



DEPARTMENT OF TRANSPORTATION  
Structure Maintenance & Investigations

Bridge Number : 55C0177  
Facility Carried: SILVERADO CANYN RD  
Location : 4.4 MI. E/O SANTIAGO ROA  
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 : 1947 Skew (degrees): 45  
Year Widened: N/A No. of Joints : 0  
Length (m) : 12.8 No. of Hinges : 0

Structure Description: Simply supported single span steel stringers (4 each) with RC open end seat abutments, all supported upon spread footings.

Span Configuration : (W) 1 @ 12.5 m (E) c/c

## SAFE LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15  
Inventory Rating: 25.4 metric tons Calculation Method: NO RATING ANALYSIS  
Operating Rating: 40.8 metric tons Calculation Method: NO RATING ANALYSIS  
Permit Rating : PGGGG  
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

## DESCRIPTION ON STRUCTURE

Deck X-Section: (S) 0.5 m br, 7.2 m, 0.5 m br (N)  
Total Width: 8.2 m Net Width: 7.2 m No. of Lanes: 2 Speed: 25 mph  
Min. Vertical Clearance: Unimpaired

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Timber	Left	42	
Rail			
Miscellaneous	Right	42	

## DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal with a cobbled bottom.

## INSPECTION COMMENTARY

### SCOPE AND ACCESS

The water in the channel is 8" deep, so all substructure elements were visually inspected.

### REVISIONS

Smart flag 359 (Soffit) was added (State 2).

### MISCELLANEOUS

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.

INSPECTION COMMENTARY

As a consequence of these revisions, the calculated Sufficiency Rating is 45.0 Also the bridge is "Functionally Obsolete".

DECK AND ROADWAY

There are two wooden posts missing in the southerly bridge railing.  
There is one wooden post broken at the west side of the northerly bridge rail.

The concrete deck exhibits light scaling about 70% of the deck area.  
There are unsealed transverse cracks in the concrete deck, 1 mm wide and 12" spaced apart. Also there are 2 spalls 12" X 8" X 2" in the eastbound direction at 3 ft from the east end.

The soffit exhibits:

- \* two transverse cracks +/- 2 ft long with light white efflorescence in bay 2 at the east end.
- \* two transverse cracks +/- 3 ft long with light white efflorescence in bay 3 at the west end.

SUPERSTRUCTURE

There are debris and tree trunk on the steel girders.  
The steel girders exhibit surface rust.  
Steel girder #1 (north girder) exhibit 3" deformation at the bottom flange at 10 ft from the west abutment.

SUBSTRUCTURE

No significant defects were visually seen during this inspection.

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.

ELEMENT INSPECTION RATINGS									
Elem		Total		Qty in each Condition State					
No.	Element Description	Env	Qty	Units	St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	90	sq.m.	0	90	0	0	0
107	Painted Steel Open Girder/Beam	2	52	m.	0	0	51	1	0
215	Reinforced Conc Abutment	2	24	m.	24	0	0	0	0
332	Timber Bridge Railing	2	13	m.	13	0	0	0	0
333	Other Bridge Railing	2	13	m.	7	6	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

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RecDate: 07/12/2011	EstCost:	Repair the deck spall and seal the cracks
Action : Deck-Methacrylate	StrTarget: 2 YEARS	with methacrylate.
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	
RecDate: 07/12/2011	EstCost:	Remove the debris and free trunk from the
Action : Remove Vegetation	StrTarget: 1 YEAR	girders
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	
RecDate: 07/12/2011	EstCost:	Clean and paint the steel girders
Action : Paint-Full Prep	StrTarget: 4 YEARS	
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	
RecDate: 02/09/2005	EstCost:	Replace the two wooden posts missing in
Action : Railing-Repair	StrTarget: 2 YEARS	the southerly bridge railing.
Work By: LOCAL AGENCY	DistTarget:	
Status : PROPOSED	EA:	

CHANNEL X-SECTION

Side : Upstream

X-Section Date: 12/14/2013

Measured From : Top of rail (south) H=0.9 m

Location	Horiz (m)	Vert (m)	Comments
Abutment 1	0.00	2.73	Face of the west abutment
	2.70	3.30	west edge of water
	5.65	3.50	Thalweg
	8.55	3.50	East edge of water
Abutment 2	12.00	2.90	Face of the east abutment

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A. Shenouda/KD. Henderson

*Ashraf Shenouda* 2/10/14  
 Ashraf Shenouda (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069  
 (8) STRUCTURE NUMBER 55C0177  
 (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- SILVERADO CANYN RD  
 (9) LOCATION- 4.4 MI. E/O SANTIAGO ROAD  
 (11) MILEPOINT/KILOMETERPOINT 0  
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0  
 (13) LRS INVENTORY ROUTE & SUBROUTE  
 (16) LATITUDE 33 DEG 44 MIN 48.9 SEC  
 (17) LONGITUDE 117 DEG 36 MIN 43.3 SEC  
 (98) BORDER BRIDGE STATE CODE % SHARE %  
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- STEEL  
 TYPE- STRINGER/MULTI-BEAM OR GDR CODE 302  
 (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- 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 1947  
 (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 2000  
 (30) YEAR OF ADT 2009 (109) TRUCK ADT 1 %  
 (19) BYPASS, DETOUR LENGTH 199 KM

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

(48) LENGTH OF MAXIMUM SPAN 12.5 M  
 (49) STRUCTURE LENGTH 12.8 M  
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M  
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 7.2 M  
 (52) DECK WIDTH OUT TO OUT 8.2 M  
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.4 M  
 (33) BRIDGE MEDIAN- NO MEDIAN 0  
 (34) SKEW 45 DEG (35) STRUCTURE FLARED NO  
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M  
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 7.2 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 = 45.0  
 STATUS STRUCTURALLY DEFICIENT  
 HEALTH INDEX 78.8  
 PAINT CONDITION INDEX = 49.5

## \*\*\*\*\* CLASSIFICATION \*\*\*\*\* CODE

(112) NBIS BRIDGE LENGTH- YES Y  
 (104) HIGHWAY SYSTEM- NOT ON NHS 0  
 (26) FUNCTIONAL CLASS- COLLECTOR URBAN 17  
 (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 4  
 (59) SUPERSTRUCTURE 5  
 (60) SUBSTRUCTURE 7  
 (61) CHANNEL & CHANNEL PROTECTION 8  
 (62) CULVERTS N

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

(31) DESIGN LOAD- M-13.5 OR H-15 2  
 (63) OPERATING RATING METHOD- NO RATING ANALYSIS 5  
 (64) OPERATING RATING- 40.8  
 (65) INVENTORY RATING METHOD- NO RATING ANALYSIS 5  
 (66) INVENTORY RATING- 25.4  
 (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 5  
 (72) APPROACH ROADWAY ALIGNMENT 8  
 (36) TRAFFIC SAFETY FEATURES 0000  
 (113) SCOUR CRITICAL BRIDGES 8

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

(75) TYPE OF WORK- REPLACE FOR DEFICIENCY CODE 31  
 (76) LENGTH OF STRUCTURE IMPROVEMENT 12.8 M  
 (94) BRIDGE IMPROVEMENT COST \$241,500  
 (95) ROADWAY IMPROVEMENT COST \$48,300  
 (96) TOTAL PROJECT COST \$405,720  
 (97) YEAR OF IMPROVEMENT COST ESTIMATE 2010  
 (114) FUTURE ADT 4121  
 (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)