

U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)		DAF No. _____ - NAP _____ - 0 2 0 - 0	Sheet # 1 of 3 Federal Project # EO ER _____ ()
		Disaster No. CA 1 4 - 1 PR ER _____ ()	
Applicant Napa County Public Works		County Napa Congressional districts 5	Incident Date (mm/dd/yyyy) Inspection 08/24/2014 09/23/2014
Location of Damage: _____		Per Site <input checked="" type="checkbox"/> or <input type="checkbox"/> Per Mile	Federal-aid Highway? Y for yes, if no, ineligible for ER funds <input type="checkbox"/> Y
Name of Road/Bridge: Silverado Trail Box Culvert		PM Begin: 1.47 PM Length: 58.00 PM End: 1.47 (in feet)	Map No 5K13 Functional Classification Type: MAJOR COLLECTOR Route # _____
Road/Bridge Data:	Bridge No 21C0015 Type: CONCRETE CULV	Traveled Way: Width 22 Type: PCC <input type="checkbox"/> AC <input checked="" type="checkbox"/> Gravel <input type="checkbox"/>	Forest Hwy? Y/N <input type="checkbox"/> N Interstate? Y/N <input type="checkbox"/> N
	Shoulder: Width 8 Type: PCC <input type="checkbox"/> AC <input checked="" type="checkbox"/> Gravel <input type="checkbox"/>	Existing ADT: 5,450	
Description of Damage:	Full height vertical cracks at exterior walls on the inside face of the north and south walls of the culvert, in addition to cracks in the northwest wing wall due to 2014 South Napa earthquake event (Magnitude 6.0).		

COST ESTIMATE					
Emergency Opening (EO)	Type of Repair	Description of Work	Cost Summary		
		EO- AGENCY FORCES CT Work Order #(s): _____ EA(s): _____		PE	0
		CE		0	
		Construction		0	
	EO- CONTRACT EO EA(s): _____		PE		
			CE		
			Construction		
NOTE: Environmental documentation for EO is required. It is generally started after work has begun.			R/W		
			Subtotal Emergency Opening	\$0	
Permanent Restoration (PR)	PR- CONSTRUCTION FA requires an approved PIF <input checked="" type="checkbox"/> Contract <input type="checkbox"/> FA PR EAs _____	Epoxy injection at cracked concrete.	PE	1,113	
			CE	1,669	
			Construction	13,906	
NOTE: PRIOR AUTHORIZATION (APPROVED E-76) IS REQUIRED TO PROCEED WITH PERMANENT RESTORATION R/W & CONSTRUCTION			R/W		
NOTE: Environmental clearance for permanent restoration is conducted through normal Federal-aid procedures			Subtotal Permanent Restoration	\$16,688	
Eligible		Signature	Date	PE Total	\$1,113
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Local Agency (if applicable):	<i>[Signature]</i>	4-13-2015	CE Total	\$1,669
<input type="checkbox"/> Yes <input type="checkbox"/> No	Caltrans:	<i>[Signature]</i>	5-8-15	R/W Total	\$0
<input type="checkbox"/> Yes <input type="checkbox"/> No	FHWA*:	<i>[Signature]</i>		Construction Total	\$13,906
TOTAL ESTIMATE				\$16,688	

Agency sig. Name (print): Mallika Ramachandran, P.E. FHWA Sig. Name (print): _____
 CT signature Name (print): John Brewster DAF Prepared by (print): Yoliana Swenson, P.E., BCA

Original: Caltrans District **Copies:** FHWA, Division of Local Assistance(local roads), Federal Resources (state hwy), HQ Major Damage Engineer (state hwy)
 *Write "N/A" in FHWA signature block if the project has no Federal ER funding or Federal ER funding delegated to the State.
FHWA Signature: REQUIRED for all Federal Funded State projects. REQUIRED for any Local Agency projects with 1) any BETTERMENT, 2) more than 2 ROW takes or 3) when paving is more than 50% of the Total Estimated Cost. **Reminder: This DAF must be accompanied by photos of the damage.**

U.S. Department of Transportation Federal Highway Administration- California Division- Title 23 Damage Assessment Form (DAF)	DAF No. <input type="text"/>	-	NAP	-	<input type="text"/>	-	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
	Sheet # 2 of 3		Federal Project #	EO	ER	-	<input type="text"/>	(<input type="text"/>)	
	Disaster No. CA <input type="text"/>	<input type="text"/>	-	<input type="text"/>	PR	ER	-	<input type="text"/>	(<input type="text"/>)
	Agency EO Calc <input type="checkbox"/>		EO contract	<input type="checkbox"/>	PR Calc	<input checked="" type="checkbox"/>					

ITEM #37 FROM BRIDGES & CULVERTS SPREADSHEET					
SILVERADO TRAIL MP 1.47 (REF: DISTRICT 2, STRUCTURE 50); DAF 20					1/20/2015
CULVERT REPAIR					
Item	Description	Unit	Quantity	Unit Price	Estimated Cost
1	Mobilization	LS	1	\$ 650.00	\$ 650.00
2	SWPPP Implementation, Erosion and Sediment Control (BMP)	LS	1	\$ 325.00	\$ 325.00
3	Clearing, Grubbing and Misc. Demolition	LS	1	\$ 650.00	\$ 650.00
4	Traffic Control	LS	1	\$ -	\$ -
5	Epoxy Injection at cracked concrete	Days	5	\$ 1,300.00	\$ 6,500.00
6	Right of Way Analysis/Appraisal/Acquisition/TCE	LS	1	\$ -	\$ -
7	Environmental Process, Permitting & Fees, Environmental Mitigation, Environmental Monitoring & Reporting	LS	1	\$ 1,625.00	\$ 3,000.00
	Subtotal				\$ 11,125.00
	25% Contingency (Planning Level)				\$ 2,781.25
	Total Construction				\$ 13,906.25
	PE 10% of Total Construction				\$ 1,112.50
	CE 15% of Total Construction				\$ 1,668.75
	Total Estimated Cost				\$ 16,687.50
ESTIMATED PROJECT COST					\$ 16,700.00

Item #5 of Environmental Process, Permitting & Fees, Environmental Mitigation, Environmental Monitoring & Reporting will include:

- Environmental Process – CEQA/NEPA Process required coordination with the following agencies: CDFWL, ACOE, RWQCB, NOAA, USFWL, FEMA, SHPO, etc.
- Permitting & Fees - For permits from RWQCB and CDFWL, on an average is approximately \$2,000 each, plus another approximately \$2,000 for CDFWL to review Initial Study/MND (if one is required).
- Environmental Mitigation – depending on the complexity of the project and impact ranges from riparian restoration at a 3:1 ratio to habitat structures and fish passage and scour measures.
- Environmental Monitoring and Reporting: Includes construction phase monitoring and post construction monitoring which is a minimum 5 years of maintenance, monitoring and reporting.

25% of contingency is used for unforeseen expenses or unknown factors encountered during construction, which are typical with this repair type of project.

U.S. Department of Transportation
Federal Highway Administration-
California Division- Title 23
Damage Assessment Form (DAF)

DAF No. - NAP - 0 2 0 - 0
Sheet # 3 of 3 Federal Project # EO ER - _____ ()
Disaster No. CA 1 4 - 1 PR ER - _____ ()



Crack in northwest wing wall.



Closeup of crack in northwest wing wall.

Photos, Sketches, and/or Narrative



Crack A: Vertical crack, full height at exterior wall inside face of south wall of culvert.



Crack A: Width of crack.



Crack A: Width of crack.



Crack B: Vertical crack full height at exterior wall inside face of north wall of culvert at cold joint.



Crack C: Vertical crack full height at exterior wall inside face of north wall of culvert at cold joint.

Damage Assessment and Recommendations Report
Silverado Trail MP 1.47 Bridge
03/05/15

Damage Assessment

Silverado Trail Bridge is located on Silverado Trail Road. Existing bridge is a 4 spans concrete bridge with concrete piers, beams, abutments, and wingwalls. This bridge is a registered Caltrans Bridge (Bridge number 21C0015).

Various cracks at several locations were observed and noted. Two full height vertical cracks up to 1.25" wide are observed at North abutment wall. One full height vertical crack is observed at South abutment wall. Diagonal crack is observed at the Northwest wingwall.

Recommendations

Bridge repair includes applying pressure grout at all the cracks observed at the abutment walls and wingwall.

Please note that the repair solution and cost estimate is based on the assumption that the existing structure meets all current codes, standards and regulations, which are highly unlikely. In the preliminary engineering phase hydraulics, geotechnical, unforeseen site conditions, archeology/historic significance, and other studies, and State and Federal permitting regulations and requirements may show that the proposed repair solution do not meet current code, standards and regulations and the repair strategy will have to be modified to meet current codes, standards and regulations leading to higher repair costs.

PREPARED BY: YOLIANA SWENSON, P.E
 BKF/Biggs Cardosa Associates, Inc.

REVIEWED BY: MALLIKA RAMACHANDRAN, P.E., SUPERVISING CIVIL ENGINEER
 COUNTY OF NAPA

INITIAL SUMMARY REPORT OF STRUCTURE

Structure No.: 50 (District #2)	Name: Silverado Trail MP 1.47
Location: N 38.34575, W -122.28313	Dimensions:
Type: RC T beam on RC wall piers and abutments.	Length: 58'-0"
General Description: 4 spans reinforced concrete bridge with interior concrete piers and abutment walls. Abutment walls connected to concrete wing walls.	Width: 41'-3"
	Roadway Width: 40'-11"
Date Constructed: NA	Date of Other Work: NA
Date of Inspection: 9/23/14	Date of Last Inspection: NA

Repair Work Since Last Inspection: NA

Structure Component	Material	General Remarks
Approaches	NA	NA
Top Of Deck	Asphalt	No damage visible.
Underside of Deck/Roof	Concrete	No damage visible.
Beams Supporting Deck	Concrete	No damage visible.
Abutment Walls	Concrete	Full height vertical cracks at both abutment walls.
Wingwalls	Concrete	Diagonal crack at Northwest wingwall.
Arch	NA	NA

Non-Structural Items	General Remarks
Channel/Waterway Adequacy	Debris and vegetation present in streambed.
Barrier, Guardrail and Fence	NA
Sidewalk	NA

Initial Summary of Findings:

- Full height vertical cracks at both abutment walls.
- Diagonal crack at Northwest wingwall.

These initial findings are based only on visual observations of existing conditions at the time of the damage assessment. Certain conditions may not be visible or may be affected by the passage of time.

EXHIBIT 3-O SAMPLE LOCAL FEDERAL-AID PROJECT FINANCE LETTER

DEPARTMENT OF TRANSPORTATION
 DIVISION OF ACCOUNTING
 LOCAL PROGRAM ACCOUNTING BRANCH

ATTN: RACHEL CARPENTER

Work on State Highway (Y or N); N If yes, provide following:
 Administered by State or Local? _____
 Project Manager Name: _____
 Accounting Program Code(s): _____
 Coop or Contribution Agrmt No.: _____

Date: 4-13-2015
 Agency: NAPA COUNTY
 Fed Project No.: _____
 Project ID: DAF 20 SILVERADO TRAIL
 PPNO.: _____
 Bridge No.: 21C0015

"P" or "L" Type (1)
 FEDERAL FUND TYPE (1)
 FEDERAL PARTICIP. COST
 TOTAL COST OF WORK
 FEDERAL FUND TYPE (2)
 FEDERAL FUND TYPE (2)
 STATE MATCH FUNDS
 LOCAL MATCH FUNDS
 OTHER FUNDS

	"P" or "L" Type (1)	FEDERAL FUND TYPE (1)	FEDERAL PARTICIP. COST	TOTAL COST OF WORK	FEDERAL FUND TYPE (2)	FEDERAL FUND TYPE (2)	STATE MATCH FUNDS	LOCAL MATCH FUNDS	OTHER FUNDS
PRELIMINARY ENGINEERING									
Preliminary Engineering: EMERGENCY OPENING	P	\$0	\$0	\$0					\$0
Preliminary Engineering: PERMANENT RESTORATION	P	\$1,113	\$1,113	\$1,113	\$985				\$128
State Furnished Preliminary Engineering Overhead at _____ %									
Purchase Costs									
Relocation Assistance /Utility									
CONSTRUCTION:									
Contract Items									
Utilities									
Supplemental Work									
Contingencies									
Trainees									
Agency/State Furn. Mat.									
Contract Total:	P	\$0	\$0	\$0					\$0
CONSTRUCTION ENGINEERING									
Construction Engineering: EMERGENCY OPENING	P	\$13,906	\$13,906	\$13,906	\$12,311				\$1,595
Construction Engineering: PERMANENT RESTORATION	P	\$0	\$0	\$0					\$0
State Furnished Construction Engineering Overhead at _____ %									
State Furnished Materials Testing									
Overhead at _____ % Subjob _____									
Striping by Agency									
Force Account Work by Agency									
TOTALS:	P	\$16,688	\$16,688	\$16,688	\$14,773				\$1,914

Federal Participation: _____
 Federal Appn. Code(s): _____
 Federal Reimbursement Rate(s) for Progress Invoice: _____
 Signature: _____
 Title: SUPERVISING CIVIL ENGINEER
 Project location: SILVERADO TRAIL, NAPA COUNTY
 Remarks: _____

I certify that this Finance Letter accurately reflects the current cost estimate for all phases of the project obligated but not fully expended.
 For questions regarding finance letter, contact: MALLIKA RAMACHANDRAN, P. E.
 Telephone No.: 707-259-8194
 Distribution: (1) Original + 4 copies-Caltrans DLAE
 (2) Copy-Local Agency Project File



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 21C0087
Facility Carried: SKELLENGER LANE
Location : 0.7 MI W SILVERADO TRAIL
City :
Inspection Date : 11/15/2012

Bridge Inspection Report

Inspection Type

Routine FC Underwater Special Other

STRUCTURE NAME: CONN CREEK

CONSTRUCTION INFORMATION

Year Built : 1930 Skew (degrees): 25
Year Widened: N/A No. of Joints : 0
Length (m) : 25.6 No. of Hinges : 0

Structure Description: RC T-beam (4) on solid pier walls and seat abutments with wings.
All on spread footings.

Span Configuration : 3 @ 8.2 m

LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=2.32 =>75.2 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=3.86 =>99.8 metric tons Calculation Method: LOAD FACTOR
Permit Rating : P P P P P
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.52 m br, 5.3 m, 0.52 m br
Total Width: 6.3 m Net Width: 5.3 m No. of Lanes: 2 Speed: 30 mph
Min. Vertical Clearance: Unimpaired
Rail Code: 1000 Rail Description: Solid concrete

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand, gravel and grass.

INSPECTION COMMENTARY

INSPECTION ACCESS

The channel was dry. All elements were inspected during this inspection.

DECK, JOINTS AND RAILS

The AC approaches at both abutments are about 1 in. lower than the bridge deck. There is a 1' X 1/2' X 2" pothole in the center line at Abutment 1 (see attached photo No. 1).

SUPERSTRUCTURE

There are hairline to 1/64 in. wide vertical flexure cracks at the midspan of the T-girders spaced larger than 6" apart.

There are random spalls with exposed rusted rebars in the girders and in the soffit due to insufficient concrete cover (see attached photo No. 3).

There is a large spall with incipient spall in the diaphragm of Abutment 1 between the two left exterior girders in Bay 1. The incipient spall measures approximately 1.5 ft x 2 ft. It is possible that this is earthquake damage from some previous seismic event (see attached photo No. 2).

SUBSTRUCTURE

There are vertical fracture planes 1/2" wide in the left wing walls adjacent to Abutment 4. One is just outside of the abutment diaphragm and the other is approximately 5 ft away. The top of the wingwall is offset approximately 6". Also, there is a spall in the face of Abutment 4 below Girder 1. The spall size is approximately 12" x 7" x 2". No

INSPECTION COMMENTARY

rebar is exposed.

SCOUR

This bridge has an unknown foundation.

Pier 2 footing on Span 2 side is exposed 2 ft vertically and 5 ft horizontally. No undermining was noted.

Channel cross section measurements were taken during this inspection. No significant changes were noticed compared to the previous stream section dated 11/18/08.

SAFE LOAD CAPACITY

The load rating for this structure is being reviewed by SMI Ratings Branch. An updated Load Rating Summary will be archived when this review is complete.

The current rating is based on BDS computer output dated 1/2/1980.

SIGNS

"Narrow Bridge" signs are posted at both approaches.

<u>ELEMENT INSPECTION RATINGS</u>									
Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State				
					St. 1	St. 2	St. 3	St. 4	St. 5
13	Concrete Deck - Unprotected w/ AC Overlay	2	160	sq.m.	160	0	0	0	0
110	Reinforced Conc Open Girder/Beam	2	153	m.	153	0	0	0	0
210	Reinforced Conc Pier Wall	2	14	m.	14	0	0	0	0
215	Reinforced Conc Abutment	2	14	m.	14	0	0	0	0
220	Reinforced Conc Submerged Pile Cap/Footing	2	1	ea.	1	0	0	0	0
256	Slope Protection	2	2	ea.	2	0	0	0	0
331	Reinforced Conc Bridge Railing	2	51	m.	51	0	0	0	0
361	Scour	2	1	ea.	1	0	0	0	0

WORK RECOMMENDATIONS

RecDate: 11/15/2012 EstCost: \$500 Patch the AC pothole at A 1 and smooth
 Action : Appr. Roadway-Repair StrTarget: 2 YEARS the approaches at both abutments.
 Work By: LOCAL AGENCY DistTarget:
 Status : PROPOSED EA:

<u>CHANNEL X-SECTION</u>			
Side :	Upstream	X-Section Date: 11/15/2012	
Measured From : Top of concrete parapet (left)			
Location	Horiz (m)	Vert (m)	Comments
Abutment 1		3.90	
Pier 2		5.00	
	12.50	5.80	Thalweg
Pier 3		5.10	
Abutment 4		4.00	

Team Leader : Zhigang Zhang
Report Author : Zhigang Zhang
Inspected By : Z. Zhang/R. Tsang

Zhigang Zhang
Zhigang Zhang (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

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***** IDENTIFICATION *****
(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 21C0087
(5) INVENTORY ROUTE (ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 04
(3) COUNTY CODE 055 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- CONN CREEK
(7) FACILITY CARRIED- SKELLENGER LANE
(9) LOCATION- 0.7 MI W SILVERADO TRAIL
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 38 DEG 27 MIN 32 SEC
(17) LONGITUDE 122 DEG 23 MIN 20 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

***** STRUCTURE TYPE AND MATERIAL *****
(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE
TYPE- TEE BEAM CODE 104
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- BITUMINOUS CODE 6
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0
***** AGE AND SERVICE *****
(27) YEAR BUILT 1930
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 306
(30) YEAR OF ADT 2012 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 8 KM
***** GEOMETRIC DATA *****
(48) LENGTH OF MAXIMUM SPAN 8.2 M
(49) STRUCTURE LENGTH 25.6 M
(50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 5.3 M
(52) DECK WIDTH OUT TO OUT 6.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.7 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 25 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 5.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 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 *****
SUFFICIENCY RATING = 78.9
STATUS FUNCTIONALLY OBSOLETE
HEALTH INDEX 100.0
PAINT CONDITION INDEX = N/A
***** CLASSIFICATION ***** CODE
(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL RURAL 06
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(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- NOT ELIGIBLE 5
***** CONDITION ***** CODE
(58) DECK 7
(59) SUPERSTRUCTURE 7
(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- LOAD FACTOR 1
(64) OPERATING RATING- 99.8
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 75.2
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED- A
DESCRIPTION- OPEN, NO RESTRICTION
***** APPRAISAL ***** CODE
(67) STRUCTURAL EVALUATION 7
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 1000
(113) SCOUR CRITICAL BRIDGES U
***** PROPOSED IMPROVEMENTS *****
(75) TYPE OF WORK- SUP/SUB REHAB CODE 35
(76) LENGTH OF STRUCTURE IMPROVEMENT 25.6 M
(94) BRIDGE IMPROVEMENT COST $156,000
(95) ROADWAY IMPROVEMENT COST $31,200
(96) TOTAL PROJECT COST $262,080
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 524
(115) YEAR OF FUTURE ADT 2029
***** INSPECTIONS *****
(90) INSPECTION DATE 11/12 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C) 09/00

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CONN CREEK

0.7 MI W SILVERADO TRAIL

11/15/2012 [AAAJ]

21C0087

124 - PHOTO-Joint-Damage/Deterioration

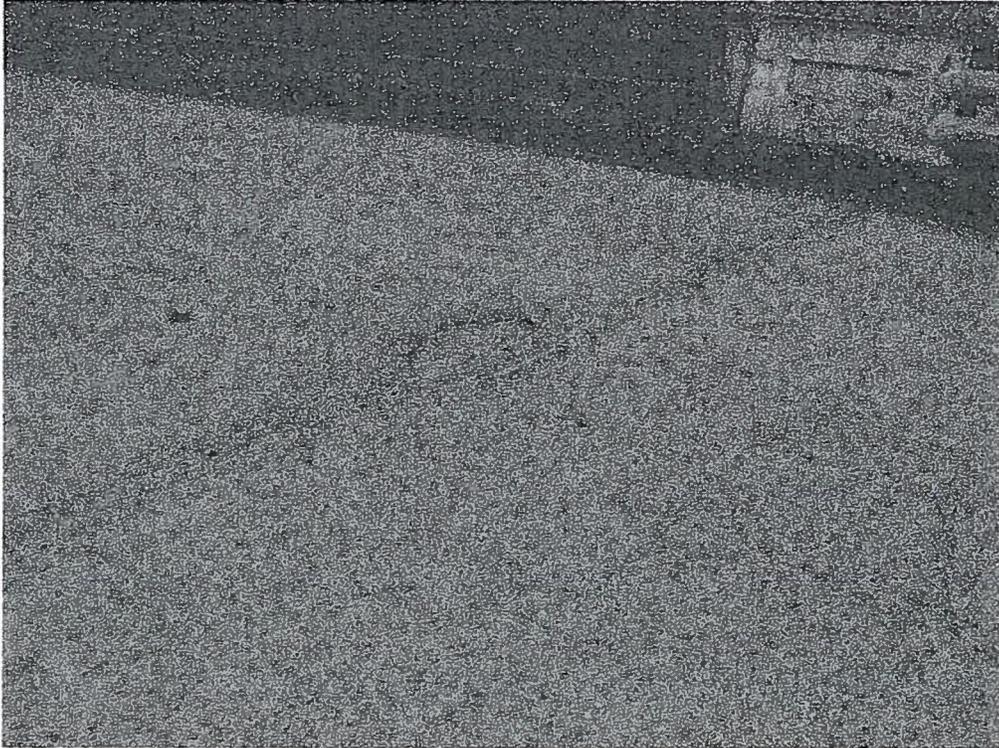


Photo No. 1

Large pothole in AC approach at Abutment 1.

107 - PHOTO-Super-Damage/Deterioration

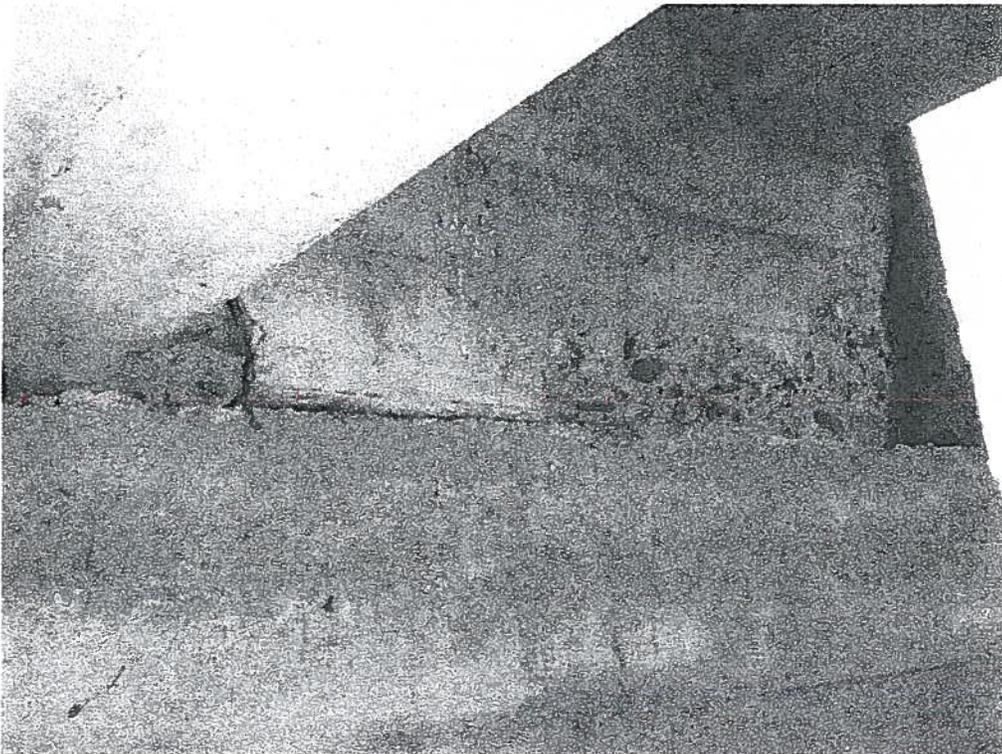


Photo No. 2

Large spalls and incipient spalls in the RC end diaphragm at Abutment 1, left.

CONN CREEK

0.7 MI W SILVERADO TRAIL

11/15/2012 [AAAJ]

21C0087

107 - PHOTO-Super-Damage/Deterioration

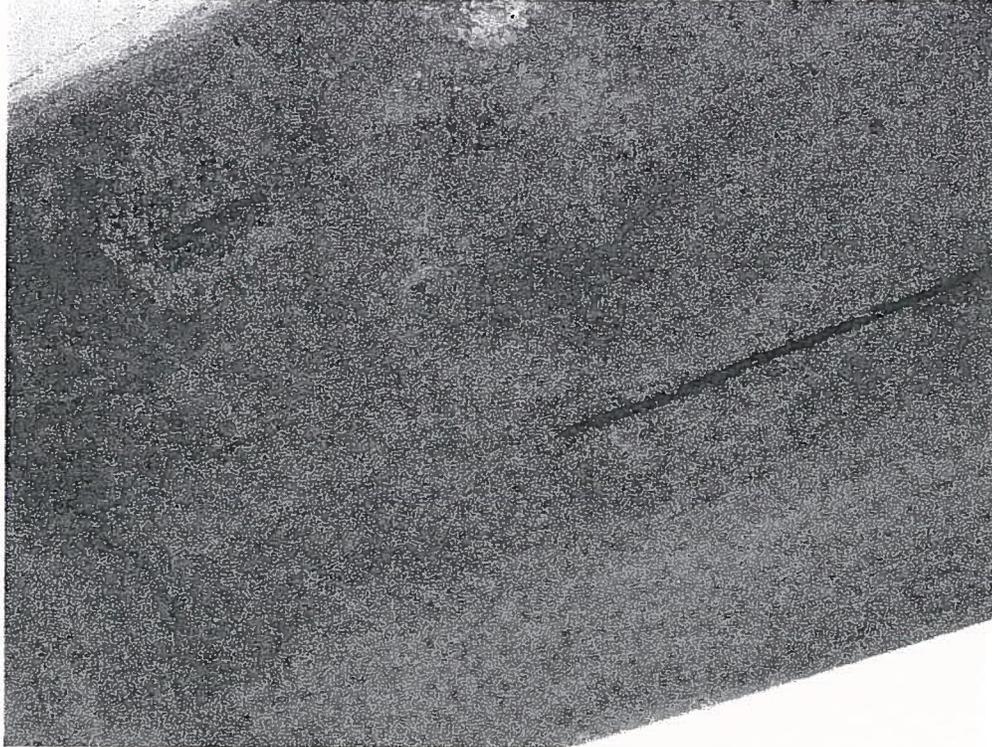


Photo No. 3

Spalls with exposed rebars in the soffit in Bay 1 near Abutment 1.

135 - PHOTO-Routine-Underside



Photo No. 4

Soffit details.



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 21C0087
Facility Carried: SKELLENGER LANE
Location : 0.7 MI W SILVERADO TRAIL
City :
Inspection Date : 11/19/2014

Bridge Inspection Report

Inspection Type
Routine FC Underwater Special Other

STRUCTURE NAME: CONN CREEK

CONSTRUCTION INFORMATION

Year Built : 1930 Skew (degrees): 25
Year Widened: N/A No. of Joints : 0
Length (m) : 25.6 No. of Hinges : 0

Structure Description: 3-spans RC T-beam (4) on RC pier walls and RC seat abutments. All on spread footings.

Span Configuration : 3 @ 8.2 m

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=2.32 =>75.2 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=3.86 =>99.8 metric tons Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.52 m br, 5.3 m, 0.52 m br
Total Width: 6.3 m Net Width: 5.3 m No. of Lanes: 2 Speed: 30 mph
Min. Vertical Clearance: Unimpaired AC Thickness: 1.5 Inches
Rail Code: 1000

Rail Type	Location	Length (ft)	Rail Modifications
Misc. Concrete	Right/Left	168	Aesthetic

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand, gravel and grass.

NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

INSPECTION COMMENTARY

SCOPE AND ACCESS

The channel was dry. All of the structure elements were accessible for a visual inspection.

DECK AND ROADWAY

The AC approaches at both abutments are about 1 inch lower than the bridge deck (see archived 11/2012 photo). There is a 2012 work recommendation proposed.

INSPECTION COMMENTARY

SAFE LOAD CAPACITY

The load rating for this structure is being reviewed by SMI Ratings Branch. An updated Load Rating Summary will be archived when this review is complete. The current rating is based on BDS computer output dated 1/2/1980.

SIGNS

"Narrow Bridge" signs are posted at both approaches.

WATERWAY

This bridge has a NBI 113 coding of U for unknown foundation. The Office of Geotechnical support conducted a field investigation (MEMO dated 7/22/05) and were unable to determine the material under the footings. Since there is no As-builts and Logs of Test Borings available, this bridge is to remain an unknown at the present time.

There is a scour Plan of Action currently filed on record for this bridge dating 10/28/2010 located in BIRIS.

On this date, a few critical elevations were measured in the field and compared to the previous stream section dated 11/15/2012. No significant differences were noted in the critical elevations, therefore, a complete channel cross section was not taken.

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Element Description	Env	Total Qty	Units	Qty in each St.	Condition	State	
						1	2	3	
						St. 1	St. 2	St. 3	
						St. 4			
16		Top Flange-RC	2	160	sq.m	150	10	0	0
	1080	Delamination/Spall/Patched Area	2	10		0	10	0	0
	510	Deck Wearing Surface-Asphalt	2	130	sq.m	130	0	0	0

(16-1080)

There are random spalls with exposed rusted rebars in the underside soffit due to insufficient concrete cover (see archived 11/2012 photo).

(16-510)

There were no significant defects noted.

110		Girder/Beam-RC	2	153	m	145	8	0	0
	1130	Cracking (RC and Other)	2	8		0	8	0	0

(110-1130)

There are hairline to 1/64 inch wide vertical at the midspan of the T-girders spaced larger than 6 inches apart.

210		Pier Wall-RC	2	14	m	14	0	0	0
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(210)

There were no significant defects noted.

215		Abutment-RC	2	14	m	10	2	0	2
	1080	Delamination/Spall/Patched Area	2	2		0	2	0	0
	1130	Cracking (RC and Other)	2	2		0	0	0	2

(215-1080)

There is a large incipient spall and spall in the diaphragm of Abutment 1 between the two left

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env Qty	Total Qty	Units	Qty in each Condition State	State St. 1	State St. 2	State St. 3	State St. 4
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exterior girders in Bay 1. The spall is 12 inches x 7 inches x 2 inches below Girder 1. The incipient spall is 18 inches x 24 inches in the RC diaphragm between the left exterior girders (see archived 11/2012 photo).

(215-1130)

The Abutment 4 right wingwall has a 1 inch wide full height vertical cracks due to the seismic event on 9/2014 (see archived 9/2014 photo).

The Abutment 4 left wingwall also has a 1/2 inch wide full height vertical cracks which has been reported since 2008 inspection (see archived 11/2008 photo).

220			Pile Cap/Footing-RC	2	14	m	12	2	0	0	0
	6000		Scour	2	2		0	2	0	0	0

(220-6000)

Pier 2 footing on Span 2 side is exposed 2 ft vertically and 5 ft horizontally (see attached photo 1).

256			Slope Protection	2	2	ea.	2	0	0	0	0
-----	--	--	------------------	---	---	-----	---	---	---	---	---

(256)

There were no significant defects noted.

331			Railing-RC	2	51	m	51	0	0	0	0
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(331)

There were no significant defects noted.

WORK RECOMMENDATIONS

RecDate: 09/13/2014	EstCost:	Replace the Abutment 4 wingwalls.
Action : Sub-Replace	StrTarget: 2 YEARS	
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	

RecDate: 11/15/2012	EstCost: \$500	Patch the AC pothole at A 1 and smooth
Action : Appr. Roadway-Repair	StrTarget: 2 YEARS	the approaches at both abutments.
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	

Team Leader : Beau Trinh
 Report Author : Beau Trinh
 Inspected By : B.Trinh/T.Le

Beau Trinh (Registered Civil Engineer) 2/25/15 (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

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***** IDENTIFICATION *****
(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 21C0087
(5) INVENTORY ROUTE (ON/UNDER) - ON 140000000
(2) HIGHWAY AGENCY DISTRICT 04
(3) COUNTY CODE 055 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- CONN CREEK
(7) FACILITY CARRIED- SKELLENGER LANE
(9) LOCATION- 0.7 MI W SILVERADO TRAIL
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 38 DEG 27 MIN 32.36 SEC
(17) LONGITUDE 122 DEG 23 MIN 18.68 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

***** STRUCTURE TYPE AND MATERIAL *****
(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- TEE BEAM CODE 204
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 3
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- BITUMINOUS CODE 6
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0
***** AGE AND SERVICE *****
(27) YEAR BUILT 1930
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 306
(30) YEAR OF ADT 2012 (109) TRUCK ADT 10 %
(19) BYPASS, DETOUR LENGTH 8 KM
***** GEOMETRIC DATA *****
(48) LENGTH OF MAXIMUM SPAN 8.2 M
(49) STRUCTURE LENGTH 25.6 M
(50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 5.3 M
(52) DECK WIDTH OUT TO OUT 6.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.7 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 25 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 5.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 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 = 78.9
STATUS FUNCTIONALLY OBSOLETE
HEALTH INDEX 97.6
PAINT CONDITION INDEX = N/A
***** CLASSIFICATION ***** CODE
(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL RURAL 06
(100) DEFENSE HIGHWAY- NOT STRAHNET 0
(101) PARALLEL STRUCTURE- NONE EXISTS N
(102) DIRECTION OF TRAFFIC- 2 WAY 2
(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- NOT ELIGIBLE 5
***** CONDITION ***** CODE
(58) DECK 7
(59) SUPERSTRUCTURE 7
(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- LOAD FACTOR 1
(64) OPERATING RATING- 99.8
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 75.2
(70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
(41) STRUCTURE OPEN, POSTED OR CLOSED-
DESCRIPTION- OPEN, NO RESTRICTION A
***** APPRAISAL ***** CODE
(67) STRUCTURAL EVALUATION 7
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 1000
(113) SCOUR CRITICAL BRIDGES U
***** PROPOSED IMPROVEMENTS *****
(75) TYPE OF WORK- SUP/SUB REHAB CODE 35
(76) LENGTH OF STRUCTURE IMPROVEMENT 25.6 M
(94) BRIDGE IMPROVEMENT COST $156,000
(95) ROADWAY IMPROVEMENT COST $31,200
(96) TOTAL PROJECT COST $262,080
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
(114) FUTURE ADT 524
(115) YEAR OF FUTURE ADT 2034
***** INSPECTIONS *****
(90) INSPECTION DATE 11/14 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- NO MO A)
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C) 09/00

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CONN CREEK

0.7 MI W SILVERADO TRAIL

11/19/2014 [AAAL]

21C0087

116 - PHOTO-Sub-Scour/Evaluation

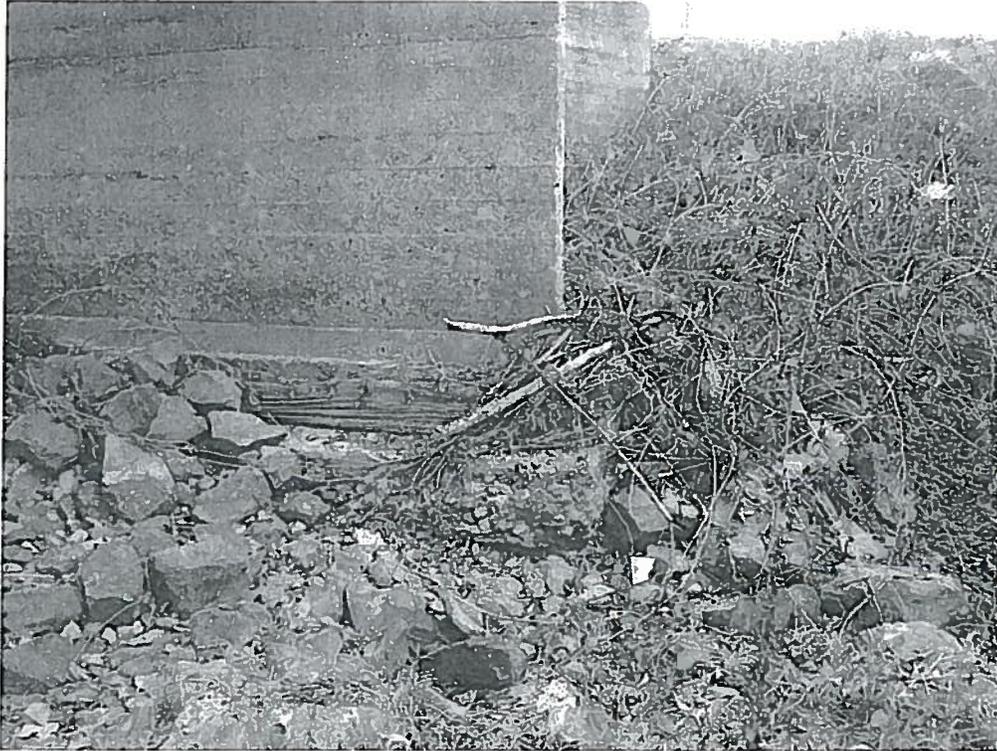


Photo No. 1

Exposed Pier 2 footing at upstream left



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 21C0087
Facility Carried: SKELLENGER LANE
Location : 0.7 MI W SILVERADO TRAIL
City :
Inspection Date : 09/13/2014

Bridge Inspection Report

Inspection Type
Routine FC Underwater Special Other
 Earthquake

STRUCTURE NAME: CONN CREEK

CONSTRUCTION INFORMATION

Year Built : 1930 Skew (degrees): 25
Year Widened: N/A No. of Joints : 0
Length (m) : 25.6 No. of Hinges : 0

Structure Description: RC T-beam (4) on solid pier walls and seat abutments with wings.
All on spread footings.

Span Configuration : 3 @ 8.2 m

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=2.32 =>75.2 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=3.86 =>99.8 metric tons Calculation Method: LOAD FACTOR
Permit Rating : P P P P P
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.52 m br, 5.3 m, 0.52 m br
Total Width: 6.3 m Net Width: 5.3 m No. of Lanes: 2 Speed: 30 mph
Min. Vertical Clearance: Unimpaired
Rail Code: 1000 Rail Description: Solid concrete

DESCRIPTION UNDER STRUCTURE

Channel Description: Sand, gravel and grass.

INSPECTION COMMENTARY

SCOPE AND ACCESS

At approximately 03:20 AM on Sunday, August 24, 2014, a magnitude 6.1 earthquake occurred just outside American Canyon, CA. Post earthquake inspections of all locally owned bridges in Napa County was subsequently requested by the county through California Office of Emergency Services. On September 11, 2014, SM&I was assigned Mission Task T1225 for Caltrans Engineers to inspect Napa County Bridges.

DECK AND ROADWAY

All elements were fully inspected and no significant deficiencies were noted.

SUPERSTRUCTURE

All elements were fully inspected and no significant deficiencies were noted.

SUBSTRUCTURE

The Abutment 4 right wingwall has a 1 inch wide full height vertical cracks as the result of this seismic event. See attached photo 1.

Since 2008, previous inspections have noted that the Abutment 4 left wingwall has a 1/2 inch wide full height vertical cracks; there is a 12 inches x 7 inches x 2 inches spall in the face of Abutment 4 below Girder 1; and there is a 18 inches x 24 inches incipient spall in the RC diaphragm of Abutment 1 between the left exterior girders.

INSPECTION COMMENTARY

RECOMMENDATIONS

Replace the Abutment 4 wingwalls.

The work estimates is \$108,750.

Team Leader : Beau Trinh
Report Author : Beau Trinh
Inspected By : B.Trinh/T.Le

Beau Trinh 9/16/14
Beau Trinh (Registered Civil Engineer) (Date)



CONN CREEK

0.7 MI W SILVERADO TRAIL

09/13/2014 [AAAK]

21C0087

113 - PHOTO-Sub-Damage/Deterioration

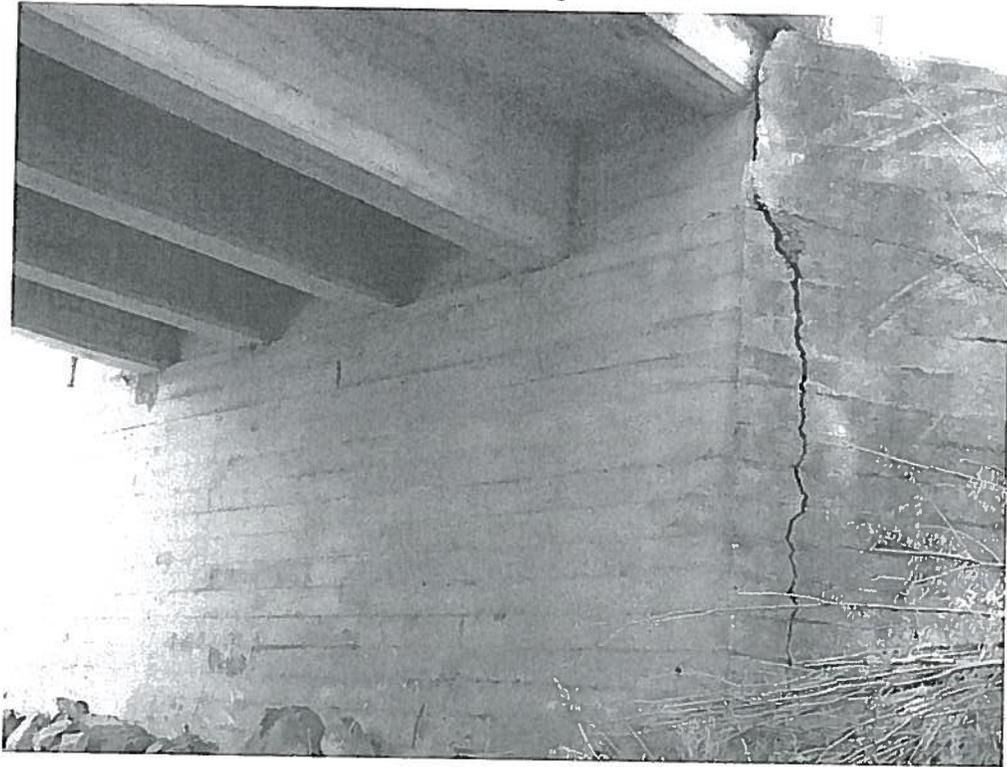


Photo No. 1

Abutment 4 right wingwall vertical crack

