



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0189
Facility Carried: SYCAMORE DRIVE
Location : 50' N/O SILVERADO CYN RD
City :
Inspection Date : 12/14/2013

Bridge Inspection Report

Inspection Type

Routine FC Underwater Special Other

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STRUCTURE NAME: SILVERADO CANYON CREEK

CONSTRUCTION INFORMATION

Year Built : 1957 Skew (degrees): 0
Year Widened: 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) 1 @ 7.9 m (N) c/c

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: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.2 m br, 3.3 m, 0.2 m br (E)
Total Width: 3.7 m Net Width: 3.4 m No. of Lanes: 1 Speed: 25 mph
Min. Vertical Clearance: Unimpaired

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
MBBR	Right/Left	52	

DESCRIPTION UNDER STRUCTURE

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

INSPECTION COMMENTARY

SCOPE AND ACCESS

The water in the channel is 2 ft deep, so all substructure elements were visually inspected.

REVISIONS

The rail code was modified from 1000 to 0000, because of the severe damage at steel post #2 in the east rail.

Element type #330 was replaced by element type #337 with the same quantity.

Element 337: The quantities were modified as follows: from [St. 1 = 16] to [St. 1 = 8, St. 2 = 2, St. 3 = 6].

MISCELLANEOUS

INSPECTION COMMENTARY

Photo underside of this structure was taken and is included with this report.

A new stream section was performed at this time and is included in this report. Compared to the previous stream section, taken on 07/15/2003, there are no significant changes to the last measurements.

DECK AND ROADWAY

There were signs and stains of debris at the rail, it maybe caused by water overtopping the bridge deck.

At NE quadrant, the steel post of the rail is very loose because it is missing 2 bolts at the bottom.

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

SUPERSTRUCTURE

The soffit of the PC/PS slab units exhibits:

* a small shallow spall 2" X 2" X 1/2" at 6 ft from the north abutment at slab unit #3 (easterly unit).

* a spall 8" X 3" X 2" at west edge of unit #1 (west unit) just under steel post #2 (counting from south).

SUBSTRUCTURE

No significant defects were found during this inspection.

SAFE LOAD CAPACITY

This rating summary is based on load ratings calculations performed by SMI Ratings Section on 11/20/1979. This summary does not include a check of that analysis. All other rating factors are assumed to be equal to or greater than the rating factor given on the BDS frame rate output sheet.

The 11/20/1979 rating calculated the Operating RF via LFD methods and assumed the Inventory RF=1. SMI procedures require that this Rating Summary record the rating type and method for both the Inventory and Operating RF's to reflect a calculated LFD rating.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total		Qty in each Condition State				
			Qty	Units	St. 1	St. 2	St. 3	St. 4	St. 5
61	PS Conc Slab - Unprotected w/ AC Overlay	2	30	sq.m.	30	0	0	0	0
215	Reinforced Conc Abutment	2	8	m.	8	0	0	0	0
256	Slope Protection	2	2	ea.	2	0	0		
330	Metal Bridge Railing - coated or uncoated	2	16	m.	8	2	6	0	
361	Scour	3	1	ea.	0	1	0	0	0

WORK RECOMMENDATIONS

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 NE quadrants.
 Replace the completely damaged steel post #2 (from south) at the east rail.

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 replacement.

RecDate: 01/14/2003
 Action : Sub-Scour Mitigate
 Work By: LOCAL AGENCY
 Status : PROPOSED

EstCost:
 StrTarget: 2 YEARS
 DistTarget:
 EA:

Backfill the erosion beneath both of the grouted rip rap slope protections at the abutments.

CHANNEL X-SECTION

Side : Upstream

X-Section Date: 12/14/2013

Measured From : Top of concrete deck (East)

Location	Horiz (m)	Vert (m)	Comments
Abutment #1	0.00	2.10	Face of S. abutment, top grouted rip rap
	2.50	3.00	South edge of water
	2.90	3.30	Thalweg
	3.85	3.00	North edge of water
Abutment #2	7.80	2.00	Face of N. abutment, top grouted rip rap

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A. Shenouda/KD. Henderson

Ashraf Shenouda
 Ashraf Shenouda (Registered Civil Engineer) (Date)

2/10/14



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 46.75 SEC
 (17) LONGITUDE 117 DEG 37 MIN 42.95 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 2009 (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 *****

SUFFICIENCY RATING = 71.8
 STATUS FUNCTIONALLY OBSOLETE
 HEALTH INDEX 96.7
 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 6
 (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 6
 (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- MISC STRUCTURAL WORK CODE 38
 (76) LENGTH OF STRUCTURE IMPROVEMENT 8.5 M
 (94) BRIDGE IMPROVEMENT COST \$31,000
 (95) ROADWAY IMPROVEMENT COST \$6,200
 (96) TOTAL PROJECT COST \$52,080
 (97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
 (114) FUTURE ADT 206
 (115) YEAR OF FUTURE ADT 2029

***** INSPECTIONS *****

(90) INSPECTION DATE 12/13 (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)