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 : 12/20/2015

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

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 Overlay Thickness: 0.0 Inches

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.

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, so all visible substructure elements were visually inspected.
Pedestrian access is from northeast quadrant.

INSPECTION COMMENTARY

DECK AND ROADWAY

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

SUBSTRUCTURE

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

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.

FRACTURE CRITICAL INVESTIGATION

Here is the summary of the fracture critical member inspection that was performed on 05/28/2014 by Carlos Villalobos and Anousheh Rouzbehani from the Office of Specialty Investigations and Bridge Management.

The structure was accessed with a ladder from the ground below. Lane closures and traffic control were not needed.

The investigation was conducted in accordance with the Fracture Critical Member Inspection Plan, dated 05/21/2008.

SUPERSTRUCTURE

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

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
12			Deck-RC	2	148	sq.m	72	76	0	0
	1080		Delamination/Spall/Patched Area	2	1		0	1	0	0
	1130		Cracking (RC and Other)	2	15		0	15	0	0
	1190		Abrasion (PS Conc./RC)	2	60		0	60	0	0

(12-1080)
The concrete deck exhibits a spall 8" X 3" X 2" at the easterly end of the eastbound lane.

(12-1130)
The concrete deck exhibits transverse cracks, up to 1.0 mm wide, 3 ft long and 3 ft spaced apart.

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.

(12-1190)
The deck exhibits almost 40% light abrasion.

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
107			Girder/Beam-Steel	2	35	m	0	35	0	0
	1000		Corrosion	2	35		0	35	0	0
	7000		Damage	2	2		0	2	0	0
	515		Steel Coating-Paint	2	168	sq.m	128	20	10	10
		3440	Effectiveness (Steel PC)	2	40		0	20	10	10

(107-1000)
Freckled rust has formed on the above the deck portions of the through girders.

(107-7000)
Both through girders were hit and deformed especially at the east end.

(107-515-3440)
The paint system was failed, where the top portion of the steel through girder is rusted.

152			Floor Beam-Steel	2	68	m	66	2	0	0
	1000		Corrosion	2	2		0	2	0	0
	515		Steel Coating-Paint	2	164	sq.m	149	0	15	0
		3440	Effectiveness (Steel PC)	2	15		0	0	15	0

(152-1000)
The top flange of floor beam #2 (first full width floor beam) is rusted at the northerly 4 feet.

(152-515-3440)
The paint is failed at the top flange of floor beam #2 (first full width floor beam) of the northerly 4 feet.

215			Abutment-RC	2	24	m	23	1	0	0
	1080		Delamination/Spall/Patched Area	2	1		0	1	0	0

(215-1080)
There are three vertical and diagonal cracks, 1.5 mm wide at west abutment.

311			Bearing-Moveable	2	3	each	2	1	0	0
	1000		Corrosion	2	1		0	1	0	0

(311-1000)
South bearing is rusted above the east abutment.

313			Bearing-Fixed	2	3	each	3	0	0	0

(313)
There were no significant defects noted.

WORK RECOMMENDATIONS

RecDate: 02/14/2005
Action : Paint-Spot Prep/Pain
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 6 YEARS
DistTarget:
EA:

Spot blast and paint the freckled rust portions of the through girders above the deck.

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A.Shenouda/KD.Henderson

3/11/2016

Ashraf Shenouda (Registered Civil Engineer) (Date)

REGISTERED PROFESSIONAL ENGINEER
Ashraf
Shenouda
No. 64332
06/30/2017
CIVIL
STATE OF CALIFORNIA

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 44.33 SEC
(17) LONGITUDE 117 DEG 39 MIN 00.74 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
HEALTH INDEX 87.1
PAINT CONDITION INDEX = 90.0

********** 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 7
(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 4204
(115) YEAR OF FUTURE ADT 2035

********** INSPECTIONS **********

(90) INSPECTION DATE 12/15 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- YES 24 MO A) 05/14
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C)