



**DEPARTMENT OF TRANSPORTATION**  
Structure Maintenance & Investigations

**Bridge Number** : 55C0189  
**Facility Carried**: SYCAMORE DRIVE  
**Location** : 50' N/O SILVERADO CYN RD  
**City** :  
**Inspection Date** : 05/08/2019

**Bridge Inspection Report**

**Inspection Type**

Routine	FC	Underwater	Special	Other
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**STRUCTURE NAME:** SILVERADO CANYON CREEK

**CONSTRUCTION INFORMATION**

Year Built : 1957	Skew (degrees): 0
Year Modified: N/A	No. of Joints : 0
Length (m) : 8.5	No. of Hinges : 0

Structure Description: Single span PC/PS concrete cored slab units (3 each) with RC open end seat abutments, all supported upon spread footings.

Span Configuration : (S) 26.00 feet (N).

**SAFE LOAD CAPACITY AND RATINGS**

Design Live Load: MS-18 OR HS-20	
Inventory Rating: RF=1.00 =>32.4 metric tons	Calculation Method: LOAD FACTOR
Operating Rating: RF=1.47 =>47.6 metric tons	Calculation Method: LOAD FACTOR
Permit Rating : PPPPP	
Posting Load : Type 3: <u>Legal</u>	Type 3S2: <u>Legal</u> Type 3-3: <u>Legal</u>

**DESCRIPTION ON STRUCTURE**

Deck X-Section: (W) 0.50 feet br, 11.00 feet, 0.50 feet br (E).

Total Width: 3.7 m	Net Width: 3.4 m	No. of Lanes: 1	Speed: 25 mph
Min. Vertical Clearance: Unimpaired		Overlay Thickness: 2.0 inches	
Rail Code: 0000			

**DESCRIPTION UNDER STRUCTURE**

Channel Description: Natural earth trapezoidal with a cobbled bottom and with grouted rock slopes through the site.

**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**

**HISTORY**

In 07/15/2003, according to residents adjacent to the bridge, the bridge does not have sufficient capacity to handle the volume of the water in the creek during major storms. The County should re-analyze the hydraulic capacity of the creek at the bridge. If there is insufficient water capacity in the creek, FHWA funding might be available for the bridge replacement.

**SCOPE AND ACCESS**

**INSPECTION COMMENTARY**

A complete routine inspection was performed by walking on and around the bridge to inspect all visible elements of the bridge structure. Bridge deck was inspected by walking on shoulder. Soffit and all substructure were inspected by walking underneath the bridge with rain boots due to 6.0 inches deep of water at the time of inspection.

There is no need for a special equipment to inspect this structure except with rain boots if it is in raining season.

**DECK AND ROADWAY**

Asphalt overlay is about 3.0 inches thick.

**DECK AND ROADWAY**

The soffit of the PC/PS slab units has two spalls. The first spall is at (2.0 inches L X 2.0 inches W X 1.0 inch D) approximately 6.0 feet from the northerly abutment. Slab unit #3 (easterly unit); and the second spall is at (8.0 inches L X 3.0 inches W X 2.0 inches D) at west edge of unit #1 (west unit) just underneath steel post #2 (counting from south).

At northeast quadrant, the steel post of the rail is very loose because it is missing two bolts at the bottom.

At the east rail, steel post #2 (from south) is completely damaged and its section is twisted.

Both ends of the westerly metal rail were hit and damaged.

**SUBSTRUCTURE**

There is a sign of settlement about (0.5 inches to 1.0 inch) at the southerly abutment.

There are minor vertical hairline cracks on both of abutment walls.

**SAFE LOAD CAPACITY**

A Load Rating Summary Sheet is achieved on 02/02/2014 for this structure. The current rating has been assigned in accordance with SM & I procedures for this structure. Based on the field conditions and load history, the structure is adequate to carry legal loads.

**ELEMENT INSPECTION RATINGS AND COMMENTARY**

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each St.	Condition	State
							1	2	3 4
39			Slab-PS Conc.	2	32	sq.m	31	1	0 0
	1080		Delamination/Spall/Patched Area	2	1		0	1	0 0
	510		Deck Wearing Surface-Asphalt	2	29	sq.m	29	0	0 0
(39)									
There were no significant defects noted.									
(39-1080)									
The soffit of the PC/PS slab units has two spalls. The first spall is at (2.0 inches L X 2.0 inches W X 1.0 inch D) approximately 6.0 feet from the northerly abutment. Slab unit #3 (easterly unit); and the second spall is at (8.0 inches L X 3.0 inches W X 2.0 inches D) at west edge of unit #1 (west unit) just underneath steel post #2 (counting from south).									
(39-510)									
There were no significant defects noted.									
215			Abutment-RC	2	8	m	6	2	0 0

**ELEMENT INSPECTION RATINGS AND COMMENTARY**

Elem No.	Defect /Prot	Defect Element Description	Env	Total Qty	Units	Qty in each Condition State			
						St. 1	St. 2	St. 3	St. 4
	1130	Cracking (RC and Other)	2	1		0	1	0	0
	4000	Settlement	2	1		0	1	0	0

(215)

There were no significant defects noted.

(215-1130)

There are minor vertical hairline cracks on both of abutment walls.

(215-4000)

There is a sign of settlement about (0.5 inches to 1.0 inch) at the southerly abutment.

256	Slope Protection	2	2	ea.	2	0	0	0
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(256)

There were no significant defects noted.

330	Railing-Metal	2	18	m	14	2	2	0
1020	Connection	2	4		0	2	2	0
7000	Damage	2	2		0	0	2	0

(330)

Rail was hit and connection was loosen.

(330-1020)

At northeast quadrant, the steel post of the rail is very loose because it is missing two bolts at the bottom.

At the east rail, steel post #2 (from south) is completely damaged and its section is twisted.

Both ends of the westerly metal rail were hit and damaged.

(330-7000)

At the east rail, steel post #2 (from south) is completely damaged and its section is twisted.

Both ends of the westerly metal rail were hit and damage.

**WORK RECOMMENDATIONS**

RecDate: 12/14/2013  
 Action : Railing-Repair  
 Work By: LOCAL AGENCY  
 Status : PROPOSED

EstCost:  
 StrTarget: 2 YEARS  
 DistTarget:  
 EA:

Replace the missing two bolts in steel post at the northeast quadrants and repair the completely damaged steel post #2 (from south) at the east rail (previous work-recommendation, no valid).  
 The new work-recommendation is to replace the entire rail system of this structure not by section.

RecDate: 07/15/2003  
 Action : Sub-Misc.  
 Work By: LOCAL AGENCY  
 Status : PROPOSED

EstCost:  
 StrTarget: 6 YEARS  
 DistTarget:  
 EA:

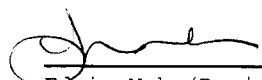
According to residents adjacent to the bridge, the bridge does not have sufficient capacity to handle the volume of the water in the creek during major storms. The County should re-analyze the hydraulic capacity of the creek at the bridge. If there is insufficient water capacity in the creek, FHWA funding might be available for the bridge

WORK RECOMMENDATIONS

replacement.

Team Leader : Edwin Mah  
Report Author : Nelson N. Vo  
Inspected By : NN.Vo/E.Mah



 7/17/2019  
Edwin Mah (Registered Civil Engineer) (Date)

**STRUCTURE INVENTORY AND APPRAISAL REPORT**

## \*\*\*\*\* IDENTIFICATION \*\*\*\*\*

(1) STATE NAME- CALIFORNIA 069  
 (8) STRUCTURE NUMBER 55C0189  
 (5) INVENTORY ROUTE (ON/UNDER)- ON 140000000  
 (2) HIGHWAY AGENCY DISTRICT 12  
 (3) COUNTY CODE 059 (4) PLACE CODE 00000  
 (6) FEATURE INTERSECTED- SILVERADO CANYON CREEK  
 (7) FACILITY CARRIED- SYCAMORE DRIVE  
 (9) LOCATION- 50' N/O SILVERADO CYN RD  
 (11) MILEPOINT/KILOMETERPOINT 0  
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0  
 (13) LRS INVENTORY ROUTE & SUBROUTE  
 (16) LATITUDE 33 DEG 44 MIN 46.67 SEC  
 (17) LONGITUDE 117 DEG 37 MIN 42.99 SEC  
 (98) BORDER BRIDGE STATE CODE % SHARE %  
 (99) BORDER BRIDGE STRUCTURE NUMBER

## \*\*\*\*\* STRUCTURE TYPE AND MATERIAL \*\*\*\*\*

(43) STRUCTURE TYPE MAIN:MATERIAL- PRESTRESS CONC  
 TYPE- SLAB CODE 501  
 (44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA  
 TYPE- OTHER/NA CODE 000  
 (45) NUMBER OF SPANS IN MAIN UNIT 1  
 (46) NUMBER OF APPROACH SPANS 0  
 (107) DECK STRUCTURE TYPE- PRECAST CONC. PA CODE 2  
 (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 1957  
 (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 100  
 (30) YEAR OF ADT 2019 (109) TRUCK ADT 1 %  
 (19) BYPASS, DETOUR LENGTH 199 KM

## \*\*\*\*\* GEOMETRIC DATA \*\*\*\*\*

(48) LENGTH OF MAXIMUM SPAN 7.9 M  
 (49) STRUCTURE LENGTH 8.5 M  
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 3.4 M  
 (52) DECK WIDTH OUT TO OUT 3.7 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 3.4 M  
 (33) BRIDGE MEDIAN- NO MEDIAN 0  
 (34) SKEW 0 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 3.4 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- NOT APPLICABLE CODE N  
 (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 = 60.6  
 PAINT CONDITION INDEX = N/A

## \*\*\*\*\* 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- NOT ELIGIBLE 5

## \*\*\*\*\* CONDITION \*\*\*\*\* CODE

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

## \*\*\*\*\* LOAD RATING AND POSTING \*\*\*\*\* CODE

(31) DESIGN LOAD- MS-18 OR HS-20 5  
 (63) OPERATING RATING METHOD- LOAD FACTOR 1  
 (64) OPERATING RATING- 47.6  
 (65) INVENTORY RATING METHOD- LOAD FACTOR 1  
 (66) INVENTORY RATING- 32.4  
 (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 5  
 (68) DECK GEOMETRY 3  
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N  
 (71) WATER ADEQUACY 6  
 (72) APPROACH ROADWAY ALIGNMENT 6  
 (36) TRAFFIC SAFETY FEATURES 0000  
 (113) SCOUR CRITICAL BRIDGES 7

## \*\*\*\*\* PROPOSED IMPROVEMENTS \*\*\*\*\*

(75) TYPE OF WORK- CODE  
 (76) LENGTH OF STRUCTURE IMPROVEMENT M  
 (94) BRIDGE IMPROVEMENT COST  
 (95) ROADWAY IMPROVEMENT COST  
 (96) TOTAL PROJECT COST  
 (97) YEAR OF IMPROVEMENT COST ESTIMATE  
 (114) FUTURE ADT 210  
 (115) YEAR OF FUTURE ADT 2037

## \*\*\*\*\* INSPECTIONS \*\*\*\*\*

(90) INSPECTION DATE 05/19 (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)