Men 101, PM 64.7-69.3
20.20.201. 120
EA 01- 45930K
May 2008

PROJECT SCOPE SUMMARY REPORT (ROADWAY REHABILITATION)

To

Request Programming in the 2010 SHOPP

In Mendocino County Near Laytonville From The Long Valley Creek Bridge No.10-0099 To Ramsey Road

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. Ricard
FOR LINDY K. LEE
DISTRICT DIVISION CHIEF- RIGHT OF WAY

APPROVAL RECOMMENDED:

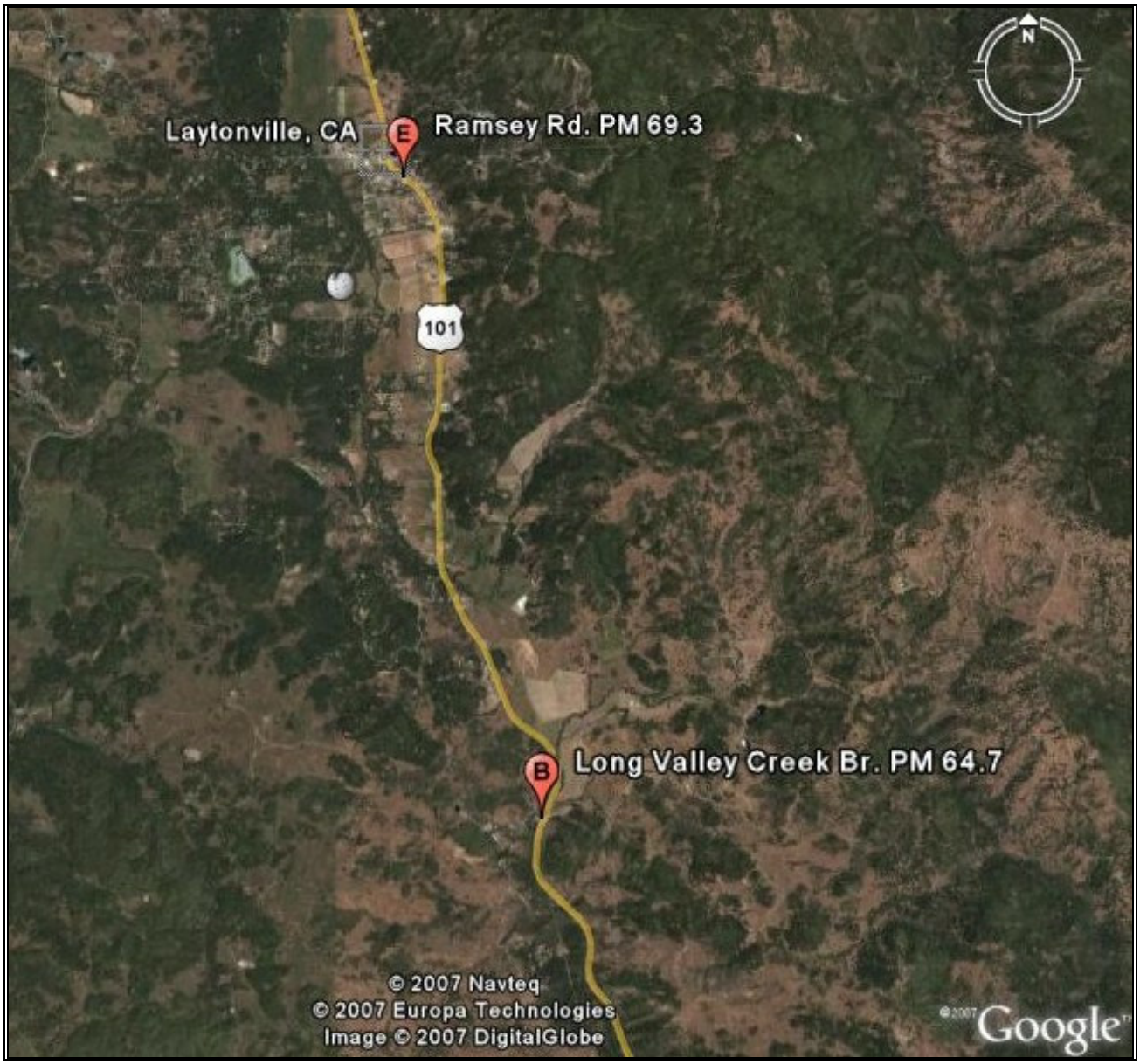
STEVEN D. BLAIR, P.E.
PROJECT MANAGER

ROYAL McCARTHY
PROGRAM ADVISOR

APPROVED: Charles C. Fielder May 12, 2008

CHARLES C. FIELDER
DISTRICT DIRECTOR

DATE



In Mendocino County Near Laytonville From The Long Valley Creek Bridge No.10-0099 To Ramsey Road

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.

Francisco R Miranda

FRANCISCO R. MIRANDA
REGISTERED CIVIL ENGINEER

4-25-2008

DATE

Table of Contents

1. INTRODUCTION AND BACKGROUND

Brief Project Description:

This project proposes to rehabilitate Route 101, from the Long Valley Creek Bridge #10-0099 (PM 64.7) to Ramsey Road (PM 69.3) near the town of Laytonville in Mendocino County (see Attachment A: Title Sheet). Six culverts will be replaced, all existing metal beam guardrail (MBGR) will be reconstructed, and their terminal sections replaced. Additionally, it is proposed to replace the pavement at an existing truck turnout area adjacent to the Long Valley Creek Bridge at the southern end of the project.

Route 101, within the project limits, is a two-lane road with 8-foot shoulders that can be classified as rural, except for the last mile at the north end of the project approaching the town of Laytonville, where it becomes a suburban facility. In addition, the road traverses mostly flat ground except at the beginning of the project where there is a short segment of mountainous and rolling terrain. The proposed improvements meet the criteria for 2R (resurfacing and restoration) projects as specified in the *Design Information Bulletin 79-03.*

District 1 Maintenance initiated this project in 2004 and a "Project Initiation Form" was approved on August 10, 2004. At that time the cost of the project was estimated at $4.9 million, which did not include drainage improvements.

The effort to develop the project was taken again in June 2007 by organizing a scoping field trip that led to the present scope and cost.

This project is proposed to be funded from the 20.20.201.120 program (2R Program) in the 2010 SHOPP cycle. The cost has been estimated at $7.13 million (February 2008, see Section 9A).

Project Limits	01-Men 101, PM 64.7-69.3
Construction Costs:	$7.00 million
Right of way Costs:	$133,000
Total Cost:	$7.13 million
Funding Source:	SHOPP
Number of Alternatives:	2
Recommended Alternative	1
Type of Facility	Conventional highway
Number of Structures:	None
Anticipated Environmental Determination/Document:	CEQA=Mitigated Negative Declaration NEPA=Cat. Exclusion
Legal Description	In Mendocino County Near Laytonville From The Long Valley Creek Bridge No.10-0099 to Ramsey Road

2. RECOMMENDATION

It is recommended that the cost associated with Alternative 1 of this project be used to program the project into the 2010 SHOPP and proceed with the preparation of the Environmental Document.

3. PURPOSE AND NEED STATEMENT

Need:

To return the pavement structural section of this segment of Route 101 to good condition, to improve the drainage by upgrading culverts at several locations, and to improve safety by updating the terminal sections and resetting the heights of the existing metal beam guardrail.

Purpose:

The purpose of this project is to prevent further deterioration of the roadway structural section, and the restoration of roadway features such as culverts and metal beam guardrail.

4. EXISTING FACILITY, DEFICIENCIES AND TRAFFIC DATA

4A. ROADWAY GEOMETRIC INFORMATION

		Minimum (1)	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4)	Shoulder is a Bicycle Lane (Y/N) (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	Right	Width	Width
Existing	64.7-65.0	850’	2	12’	Flexible	8’	8’	None	N	None	Y	Truck Turnout
Proposed	64.7-65.0	850’	2	12’	Flexible	8’	8’	None	N	None	Y	Truck Turnout
	Min. 3R Stds.	850’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	65.0-65.3	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	65.0-65.3	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	65.3-65.9	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	65.3-65.9	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	65.9-66.0	1,500’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	65.9-66.0	1,500’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	66.0-66.4	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	66.0-66.4	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	66.4-67.0	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	66.4-67.0	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	67.0-67.16	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	67.0-67.16	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	67.16-67.4	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None

		Minimum (1)	Through Traffic Lanes (2)			Paved Shoulder Width (3)		Median (4)	Shoulder is a Bicycle Lane (Y/N) (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	Right	Width	Width
Proposed	67.16-67.4	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Min. 3R Stds.	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	67.4-67.6	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	67.4-67.6	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	67.6-68.0	20,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	67.6-68.0	20,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	1000’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.0-68.1	2,500’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.0-68.1	2,500’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	550’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.1-68.2	3,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.1-68.2	3,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	550’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.2-68.3	20,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.2-68.3	20,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	550’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.3-68.7	10,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.3-68.7	10,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	550’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.7-68.9	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.7-68.9	1,200’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	550’	2	12’	Flexible	6’	6’	NA	N	6’	Y	
Existing	68.9-69.3	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
Proposed	68.9-69.3	2,000’	2	12’	Flexible	8’	8’	None	N	None	Y	None
	Min. 3R Stds.	450’	2	12’	Flexible	6’	6’	NA	N	6’	Y	

Remarks: No alignment modifications are proposed for this segment of Route 101.

4B. CONDITION OF EXISTING FACILITY

(1) Traveled Way Data

From PM	To PM	Lane Side	crack Ln-miles	PMS Cat.	IRI Score	MSL Class	Alligator Cracking %			Patch	Rutt	Bleed	Ravel
							A	B	C	%	Y/N	Y/N	Y/N
64.7	65.6	L1	0.00	32	127	1	0%	0%	NO	0%	NO	NO	YES
64.7	65.6	R1	0.23	9	96	1	0%	25%	YES	0%	NO	NO	NO
65.6	65.7	L1	0.04	7	121	1	0%	40%	NO	0%	YES	NO	NO
65.6	65.7	R1	0.03	9	99	1	0%	25%	YES	0%	NO	NO	NO
65.7	65.9	L1	0.05	7	124	1	0%	40%	NO	0%	YES	NO	NO
65.7	65.9	R1	0.07	7	99	1	0%	56%	YES	0%	NO	NO	NO
65.9	66.0	L1	0.07	7	136	1	0%	40%	NO	0%	YES	NO	NO
65.9	66.0	R1	0.10	7	103	1	0%	56%	YES	0%	NO	NO	NO
66.0	66.2	L1	0.08	7	116	1	0%	40%	NO	0%	YES	NO	NO
66.0	66.2	R1	0.12	7	127	1	0%	56%	YES	0%	NO	NO	NO
66.2	67.0	L1	0.42	7	116	1	5%	50%	NO	43%	NO	NO	NO
66.2	67.0	R1	0.49	7	127	1	43%	21%	NO	0%	YES	NO	NO
67.0	67.1	L1	0.00	99	78	1	0%	0%	NO	0%	NO	NO	NO
67.0	67.1	R1	0.05	9	90	1	43%	21%	NO	0%	YES	NO	NO
67.1	67.3	L1	0.00	99	90	1	0%	0%	NO	0%	NO	NO	NO
67.1	67.3	R1	0.16	9	90	1	43%	21%	NO	0%	YES	NO	NO
67.3	67.6	L1	0.08	32	87	1	28%	0%	NO	4%	NO	NO	NO
67.3	67.6	R1	0.19	9	68	1	43%	21%	NO	0%	YES	NO	NO
67.6	67.7	L1	0.02	32	97	1	28%	0%	NO	4%	NO	NO	NO
67.6	67.7	R1	0.04	31	59	1	53%	9%	NO	0%	NO	NO	NO
67.7	68.9	L1	0.32	32	113	1	28%	0%	NO	4%	NO	NO	NO
67.7	68.9	R1	0.70	31	96	1	53%	9%	NO	0%	NO	NO	NO
68.9	69.1	L1	0.03	9	102	1	0%	14%	NO	0%	NO	NO	NO
68.9	69.1	R1	0.12	31	88	1	53%	9%	NO	0%	NO	NO	NO
69.1	69.3	L1	0.03	9	91	1	0%	14%	NO	0%	NO	NO	NO
69.1	69.3	R1	0.12	32	79	1	50%	0%	NO	0%	NO	NO	NO

Source: 2005 Pavement Condition Survey

Locations of subsurface or surface water pondings:

District 1 Materials Laboratory reported water pumping through the structural section at several locations (see Attachment L: Preliminary Materials Recommendation). The proposed drainage improvements consisting of the installation of pipe underdrains and culvert upgrading are expected to lower the water table beneath the structural section to alleviate the pumping and migration of fines to the surface.

Deflection Study: A Deflection Study will be requested prior to PS&E.

(2) Shoulder Data

Condition: Shoulders are in good condition.

Deficiencies: No deficiencies observed.

(3) Pedestrian Facility Data

Remarks: No pedestrian facilities are present within the project limits.

(4) Bicycle Path Data

There are no striped bicycle paths within the project limits; however, a project that begins immediately north of Ramsey Road, scheduled for construction in 2008 (EA 01-4293U1), will construct Class II bicycle lanes (striped lanes for one-way bicycle travel) in the town of Laytonville.

In order to provide a continuation of the Class II bike lane that will be provided by the above-mentioned project, the shoulders on both directions of travel will be striped as Class II bike lanes from Hardwood Road (PM 68.9) to Ramsey Road (PM 69.3)

4C. STRUCTURES INFORMATION

Structures	Width Between Curbs			Replace Bridge Railings	Vertical Clearance			Work Identified in STRAIN	Replace Bridge Approach Rail	Replace Bridge Approach Slab	
Name/No.	Exist	3R Std	Prop	(Y or N)	Exist	3R Std	Prop	(Y or N)	(Y or N)	(Y/N)	#
10-0099	57’ 6”	40’	57’ 6”	N	NA			N	Y	N	
10-0024	40’	40’	40’	N	NA			N	Y	N	

NA=Not applicable

4D. VEHICLE TRAFFIC DATA

Base-year 2005 ADT: 6,240 Const.-Year 2014 ADT: 7,680

10-Year 2024 ADT: 9,280 20-Year 2034 ADT: 10,900

DHV: 1,520D: 60% % Trucks: 13.0 %

T.I. (10-Year): 10.5 ESAL (10-Year): 3,658,774

T.I. (20-Year): 11.0 ESAL (20-Year): 5,399,511

Safety Field-Review: July 10, 2007

A 5-Year Collision Data Table is shown below for the period from July 1, 2001 to June 30, 2006. The actual collision rate for this segment of Route 101 for the above-mentioned period was below the statewide average for similar facilities.

Location(s) of Accident Concentration: None found.

Collisions				Collision Rate			Statewide Average		
Total	F	I	F + I	F	F + I	Total	F	F + I	Total
42	2	11	13	0.04	0.26	0.84	0.03	0.58	1.21

4E. MATERIALS

The Materials Laboratory made the following recommendations for a 20-year design life:
Cold plane any existing open graded asphalt concrete, and conduct a field review to locate areas of severe failure identified by ruttings greater than 0.05'and/or loose, spalling pavement. Dig out and repair the localized areas of pavement failure to a depth of 0.35' (mill & fill with HMA-A), and seal all cracks wider than ¼" 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' hot mix asphalt open graded friction course (RHMA-O). See Attachment L: Preliminary Materials Recommendations.

5. CORRIDOR AND SYSTEM COORDINATION

This project is consistent with the Transportation Concept Report for Route 101 in Mendocino County. Future plans for improving Route 101 in the vicinity of this project include the following:
EA 01-40280, PM 46.2-R84.6, culvert rehabilitation, construction year 2012
EA 01-46730, PM 64.7-68.8, open graded friction course, construction year 2008
EA 01-4293U, PM 69.3-69.5, Laytonville curve improvement and Main Street aesthetics, construction year 2008

6. ALTERNATIVES

6A. REHABILITATION STRATEGY:

A life cycle cost analysis was conducted to compare two rehabilitation strategies for Alternative 1 (see Alternative 1 description below). The first strategy has a life of ten years and the second strategy, twenty years. When both strategies were compared using the Caltrans software RealCost version 2.2, the ten-year life strategy produced an equivalent uniform annual cost (EUAC) of $817,000, while the twenty-year strategy yielded an EUAC of $649,000). Consequently, it is recommended to implement the twenty-year

rehabilitation strategy because it achieves the same results as the ten-year strategy at a considerable cost savings to the State (see Attachment J: Life Cycle Cost Analysis Summary Sheet).

Alternative 1:
The 20-year rehabilitation strategy selected for implementation consists of the following:
Cold plane any existing open graded asphalt concrete, and conduct a field review to locate areas of severe failure identified by rutting greater than 0.05' and/or loose, spalled 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 open graded friction course (RHMA-0).

Additionally, this alternative proposes to upgrade six culverts and to install underdrain pipes at several locations to improve drainage; to repave and extend, with full structural section, a truck turnout located at the southern end of the project and used by the California Highway Patrol, because the existing pavement is in poor condition and a taper needs to be added for trucks to accelerate to near prevailing highway speed.

Alternative 2: No build
Failure to rehabilitate this segment of Route 101 could result in substantially escalated costs associated with emergency repairs, increased deterioration of roadway surface and structural section, and unacceptable ride scores.

6B. DESIGN EXCEPTIONS:

This project qualifies for the 2R program (resurface and restoration) because the geometric features and the safety of Route 101 within the project limits will not be degraded by the proposed improvements, as concluded by a Safety Screening prepared by the District 1 Traffic Safety Unit on March 3, 2008. Consequently, both Mandatory and Advisory Design Exception fact sheets will not be required for geometric design features. Furthermore, new nonstandard features are not being proposed as part of the scope of this project.

6C. ENVIRONMENTAL COMPLIANCE:

Based on findings by the Division of Environmental Planning, the appropriate documents for this project will be a Mitigated Negative Declaration for the California Environmental Quality Act (CEQA) and Categorical Exclusion for the National Environmental Protection Act (NEPA).

The following key environmental issues, studies, and permits are anticipated: cultural resources, biological resources, water quality; and sections 401, 404,

and 1602 resource agency permit/agreements may be required. The project will also require a Storm Water Pollution Prevention Plan (SWPPP) and a Water Pollution Control Plan at an estimated cost of $150,000. Several locations will need a Phase I archaeological investigation and one location may require a phase II archaeological investigation.

Anticipated mitigation measures include best management practices to protect water quality, planting vegetation at disturbed areas, and placing environmentally sensitive fencing prior to construction. The cost of mitigation and compliance has been preliminarily estimated at $20,000.

6D. HAZARDOUS WASTE DISPOSAL

A hazardous waste disposal site is not required for this project.

6E. OTHER AGENCIES INVOLVED

The following permits are expected for this project:
Section 401 permit from the North Coast Regional Water Quality Control Board (NCWQCB), Section 404 permit from the U.S. Army Corps of Engineers, and Section 1602 permit from the California Department of Fish and Game

6F. MATERIALS AND OR DISPOSAL SITE NEEDS AND AVAILABILITY:

No Disposal or borrow sites are anticipated for this project. Staging areas for contractor's equipment and materials are available within the State Right of Way.

6G. HIGHWAY PLANTING AND IRRIGATION:

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

6H. ROADSIDE DESIGN AND MANAGEMENT:

All Metal Beam Guardrail will be reset to achieve standard railing elevations after pavement overlay. All terminal sections will be brought to current standards.

6I. STORMWATER COMPLIANCE:

A Storm Water Data Report was signed on October 1, 2007 and a similar report will be prepared for the P&E phase to apply for the 401 permit to the NCWQCB. No permanent Best Management Practice (BMP) appurtenances are anticipated for this project. Temporary construction BMPs consisting of drop inlet protection, fiber rolls, and silt or polyethylene fences will be used during construction in accordance with the Storm Water Pollution Prevention Plan prepared for this job at an estimated cost of $150,000.

6J. RIGHT OF WAY AND UTILITY ISSUES:

A Right of Way Data Sheet was prepared for this project on October 5, 2007 (see Attachment G: Right of Way Data Sheet). The estimated Right of Way cost is $133,000, which includes $105,000 for utility relocation. Utilities requiring verification are PG&E and AT&T. In addition, a Laytonville County waterline will require verification and possible relocation at State expense.

6K. RAILROAD INVOLVEMENT:

No railroad involvement in this project.

6L. 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.

6M. PROLONGED TEMPORARY RAMP CLOSURES:

There are no ramps within the project limits.

6N. 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.

6O. LOCAL AND REGIONAL INPUT:

Required permits will constitute inputs from outside Caltrans. The local schools shall be consulted regarding their bussing schedules because this project will require one-way traffic control.

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

The road would continue to deteriorate to a point where only a major and expensive reconstruction would bring it back to the state of good use.

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

Alternative 1, a 20-year rehabilitation strategy (see Attachment J: Life Cycle Cost Analysis Summary Sheet), and Alternative 2 (the no-build) were studied. The no-build option was not selected because it does not meet the Need and Purpose of this project.

7. TRANSPORTATION MANAGEMENT

7A. TRANPORTATION MANAGEMENT PLAN

A Transportation Management Plan Data Sheet was prepared in September 2007. One-way traffic control with a maximum length of 2,000 feet is recommended to control traffic during construction. A minimum of one 12-foot travel lane and a 4-foot shoulder shall be open for public traffic. If this cannot be provided, pedestrian and bicycles will be ferried across the construction zone using a pilot vehicle. Work shall be coordinated with the local school busing system to minimize impacts on the student transport schedules.

7B. VEHICLE DETECTION SYSTEMS

A total of 8 inductive detection loops for traffic counting are included in this project.

8. ENVIRONMENTAL DETERMINATION/DOCUMENT

According to the *Preliminary Environmental Assessment Report* (PEAR) that was prepared for this PSSR, the environmental documents for this project are: a Categorical Exclusion for NEPA, and a Mitigated Negative Declaration for CEQA if consultation with U. S. Endangered Species Act, Section 7, is required. If Section 7 consultation can be avoided, then a Categorical Exception would likely be the required CEQA document (see Attachment F: Preliminary Environmental Assessment Report).

Date Approved: April 15, 2008

9. FUNDING/SCHEDULING

9A. COST ESTIMATE

Pavement Work	Lane-Miles	Number	Cost (1,000s)
Flex Overlay of Flex Pavement (recycle not included)[1,2]	9.2	--	4,223
Hot Recycled AC	--	--	--
Cold Recycled AC	--	--	--
Seal Random Cracks	2.0	--	28
Ramps and OC/UC Approaches	--	--	--
Imported Material (Shldr. Backing)	9.2	--	171
Edge Drain (side mi)	--	--	--
Bridge Approaches	--	4	32
Total Lane-Miles of Rehabilitation	9.2	--	--

COSTS SUBTOTAL **4,454**

Notes: 1. Includes cost to remove and replace localized failed areas.
2. Includes cost of shoulder backing material for increased thickness at shoulder edge, as needed.

Does the Project Include?	Yes/No	Cost
Main Line Widening	No	--
Bridge Widening and Rail Upgrade	No	--
Bridge Rail Upgrade - Without Widening	No	--
Vertical Clearance Adjustment	No	--
Drainage Rehabilitation	Yes	--
Upgrade 6 culverts		345
Place underdrains		128
Water Pollution Control	Yes	150
Pedestrian Facilities	No	

Safety	Yes/No	Cost
Rumble Strip	Yes	48
Superelevation Correction	No	--
Vertical Alignment	No	--
Horizontal Alignment	No	--
Left/Right-Turn Storage/Widening/Lengthening	No	--
Signal Upgrade	No	--
Median Barrier	No	--
Metal Beam Guardrails (New)	No	--
Concrete Guardrail	No	--
Roadside Cleanup	No	--
Gore Cleanup	No	--
Electroliers	No	--

Roadside Management	Yes/No	Cost
Pavement beyond Gore Area	No	--
Miscellaneous Paving	Yes	516
Maintenance Vehicle Pull outs	No	--
Off-Freeway Access	No	--
Roadside Facilities	No	--

Traffic Control	Yes/No	Cost
Control Traffic	Yes	74
Upgrade MBGR	Yes	91
Inductive Loop Detectors	Yes	10

COSTS SUBTOTAL **1,362**

SUM OF SUBTOTALS		**5,816**
20% Contingency *(of Subtotals)*		**1,163**
Utility Relocation	Yes	105
Railroad Agreements	No	0
Right of Way	Yes	28
Environmental Compliance	Yes	20
TOTAL PROJECT COST		**7,132**
	Call	**7.13 Mil**

9B. PROJECT SUPPORT

See Attachment M: Programming Sheet

9C. PROJECT SCHEDULE:

See Attachment M: Programming Sheet

10. FEDERAL COORDINATION

Participation of the Federal Highway Administration (FHWA) is not required for this project because approval of the NEPA environmental document has been delegated to the California Department of Transportation by the FHWA.

11. SCOPING TEAM FIELD REVIEW ATTENDANCE ROSTER:

See Attachment H:
Date Of Field Review: 7/10/2007

12. PROJECT REVIEWED BY:

Field Review	PDT	Date	7/10/2007
District Maintenance	Mark L. Suchanek	Date	4/01/2008
District Safety	Marie Brady	Date	3/07/2008
District Materials	Wesley Johnson	Date	3/07/2008
HQ Design Coordinator/Reviewer	John Steele	Date	3/10/2008
HQ Maintenance Program	Ron Jones	Date	4/25/2008
FHWA		Date	
Others			
District Advanced Planning	Ilene Poindexter	Date	1/09/2008

13. ATTACHMENTS

A. Title Sheet
B. Typical Cross Sections
C. Truck Turnout Layout Sheet
D. Pavement Management System Inventory Data
E. Culverts Proposed For Replacement
F. Preliminary Environmental Assessment Report
G. Right Of Way Data Sheet
H. Scoping Team Field-Review Attendance Roster
I. SHOPP Performance Output Table
J. Life Cycle Cost Analysis Summary Sheet
K. Preliminary Cost Estimate
L. Preliminary Materials Recommendation
M. Programming Sheet

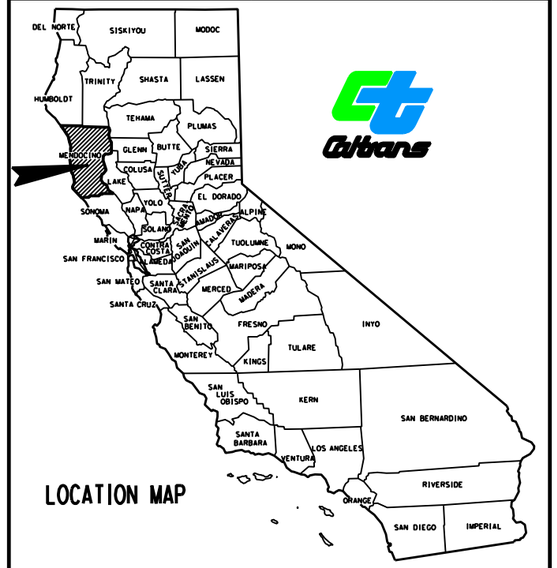
INDEX OF PLANS

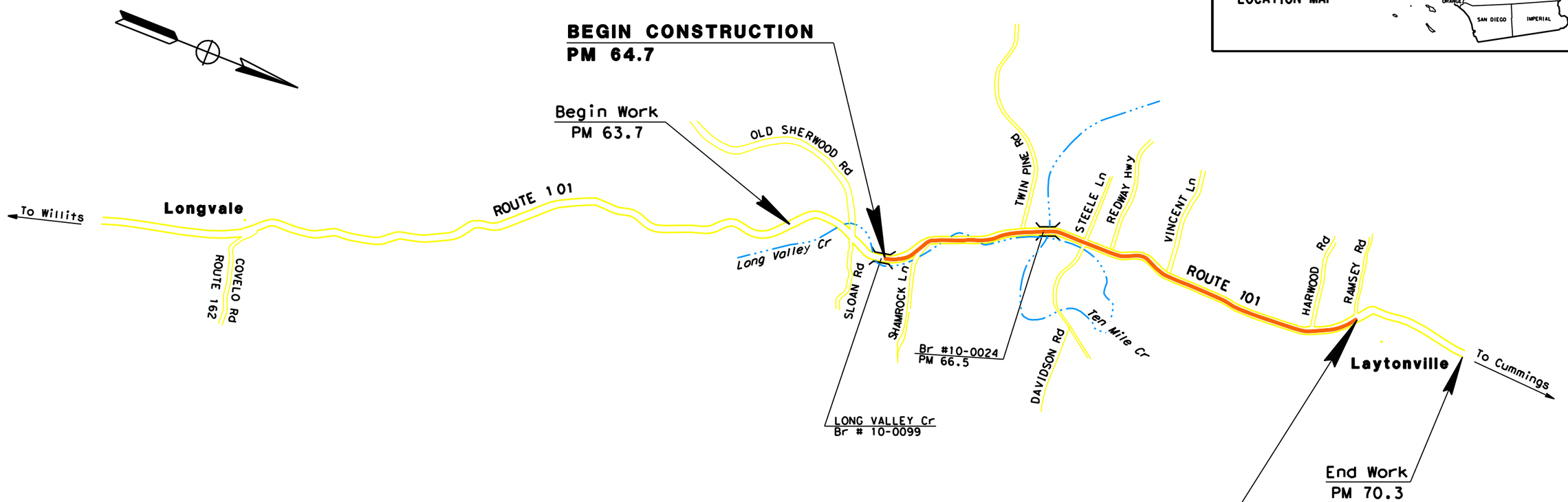
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
01	Men	101	64.7/69.3		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN MENDOCINO COUNTY
NEAR LAYTONVILLE
FROM THE LONG VALLEY CREEK BRIDGE NO. 10-0099
TO RAMSEY ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006





ATTACHMENT A

NO SCALE

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

PROJECT ENGINEER _____ DATE _____
REGISTERED CIVIL ENGINEER

Francisco Miranda
No. 51038
Exp. 9-30-07
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

PROJECT MANAGER: RM
DESIGN ENGINEER: FRANCISCO MIRANDA

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

CONTRACT No. 01-459304

CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => $USER
DGN FILE => $REQUEST

CU 03259 EA 45930

Attachment_A.dgn 4/22/2008 2:34:44 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Men	101	64.7/69.3		

REGISTERED CIVIL ENGINEER DATE

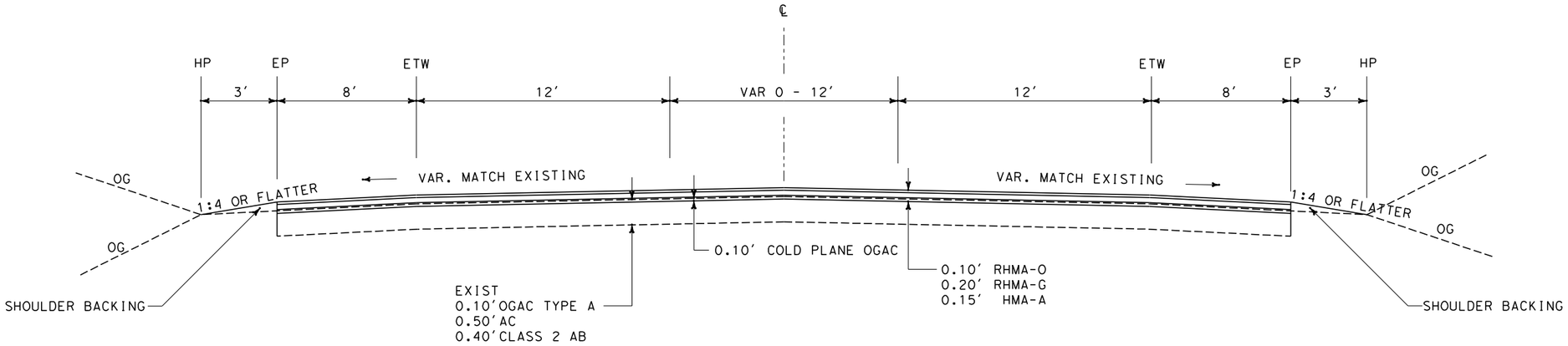
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Francisco Miranda
No. 51038
Exp 9-30-07
CIVIL
STATE OF CALIFORNIA

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

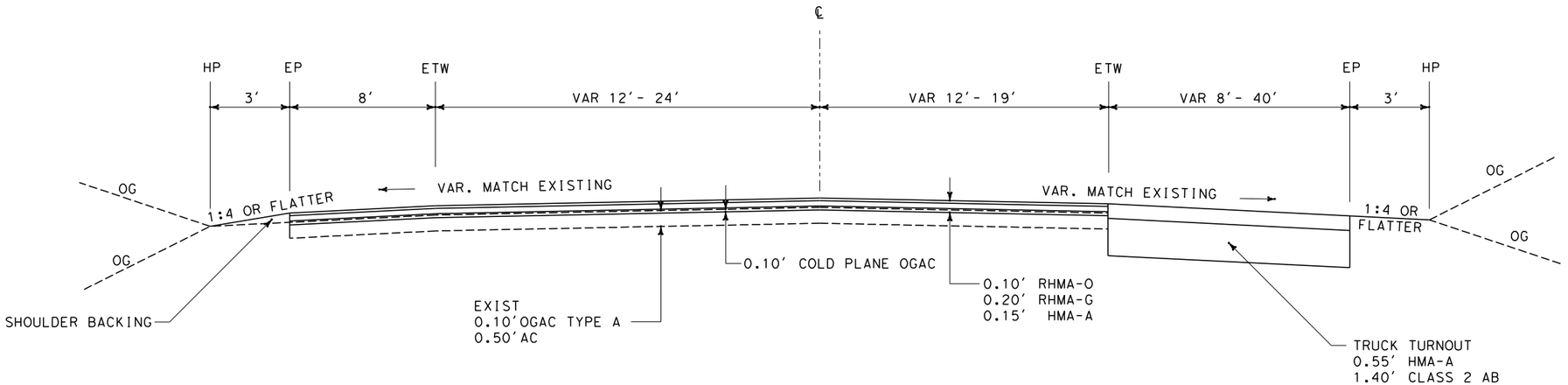
NOTE:

1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.



ROUTE 101

PM 64.87 TO 69.30



ROUTE 101

PM 64.70 TO 64.87

ATTACHMENT B
TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY | DATE REVISED

FRANCISCO MIRANDA

CALCULATED-DESIGNED BY

FUNCTIONAL SUPERVISOR: GERALD WONG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
NORTH REGION
OFFICE OF DESIGN, SOUTH
DESIGN BRANCH 00

$FREQUEST

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

BORDER LAST REVISED 3/1/2007

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

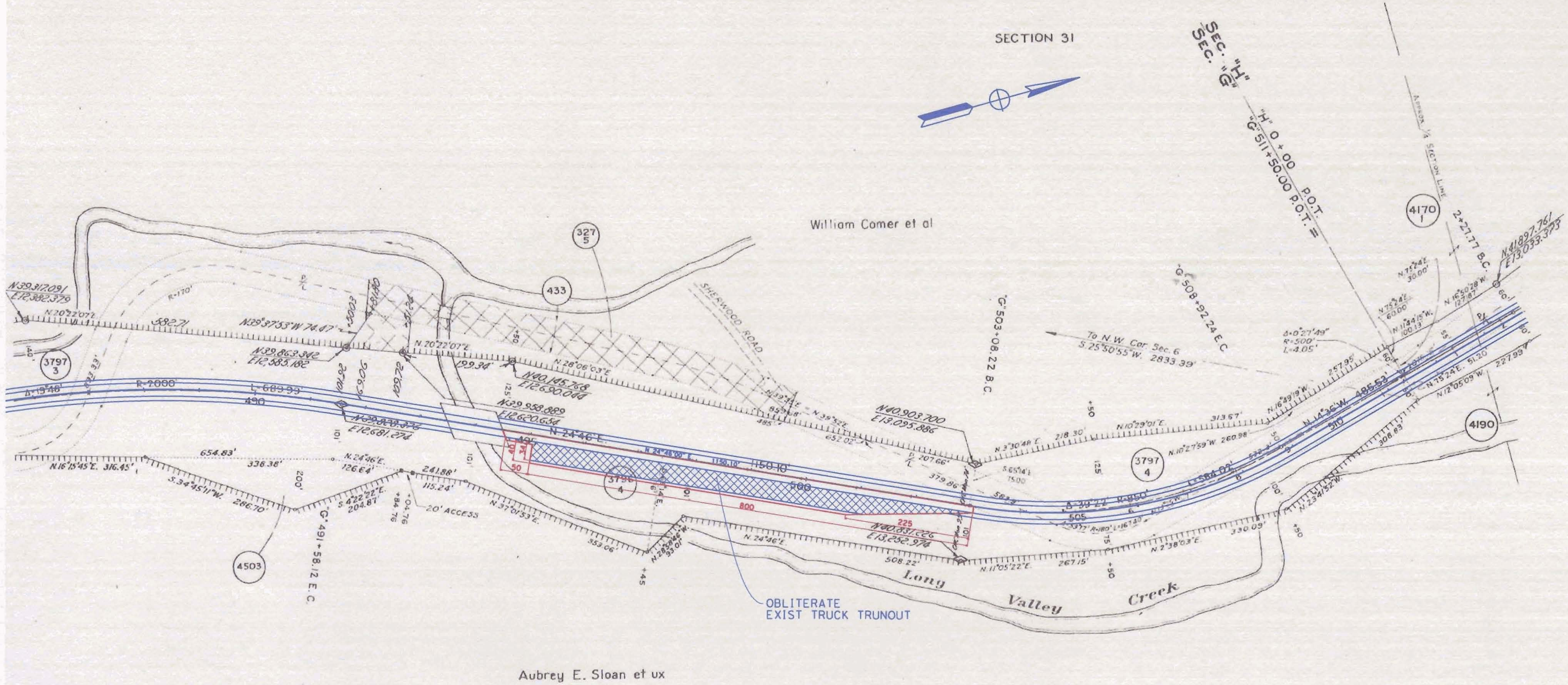
USERNAME => $USER
DGN FILE => $REQUEST

CU 03259

EA 45930

DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
1	MEN	1	G,H		

APPROVED B.D. Van Zandt CE 8136



LEGEND

NEW STRUCTURAL SECTION

OBLITERATE
EXIST TRUCK TRUNOUT

I - MEN - I - G,H

Scale: 1"=100'

64.71

This Project On
LOCAL COORDINATE SYSTEM

◇ = CHC SURVEY MONUMENT IN PLACE

◉ = CHC R/W MONUMENT IN PLACE

PRINT ON FILE
WITH
COUNTY RECORDER
DATE...............

ORIGINAL ON FILE
WITH
COUNTY SURVEYOR
JUL 20 1962

ATTACHMENT C

Collection Date: 12/16/2005
Printed: 11/14/2007

Caltrans Maintenance Program
2005 Pavement Condition Survey Inventory
Caltrans Drive Order

District 1, MEN, Rte 101, PM 64.7 - 69.3

District 1 County MEN Route 101

District	1
County	MEN
Route	101
Begin PM	62.639

Begin PM - End PM		Length	LaneMi. (Est.)	Type	AADT (,000)	MSL								
Lane	Surface Type	Alligator Cracking A %	Alligator Cracking B %	Alligator Cracking C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	Slab Cracking 3rd %	Slab Cracking Corner %	Faulting	Patching Area %	Patching Poor Cond.?	Ride, IRI	Priority	Skid	Defect
62.639 - 63.539			**0.900**		**3.600**	**MLD**	**5**	**1**							
L1	F-DG	0	36									N/A	7		HIGH ABC
L2	F-DG	0	76									9 104	7		HIGH ABC
R1	F-DG	0	0									6 91	32		FINE RAVEL
R2	F-DG	0	50									10 105	7		HIGH ABC
63.539 - 63.854			**0.315**		**1.260**	**MLD**	**5**	**1**							
L1	F-DG	0	36									N/A	7		HIGH ABC
L2	F-DG	0	76									7 96	7		HIGH ABC
R1	F-DG	0	0	Yes								6 91	32		FINE RAVEL
R2	F-DG	0	0	Yes								9 101	32		FINE RAVEL
63.854 - 64.707			**0.853**		**3.412**	**MLD**	**5**	**1**							
L1	F-DG	0	61									24 160	7		HIGH ABC
L2	F-DG	3	38									8 98	7		HIGH ABC
R1	F-DG	0	0	Yes								5 88	32		FINE RAVEL
R2	F-DG	0	0	Yes								8 97	32		FINE RAVEL
64.707 - 64.726			**0.019**		**0.076**	**MLD**	**5**	**1**							
L1	F-DG	0	0									24 160	32		FINE RAVEL
R1	F-DG	0	0	Yes								18 139	32		FINE RAVEL
R2	F-DG	0	0	Yes								N/A	32		FINE RAVEL
64.726 - 65.634			**0.908**		**1.816**	**2LNU**	**5**	**1**							
L1	F-DG	0	0									15 127	32		FINE RAVEL
R1	F-DG	0	25	Yes								7 96	9		MOD ABC
65.634 - 65.739			**0.105**		**0.210**	**2LNU**	**5**	**1**							
L1	F-DG	0	40		Rutting							14 121	7		HIGH ABC
R1	F-DG	0	25	Yes								8 99	9		MOD ABC
65.739 - 65.857			**0.118**		**0.236**	**2LNU**	**5**	**1**							
L1	F-DG	0	40		Rutting							15 124	7		HIGH ABC
R1	F-DG	0	56	Yes								8 99	7		HIGH ABC

ATTACHMENT D

*Surface type of 'FR' is Enhanced Binder

Collection Date: 12/16/2005
Printed: 11/14/2007

Caltrans Maintenance Program
2005 Pavement Condition Survey Inventory
Caltrans Drive Order

District 1, MEN, Rte 101, PM 64.7 - 69.3

District 1 County MEN Route 101

District	1
County	MEN
Route	101
Begin PM	T 65.859

Begin PM - End PM		Length	LaneMi. (Est.)	Type	AADT (,000)	MSL								
Lane	Surface Type	Alligator Cracking A %	Alligator Cracking B %	Alligator Cracking C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	Slab Cracking 3rd %	Slab Cracking Corner %	Faulting	Patching Area %	Patching Poor Cond.?	Ride, IRI	Priority	Skid	Defect
T 65.859 - T 66.030			**0.171**		**0.342**	**2LNU**	**5**	**1**							
L1	F-DG	0	40		Rutting							18 136	7		HIGH ABC
R1	F-DG	0	56	Yes								9 103	7		HIGH ABC
66.030 - 66.241			**0.211**		**0.422**	**2LNU**	**5**	**1**							
L1	F-DG	0	40		Rutting							12 116	7		HIGH ABC
R1	F-DG	0	56	Yes								15 127	7		HIGH ABC
66.241 - 67.011			**0.770**		**1.540**	**2LNU**	**5**	**1**							
L1	F-DG	5	50							43		13 117	7		HIGH ABC
R1	F-DG	43	21		Rutting							9 102	9		MOD ABC
67.011 - 67.086			**0.075**		**0.150**	**2LNU**	**5**	**1**							
L1	F-DG	0	0									5 78	99		NO DISTRESS OBSERVED
R1	F-DG	43	21		Rutting							6 90	9		MOD ABC
R 67.086 - R 67.341			**0.255**		**0.510**	**2LNU**	**5**	**1**							
L1	F-DG	0	0									6 90	99		NO DISTRESS OBSERVED
R1	F-DG	43	21		Rutting							6 90	9		MOD ABC
R 67.341 - R 67.641			**0.300**		**0.600**	**2LNU**	**5**	**1**							
L1	F-DG	28	0							4		5 87	32		ALL. A, NO B, OPEN CRKS
R1	F-DG	43	21		Rutting							5 68	9		MOD ABC
R 67.641 - R 67.707			**0.066**		**0.132**	**2LNU**	**5**	**1**							
L1	F-DG	28	0							4		8 97	32		ALL. A, NO B, OPEN CRKS
R1	F-DG	53	9									5 59	31		ALL. A & B, OPEN CRKS
67.717 - 68.851			**1.134**		**2.268**	**2LNU**	**5**	**1**							
L1	F-DG	28	0							4		12 113	32		ALL. A, NO B, OPEN CRKS
R1	F-DG	53	9									7 96	31		ALL. A & B, OPEN CRKS
68.851 - 69.051			**0.200**		**0.400**	**2LND**	**5**	**1**							
L1	F-DG	0	14									9 102	9		MOD ABC
R1	F-DG	53	9									5 88	31		ALL. A & B, OPEN CRKS

ATTACHMENT D

*Surface type of 'FR' is Enhanced Binder

Collection Date: 12/16/2005
Printed: 11/14/2007

Caltrans Maintenance Program
2005 Pavement Condition Survey Inventory
Caltrans Drive Order

District 1, MEN, Rte 101, PM 64.7 - 69.3

District	1
County	MEN
Route	101
Begin PM	69.051

District 1 County MEN Route 101

Begin PM	-	End PM	Length	LaneMi. (Est.)	Type	AADT (,000)	MSL
69.051	-	**70.351**	**1.300**	**2.600**	**2LND**	**5**	**1**

Lane	Surface Type	Alligator Cracking A %	Alligator Cracking B %	Alligator Cracking C (Y/N)?	Rutting, Bleeding	Slab Cracking 1st %	Slab Cracking 3rd %	Slab Cracking Corner %	Faulting	Patching Area %	Patching Poor Cond.?	Ride, IRI	Priority	Skid	Defect
L1	F-DG	0	14									6	91	9	MOD ABC
R1	F-DG	50	0									5	79	32	ALL. A, NO B, OPEN CRKS

ATTATTACHMENT D

*Surface type of 'FB' is Fabriced Binder

CULVERTS PROPOSED FOR REPLACEMENT

01-459300
Laytonville Rehab
PM 64.7-69.3

CO	RTE	PM	STATION	SIZE_IN_	TYPE	REMARKS
MEN	101	65.22	521+43.945	18	CSP	upgrade to 24" CSP
MEN	101	65.52	537+27.945	15	PVC	upgrade to 24" CSP
MEN	101	65.98	561+56.745	18	RCP	upgrade to 24" CSP
MEN	101	66.18	572+12.745	18	CSPH	upgrade to 24" CSP
MEN	101	67.04	617+53.545	18	CSPH	upgrade to 24" CSP
MEN	101	69.25	734+22.345	18	CSP	upgrade to 24" CSP
						Attachment E

Preliminary Environmental Analysis Report

Project Information

Dist. 01 County Men Route 101 Post Mile 64.7/69.3

EA 45930K

Project Title: Route 101 Roadway Rehabilitation near Laytonville

Project Manager: Steven Blair	Phone # 707-441-5899
Advanced Planning Branch Chief: Ilene Poindexter	Phone # 707-441-3969
Design Senior: Gerald Wong	Phone # 916-274-5869
Project Engineer: Francisco Miranda	Phone # 916-274-5906
Environmental Senior: Melinda Molnar	Phone # 707-445-6627
Environmental Coordinator: Mitchell Higa	Phone # 707-441-5855

Project Description

Purpose and Need:

The proposed project consists of roadway rehabilitation improvements to preserve and extend the service life of existing highways for a minimum of ten years; enhance highway safety; and upgrade the roadway facilities to current design standards. Roadway rehabilitation work is generally regarded as major, non-routine maintenance work.

Description of work: This project consists of rehabilitating Route 101, from the Long Valley Creek Bridge #10-0099 (PM 64.7) to Ramsey Road (PM 69.3) near the town of Laytonville in Mendocino County. The proposed work includes:

- Dig out and repair the localized failed areas to a depth of 0.35' and seal all cracks wider than ¼" by route and seal method. Then place 0.15' hot mix asphalt followed by 0.20' rubberized hot mix asphalt and 0.10' rubberized hot mix asphalt open graded friction course.

- Six culverts would be replaced and upgraded from 18" to 24" diameter at the following post mile locations: 65.22, 65.52, 65.98, 66.18, 67.04, and 69.25.

- Install/replace under drains.
- All existing metal beam guardrail would be reset and the terminal sections replaced.
- Place shoulder backing continuously adjacent to northbound and southbound lanes.
- An existing 34' x 525' wide truck turnout area used by the CHP for truck inspection would be upgraded by removing the pavement starting at the edge of the traveled way and replacing it with an estimated 40'x 575' full structural section area plus a 225' taper. The proposed paving would result in an increase in impervious area of 0.12 acres.
- Relocate utilities at the northern end of the project.

Proposed equipment staging areas are within the existing State right-of-way at the beginning of the project on the left (west) just before and after the bridge: left at PM 65.90 and right at PM 67.27.

The construction cost of this alternative is approximately $7.13 million.

No-Build

Costs associated with this alternative include unknown maintenance costs for the deteriorating roadway. Failure to implement the suggested repairs in a timely manner could result in substantially escalated costs associated with emergency repairs. The no-build alternative does not meet the need and purpose of this project.

Anticipated Environmental Approval

CEQA	NEPA
If the project requires U.S. Endangered Species Act Section 7 Consultation, then a **Mitigated Negative Declaration** would likely be required. If Section 7 Consultation can be avoided, then a **Categorical Exemption** would likely be the required document.	**Categorical Exclusion**

Environmental approval is estimated to require at least 20 months. However, if the project scope changes, additional time and resources would be required for further technical studies, interagency coordination, and environmental documentation. Assuming the project scope remains essentially the same, approximately 4.7 PYs would be required to complete the studies and environmental documents. (Note that the PY estimate is only for Environmental Unit 171.

See Attachment B for a breakdown of the work hour totals.)

PSR Summary Statement

The following key environmental issues and corresponding studies would be anticipated:

- Cultural resources staff requires approximately 66 weeks to complete archaeological investigations for the draft environmental document. Native American monitoring will be required.

- Water quality and temporary construction noise studies/documentation will also be required.

- Section 401, 404, and 1602 resource agency permits/agreements will be required. The project may require a Storm Water Pollution Prevention Plan and Water Pollution Control Plan. If an on-site asphalt batch plant is required, a Regional Air Quality Management District permit may be required.

- Measures to minimize harm to water quality will include working within a construction window for the culvert replacement work.

Special Considerations

Several locations within the project limits will need at least an Extended Phase I archaeological investigation to determine presence/absence of cultural resources within the proposed work area. Also, one location is likely to require a Phase II archaeological investigation to determine eligibility for the National Register of Historic Places. Native American monitoring and consultation will be required.

The need for additional plant surveys for the proposed project will be determined once the complete project description is provided. If required, surveys for sensitive plant species must be performed during the spring season. Presence of special-status plants at risk may require agency consultation and mitigation.

U.S. Endangered Species Act Section 7 consultation(s) and sensitive plant surveys may be required within the project area, which includes designated disposal site(s), staging area(s), access roads and other temporary construction areas as well as utility relocation areas.

Measures to minimize harm to protect water quality will include working within a construction window for the culvert replacement work.

Anticipated Project Mitigation

Anticipated mitigation/measures to minimize harm include:

- Planting native vegetation at disturbed areas;
- Best Management Practices to avoid/minimize erosion and sediment run-off into the affected watercourses;
- Permanent treatment BMPs may be required at roadway widening locations.

Mitigation costs will vary depending on the work proposed; generally, mitigation costs are estimated to be up to ten percent of the project cost. Accurate mitigation cost estimates and additional mitigation measures that may be required cannot be determined until the project scope of work is finalized, and after coordination with resource agencies. Based on the August 1, 2007 Environmental Study Request, the estimated mitigation cost is $20,000. For preliminary mitigation cost estimates, see Attachment A – Mitigation and Compliance Cost Estimate.

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:

Original signed by

Melinda Molnar
Senior Environmental Planner
Environmental Branch E-1

4-14-08
Date:

Original signed by M. Yancheff for

Steven Blair
Project Manager

4-15-08
Date:

Environmental Technical Reports or Studies Required

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

Discussion of Technical Review

Socio-economic and Community Effects. This project is in a rural setting and the following items/issues are not expected:

- Displace any existing development;
- Create new, or close existing highway access points;
- Increase traffic carrying capacity;
- Remove an existing traffic bottleneck;
- The project as proposed does not appear to affect any public accesses for recreation activities such as hunting or fishing. There are no designated public trails within the project limits.

For these reasons, the project is not expected to have any long-term effects on the local community or the economy. However, the project limits include a portion of the Laytonville community; consequently, access for businesses, residents, pedestrians, and bicyclists needs to be accommodated during construction.

If the project can be constructed under one-way traffic control during off-peak periods and without restricting access to driveways and local roads, then traffic delay is not expected to be a substantial issue.

Farmlands. N/A

Visual Effects.

If the proposed project avoids tree removal, major earthwork, and additional metal beam guardrail or concrete barriers, then visual effects would be avoided or minimal.

Erosion control and replacement plantings should consist of plants native to the area/region.

Water Quality and Erosion. The site should be evaluated for potential water quality impacts associated with the project. Ten Mile and Long Valley Creeks and its tributaries are sensitive resources that are in close proximity or within the project area. Any original ground exposed during construction has the potential for storm water to erode and transport sediment to sensitive receiving waters. If site de-watering is required for new construction, a de-watering plan is required. Construction staging and site access for construction must be included in the water quality analysis.

Appropriate Best Management Practices (BMPs) will be required to protect water quality. Also, measures may be required to prevent sediment, rock, and debris from entering watercourses during construction. If site de-watering at any drainage improvement location is required, a de-watering plan is required. Temporary work area(s), disposal site(s), and access roads for construction must be included in any water quality analysis. Storm Water Pollution Prevention Plan and Water Pollution Control Plan may be required. Treatment BMPs may be required at roadway widening locations.

Floodplain. A floodplain evaluation report will likely not be required if the project does not temporarily (during construction) or permanently encroach into a floodplain.

Air and Noise. Air quality and noise impacts are not expected to be substantial since the proposed project will not increase traffic capacity or realign the highway substantially closer to sensitive receptors such as residences. Measures to minimize dust during construction may be required.

Although a formal noise study will not likely be required, a memorandum addressing construction noise issues is recommended. A campground south of Laytonville and residences within Laytonville are potential sensitive construction noise receptors and should be notified in advance if nighttime construction is anticipated.

Wild and Scenic River. N/A

Cultural Resources.

Based on a prior field survey, literature search, and partial records search, no historic properties within the project area are listed or have been determined eligible for the National Register of Historic Places or the California Register of Historic Resources. No historic properties within the project areas are listed on the California Inventory of Historic Places, the California Historical Landmarks, or the California Points of Historical Interest.

There are 14 cultural resource locations within, or close to the project area. Cultural resource studies required for the proposed project include archaeological field studies for both prehistoric and historic resources. Several locations need at least an Extended Phase I archaeological investigation to determine presence/absence of cultural resources within the proposed work area. Also, one location is likely to require a Phase II archaeological investigation to determine eligibility for the National Register of Historic Places. All cultural resource locations are confidential. Please call Barry Douglas at 707-445-6417 for more information.

Consultation regarding cultural resources will be required with the California Native American Heritage Commission, the Laytonville Rancheria (Cahto), the Round Valley Rancheria (Huchnom), the Mendocino County Historical Society, and other interested parties.

Hazardous Waste/Materials. Initial Site Assessments (ISA) and Supplemental ISA have been prepared. None of the project work locations are listed on the 1998 Hazardous Waste and Substances Site List. However, the project location is in an area with potential for naturally occurring asbestos. A Preliminary Site Investigation may be required during the Project Report phase.

Biological Resources. This project may affect sensitive biological resources. Formal consultation with National Marine Fisheries Service on the Coho salmon and steelhead may be required for proposed work near Long Valley Creek. The existing bridge over Ten Mile Creek should be inspected for the presence/absence of bats, nesting swallows and other protected species. Bird and bat surveys should be completed in the spring/summer season. The California Natural Diversity Data Base (CNDDB) does not indicate any other known sensitive biological resources in this location. There are three federally threatened plant species known to occur near the project vicinity: Humboldt milk-vetch (*Astragalus agnicidus*), North Coast semaphore grass (*Pleuropogon hooverianus*) and Milo Baker's lupine (*Lupinus milo-bakeri*). It is likely that surveying for these plants will need to occur during the spring to determine if they are present within the project limits. Any vegetation removal will adhere to the Federal Migratory Bird Treaty Act. This project, as proposed, would not likely require formal consultation with National Marine Fisheries Service on the Coho salmon and steelhead.

Wetlands. A delineation of jurisdictional wetlands and waters of the United States will be required. Executive Order 11990 requires an avoidance alternative analysis for wetland impacts unless there is no practicable alternative available. Impacts to waters of the U.S. and wetlands from the project and any temporary access roads will need to be quantified.

Invasive Pest Plant Species. Executive Order 13112 requires that any federal action may not cause or promote the spread or introduction of invasive species. This project is located within a relatively pristine setting. If erosion control measures involve planting on disturbed ground, non-persistent annuals or native vegetation shall be planted, according to recommendations by the Caltrans staff revegetation specialist or botanist.

Biological Resources Mitigation (*For standard PSR only*). Mitigation for temporary and permanent impacts to sensitive biological resources (wetlands, riparian vegetation, regulated plants and animals) may be required. Mitigation for impacts to waters of the United States may be required. For this project, mitigation could include swallow exclusion, restricted construction scheduling, habitat enhancement, habitat restoration, or habitat replacement. Mitigation cost estimates and additional mitigation measures that may be required cannot be determined until the project scope is fully defined. The estimated mitigation cost is $20,000.

Right-of-Way Relocation or Staging Area. It appears that permanent right-of-way acquisition, permanent easement, access roads, or borrow/disposal sites are not required for this project. However, 0.52-acres of temporary construction easement would be required.

These areas, which must be identified prior to initiating environmental studies, will require complete environmental evaluation as part of this project.

Mitigation. Mitigation will include:

- Best Management Practices to protect water quality;
- Planting native vegetation at disturbed areas;
- Placing environmentally sensitive fencing prior to construction.

If there are any impacts to Waters of the United States or wetlands, mitigation will be required. If necessary, other mitigation for temporary and permanent impacts to sensitive biological resources may be required, such as tree replacement for any tree removal; swallow exclusion; restricted construction scheduling; habitat enhancement; habitat restoration; or habitat replacement.

Permits. Permits from the State Department of Fish and Game (1602), U.S. Army Corps of Engineers (404), and the Regional Water Quality Control Board (401) may be required for culvert improvement work. Additional permits for any needed staging area(s), borrow/disposal site(s) or access road(s) may be required. If an on-site asphalt batch plant is required, a Regional Air Quality Management District permit may be required.

Coastal Zone. This project is not within local or state coastal jurisdiction.

Cumulative Impacts. In addition, other roadway projects recently constructed or in the planning phase should be evaluated to determine if there are any cumulative effects to sensitive resources such as habitat fragmentation.

List of Preparers

Hazardous Waste – Mark Melani
Biological Resources – Coady Reynolds
Cultural Resources – Barry Douglas

List of Attachments

Attachment A - Mitigation and Compliance Cost Estimate
Attachment B – Environmental (Unit 171) work hour estimates

Attachment A
Mitigation and Compliance Cost Estimate*

Dist.-Co.-Rte.-PM: 01-Men-101-PM 64.7/69.3 EA: 45930K

Project Description: Rehabilitate Route 101 roadway near Laytonville

Person completing form/Dist. Branch: Mitchell Higa, North Region Environmental Management, Branch E-1, Eureka

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

Date: November 16, 2007

	Mitigation			Compliance
	Project Feature[1]	Enviro. Obligation[2]	Statutory Require.[3]	Permit & Agreement[4]
Fish & Game 1602 Agreement			5,000	
State Lands Agreement				
COE 404 Permit- Nationwide			5,000	
COE 404 Permit- Individual				
COE Section 10 Permit				
COE Section 9 Permit				
RWQCB-Conditional Waiver (401)			5,000	
SWPPP				
WPCP/NPDES				
Erosion Control				
Noise attenuation				
Native plant landscaping				
Archaeological				
Biological				
Historical				
Wetland/riparian			5,000	
TOTAL (Enter zeros if no cost)			20,000	

Costs are to include all costs to complete the commitment including: capital outlay and staff support; cost of right-of-way or easements; long-term monitoring and reporting; and any follow-up maintenance.
[1] Mitigation Caltrans would normally do if not required by a permit or environmental agreement.
[2] Mitigation Caltrans would not normally do but is required by conditions of a permit or environmental agreement.
[3] Mitigation Caltrans would not normally do and is not required by a permit or Environmental 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.

***** Note that the mitigation estimate is only for Environmental Unit 171. The Landscape Architecture or NPDES units may have additional mitigation costs.

State of California
Department of Transportation

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: Gerry Wong
Branch Chief, Design South
Department of Transportation, District 3

Attention Francisco R. Miranda
Project Engineer

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

Date: October 5, 2007

File: 01-MEN-101-PM 64.7/69.3
E.A. 45930k
Alternate No. N/A

Roadway rehabilitation on Route 101 near Laytonville, from the Long Valley Creek Bridge #10-0099 to Ramsey Road

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 August 21, 2007 .

Right of Way Lead Time will require a minimum of **12** 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 **9** 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
Mitigation Information Sheet

cc. Steve Blair

ATTACHMENT G

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATA SHEET

Date: October 5, 2007

01-MEN-101-PM 64.7/69.3
E.A. 45930k
Roadway rehabilitation on Route 101 near Laytonville, from the Long Valley Creek Bridge #10-0099 to Ramsey Road

1. Right of Way Cost Estimate: **Alternate No. N/A**

	Current Value Future Use	Escalation Rate	Escalated Value
A. Total Acquisition Cost	$10,625	5%	$13,557
B. Mitigation acquisition & credits	$0		$0
C. Project Development Permit Fees	$15,600	5%	$19,905
Subtotal	$26,225		$33,462
D. Utility Relocation (State Share) (Owner's share: $0)	$105,000	5%	$133,974
E. Relocation Assistance (RAP)	$0		$0
F. Clearance/Demolition	$0		$0
H. Title & Escrow	$1,350	5%	$1,723
I. Total Estimated Right of Way Cost	$132,575	**Rounded**	**$169,000**
J. Construction Contract Work	$0		

2. Current Date of Right of Way Certification October 1, 2012

3. Parcel Data:

Type		Dual/Appr	Utilities	
X	0		U4 - 1	0
A	9		- 2	0
B	0		- 3	0
C	0	0	- 4	0
D	0	0	U5 - 7	3
			- 8	0
Total	9		- 9	1

Areas:

R/W:	0.52 Ac.		
Excess:	N/A	No. Excess Pcls:	0
Mitigation:	N/A		

RR Involvements	
None	X
C&M Agrmt	
Svc Contract	
Easements	
Rights of Entry	
Clauses	

Misc. R/W Work	
RAP Displ	N/A
Clear/Demo	N/A
Const Permits	N/A
Condemnation	0
USA Involvement	

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

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

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 _____

Utility relocations are not anticipated; however, utility verifications will be required.

9. Are railroad facilities or rights of way affected? Yes _____ No X

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

15. 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 12 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 9 months will be required after receiving the last appraisal map to Right of way for certification.

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

Evaluation Prepared By:

Right of Way: Brett Benson Date 10/5/07
Brett Benson

Reviewed By:

RW Project Coordinator: Mark Rowan Date 10/11/07
Mark Rowan

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

10/9/07
Date

APPROVED:

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

10/21/07
Date

Men 101, PM 64.7-69.3
EA 01-45930K
Roadway Rehabilitation

SCOPING TEAM FIELD-REVIEW ATTENDANCE ROSTER

NAME	UNIT	TELEPHONE
Gerry Wong	Design South	916-274-5869
Francisco Miranda	Design South	916-274-5906
Wesley Johnson	Dist. 1 Materials	707-445-6386
Wayne Ingle	Dist. 1 Maintenance	707-489-3134
Steve Bowles	Dist. 1 Maintenance	707-923-2702
Glen Hurlburt	Dist. 1 Hydraulics	707-441-2037
Dawn Friend	Dist. 1 Hydraulics	707-441-2081
Jeffrey Zimmerer	Dist. 1 Traffic Safety	707-445-6443
Steven Blair	Project Manager	707-441-5899

ATTACHMENT H

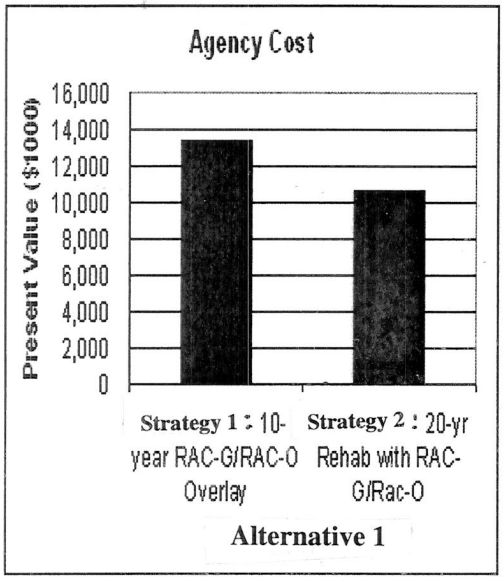
SHOPP Project Performance Output

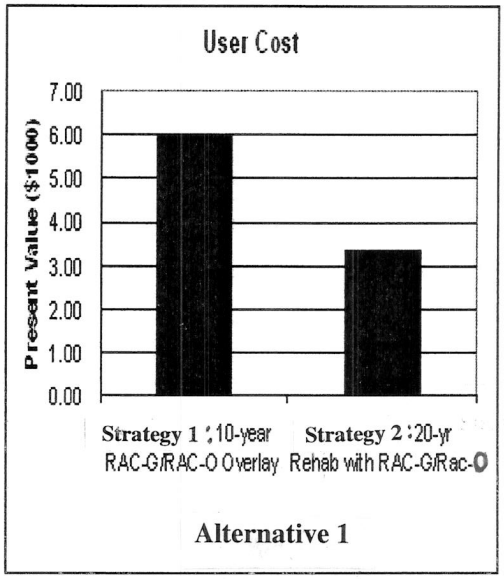
Update Date: 27 December 2007			Program	Fiscal	RTL	Programming Information ($1,000)		
District - County - Rte -PM	**PPNO**	**EA**	**Code**	**Year**	**Date**	**Construction $ __**	**8,379**	
01-Men-101, PM 64.7-69.3	**4483**	**45930K**	**201.120**	**2008**	**11/01/12**	**Project Manager : : Steven Blair**		
Location: In Mendocino County, near Laytonville						**HQ Program Manager:**	**Susan Massey**	
Project Discription: Roadway rehabilitation and drainage upgrade								

PROGRAM	ACCT. CODE 20.XX.	Quantity of Performance Output: Ten Year Plan	PID		PA&ED	RTL		CCA	After Construction	PERFORMANCE units
Approval Date		??					Output Cost ($1,000)			
Construction Cost ($1,000)		??	8379	10665						
Right of Way Cost ($1,000)		??	169							
Support Cost ($1,000)		??	2117							
EMERGENCY RESPONSE										
Major Damage Restoration	201.130									Locations
Permanent Restoration	201.131									Locations
COLLISION REDUCTION										
Safety Improvements	201.010									Collision Reduce
Collision Severity Reduction	201.015									Collision Reduce
Median Barrier Upgrade	201.020									Centerline Miles
MANDATES										
Relinquishments	201.160									Lane Miles
Noise Attenuation for Schools	201.270									Locations
Railroad	201.325									Locations
Hazardous Waste Mitigation	201.330									Locations
Storm Water	201.335									Acres Treated / Pollutant
ADA Compliance	201.361									Curb Ramps
SHOPP TEA	201.736									Locations
BRIDGE PRESERVATION										
Bridge Rehabilitation	201.110									Bridges
Bridge Scour Mitigation	201.111									Bridges
Bridge Rail Replacement/Upgrade	201.112									Linear Feet
Bridge Seismic Restoration	201.113									Bridges
Bridge Widening	201.114									Bridges
Bridge Preservation	201.115									Bridges
Trans Permit Requirements for Bridges	201.322									Bridges
ROADWAY PRESERVATION										
Roadway Rehabilitation (3R)	201.120	9.2								Lane Miles
Pavement Preservation (CAPM)	201.121									Lane Miles
Pavement Rehabilitation (2R)	201.122									Lane Miles
Long-Life Pavement Corridors (4R)	201.125									Lane Miles
Roadway Protective Betterment	201.150									Locations
Drainage System Restoration	201.151	6								Culverts
Signs and Lighting Rehabilitation	201.170									Signs
										Light Fixtures
MOBILITY										
Operational Improvements	201.310									Daily Vehicle Hours of delay
Transportation Management Systems	201.315									Field Elements
										Miles of fiber
Truck Inspection & WIM Facilities	201.321	1								Locations
ROADSIDE PRESERVATION										
Highway Planting Restoration	201.210									Acres
Freeway Maintenance Access	201.230									Locations
Roadside Enhancement	201.240									Locations
Beautification and Modernization	201.245									Centerline Miles
Safety Roadside Rest Area Restoration	201.250									Locations
New Safety Roadside Rest Areas	201.260									Locations
FACILITIES										
Equipment Facilities	201.351									Locations
Maintenance Facilities	201.352									Locations
Office Buildings	201.353									Locations
Materials Lab	201.354									Locations
Additional Performance Units										
Paved Shoulders										
										ATTACHMENT I

Deterministic Results

Total Cost	Strategy 1 : 10-year RAC-G/RAC-O Overlay		Strategy 2 : 20-yr Rehab with RAC-G/Rac-O	
	Agency Cost ($1000)	User Cost ($1000)	Agency Cost ($1000)	User Cost ($1000)
Undiscounted Sum	$21,742.00	$10.27	$14,020.33	$3.92
Present Value	$13,378.50	$5.98	$10,623.78	$3.36
EUAC	$817.05	$0.37	$648.81	$0.20





ATTACHMENT J

PRELIMINARY COST ESTIMATE
Alt. 1 with 20-Year Rehabilitation Strategy
Feb-08

Men 101 PM 64.7-69.3
EA 01-45930K
Rehabilitate Roadway

BEES ITEM	DESCRIPTION	UNIT	QTY.	UNIT COST	AMOUNT
074019	Prepare Storm Water PPP	LS	1.0	1,800	1,800
074016	Construction Site Managemente	LS	1.0	5,000	5,000
074020	Water Pollution Control	LS	1.0	150,000	150,000
074038	Temp. Drainage Inlet Protection	EA	6.0	250	1,500
120090	Construction Area Signs	LS	1.0	5,000	5,000
128650	Port.Changeable Message Signs	EA	2.0	7,000	14,000
120100	Traffic Control System	LS	1.0	60,000	60,000
150805	Remove Culvert	EA	7.0	2,600	18,200
705337	Alternative FES	EA	9.0	1,000	9,000
150668	Remove FES	EA	9.0	300	2,700
152430	Adjust Inlet	EA	2.0	1,800	3,600
620913	24" APC	LF	574.0	270	154,980
510502	Minor Concrete (Minor Structure)	CY	6.7	2,000	13,480
750001	Misc. Iron & Steel	LB	458.0	3	1,374
839521	Cable Railing	LF	200.0	65	13,000
685067	Alternative Pipe Underdrain	LF	2,720.0	47	127,840
160101	Clearing and Grubbing	HA	2.0	7,500	15,000
190101	Roadway Excavation	CY	1,180.0	62	73,160
153103	Cold Plane AC Pavement	SYD	107,950.0	5	496,570
374206	Seal Random Cracks	LNMI	2.0	14,000	28,000
390095	Replace Asphalt Concrete Surfacing	CY	411.0	300	123,300
393003	Geosynthetic Pavement Interlayer	SYD	356.0	7	2,492
198007	Imported Mat. (Shldr. Backing)	TON	5,700.0	30	171,000
390132	Hot Mix Asphalt (Type A)	TON	13,140.0	110	1,445,400
390137	Rubberized HMA (Gap Graded)	TON	14,400.0	110	1,584,000
390138	Rubberized HMA (Open Graded)	TON	5,440.0	120	652,800
840561	4" Thermoplastic Stripe	LF	103,000.0	2	206,000
840506	8" Thermoplastic Stripe	LF	410.0	4	1,640
850122	Retroreflective Pavement Markers	EA	2,600.0	10	26,000
839541	Transition Railing (Type WB)	EA	4.0	3,500	14,000
839718A	Thrie Beam Barr Railing Anch Blck	EA	4.0	4,500	18,000
200000A	Weed Control Mat (Fiber)	LF	1,600.0	17	27,200
151572	Reconstruct MBGR	LF	1,500.0	25	37,500
839581	Term. Anchor Assmbly (Type SFT)	EA	8.0	1,030	8,240
839584	Alt. In-Line Terminal System	EA	2.0	3,100	6,200
839585	Alt. Flared Terminal System	EA	5.0	2,300	11,500
840515	Thermoplastic Pavemente Marking	SF	860.0	10	8,600
394056A	Centerline Rumble Strip	STA	240.0	200	48,000
860810	Inductive Loop Detector	EA	8.0	1,200	9,600
066070	Maintain Traffic	Day	60.0	2,500	150,000
066105	Resident Engineer's Office	Day	60.0	100	6,000
066062	COZEEP	Day	40.0	1,600	64,000

ATTACHMENT K

ATTACHMENT K (cont.)

Sub-Total		**5,815,676**
Contingencies (20%)		**1,163,135**
Total Roadway Work		**6,978,811**
Total Structures Cost		**0**
Right of Way Cost		
Utility Relocation		105,000
Title and Escrow		1,350
Right of way easements		10,625
Permit Fees		15,600
Total Right of Way		**132,575**
Environmental Compliance		**20,000**
Total Esimated Cost		**7,131,386**
	Call	**$7.13 Million**

State of California Business, Transportation and Housing Agency

Memorandum

To: Gerry Wong, Chief
Design Branch S09

Date: September 14, 2007

File: 01-Men-101-PM 64.7/69.3
01-45930K
Roadway Rehabilitation

From: DEPARTMENT OF TRANSPORTATION - North Region
Wesley D. Johnson - North Region, Eureka Materials

Subject: Preliminary Materials Recommendation

In response to your request dated July 19, 2007, personnel from the Eureka Materials Lab conducted a field review within the limits of this project as well as reviewing pertinent information from previous project files to determine this preliminary materials recommendation.

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

Overlay Recommendation

With this overlay recommendation being needed in a timely basis and not allowing the time required to determine a rehabilitation requirement to include deflection testing and coring, we have estimated the overlay thicknesses that will be required based on the Memorandum signed by Mark Leja and Steve Takigawa dated November 17, 2006. This memorandum titled, "Revised Cost Estimating Procedures for the Scoping of Flexible Pavement Rehabilitation", and the Division of Design Pavement Technical Guide "Alternative Procedure to Estimate Flexible Pavement Rehabilitation Requirements", were used.

WESLEY D. JOHNSON

ATTACHMENT L

Overlay Recommendation (Continued):

10-Year Design Life

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:

Cold plane any existing open graded asphalt concrete and 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 open graded friction course (RHMA-O).

20-Year Design Life

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 11.0 the following overlay is needed for mainline and shoulders:

Cold plane any existing open graded asphalt concrete and 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 open graded friction course(RHMA-O).

Note:

- Without the use of rubberized hot mix asphalt, 0.40′ of conventional hot mix asphalt is required for a 10 year design life, and 0.50′ is needed for a 20 year design life. Not including the open graded friction course.

- At the northern end of this project between post mile 68.80 and post mile 69.30, exists an upper layer of open graded asphalt concrete placed in 1998 at a compacted thickness of 0.07′ under project 01-396204.

  Although this existing open graded asphalt concrete appears in good condition at this time, it will have reached it's design life well before this project is constructed and should be removed prior to the placement of any additional asphalt concrete.

Notes (Continued):

- Routing Cracks: Route cracks 1/4" wide and wider. The width of the routing should be 1/4" wider than the crack width. The depth should be equal to the width of the routing plus 1/4". In order to alleviate the potential bump in the overlay from the crack sealant, leave the crack sealant 1/4 " below grade to allow for expansion. (Please see Attachment A for detail)

- With the amount of crack sealing currently within the limits of this project and our recommendation to seal additional cracks, the above recommended alternatives have taken into account the potential bump created by the sealant.

- Of the 9.2 lane miles within this project (minus shoulders), approximately 1.5 lane miles of this project was noted as having alligator cracking to a point where dig-out repairs should be made.

New Structural Section

Truck Turnout/Inspection Area:

The following is recommended for any new structural section intended for the truck turnout/CHP inspection area located near the beginning of this project. Each alternative is equivalent in design life and was calculated based on approximately 20 previous soil samples tested for R-value under project 01-197724 showing values of above 30, and a 20 year traffic index of 11.0.

Alternative	HMA (Type A)	AB (Class 2)
1	0.55′	1.40′
2	1.15′	---

Note:

Until coring of this area (truck inspection area) is conducted to determine the actual thickness of the structural section, it should be assumed this area is not adequate to sustain traffic loading for 20 years and will need to be removed and replaced with the above recommended thickness.

Material Specifications:

- Rubberized Hot Mix Asphalt: Shall be Type G(RHMA-G), 3/4" maximum, meeting Caltrans Standard Special Provisions for RHMA-G.

Material Specifications (Continued):

- Rubberized Open Graded Friction Course: Shall be Type O(RHMA-O), 1/2" maximum, meeting Caltrans Standard Special Provisions for RAC-O. Rubberized open graded friction course shall be treated with liquid anti-strip at a rate of 0.5% by mass of asphalt binder.

- Hot Mix Asphalt: Shall be Type A(HMA-A), 3/4" Maximum,Medium conforming to Section 39 of the Standard Specifications.

- Paint Binder (Tack Coat): Shall be either CRS2 rapid setting asphaltic emulsion, or PG 64-16 paving grade asphalt depending on the atmospheric temperature. At atmospheric temperatures above 64°F., paint binder (tack coat) shall be rapid setting asphaltic emulsion, CRS2. At atmospheric temperatures below 64°F., paint binder (tack coat) shall be paving grade asphalt. Rapid setting asphaltic emulsion, CRS2, shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 94, "Asphaltic Emulsions,"of the Standard Specifications. Paving grade asphalt shall conform to the Standard Special Provisions for PG 64-16.

- Asphalt Binder:

  Rubberized: Shall be rubberized meeting Caltrans specifications for the RHMA-G and RHMA-O with an estimated total rubber and binder content of 8.0% and 6.6% respectively.

  Conventional: PG Grade 64-28PM shall be used for HMA-A with an estimated bitumen content of 5.5%.

- Asphalt Concrete Dike: Hot mix asphalt used in the construction of dikes shall be Type A, 3/8" Maximum, conforming to Section 39 of the Standard Specifications. The amount of asphalt binder used in asphalt concrete placed in dikes shall be increased 1.0% by mass of the aggregate over the amount of asphalt binder that would typically be used in 3/4" HMA placed on the traveled way. Asphalt binder used in construction of dikes shall conform to the standard special provisions for PG 64-16. (Please see Attachment B for construction detail for modified dike installation when open graded asphalt concrete is placed)

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 64.85 to 65.19 (Left) along cut bank
- Post Mile 65.22 to 65.26 (Left) along cut bank
- Post Mile 65.31 to 65.42 (Left) along cut bank
- Post Mile 65.88 to 66.05 (Left) along cut bank
- Post Mile 68.28 to 68.45 (Right) along cut bank

Other areas where pumping was observed appears to be caused from poor ditch and/or culvert drainage at post mile 65.50 to 65.88, 66.18, 67.16 and 67.37 to 67.55. The North Region Hydraulics Branch should review these locations for possible drainage improvements.

Alternate Pipe Culvert Recommendation

Based on pH and resistivity testing on soil samples taken at 7 various culvert locations within the limits of this project under contract 01-197724, the following alternate pipe culverts may be used for any new or modified culverts within the project limits and are approved for a 50 year service life

- Reinforced Concrete Pipe may be used meeting the minimum requirements in Sections 65 and 90 of the Standard Specifications with the following changes, or additions: Cement shall be Type II, or Type IP modified cement, with a maximum water to cement ratio of 0.40.

- 0.168" (8 gage) galvanized, corrugated steel pipe conforming to Section 66 of the Standard Specifications.

- 0.109" (12 gage) galvanized, polymeric sheet coated, corrugated steel pipe conforming to Section 66 of the Standard Specifications.

- Plastic pipe - Shall be high density polyethylene(HDPE), conforming to Section 64 of the Standard Specifications. Reference should be made to durability in Section 854.8 of the Highway Design Manual.

Alternate Pipe Culvert Recommendation (Continued):

Please see Attachment C or D for Culvert Installation Detail.

If you have any questions, call David Waterman at (707)445-6355.

Attachments

DHW:dhw

c: F. Miranda
S. Blair
Lab Files

PROGRAMMING SHEET

Project Manager: STEVEN BLAIR

01-MEN-101 PM 64.7/69.3

EA 01-45930K

Date: 24-Apr-08

20.10.201.120 Roadway Rehabilitation

PROJECT SCHEDULE

MILESTONE	DATE
Begin Environmental Document (M020)	10/1/2010
Begin Project Report (M040) (Begin Design of Project)	7/1/2010
Circulate Environmental Document (M120)	8/1/2011
Project Approval & Environmental Document (M200)	10/1/2011
District Submits Bridge Site Data to Structures (M221)	N/A
Right of Way Maps (M224)	10/1/2011
Draft Structures Plans, Specifications & Estimate (M378)	N/A
Project Plans, Specifications & Estimate (M380)	8/1/2012
Right of Way Certification (M410)	10/1/2012
Ready to List (M460)	11/1/2012
HQ Advertise (M480)	1/1/2013
Approve Construction Contract (M500)	4/1/2013
Contract Acceptance (M600)	10/1/2013

Escalation Factors Used: Capital: 07/08=3.6%, 08/09=3.6%, 09/10=3.7%, 10/11=4.4%
Support:07/08=8%, 08/09=3%, 09/10=2%, 10/11=2%

2008 COSTS

Const: $ 7,000

R/W: $ 132

PROJECT COSTS BY SB45 CATEGORY

Costs are in thousands of dollars

CAPITAL COSTS	07/08	08/09	09/10	10/11	11/12	12/13	FUTURE	TOTAL
Right of Way	$ -	$ -	$ -	$ -	$ -	$ 169	$ -	$ 169
Construction	$ -	$ -	$ -	$ -	$ -	$ 8,379	$ -	$ 8,379
							CAPITAL TOTAL	$ 8,548
SUPPORT COSTS								
Environmental	$ -	$ -	$ -	$ 238	$ 159	$ -	$ -	$ 397
Design	$ -	$ -	$ -	$ -	$ 292	$ 80	$ -	$ 373
Right of Way	$ -	$ -	$ -	$ -	$ 160	$ 58	$ 38	$ 256
Construction	$ -	$ -	$ -	$ -	$ -	$ 495	$ 596	$ 1,091
							SUPPORT COSTS	$ 2,117
							TOTAL PROJECT COSTS	$ 10,665
							SUPPORT TO CAPITAL RATIO/%	25%
	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

SUPPORT PY'S by DIVISION

Number of Hours in a PY: 1758

PROJECT SUPPORT IN PYS

	07/08	08/09	09/10	10/11	11/12	12/13	FUTURE	TOTAL
Transportation Planning	0.00	0.00	0.00	0.72	0.90	0.02	0.01	1.6
District Design	0.00	0.00	0.00	0.66	1.75	0.75	0.67	3.8
Right of Way	0.00	0.00	0.00	0.13	1.01	0.40	0.21	1.8
District Construction	0.00	0.00	0.00	0.02	0.11	2.24	2.55	4.9
DES Design	0.00	0.00	0.00	0.00	0.01	0.11	0.00	0.1
DES Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0