3

Marcie MacFarland <marcie.macfarland@edcgov.us>

BOS Agenda Item #3, (13-0217) Mt Murphy Bridge Project

1 message

Kimberly Kerr <kimberly.kerr@edcgov.us> Mon, Mar 18, 2013 at 9:18 PM
To: The BOSTHREE <bosthree@edcgov.us>, The BOSTWO <bostwo@edcgov.us>, The BOSONE <bosone@edcgov.us>, The BOSFIVE <bosfive@edcgov.us>, The BOSFOUR <bosfour@edcgov.us>, Norma Santiago <norma.santiago@edcgov.us>, Brian Veerkamp <brian.veerkamp@edcgov.us>, Ron Mikulaco <ron.mikulaco@edcgov.us>, Ron Briggs <ron.briggs@edcgov.us>, Ray Nutting <ray.nutting@edcgov.us>, James S Mitrisin <jim.mitrisin@edcgov.us>, Marcie MacFarland <marcie.macfarland@edcgov.us>
Cc: Terri Daly <theresa.daly@edcgov.us>, Matthew Smeltzer <matt.smeltzer@edcgov.us>, Adam Bane <adam.bane@edcgov.us>, Edward Knapp <ed.knapp@edcgov.us>, Terri Knowlton <terri.knowlton@edcgov.us>

To Chair Briggs and Supervisors,

Item #3 (13-0217) on tomorrow's (March 19, 2013) Board of Supervisor's Agenda is requesting the Board to Award the Request For Proposal (RFP) to the firm of CH2MHill for the preparation of a Project Study Report, and authorize the Community Development Agency Director to negotiate the contract for services for approximately $550,000.

In January, 2013, the County put out an RFP to eight firms soliciting proposals to prepare a Project Study Report (PSR) for the Mt. Murphy Bridge project. Two proposals were submitted, CH2MHill and a Quincy Engineering/Mark Thomas Company joint proposal. CH2MHill was determined to be the qualified firm for this work by a panel including staff from El Dorado County, Placer County and Caltrans. This item was placed on the Board Agenda to acknowledge the determination CH2MHill is the selected proposer, and to allow for negotiations on an agreement.

In review of the CH2MHil proposal, staff has concerns regarding the cost, and need for the full PSR level document. The PSR is a well defined, standardized work product which allowed for an apples-to-apples comparison of proposals; however, it does include items not necessarily required for this phase of the project.

We have discussed with CH2MHill, a scaled down – less costly study which cuts non-essential items of work (roadway geometric design approval, non-bridge related drainage studies, multiple, higher level/less detailed structural type selections, etc.) which are not anticipated to be controlling factors in the ultimate alternative selection.

Staff feels it is important to retain the most significant public outreach portions of the proposal. This outreach includes facilitation of multiple public meetings, establishment of a Stakeholder Advisory Committee (SAC) with multiple SAC meetings to further collect community input, establish alternatives and evaluation criteria, prioritizes importance factors and provide a community based evaluation of the bridge improvement alternatives. This effort, along with the technical evaluation of the existing structure, and replacement alternatives is the work we feel necessary for this project, and can be accomplished for significantly less cost than the full PSR proposal.

Should the Board so desire, staff can negotiate with CH2MHill for the above described reduced scope of work and cost, and return to the Board with a more refined agreement.

Project Background Information

Additionally, there have been concerns raised regarding whether the County needs to make repairs or replace the Mt. Murphy bridge. Attached to this e-mail is information provided to the public at the community outreach meeting on this project. Also, there are some photographs for the bridge and the January 2011 Bridge Inspection Report prepared by CalTrans.

Some issues identified in the 2011 Bridge Inspection Report were:
Deck - Cracking & spauling, some visible on deck (top) and soffit (bottom)
Superstructure - Damage to member, deck cracking, exposed rebar, lateral frame damage (2 inches out of plane on truss member)
Substructure - Abutment 1 left & right wing wall cracks, Pier 4 diaphragm cracking / exposed rebar, Abutment 7 cracking

Paint - Chipping, blistering, rusting in various locations
Scour - Minor scour along abutments

The bridge is posted for a lower load rating than designed, which is appropriate for now, but may be lowered in the future.

The recommended repairs in the current 2 year review period include repair to the lateral frame elements (Steel truss), and removal/replacement of unsound concrete around exposed rebar on Pier 4 diaphragm.

Other facts - bridge built 1915, Sufficiency rating 0 out of 100.

Additionally, in 2007 the County had to make repairs to the bridge due to a separation in of a segment over the river.

This project is in the County's Capital Improvement Program and the project page is attached for your review. The project funding is from the Federal Highways Administration and can used be to either repair or replace the bridge. To utilize these funds, the County must follow the Federal Highway Administration process to ensure funding for the project. If the County elects not to utilize these funds for the project, then the County would need to retum the funds to the Federal Highway Administration and determine another funding source to make repairs. The Road Fund would be the appropriate funding source with Gas Tax revenue being used to make any repairs which would impact other road maintenance projects.

Please let us know if you have any further questions in regard to this project or the agenda item.

Kim Kerr
Assistant Chief Administrative Officer
Interim Department of Transportation Director

Contact Chief Administrative Office/Risk
County of El Dorado
Chief Administrative Office
330 Fair Lane
Placerville, CA 95667
(530) 621-7695

Contact DOT Director:
County of El Dorado
Transportation Department
2850 Fairlane Court
Placerville, CA 95667
(530) 621-7533

——— Forwarded message ———
From: **Adam Bane** <adam.bane@edcgov.us>
Date: Mon, Mar 18, 2013 at 8:27 PM
Subject: Mt Murphy Inspection Report
To: Kimberly Kerr <kimberly.kerr@edcgov.us>
Cc: Matthew Smeltzer <matt.smeltzer@edcgov.us>

The 2011 Bridge Inspection report in attached. T

–
Adam Bane
Senior Civil Engineer
El Dorado County
Department of Transportation
(530) 621-5983

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Thank you.

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7 attachments

Photo_091107_013.jpg
209K

Mt Murphy 034.jpg
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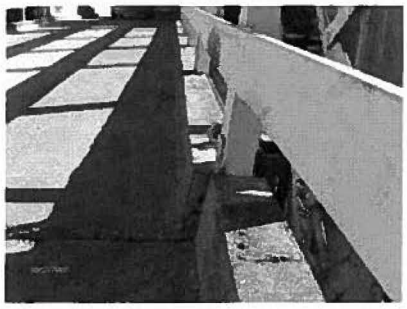
Mt. Murphy 014.jpg
2092K



Mt. Murphy 002.jpg
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25C0004 Bridge Inspection Report 01-05-2011.PDF
1412K

Microsoft PowerPoint - Mt Murphy Public Workshop_FINAL.pdf
10690K

Mt. Murphy Project Page - 2012 CIP.pdf
442K

DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 25C0004
Facility Carried: MT MURPHY RD
Location : 0.1 MI E OF SR 49
City :
Inspection Date : 01/05/2011

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SOUTH FORK AMERICAN RIVER

CONSTRUCTION INFORMATION

Year Built : 1915
Year Widened: N/A
Length (m) : 149
Skew (degrees): 0
No. of Joints : 6
No. of Hinges : 0

Structure Description: Approach Spans (Span 1, 2, 4, 5 and 6): RC deck on RC beams on RC abutments and RC piers, all on spread footings.
Main Span (Span 3): RC deck on rolled steel stringers on rolled steel floor beams on pinned and riveted steel through truss on RC piers on spread footings.

Span Configuration : 20.8 m, 17.6 m, 49.4 m (truss); 20 m, 19.8 m, 19.5 m

LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: 2.7 metric tonnes Calculation Method: ALLOWABLE STRESS
Operating Rating: 13.6 metric tonnes Calculation Method: ALLOWABLE STRESS
Permit Rating : XXXXX
Posting Load : Type 3: 14 U.S. Tons Type 3S2: 21 U.S. Tons Type 3-3: 27 U.S. Tons

DESCRIPTION ON STRUCTURE

Deck X-Section: (Truss) 0.12 m r, 0.15 m cu, 3.2 m, 0.15 m cu, 0.12 m r; (Appr) 0.67 m r, 0.15 m cu, 4.1 m, 0.15 m cu, 0.67 m r

Total Width: 3.7 m Net Width: 3.2 m No. of Lanes: 1
Rail Description: Timber rail (truss); Concrete (approaches). Rail Code : 0000
Min. Vertical Clearance: 4.190

DESCRIPTION UNDER STRUCTURE

Channel Description: Flat. Rock lined; rapid flow.

CONDITION TEXT

REVISIONS
Item #28c, Speed, a traffic speed of 5mph was entered based on nearby speed limit signs.

Item #29, Recent ADT, was revised to 280 based on 2009 traffic counts by the local agency.

Item #108a, Type of Wearing Surface, has been changed from 1:Concrete to 0:None.

ELI Element #359, Soffit of Concrete Decks and Slabs Smart Flag, a quantity of 1 each was added in State 2 due to existing field conditions.

CONDITION OF STRUCTURE

INSPECTION ACCESS
Reference nomenclature in this report is as follows: Abutment 1 is on the left side looking downstream.

The river was flowing rapidly with a depth of about 6' across the full width of Span 3 and 25' into Span 2. All elements above water were inspected.

CONDITION TEXT

DECK AND RAILS

The surface of the approach slabs are scaled and abraded with shallow spalls and edge spalls at the joints, probably caused by the spoked wheels with a metal band surface of the horse and carriage attraction at the local park. There are also 0.020" to 0.080" wide transverse cracks throughout the deck (see photo #3 and #4). These cracks are mirrored on the soffit with efflorescence (see photo #5). This condition has been reported since November 25, 1991.

The bridge does not have an identification marker.

SUPERSTRUCTURE

The lower double angle of each lateral overhead bracing frame has some level of vehicle impact damage (see photo #6). The damage generally consists of out-of-plane local deformations up to 2". This damage was first noted in the November 25, 1991, inspection.

Soffit cracks appear about 6" from both edges of the deck in Span 1. No rust stains were noted. This damage was first noted in the August 1, 2008, inspection.

There is about 2' of exposed rebar in the soffit of Span 6 (see photo #8). The bar appears to have inadequate concrete cover and does not warrant repairs at this time.

SUBSTRUCTURE

There is a diagonal crack > 0.080" wide appears in the Abutment 1 right wingwall. The crack is 6' from the end of the wall and extends down to ground level. A similar crack also appears in the left wingwall. This condition was first noted during the October 12, 1995, inspection.

There is spalling of the end diaphragm at Pier 4. The concrete is missing on the bottom 6" along three-quarters of the length of the diaphragm. The bottom longitudinal reinforcing steel is exposed, but does not appear to be rusting (see photo #9). No cracks could be seen in the adjacent area or soffit. A 1995 work order to repair this spall remains incomplete.

There is a vertical, meandering crack along Abutment 7 and adjacent right side wingwall. The crack is 1" wide with 1.25" offset, running 4.5' long. This condition was first noted during the October 12, 1995, inspection.

PAINT CONDITION

Chipped paint with rust, blush rust and scattered areas of blanket rust were noted on the bottom chord, stringers and floor beams (see photo #7 and #10). There is random freckled rust on the remaining steel members.

SCOUR

The footings at Piers 3 & 4 were not exposed. Scour countermeasures in the form of tied blocks have been placed around Pier 3 located about 3' from the sides of the pier.

The footing at Pier 2 is esposed 18" along its entire length. The footing was dry at the time of investigation and is buried in heavy vegetation. There were no signs of undermining.

SIGNS

There are signs posted at both approaches indicating the following:

ONE LANE BRIDGE

and,

14 TONS PER VEHICLE
21 TONS PER SEMI-TRAILER COMBINATION
27 TONS PER TRUCK AND FULL TRAILER

CONDITION TEXT

There are signs on top of the truss indicating:
VERTICAL CLEARANCE 13'- 6"

SAFE LOAD CAPACITY
EXISTING POSTING

This structure was posted by an Order from the Director of Transportation, dated September 25, 1980 for the following load restrictions.
14 TONS PER VEHICLE
21 TONS PER SEMI-TRAILER COMBINATION
27 TONS PER TRUCK AND FULL TRAILER

RECOMMENDED POSTING
Retain the existing posting mentioned above.

MISCELLANEOUS
Routine roadway and elevation photgraphs were taken during this investigation (see photo #1 and #2).

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	550	sq.m.	0	550	0	0	0
110	Reinforced Conc Open Girder/Beam	2	199	m.	0	199	0	0	0
121	Painted Steel Bottom Chord Thru Truss	2	198	m.	0	0	198	0	0
126	Painted Steel Thru Truss (excl. bottom chord)	2	198	m.	0	0	198	0	0
152	Painted Steel Floor Beam	2	42	m.	0	0	42	0	0
205	Reinforced Conc Column or Pile Extension	2	6	ea.	6	0	0	0	0
210	Reinforced Conc Pier Wall	2	12	m.	12	0	0	0	0
215	Reinforced Conc Abutment	2	12	m.	7	5	0	0	0
304	Open Expansion Joint	2	18	m.	12	6	0	0	0
311	Moveable Bearing (roller, sliding, etc.)	2	2	ea.	2	0	0	0	0
313	Fixed Bearing	2	2	ea.	2	0	0	0	0
331	Reinforced Conc Bridge Railing	2	192	m.	192	0	0	0	0
332	Timber Bridge Railing	2	99	m.	99	0	0	0	0
358	Deck Cracking	2	1	ea.	0	1	0	0	0
359	Soffit of Concrete Deck or Slab	2	1	ea.	0	1	0	0	0

WORK RECOMMENDATIONS

RecDate: 08/02/2006
Action : Bridge-Paint ID
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:
Place bridge number on the face of the right barrier at Abutment 1.

RecDate: 03/18/2001
Action : Undefined Work
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:
Repair the damaged lateral frame elements.

WORK RECOMMENDATIONS

RecDate: 10/12/1995
Action : Undefined Work
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Remove unsound concrete on the end diaphram at Pier 4 and recast.

Inspected By : R.Odell/M.O'leary

Ryan Odell (Registered Civil Engineer)

STRUCTURE INVENTORY AND APPRAISAL REPORT

********** IDENTIFICATION **********

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 25C0004
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 03
(3) COUNTY CODE 017 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- SOUTH FK AMERICAN RIVER
(7) FACILITY CARRIED- MT MURPHY RD
(9) LOCATION- 0.1 MI E OF SR 49
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 38 DEG 48 MIN 07 SEC
(17) LONGITUDE 120 DEG 53 MIN 27 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

******** STRUCTURE TYPE AND MATERIAL *********

(43) STRUCTURE TYPE MAIN:MATERIAL- STEEL
TYPE- TRUSS - THRU CODE 310
(44) STRUCTURE TYPE APPR:MATERIAL- CONCRETE
TYPE- STRINGER/MULTI-BEAM OR GDR CODE 102
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 5
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- NONE CODE 0
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1915
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 01 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 280
(30) YEAR OF ADT 2009 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 32 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 49.4 M
(49) STRUCTURE LENGTH 149.0 M
(50) CURB OR SIDEWALK: LEFT 0.2 M RIGHT 0.2 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 3.2 M
(52) DECK WIDTH OUT TO OUT 3.7 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 4.6 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 4.19 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 3.2 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 4.19 M
(54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
(55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
(56) MIN LAT UNDERCLEAR LT 0.0 M

********** NAVIGATION DATA **********

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
(111) PIER PROTECTION- CODE
(39) NAVIGATION VERTICAL CLEARANCE 0.0 M
(116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

****

SUFFICIENCY RATING = 0.0
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 61.8
PAINT CONDITION INDEX = 50.0

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- LOCAL RURAL 09
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 1 LANE, 2 WAY 3
(103) TEMPORARY STRUCTURE-
(105) FED.LANDS HWY- NOT APPLICABLE 0
(110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
(20) TOLL- ON FREE ROAD 3
(21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
(22) OWNER- COUNTY HIGHWAY AGENCY 02
(37) HISTORICAL SIGNIFICANCE- ELIGIBLE 2

********** CONDITION ********** CODE

(58) DECK 4
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

********* LOAD RATING AND POSTING ********* CODE

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
(64) OPERATING RATING- 13.6
(65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
(66) INVENTORY RATING- 2.7
(70) BRIDGE POSTING- > 39.9% BELOW 0
(41) STRUCTURE OPEN, POSTED OR CLOSED- P
DESCRIPTION- POSTED FOR LOAD

********** APPRAISAL ********** CODE

(67) STRUCTURAL EVALUATION 2
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 8
(72) APPROACH ROADWAY ALIGNMENT 4
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES U

********** PROPOSED IMPROVEMENTS **********

(75) TYPE OF WORK- REPLACE FOR DEFICIENC CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 149 M
(94) BRIDGE IMPROVEMENT COST $1,285,700
(95) ROADWAY IMPROVEMENT COST $257,140
(96) TOTAL PROJECT COST $2,159,976
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 2848
(115) YEAR OF FUTURE ADT 2028

********** INSPECTIONS **********

(90) INSPECTION DATE 01/11 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- YES 24 MO A) 12/10
B) UNDERWATER INSP- YES 60 MO B) 06/08
C) OTHER SPECIAL INSP- NO MO C)

Printed on: Wednesday 04/20/2011 09:01 AM

25C0004/AAAM/20192

SOUTH FORK AMERICAN RIVER

0.1 MI E OF SR 49 | 01/05/2011 [AAAM] | 25C0004

100 - PHOTO-ROADWAY VIEW

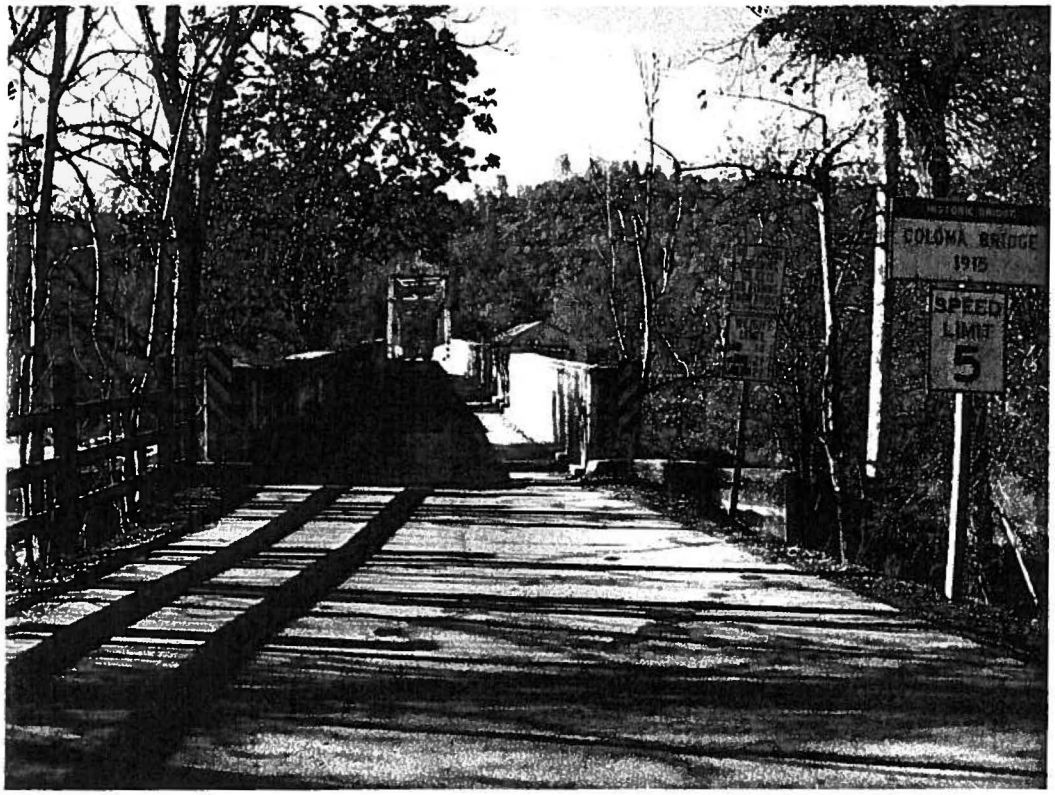


Photo No. 1

Roadway View (looking east).

101 - PHOTO-ROUTINE ELEVATION

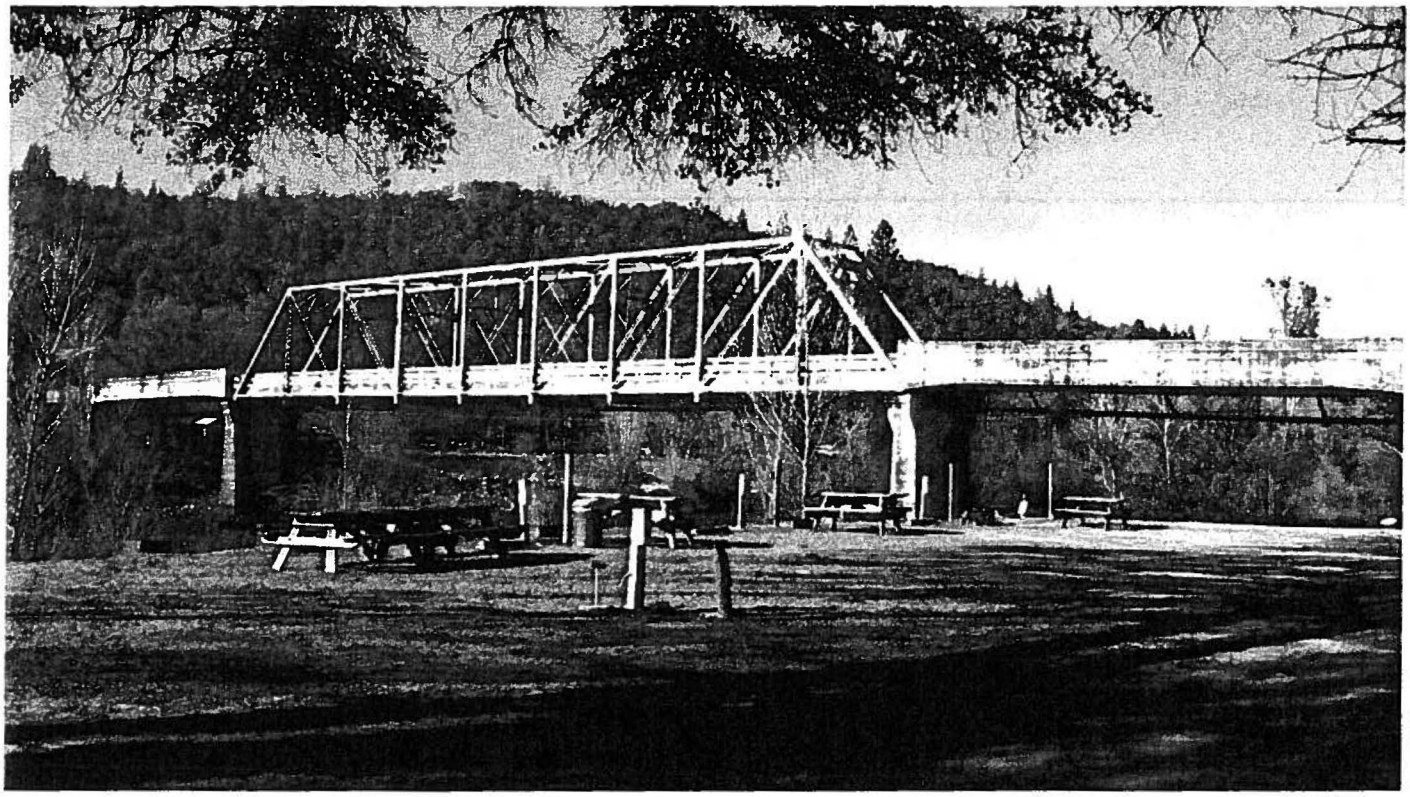


Photo No. 2

Elevation View (right side).

102 - PHOTO-DECK DAMAGE/DETERIORATION

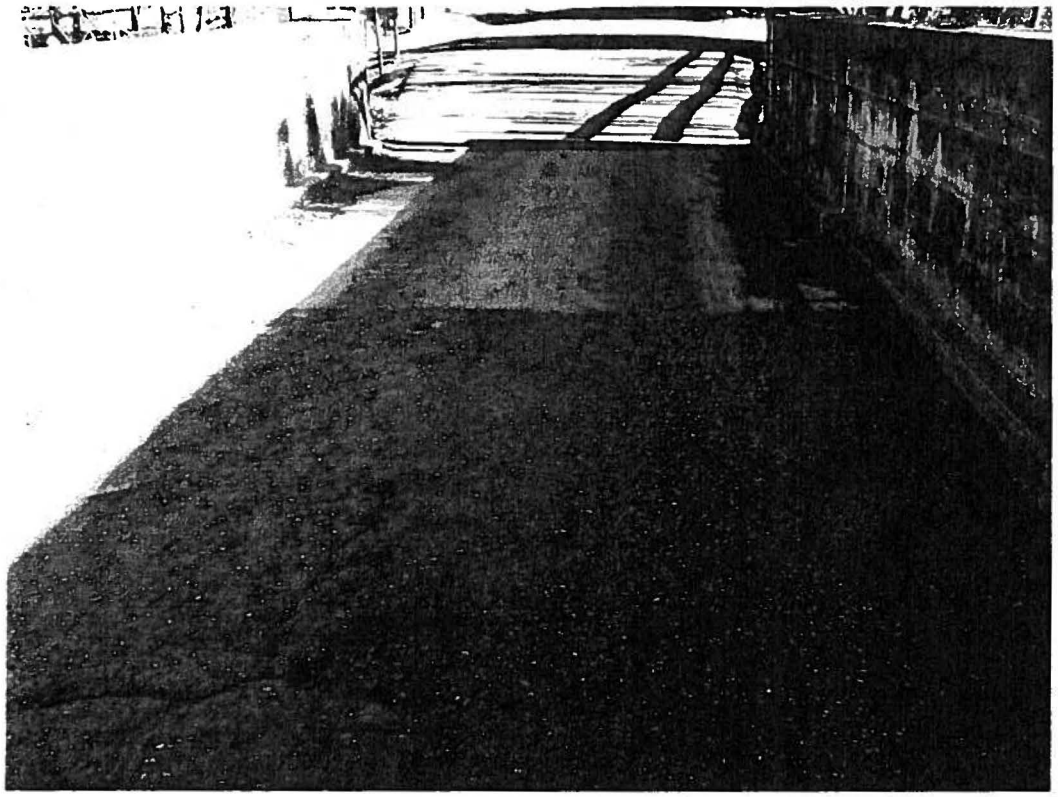


Photo No. 3

Abrasion, scaling, and spalls on the deck surface in Span 7.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

Photo No. 4

Typical transverse deck cracks in Span 2.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

Photo No. 5

Typical transverse soffit cracks with efflorescence and rust stains in Span 2.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

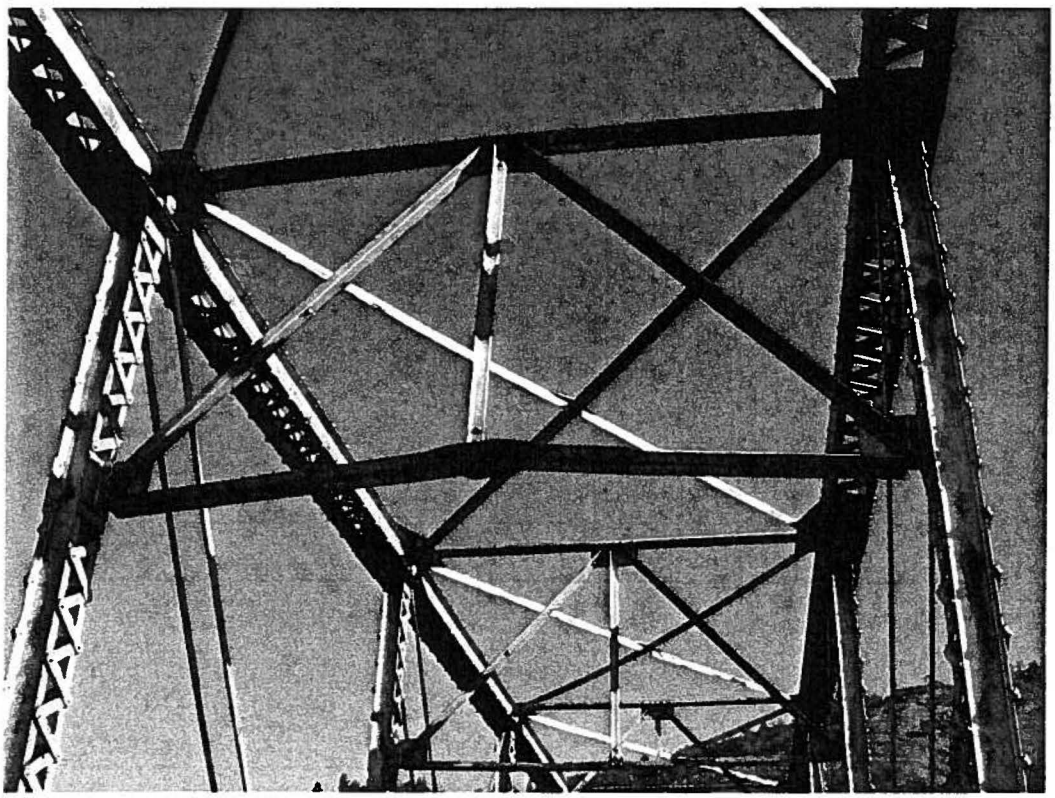


Photo No. 6

Damaged sway bracing from vehicle impact.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

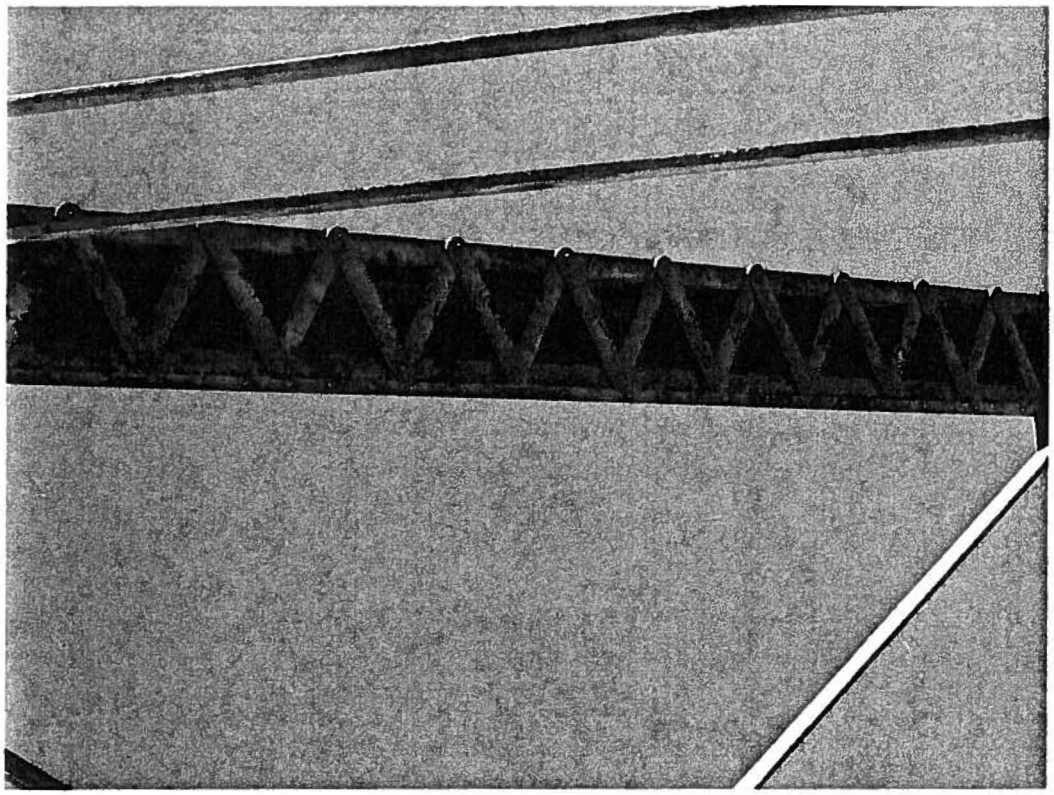


Photo No. 7

Paint condition of top chord in Span 3.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

Photo No. 8

Exposed transverse rebar in the soffit of Span 6.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

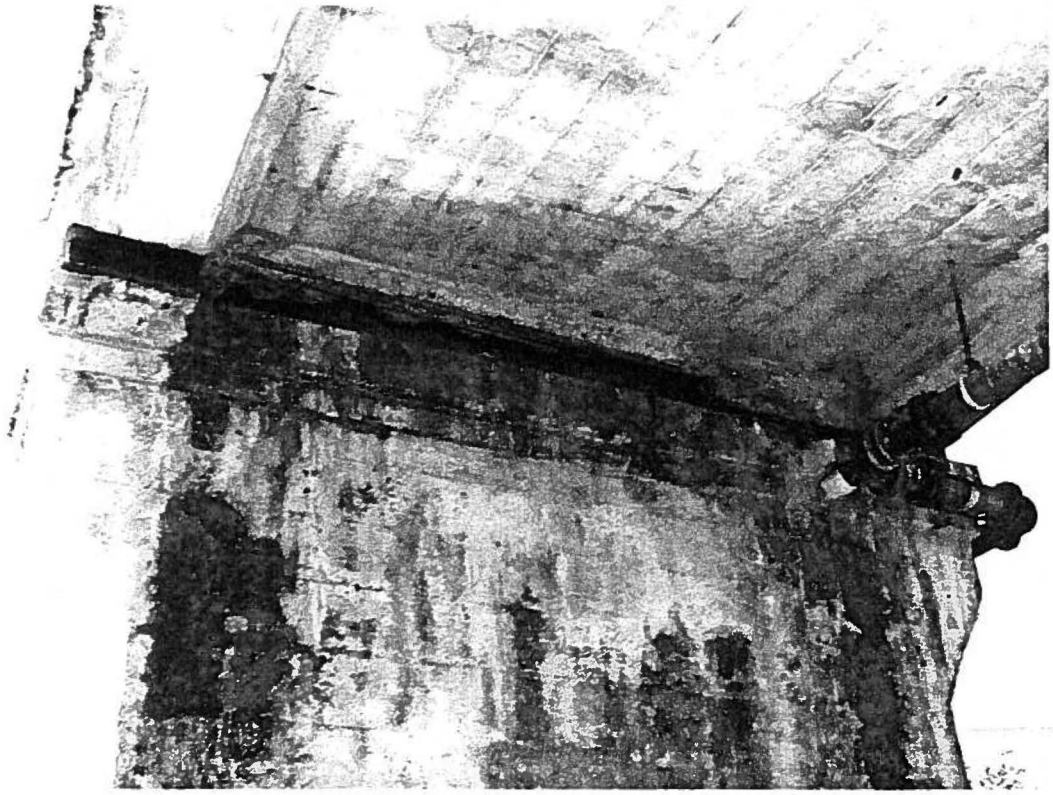


Photo No. 9

Pier 4 end diaphragm spall with exposed rebar.

107 - PHOTO-SUPER DAMAGE/DETERIORATION

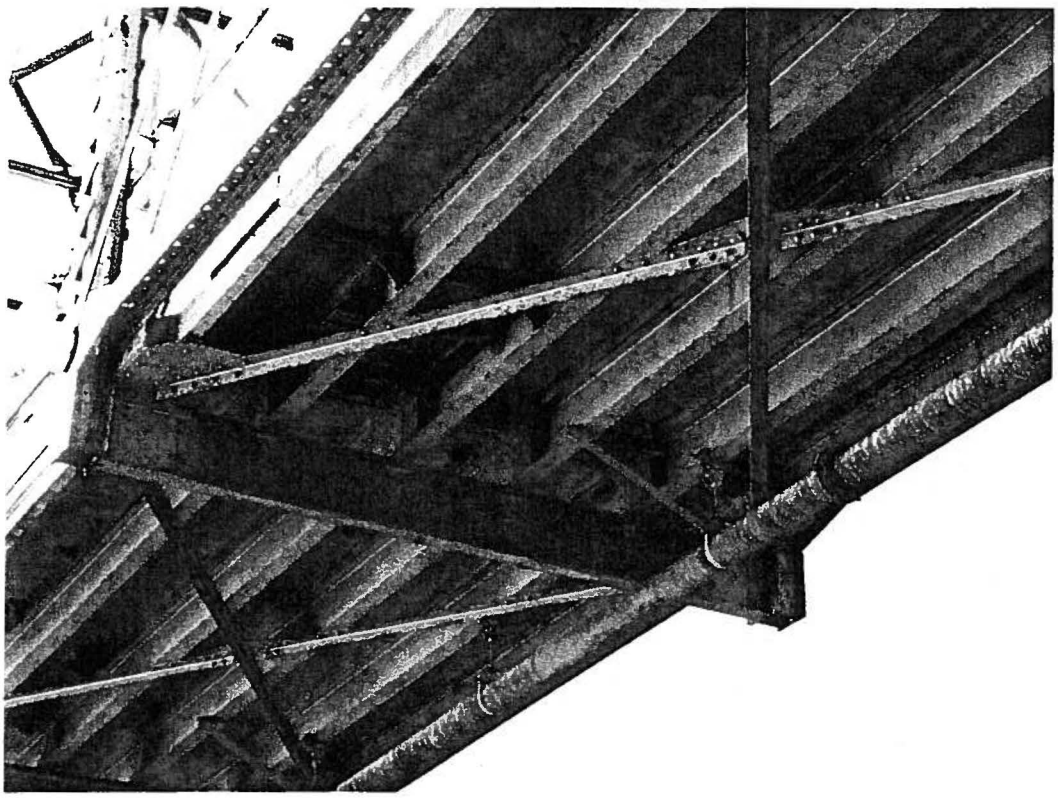


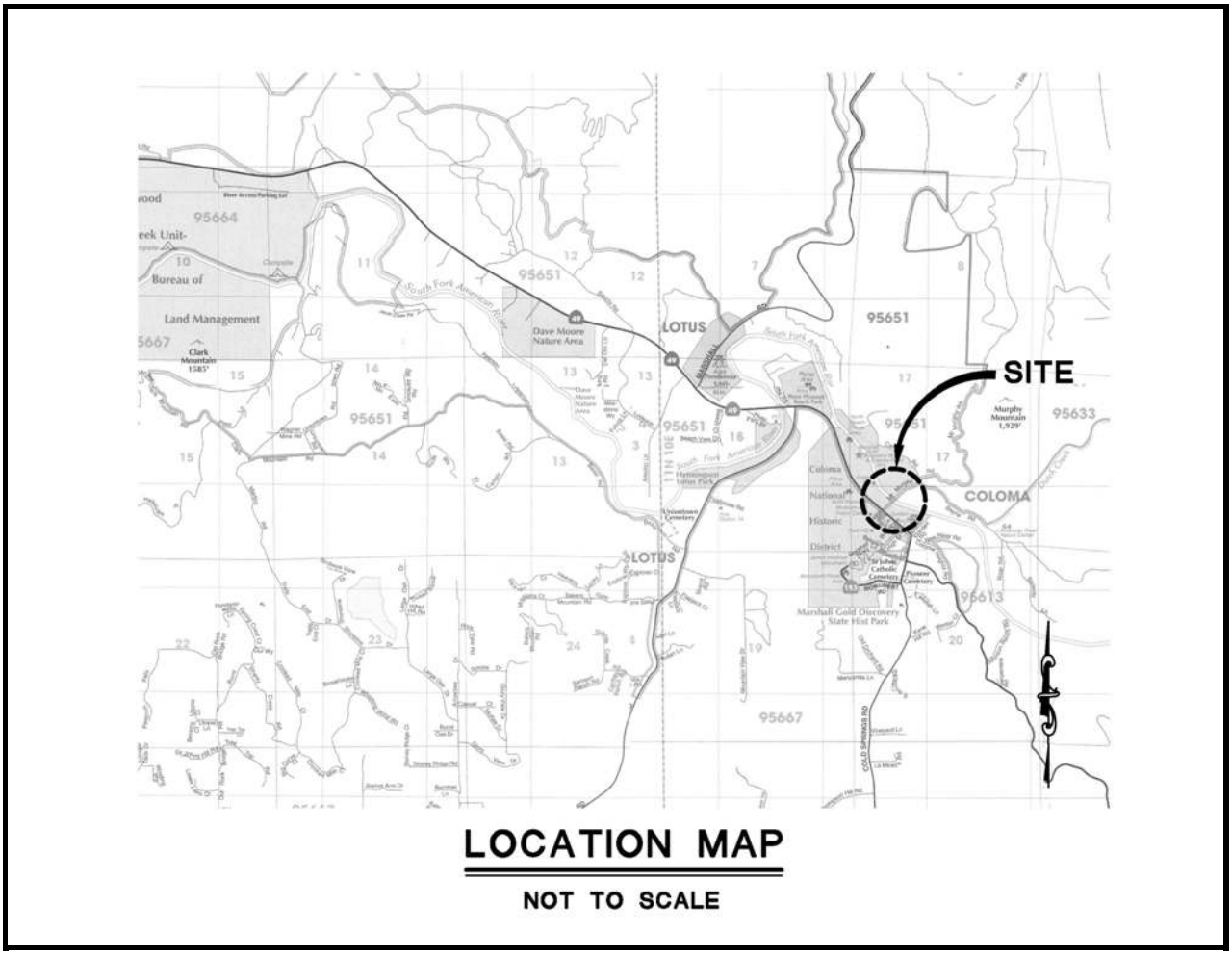
Photo No. 10

Typical paint condition of floorbeams and stringers.

Mount Murphy Road at South Fork American River - Bridge Replacement

CIP Project Summary

Project No: 77129 **Type: Bridge** **Supervisor District(s) 4**



LOCATION MAP

NOT TO SCALE

Project Description:

Project includes replacement or rehabilitation of the bridge at the South Fork American River crossing, widening and potential realignment at the bridge approaches.

Original Budget: $8,065,000 Expenses to Date: $0 Project Initiation Date: 04/17/12

Mount Murphy Road at South Fork American River - Bridge Replacement

Financing Plan & Tentative Schedule

Project No: 77129 **Type: Bridge** **Supervisor District(s) 4**

All Figures in Thousands

Revenue by Funding Source	Prior FY	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17-20/21	Future	Total
Highway Bridge Program	$0	$130	$360	$538	$687	$6,350	$0	$0	$8,065
Total	$0	$130	$360	$538	$687	$6,350	$0	$0	$8,065

All Figures in Thousands

Expenditures	Prior FY	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17-20/21	Future	Total
Planning/Env - Consultant	$0	$50	$300	$138	$0	$0	$0	$0	$488
Planning/Env - Staff	$0	$27	$60	$0	$0	$0	$0	$0	$87
Design - Consultant	$0	$45	$0	$300	$255	$0	$0	$0	$600
Design - Staff	$0	$0	$0	$100	$100	$0	$0	$0	$200
Right of Way - Acquisition	$0	$0	$0	$0	$140	$0	$0	$0	$140
Right of Way - Consultant	$0	$5	$0	$0	$45	$0	$0	$0	$50
Right of Way - Staff	$0	$3	$0	$0	$147	$0	$0	$0	$150
Construction Mgmt - Consultant	$0	$0	$0	$0	$0	$450	$0	$0	$450
Construction Mgmt - Staff	$0	$0	$0	$0	$0	$400	$0	$0	$400
Direct Construction Costs	$0	$0	$0	$0	$0	$5,500	$0	$0	$5,500
Total	$0	$130	$360	$538	$687	$6,350	$0	$0	$8,065

Project Schedule	Prior FY	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17-20/21	Future	
Planning/Environmental									
Design									
Right Of Way									
Construction									

Mt. Murphy Road Bridge Project

Public Workshop, Thursday, February 7, 2013

Gold Trail Grange Hall, 319 State Highway 49, Coloma

PRESENTED BY:
County of El Dorado
Community Development Agency
Transportation Division

Matthew Smeltzer, P.E.
Deputy Director of Engineering

Adam Bane, P.E.
Senior Civil Engineer

Janet Postlewait
Principal Planner

Anne Novotny
Senior Planner

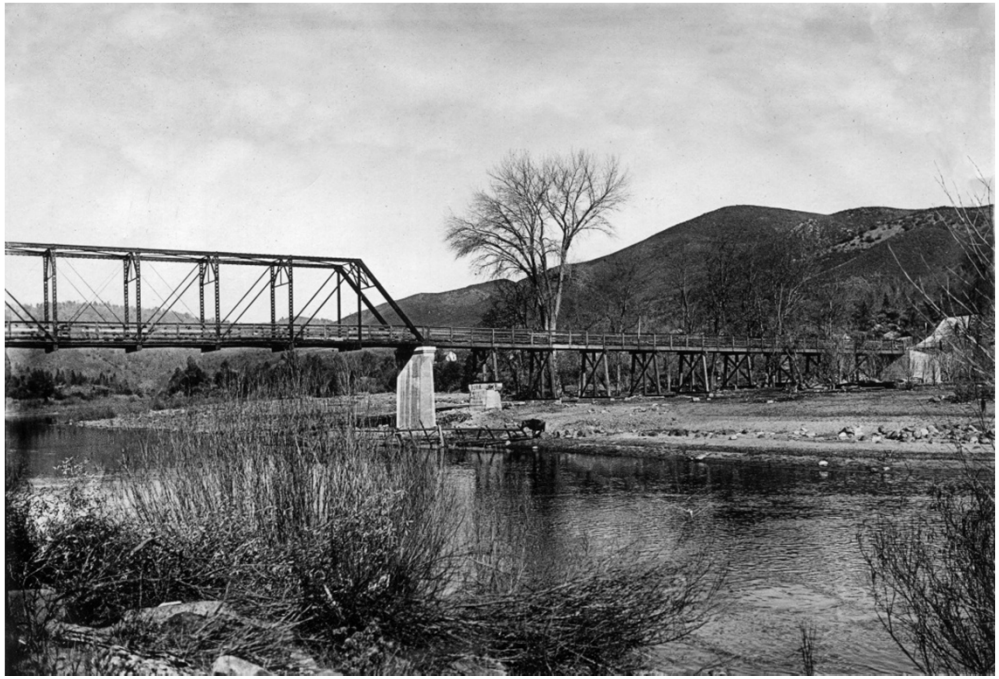
Why Are We Here Today?

1. Mt. Murphy Bridge has existing deficiencies that need to be addressed
2. To provide information and to listen to **You – the community**
3. This public meeting is the beginning of the initial planning process to determine whether to repair or replace existing bridge
4. Community input throughout this process

Workshop Agenda

1. **Welcome & Introduction** – Anne Novotny
2. **Bridge Facts / Current Conditions** – Matt Smeltzer
3. **Highway Bridge Program Funding** – Matt Smeltzer
4. **Mt. Murphy Bridge Project Study Report** – Adam Bane
5. **Environmental Process** – Adam Bane
6. **Previous Plans/Studies in Project Area** – Adam Bane
7. **Bridge Design Examples** – Matt Smeltzer
8. **Next Steps for Public Input** – Anne Novotny
9. **Open Question & Discussion Period**

Mt. Murphy Road Bridge Facts



Courtesy of Vickie Longo

- Current bridge built in 1915 – 98 years old
- 10.5 foot wide one-lane steel truss structure
- 160-ft long span over South Fork Amer. River
- Two concrete approaches (140-ft & 60-ft long)
- 280 Vehicles/Day (2012 traffic counts)
- 1 of 77 bridges maintained by County

Existing Caltrans Sufficiency Issues

- Routine inspections every 2 years by Caltrans
- Rated on 140 elements; Score of 0 to 100
- Sufficiency Rating (SR) < 80 = eligible for rehabilitation
- Sufficiency Rating (SR) < 50 = eligible for replacement
- 2006 SR = 2.0; 2011 SR = 0.00 (lowest rating of all County maintained bridges)
- Structurally Deficient (per 2011 SR)
- Functionally Obsolete (per deck geometry rating of 2; less than 3 is “FO”)
- Structure has Fracture Critical (FC) members; FC inspections by Caltrans annually

Highway Bridge Program (HBP)

Federal Funding

- Federal Highway Administration (FHWA) safety funding program for bridge maintenance, rehab and replacement
- 100% Reimbursement Bridge Program (Off System Roads)
- No Local Match (County General Fund will NOT be used)
- Funds projects that either rehabilitate or replace (not both)
- Aug 2010 – County submitted HBP request to Caltrans
- Sept 2011 – County received federal authorization for $600K for preparation of Project Study Report and Environmental Document

Mt. Murphy Bridge Maintenance

- Routine maintenance by County bridge crew – as recommended per Caltrans inspection reports
- Sept 2007 – crew found one deck section slid 4 inches sideways; required immediate inspection and repair

  Deck moved back into place by jacking the concrete slab against temporary bracing and beams below

  Emergency repair cost $90K, took about 3 weeks of 530 man hours to complete

Mt. Murphy Bridge Emergency Deck Repair, Sep-Oct 2007

Mt. Murphy Bridge Emergency Deck Repair, Sep-Oct 2007

Mt. Murphy Bridge Emergency Deck Repair, Sep-Oct 2007

Mt. Murphy Bridge Emergency Deck Repair, Sep-Oct 2007

Mt. Murphy Bridge Project Study Report

Purpose of the PSR

- Define Project Purpose & Need
- Identify alternatives to repair/rehabilitate or replace existing bridge and cost estimates
- Assess environmental impacts
- Develop quantitative matrix to evaluate and rank preferred alternatives

Example of Evaluation Criteria Matrix

CRITERIA	ALTERNATIVE										
		1		2		3		4		5	
	Importance Factor	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score	Rating	Weighted Score
BRIDGE											
(1) INITIAL COST	10	5	50	4	40	1	10	1	10	5	50
(2) MAINTENANCE COST	6	5	30	5	30	3	18	3	18	5	30
(3) AESTHETICS	6	3	18	4	24	4	24	4	24	4	24
ROADWAY											
(4) APPROACH ROAD COST	10	5	50	1	10	3	30	5	50	5	50
(5) MAINTENANCE COST	6	2	12	2	12	4	24	5	30	2	12
(6) REHABILITATION / REPLACEMENT COST	6	1	6	2	12	3	18	5	30	1	6
(7) DEFICIENCIES / SAFETY	9	1	9	2	18	4	36	5	45	1	9
(8) VEHICLE OPERATING SAVINGS	8	1	8	2	16	5	40	5	40	1	8
(9) RIGHT OF WAY COSTS	5	5	25	5	25	2	10	2	10	5	25
(10) ENVIRONMENTAL ISSUES / PERMITTING (STUDY AREA)	5	2	10	4	20	4	20	4	20	2	10
(11) RECREATIONAL USES	4	1	4	3	12	4	16	4	16	1	4
(12) COMMUNITY ACCEPTANCE	9	2	18	3	27	5	45	5	45	1	9
(13) EMERGENCY VEHICLE ACCESS	10	1	10	1	10	5	50	5	50	1	10
(14) IMPACT ON GENERAL PLAN	5	4	20	4	20	4	20	4	20	4	20
TOTAL			270		276		361		408		267

Ratings: 1 = Low; 5 = High

1993 Mosquito Road Bridge Replacement Study

TABLE 9-6 - CRITERIA MATRIX

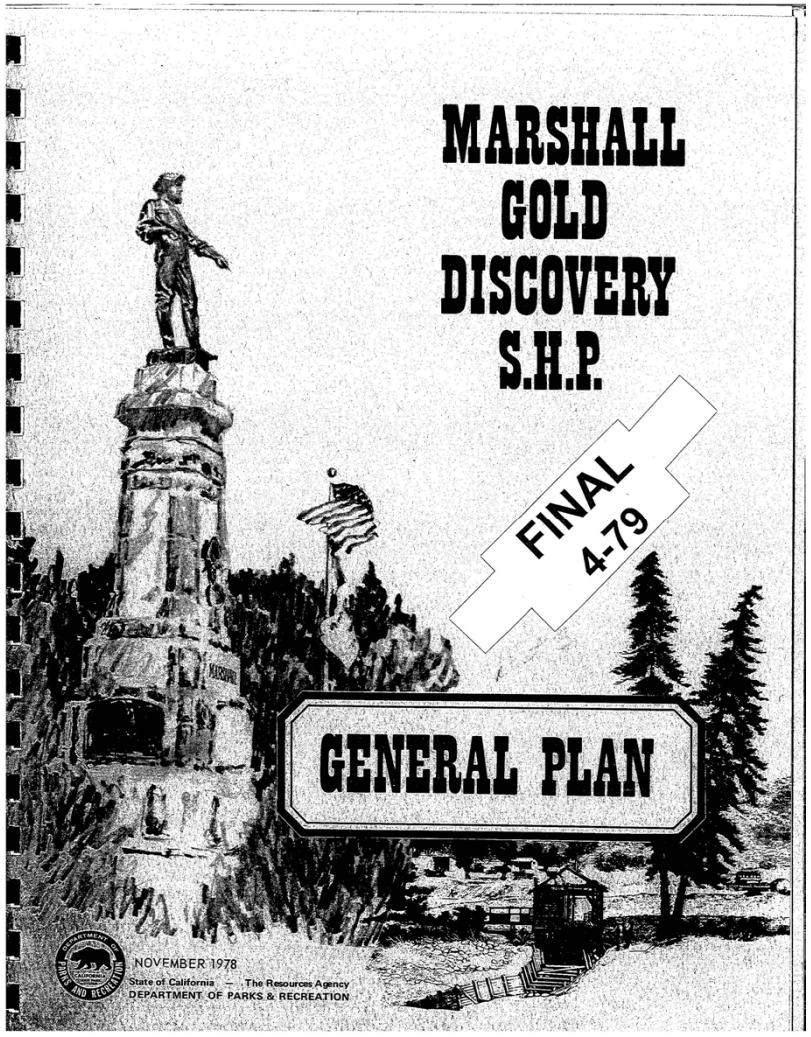
Possible Evaluation Criteria

- Community Acceptance
- Public Safety
- Historic / Rural Preservation
- Aesthetics / Architectural Design
- Bicycle / Pedestrian / Emergency Vehicle Access
- Environmental Issues
- Recreational Uses
- Costs – Bridge Construction, Approach Roadway, Right of Way Acquisitions, Maintenance/Rehab
- Access during Construction

PSR / Environmental Process

- Public Input throughout the planning process
- Stakeholder Advisory Committee
- Establish evaluation criteria & alternatives
- Draft Project Study Report (PSR)
- Return to public with Draft PSR for review/comments
- Finalize PSR – Anticipated Completion by 2014
- Environmental Review – begin CEQA/NEPA process

Previous Plans/Studies in Project Area



Land Use Circulation Element

- Recommended improvements to reduce impacts of motor vehicle traffic on the park's historic area and improve circulation
- The complete plan is available on the CA State Parks website: http://www.parks.ca.gov/pages/21299/files/marshall_gold_discovery_shp_gp.pdf

Previous Plans/Studies in Project Area

- In May 2010, a State Route 49 Realignment Study from Coloma to El Dorado was completed by the El Dorado County Transportation Commission
- The complete study is available on the EDCTC website: http://www.edctc.org/3/SR49Realignment.htm

Bridge Design Examples

Prestressed Concrete Box Girder

Current Chili Bar Bridge over South Fork American River at State Hwy 193 in El Dorado County

Built in 1993, replaced historic bridge pictured below.

The bridge built in 1922, was designed by John B. Leonard, a pioneering proponent of the use of reinforced concrete in California. He designed many of the earliest reinforced concrete arch bridges in the state.

Bridge Design Examples

Concrete Box Girder Design
Lake Natoma Crossing, Folsom

Post-tensioned concrete box girder, with false deck arches; 4 traffic lanes; opened in 1999; designed to mimic key features of the original historic Rainbow bridge; includes pedestrian walkways with outlook areas, decorative vintage looking railing and lights.

Concrete Arch Design
Rainbow Bridge, Folsom

208' long main concrete arch span with open spandrel columns and 7 span north and 4 span south T-girder approaches totaling 511' in length. Built in 1917, underwent major reconstruction in 1969. Was the only means of crossing the American River in the City of Folsom until 1999 when the Lake Natomas Crossing was completed.

Bridge Design Examples

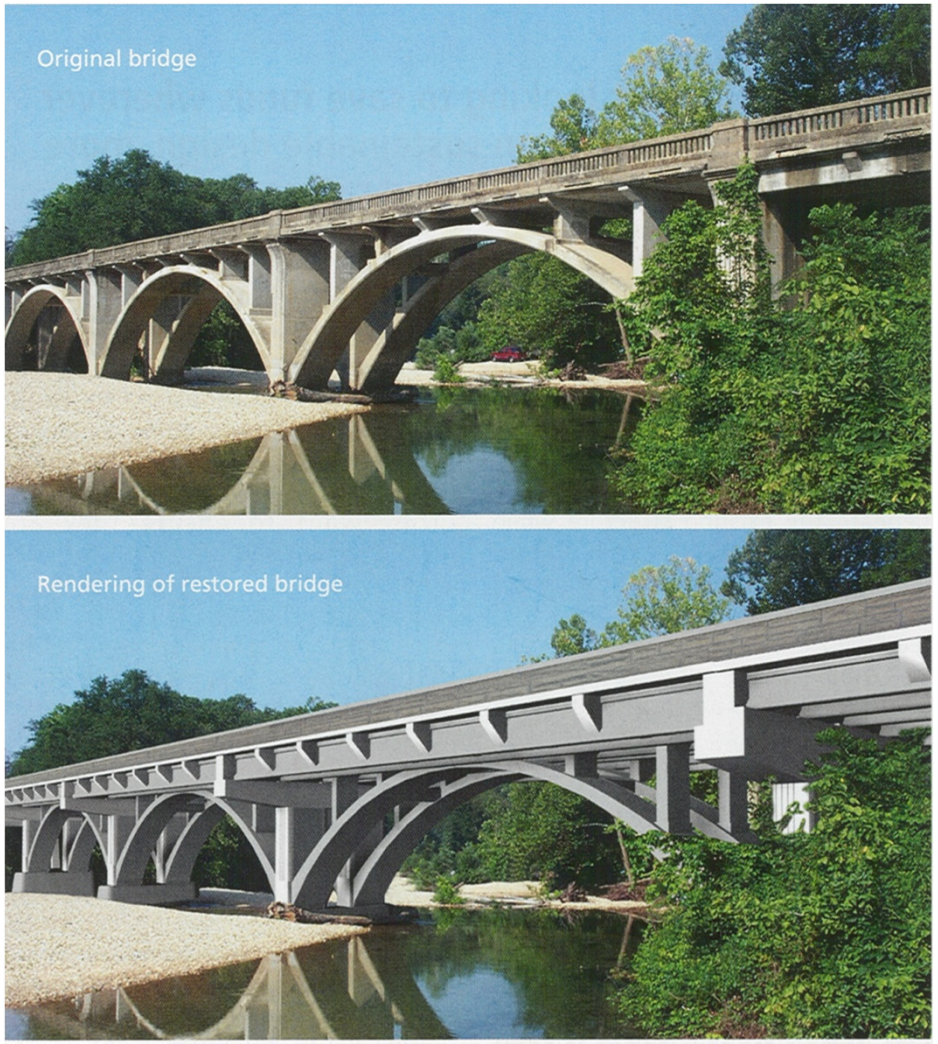
Bowstring Truss in London, Ontario, Canada

Bridge Design Examples

Precast Concrete

Sinking Creek Bridge, Ozark Scenic Riverways National Parkland

Precast concrete solution allows attractive arches on the bridge to remain in place which appearing to support the bridge loads.



Bridge Design Examples

Suspension Cable

Guy A. West Memorial Bridge, Sacramento

Spans the American River between Sacramento State University and Campus Commons. Built in 1966, the pedestrian bridge is 1,144-ft long and 16-ft wide.

New Steel Truss at Wentworth Springs/Gerle Creek

Next Steps for Public Input

- **Q & A Session** – ***What are your primary concerns?***
- **Evaluation Criteria – *What are your priorities?***
- **Visit the project website at**: **www.edcgov.us/bridgeprojects/**
- **Sign-In Sheet** – provide your email address to receive project updates
- **Comment Cards**
- **Stakeholder Advisory Committee**
- **Follow-up Public Workshops**

Questions or Comments

Email: mtmurphybridge@edcgov.us

Mail: El Dorado County Transportation Div.
Attn: Anne Novotny
2850 Fairlane Court
Placerville, CA 95667

Phone: (530) 621-5900

Thank you for attending this workshop.
Your input is important to us.

Mt. Murphy Rd Bridge Project Public Workshop, 2/7/13


10/02/2007


10/02/2007