserve some of the existing, vegetated hillside and reduce the surface area of a cut slope. This 10-20 foot tall retaining wall will be located between post miles 11.65 and 11.68.

Specific Best Management Practices that will preserve and protect environmentally sensitive vegetated areas identified in the Preliminary Environmental Assessment Report will be examined at the design stage. These areas will be delineated on the contract plans.

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

As indicated in the attached Evaluation Documentation Form, this project is required to evaluate permanent treatment BMPs. The treatment BMP consideration strategy is to evaluate Low Impact Development (LID) type treatment BMPs such as biofiltration strips/swales, earthen type BMPs and traction sand traps as outlined in Tim Sobelman's memo dated December 16, 2008 (see Appendix F). However, traction sand traps are not applicable to this project as traction sand is not applied to the highway surface along the project segment more than twice a year.

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

Selection of specific Temporary Construction Site BMPs will be incorporated into the project as part of the contractor prepared Storm Water Pollution Prevention Plan (SWPPP). As such and because of the lack of project design detail at this stage, Construction Site BMPs Checklist CS-1 has not been completed for the project. However, the Construction Site BMP Consideration Form has been completed and attached to the SWDR. From the Consideration Form responses, the following construction site BMP are applicable to this project:

CONSTRUCTION SITE BMP	EXAMPLE BMP TYPE
SOIL STABILIZATION (SS)	soil binders, hydroseeding, geotextiles, earth dikes
SEDIMENT CONTROL (SC)	fiber rolls, silt fence, gravel bag berm, sediment traps
TRACKING CONTROL (TC)	wheel wash, stabilized roadway
WIND EROSION CONTROL (WE)	hydro mulch, soil binders
NON-STORM WATER MANAGEMENT (NS)	temp stream crossing, clear water diversion
WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL (WM)	concrete wash, material use, spill prevention & control

The cost for construction site BMPs has been estimated using option 1, Percentage of Total Construction Cost, as shown in Appendix F of the Storm Water Project Planning and Design Guide.

7. Maintenance BMPs (Drain Inlet Stenciling)

The Hopland Rehab project does not lie within communities with populations 10,000 or more, or an MS4 permit area. As such, stenciling of inlet structures would not be required as a Maintenance BMP.

REQUIRED ATTACHMENTS

- ⇒ Vicinity Map
- ⇒ Evaluation Documentation Form (EDF)
- ⇒ Figures (Storm Water Information)

Project Location Map



APPENDIX E

Evaluation Documentation Form

DATE: 1-22-09

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

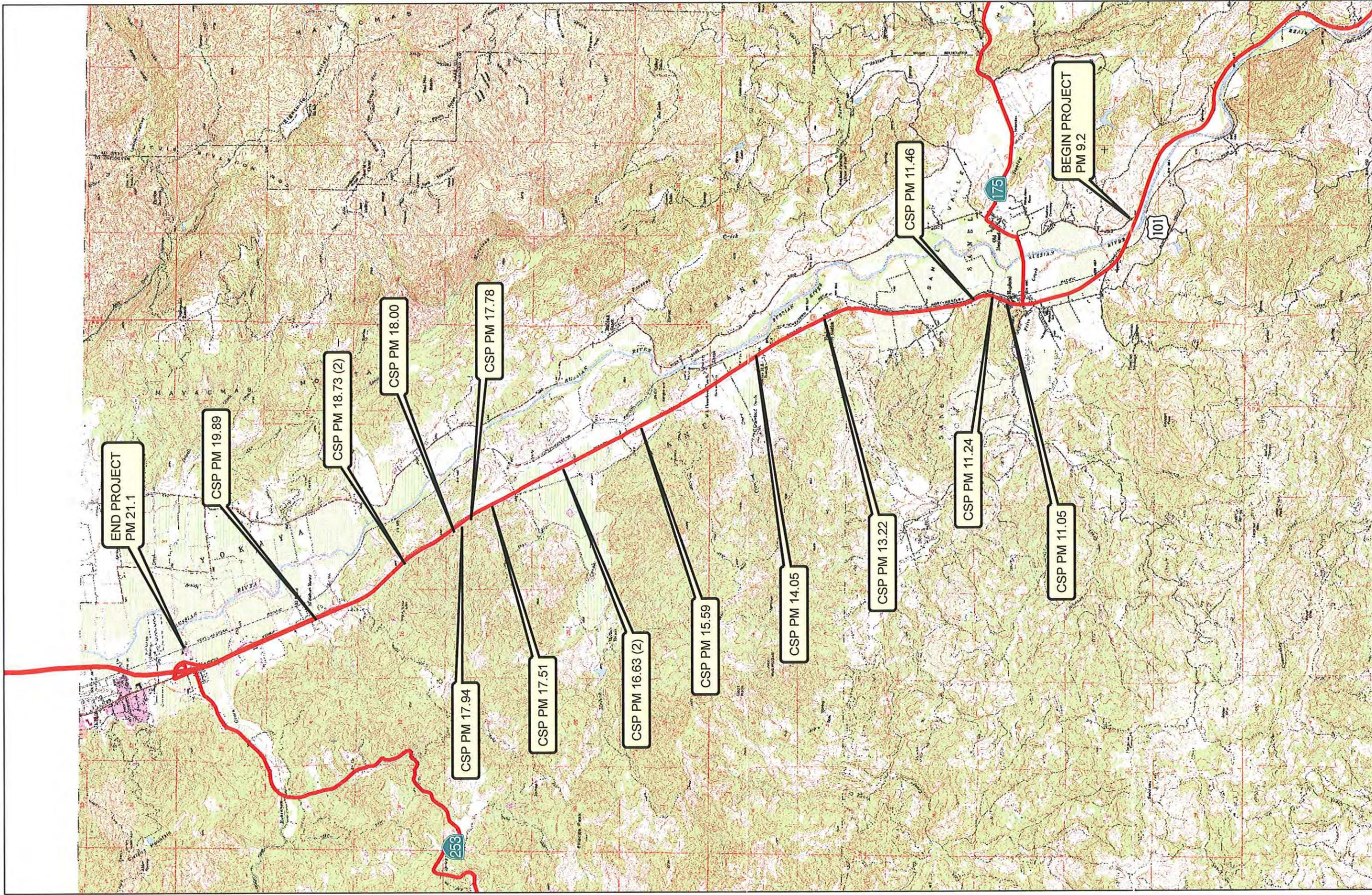
EA: 01-36291K

NO.	CRITERIA	YES	NO	SUPPLEMENTAL INFORMATION FOR EVALUATION
1.	Begin Project Evaluation regarding requirement for consideration of Treatment BMPs	<input checked="" type="checkbox"/>		Go to 2
2.	Is this an emergency project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If Yes , go to 11. If No , continue to 3.
3.	Have TMDLs or other Pollution Control Requirements been established for surface waters within the project limits? Information provided in the water quality assessment or equivalent document.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , contact the District/Regional NPDES Coordinator to discuss the Department's obligations under the TMDL (if Applicable) or Pollution Control Requirements, go to 10 or 4. <i>TS</i> (Dist./Reg. SW Coordinator initials) If No , continue to 4.
4.	Is the project located within an area of a local MS4 Permittee?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If Yes . (Co.), go to 5. If No , document in SWDR go to 5.
5.	Is the project directly or indirectly discharging to surface waters?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 6. If No , go to 11.
6.	Is this a new facility or major reconstruction?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 8. If No , go to 7.
7.	Will there be a change in line/grade or hydraulic capacity?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 8. If No , go to 11.
8.	Does the project result in a <u>net increase of one acre or more of new impervious surface</u> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 10. If No , go to 9. <u>6.8 Acres</u> (Net Increase New Impervious Surface)
9.	Is the project part of a Common Plan of Development?	<input type="checkbox"/>	<input type="checkbox"/>	If Yes , continue to 10. If No , go to 11.
10.	Project is required to consider approved Treatment BMPs.	<input checked="" type="checkbox"/>		See Sections 2.4 and either Section 5.5 or 6.5 for BMP Evaluation and Selection Process. Complete Checklist T-1 in this Appendix E.
11.	Project is not required to consider Treatment BMPs. <i>TS</i> (Dist./Reg. SW Coord. Initials) <i>JP</i> (Project Engineer Initials) <u>1-27-09</u> (Date)	<input type="checkbox"/>		Document for Project Files by completing this form, and attaching it to the SWDR.

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs

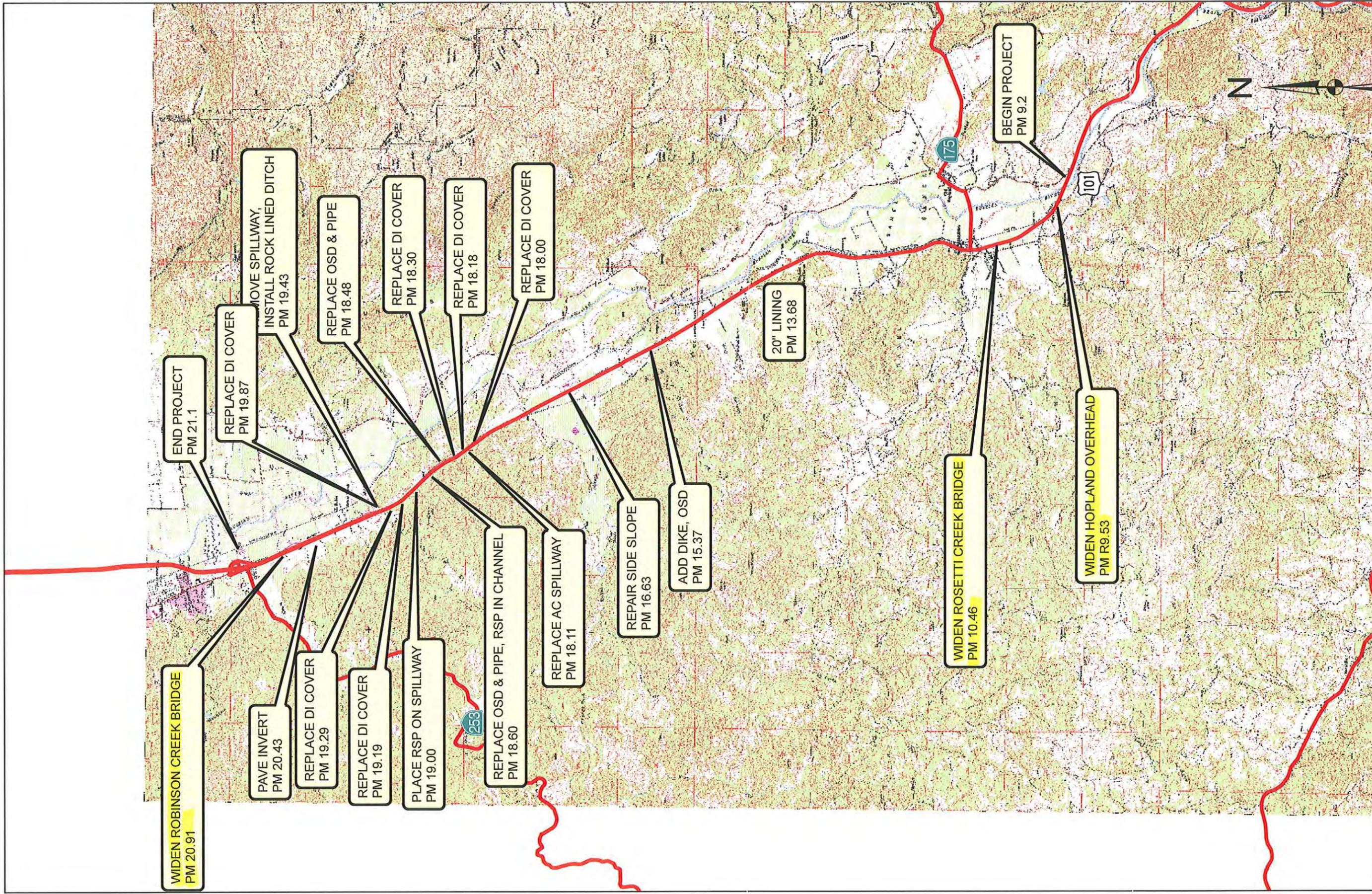


FIGURES



HOPLAND REHAB
PROPOSED CULVERT REPLACEMENTS

FIG
4



HOPLAND REHAB (EA 01-36291K)
MISC. DRAINAGE EFFECTS

FIG 2

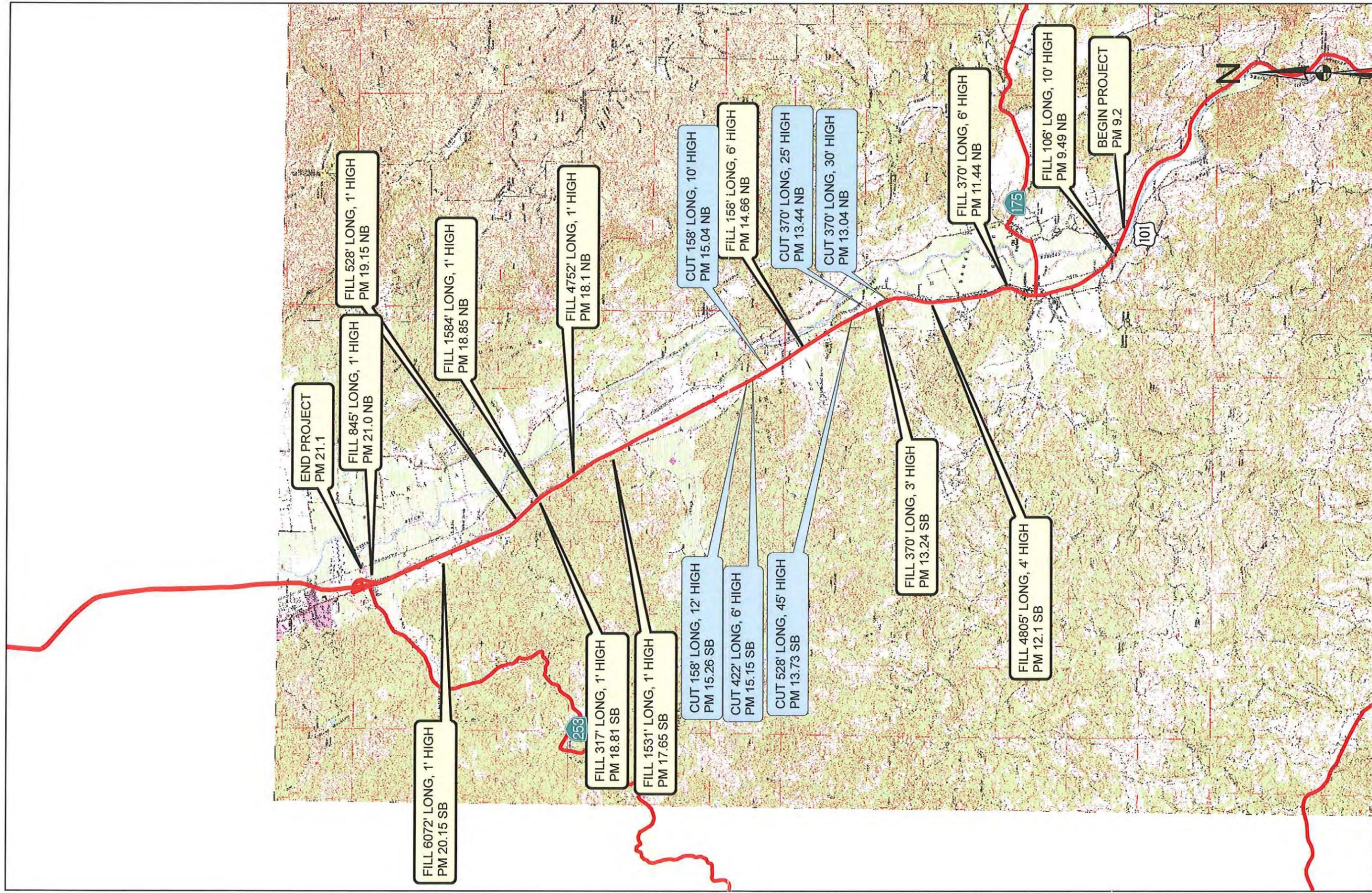


FIG
3

HOPLAND REHAB (EA 01-36291K)
CUT AND FILL LOCATIONS

ATTACHMENT N

**PRELIMINARY DRAINAGE
RECOMMENDATIONS**

Memorandum

To: Ilene Poindexter
Branch Chief
Advance Planning

Date: July 8, 2008
File: 01-MEN-101-PM 9.2/21.1
01-36291K
Roadway Rehabilitation

Attn: Jeff Pimentel, Project Engineer

From: **DEPARTMENT OF TRANSPORTATION- North Region**
D01 Hydraulics, Eureka Office

Subject: Preliminary Drainage Recommendations

This project proposes to rehabilitate Route 101 from the Russian River Bridge south of Hopland to 0.2 miles south of Robinson Creek Bridge. Our staff used a combination of the Maintenance Hydraulics database and field inspections to compile a list of existing culverts and provide preliminary drainage recommendations as per your request. There are approximately 115 culverts within the project limits. The Maintenance Hydraulics database has inspection notes dated within the last two years for 45 of those. The remaining 70 culverts were inspected by our staff on June 17 and 18, 2008. A list of 17 culverts has been sent to Maintenance Hydraulics requesting culvert camera inspection.

Drainage recommendations:

These preliminary recommendations are made based on the Maintenance Hydraulics culvert inspection database as well as the field inspection conducted by our office. If budget constraints preclude work on all of the culverts listed, this office, in cooperation with Ukiah Maintenance, can help draft a prioritized list.

Replacement:

Post Mile	Existing		Replacement		Length
	Material	Diameter	Material	Diameter	
11.05	CSP	30"	CSP	in kind	70
11.24	CSP	24"	CSP	in kind	76
11.46	CSP	18"	CSP	24"	68
13.22	CSP	24"	CSP	in kind	50
14.05	bitcd CSP	18"	CSP	24"	50
15.59	bitcd CSP	30"	CSP	in kind	60
16.63	CSP	18"	CSP	24"	50
16.63	CSP - DD	18"	CSP	24"	20
17.51	CSP	30"	CSP	in kind	156
17.78	CSP	18"	CSP	24"	131
17.94	CSP	18"	CSP	24"	139
18.00	CSP	18"	CSP	24"	142
18.73	CSP	18"	CSP	24"	50
18.73	CSP - DD	18"	CSP	24"	120
19.89	CSP	18"	CSP	24"	100

Lining:

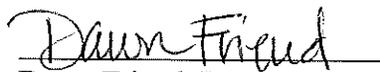
Post Mile	Material	Diameter	PP Liner	Length
13.68	CSP	24"	20"	160
17.94	CSP	18"	15"	139

Miscellaneous:

Post Mile	Material	Diameter	Length	Recommendation	Quantity
15.37	bitcd CSP	24"	75	add roadway dike, overside drain	15 ft AC dike, 1 OS drain
16.63	CSP	18"	81	repair side slope	72 ft3 light RSP
18.00	CSP	18"	142	replace wooden DI cover	1
18.11	CSP	24"	12	replace AC spillway	30 ft3 DGAC
18.18	CSP	18"	97	replace wooden DI cover	1
18.30	CSP	18"	75	replace wooden DI cover	1
18.48	CSP	18"	90	replace overside drain & 24"squash pipe	1 OS drain w/pipe
~18.60	NA	NA	NA	replace overside drain & 24"squash pipe. Facing RSP in erosion channel	1 OS drain w/pipe 1200 ft3 facing
19.00	pp liner	15"	100	place RSP on degraded spillway	50 ft3 rock,
19.19	bitcd CSP	18"	132	replace wooden DI cover	1
19.29	pp liner	18"/15"	100	replace wooden DI cover	1
19.43	bitcd CSP	24"	132	remove concrete spillway, place rock lined ditch	remove 30 ft degraded spillway, place 30 ft rock lined ditch(light)
19.87	CSP	18"	100	replace wooden DI cover	1
20.43	CSP	48"	57	minor concrete (pave invert)	153 ft3

Additionally, we recommend adding 20% to the drainage estimate to account for damage that may be discovered by the culvert camera, as well as any further degradation of facilities between now and construction.

If you have any questions or concerns regarding this information or hydraulic questions in general, please contact me at (707) 441-2081.



Dawn Friend, P.E.
North Region Hydraulics, Eureka

DMF:dmf

- cc: 1. LAKostrzewa
2. DMFriend
3. Project File

ATTACHMENT O

PROPOSED SHOULDER WIDENING LOCATIONS

PROPOSED SHOULDER WIDENING LOCATIONS

NB Outside Shoulder

PM Start	PM End	Existing Width	Proposed Width
9.2	9.23	4-6	8
Russian River Bridge			
9.47	9.51	4	8
Hopland Overhead			
9.61	10.45	2-3	8
Rosetti Creek Bridge			
10.49	10.58	2	8
Feliz Creek Bridge			
11.23	11.43	1	8
11.43	11.61	1-2	8
11.74	12.8	1-3	8
12.8	12.97	1-2	8
12.97	13	2	8
13	13.07	2-3	8
13.07	13.16	6	8
13.16	13.27	2-3	8
13.27	13.4	6	8
13.4	13.47	1	4
13.68	13.77	1	4
13.77	13.79	1	4
13.79	13.81	1	4
14.03	14.08	3	8
Crawford Creek Bridge			
14.66	14.69	2	4
15.03	15.06	1	4
15.06	15.28	1	4
15.53	15.58	3	8
McNab Creek Bridge			
17.5	18.4	5-7	10
18.7	19	6	10
19.1	19.2	7	10
Robinson Creek Bridge			

NB Inside Shoulder

PM Start	PM End	Existing Width	Proposed Width
17.5	20.91	1	5
Robinson Creek Bridge			
20.94	21.1	2	5

SB Outside Shoulder

PM Start	PM End	Existing Width	Proposed Width
Robinson Creek Bridge			
20.75	19.6	6	10
18.84	18.78	8	10
17.79	17.49	6	10
17.49	17.45	6	8
McNab Creek Bridge			
15.72	15.64	5	8
15.64	15.61	3	4
15.29	15.27	1	4
15.27	15.18	1	4
15.18	15.13	1	4
15.13	15.1	1	4
Crawford Creek Bridge			
13.78	13.68	1	4
13.45	13.38	3	4
13.27	13.2	3	8
13.08	12.97	1-3	8
12.97	12.8	1	8
12.8	11.69	1-2	8
11.69	11.64	1	10
11.64	11.43	1	8
11.43	11.23	1-2	8
Feliz Creek Bridge			
10.6	10.46	1-2	8
Rosetti Creek Bridge			
10.45	9.59	1-2	8
Hopland Overhead			
9.52	9.45	4	8
Russian River Bridge			

SB Inside Shoulder

PM Start	PM End	Existing Width	Proposed Width
19.6	17.5	1-3	5

ATTACHMENT P

CULVERT LOCATIONS

CULVERT LOCATIONS

PM	Size (in)	Type	Replace?/Size (in)
9.20	18	CSP	NO
9.82	30	WSP	NO
9.87	78	RCB	NO
10.06	106	RCB	NO
10.35	24	CMP	NO
10.89	18	CSP	NO
10.91	18	BCSP	NO
10.94	24	CSP	NO
11.03	18	BCSP	NO
11.05	30	CSP	YES / 30
11.12	24	CSP	NO
11.18	18	CSP	NO
11.24	24	CMP	YES / 24
11.35	18	CSP	NO
11.46	18	CMP	YES / 24
11.63	24	CMP	NO
11.72	55	RCB	NO
12.76	44	RCB	NO
12.86	24	CMP	NO
12.98	18	CMP	NO
13.13	18	CSP	NO
13.15	18	CSP	NO
13.22	24	CSP	YES / 24
13.51	24	BCSP	NO
13.55	24	BCSP	NO
13.60	24	BCSP	NO
13.68	24	BCSP	NO
13.70	18	BCSP	NO
13.84	24	BCSP	NO
13.95	1010	RCB	NO
14.05	18	BCSP	YES / 24
14.10	24	BCSP	NO
14.24	18	BCSP	NO
14.38	106	RCB	NO
14.59	18	CSP	NO
14.73	36	CSP	NO
14.90	1010	RCB	NO
15.00	36	BCSP	NO
15.11	24	CSP	NO
15.32	18	BCSP	NO
15.37	24	BCSP	NO
15.43	24	BCSP	NO
15.47	30	BCSP	NO
15.59	30	CSP	YES / 30
15.66	24	CSP	NO
15.80	18	CSP	NO
15.82	1010	RCB	NO
15.84	18	CSP	NO
15.92	18	CSP	NO
16.13	18	CSP	NO
16.35	18	CSP	NO
16.50	18	CSP	NO
16.56	18	CSP	NO

PM	Size (in)	Type	Replace?/Size (in)
16.63	18	CSP	YES / 24
16.73	85	RCB	NO
17.25	18	CSP	NO
17.51	30	CSP	YES / 30
17.55	18	CMP	NO
17.69	24	CMP	NO
17.78	18	CMP	YES / 24
17.86	18	CMP	NO
17.94	18	CSP	YES / 24
18.00	18	CSP	YES / 24
18.02	66	CSP	NO
18.07	24	CSP	NO
18.11	18	CSP	NO
18.17	18	CSP	NO
18.18	18	CMP	NO
18.25	24	CSP	NO
18.20	66	CSP	NO
18.30	18	CSP	NO
18.49	48	CSP	NO
18.37	18	CSP	NO
18.45	18	CSP	NO
18.34	48	CSP	NO
18.50	18	CSP	NO
18.58	18	CSP	NO
18.73	18	CMP	YES / 24
19.00	18	CSP	NO
19.10	30	CSP	NO
19.12	18	CSP	NO
19.19	18	CSP	NO
19.29	18	CSP	NO
19.43	24	CSP	NO
19.57	76	SSPP	NO
19.81	18	SSPP	NO
19.89	18	CSP	YES / 24
19.92	48	BCSP	NO
19.94	18	BCSP	NO
20.05	18	BCSP	NO
20.13	18	BCSP	NO
20.22	18	CSP	NO
20.27	30	BCSP	NO
20.43	48	BCSP	NO
20.63	18	CMP	NO
20.79	18	CSP	NO
20.82	18	CSP	NO
21.05	18	CMP	NO

LEGEND:

- CSP Corrugated Steel Pipe
- BCSP Bituminous Corrugated Steel Pipe
- CMP Corrugated Metal Pipe
- RCB Reinforced Concrete Box
- SSPP Structural Steel Plate Pipe
- WSP Welded Steel Pipe

ATTACHMENT Q

SCOPING TEAM FIELD REVIEW ATTENDANCE ROSTER

SCOPING TEAM FIELD REVIEW ROSTER

Field Review Date: April 30th, 2008

NAME	UNIT	TELEPHONE
Jeffrey Pimentel	Advance Planning	(707) 445-6358
Carlton Schrieve	Advance Planning	(707) 441-2079
Johnathon Jackson	Advance Planning	(707) 441-2059

ATTACHMENT R

RISK MANAGEMENT PLAN

Project Risk Register

DIST- EA 01-36291						Project Name: Hopland Rehab.			Project Manager: Steven Blair			Date Created: 03/20/09		Last Updated:			
						Co - Rte - PM: Men-101-9.2/R21.1			Telephone: 707-441-5899								
ITEM	ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Cost/Time Impact Value	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	Adjusted Cost/Time Impact Value	WBS Item	Status Date and Review Comments
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
1	01-36291-R1	Active	Threat	Design	01/29/09	Shortage of SHOPP funding to support project	National and international economic conditions	Cost	Low	Moderate: increased cost/delayed construction	Project Manager 707-441-5899 Steven_Blair@dot.ca.gov	Total project cost was a risk for fundability	Accept	Recommend to reduce total project scope into three phased projects. This will delay improvements at locations that need Rehab.	Costs of delaying phases may increase total construction costs.	100.05 Project Management - PID Component	
2	01-36291-R2	Active	Threat	Design	03/19/09	Unforeseen sensitive species identified	Unforeseeable presence of protected plant species	Time	Low	Moderate: increased cost/delayed construction	Project Manager 707-441-5899 Steven_Blair@dot.ca.gov	Inability to advertise	Accept	Revise to conform to permit requirements.	Revisions will increase design overhead costs. Increased risk of incurring unknowable tort liability costs.	255 Circulate, Review and Prepare Final District PS&E Package	
3	01-36291-R3	Active	Threat	Construction	03/19/09	Unforeseen cultural/sensitive locations identified	Unforeseeable presence of cultural/sensitive material.	Time	Low	Moderate: increased cost/delayed construction	Project Manager 707-441-5899 Steven_Blair@dot.ca.gov	Identification of sensitive resources	Accept	Mitigate or revise to avoid sensitive resources.	Revisions will increase design overhead costs. Increased risk of incurring unknowable tort liability costs.	270 Construction Engineering and General Contract Administration	
4	01-36291-R3	Active	Threat	Construction	02/15/08	Possible future conflicts with Project EA 2921U	Unknown future delivery dates for phased projects from this EA, and future delivery dates of potential phased projects from EA 2921U	Time and Cost	Low	Moderate: increased cost/delayed construction	Project Manager 707-441-5899 Steven_Blair@dot.ca.gov	Lack of coordination with EA's delivery schedule	Accept	Current conditions suggest that EA 36291 may precede phases for EA 2921U to construction.	Coordination will assure that impacts are minimal	100.05 Project Management - PID Component	
5																	
6																	
7																	

ATTACHMENT S

PROGRAMMING SHEET

PROGRAMMING SHEET

Project Manager: STEVEN BLAIR

01-MEN-101 PM 009.2/R021.1

Date: 13-May-09

EA 01-36291_

20.10.201.120 Roadway Rehab

PROJECT SCHEDULE

MILESTONE	DATE
Begin Environmental Document (M020)	9/1/2010
Begin Project Report (M040) (Begin Design of Project)	7/1/2010
Circulate Environmental Document (M120)	11/1/2011
Project Approval & Environmental Document (M200)	2/1/2012
District Submits Bridge Site Data to Structures (M221)	4/1/2012
Right of Way Maps (M224)	5/1/2012
Draft Structures Plans, Specifications & Estimate (M378)	7/1/2013
Project Plans, Specifications & Estimate (M380)	10/1/2013
Right of Way Certification (M410)	1/1/2014
Ready to List (M460)	2/1/2014
HQ Advertise (M480)	4/1/2014
Approve Construction Contract (M500)	7/1/2014
Contract Acceptance (M600)	11/1/2015

Escalation Factors Used: Capital: 09/10=3.6%, 10/11=3.7%, 11/12=4.4%, 12/13=3.6%, 13/14=3.6%
 Support: 09/10=3%, 10/11=2%, 11/12=2%, 12/13=2%, 13/14=2%

2009 COSTS

Const: \$ 39,275
R/W: \$ 3,521

PROJECT COSTS BY SB45 CATEGORY

Costs are in thousands of dollars

CAPITAL COSTS	08/09	09/10	10/11	11/12	12/13	13/14	FUTURE	TOTAL
Right of Way	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,497	\$ -	\$ 4,497
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 46,698	\$ -	\$ 46,698
CAPITAL TOTAL								\$ 51,195

SUPPORT COSTS

Environmental	\$ -	\$ 64	\$ 665	\$ 406	\$ -	\$ -	\$ -	\$ 1,135
Design	\$ -	\$ -	\$ -	\$ 273	\$ 1,149	\$ 490	\$ -	\$ 1,912
Right of Way	\$ -	\$ -	\$ -	\$ 118	\$ 154	\$ 131	\$ 94	\$ 497
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,457	\$ 6,457
SUPPORT COSTS								\$ 10,000

TOTAL PROJECT COSTS \$ 61,195

SUPPORT TO CAPITAL RATIO/% 20%

SUPPORT PY'S by DIVISION

Number of Hours in a PY: 1758

PROJECT SUPPORT IN PYS

	08/09	09/10	10/11	11/12	12/13	13/14	FUTURE	TOTAL
Transportation Planning	0.00	0.14	2.30	1.20	0.28	0.22	0.12	4.3
District Design	0.00	1.20	1.42	2.63	2.53	1.13	3.98	12.9
Right of Way	0.00	0.07	0.24	0.52	1.52	1.19	0.55	4.1
District Construction	0.00	0.01	0.02	0.09	0.07	0.11	32.72	33.0
DES Design	0.00	0.08	0.51	0.55	3.23	1.14	1.64	7.1
DES Construction	0.02	0.01	0.02	0.01	0.04	0.06	1.94	2.1
TOTAL	0.02	1.51	4.52	5.00	7.67	3.85	40.96	63.5

Comments: