DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0174
Facility Carried: SILVERADO CNYN RD.
Location : 1.6 MI E/O SANTIAGO ROAD
City :
Inspection Date : 12/14/2013

Inspection Type

Routine	FC	Underwater	Special	Other
X				

Bridge Inspection Report

STRUCTURE NAME: SILVERADO CANYON CREEK

CONSTRUCTION INFORMATION

Year Built : 1935
Year Widened: N/A
Length (m) : 17.7

Skew (degrees): 36
No. of Joints : 0
No. of Hinges : 0

Structure Description: CIP/RC deck on riveted steel floor beams on simply supported riveted steel through girders (2) on RC pedestals on RC closed end backfilled cantilever abutments on spread footings.

Span Configuration : (W) 1 @ 15.5 m (E) c/c

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15
Inventory Rating: RF=0.75 =>24.3 metric tons Calculation Method: LOAD FACTOR
Operating Rating: RF=1.15 =>37.3 metric tons Calculation Method: LOAD FACTOR
Permit Rating : GGGGG
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (S) 0.7 m cu, 7.0 m, 0.7 m cu, 1.2 m sw (N)
Total Width: 9.7 m Net Width: 7.0 m No. of Lanes: 2 Speed: 45 mph
Min. Vertical Clearance: Unimpaired

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Misc. Steel	Right/Left		

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal with a cobbled bottom.

INSPECTION COMMENTARY

SCOPE AND ACCESS

The channel was dry, so all substructure elements were visually inspected. Pedestrian access is from NE corner.

REVISIONS

Element #12 (Bare Concrete Deck): the entire quantity was moved to state 2, because of the scaling and spalling.

Element #311 (Movable Bearings): one each is moved to state 2.

MISCELLANEOUS

Photo underside of this structure was taken and is included with this report.
It is steel through girders so item 36a is 0 but the element is included under girder.

INSPECTION COMMENTARY

DECK AND ROADWAY

There three spalls 12" X 3" X 2" at the top of east back wall.

The concrete deck exhibits transverse cracks 0.5 mm wide, 3 ft long and 3 ft spaced apart, also the deck exhibits almost 70% light scaling.
The concrete deck exhibits a spall 8" X 3" X 2" eastbound lane.

SUPERSTRUCTURE

The soffit exhibits several longitudinal and transverse cracks 0.5 mm wide and 3 ft long without any efflorescence at most bays. Also there is a longitudinal crack in bays 1, 2, 3 and 4 at 10 ft from the north end.

Freckled rust has formed on the above the deck portions of the through girders.

South bearing is rusted above the east abutment.

SUBSTRUCTURE

There are three vertical and diagonal cracks 1.5 mm wide at west abutment.

North-east wingwall has a spall 15" X 2" X 2" with rebar exposed and rusted.

FRACTURE CRITICAL INVESTIGATION

A fracture critical inspection was performed on 07/25/2012 by Jeff Yang from the Office of Specialty Investigations and Bridge Management. The structure was accessed from the ground below. The investigation was conducted in accordance with the Fracture Critical Member Inspection Plan, dated 05/21/2008.

A hands-on visual inspection was performed on the tension stress areas of the left and right girders. No fractures or cracks were found.

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 computer output, dated 05/01/1986.

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	110	sq.m.	110	0	0	0	0
107	Painted Steel Open Girder/Beam	2	35	m.	0	0	35	0	0
152	Painted Steel Floor Beam	2	68	m.	68	0	0	0	0
215	Reinforced Conc Abutment	2	24	m.	24	0	0	0	0
311	Moveable Bearing (roller, sliding, etc.)	2	3	ea.	2	1	0		
313	Fixed Bearing	2	3	ea.	3	0	0	0	0

WORK RECOMMENDATIONS

RecDate: 02/14/2005	EstCost:		Spot blast and paint the freckled rust
Action : Paint-Spot Prep/Pain	StrTarget:	6 YEARS	portions of the through girders above the
Work By: LOCAL AGENCY	DistTarget:		deck.
Status : PROPOSED	EA:		

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A.Shenouda/KD.Henderson

2/10/14

Ashraf Shenouda (Registered Civil Engineer) (Date)

STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 55C0174
(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 CNYN RD.
(9) LOCATION- 1.6 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 44.49 SEC
(17) LONGITUDE 117 DEG 39 MIN 00.63 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- STEEL
TYPE- GIRDER & FLOORBEAM SYSTEM CODE 303
(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 1935
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
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 17.7 M
(49) STRUCTURE LENGTH 17.7 M
(50) CURB OR SIDEWALK: LEFT 0.7 M RIGHT 1.2 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 7.0 M
(52) DECK WIDTH OUT TO OUT 9.7 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 7.0 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 36 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 7.0 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

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SUFFICIENCY RATING = 50.5
STATUS FUNCTIONALLY OBSOLETE
HEALTH INDEX 93.2
PAINT CONDITION INDEX = 89.6

********** 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- 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 6
(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- LOAD FACTOR 1
(64) OPERATING RATING- 37.3
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 24.3
(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 9
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 8

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

(75) TYPE OF WORK- MISC STRUCTURAL WORK CODE 38
(76) LENGTH OF STRUCTURE IMPROVEMENT 17.7 M
(94) BRIDGE IMPROVEMENT COST $171,000
(95) ROADWAY IMPROVEMENT COST $34,200
(96) TOTAL PROJECT COST $287,280
(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- YES 24 MO A) 07/12
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C)