DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0038
Facility Carried: SANTIAGO CNYN ROAD
Location : 0.2 MI W/O SILVERADO CYN
City :
Inspection Date : 08/13/2015
Inspection Type
Routine FC Underwater Special Other
X

# Bridge Inspection Report

**STRUCTURE NAME: SANTIAGO CREEK**

## CONSTRUCTION INFORMATION

Year Built : 1963
Year Widened: N/A
Length (m) : 69.5
Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Continuous four span CIP/RC T-beam (5 each) with RC single column bents and RC open end seat abutments, all supported upon spread footings.

Span Configuration : (W) 14.9 m, 2 @ 19.2 m, 14.9 m (E) c/c

## SAFE LOAD CAPACITY AND RATINGS

Design Live Load: MS-18 OR HS-20
Inventory Rating: 40.8 metric tons Calculation Method: LOAD FACTOR
Operating Rating: 68.9 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: (S) 0.5 m br, 8.4 m, 0.5 m br (N)
Total Width: 9.3 m Net Width: 8.5 m No. of Lanes: 2 Speed: 55 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 Inches

Rail Code: 0111

| Rail Type | Location | Length (ft) | Rail Modifications |
|---|---|---|---|
| Type 8 | Right/Left | 492 | |

## 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 at the time of the inspection, and all substructure elements were visually inspected.

SAFE LOAD CAPACITY
The load rating for this structure is being reviewed by SMI Ratings Branch. An updated

## INSPECTION COMMENTARY

Load Rating Summary will be archived when this review is complete.

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 16 | | | Top Flange-RC | 2 | 646 | sq.m | 636 | 10 | 0 | 0 |
| | 1120 | | Efflorescence/Rust Staining | 2 | 10 | | 0 | 10 | 0 | 0 |
| | 521 | | Concrete Coat.(Meth/Paint/Seal) | 2 | 584 | sq.m | 584 | 0 | 0 | 0 |
| (16) There were no significant defects noted. | | | | | | | | | | |
| (16-1120) There are few short 2 ft long transverse cracks 0.5 mm wide with light white efflorescence at the soffit in all spans. | | | | | | | | | | |
| (16-521) There were no significant defects noted. | | | | | | | | | | |
| 110 | | | Girder/Beam-RC | 2 | 348 | m | 347 | 1 | 0 | 0 |
| | 1080 | | Delamination/Spall/Patched Area | 2 | 1 | | 0 | 1 | 0 | 0 |
| (110-1080) There is a spall 6" x 3" x 1" in the north exterior girder in sapn #3 | | | | | | | | | | |
| 215 | | | Abutment-RC | 2 | 28 | m | 28 | 0 | 0 | 0 |
| (215) There were no significant defects noted. | | | | | | | | | | |
| 234 | | | Pier Cap-RC | 2 | 27 | m | 27 | 0 | 0 | 0 |
| (234) There were no significant defects noted. | | | | | | | | | | |
| 254 | | | Column Shell-Full Ht | 2 | 3 | ea. | 3 | 0 | 0 | 0 |
| | 515 | | Steel Coating-Paint | 2 | 105 | sq.m | 105 | 0 | 0 | 0 |
| (254) The footings top are exposed 2' x 10' at bent #2 and #3. According to the hydraulic report it is within the limits | | | | | | | | | | |
| (254-515) There were no significant defects noted. | | | | | | | | | | |
| 256 | | | Slope Protection | 2 | 2 | ea. | 2 | 0 | 0 | 0 |
| (256) There were no significant defects noted. | | | | | | | | | | |
| 301 | | | Joint-Pourable Seal | 2 | 20 | m | 20 | 0 | 0 | 0 |
| (301) There were no significant defects noted. | | | | | | | | | | |
| 311 | | | Bearing-Moveable | 2 | 10 | each | 10 | 0 | 0 | 0 |
| | 515 | | Steel Coating-Paint | 2 | 10 | sq.m | 10 | 0 | 0 | 0 |
| (311) There were no significant defects noted. | | | | | | | | | | |
| (311-515) | | | | | | | | | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| There were no significant defects noted. | | | | | | | | | | |
| 330 | | | **Railing-Metal** | 2 | 139 | m | 139 | 0 | 0 | 0 |
| (330) | | | | | | | | | | |
| There were no significant defects noted. | | | | | | | | | | |

**WORK RECOMMENDATIONS** - NONE

Team Leader : Mikhael T. Zaarour

Report Author : Mikhael T. Zaarour

Inspected By : MT.Zaarour/KD.Henderson

9/23/15

Mikhael T. Zaarour (Registered Civil Engineer) (Date)

# STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **55C0038**
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 12
(3) COUNTY CODE 059 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- SANTIAGO CREEK
(7) FACILITY CARRIED- SANTIAGO CNYN ROAD
(9) LOCATION- 0.2 MI W/O SILVERADO CYN
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 33 DEG 44 MIN 51.58 SEC
(17) LONGITUDE 117 DEG 40 MIN 33.96 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE CONT
TYPE- TEE BEAM CODE 204
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 4
(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 1963
(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 7000
(30) YEAR OF ADT 2012 (109) TRUCK ADT 5 %
(19) BYPASS, DETOUR LENGTH 22 KM

********** GEOMETRIC DATA **********

(48) LENGTH OF MAXIMUM SPAN 19.2 M
(49) STRUCTURE LENGTH 69.5 M
(50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 8.5 M
(52) DECK WIDTH OUT TO OUT 9.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 12.2 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 8.5 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 = 74.0
STATUS
HEALTH INDEX 99.7
PAINT CONDITION INDEX = 100.0

********** CLASSIFICATION ********** CODE

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- ROUTE ON NHS 1
(26) FUNCTIONAL CLASS- OTHER PRIN ART URBAN 14
(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 8
(59) SUPERSTRUCTURE 8
(60) SUBSTRUCTURE 8
(61) CHANNEL & CHANNEL PROTECTION 4
(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- 68.9
(65) INVENTORY RATING METHOD- LOAD FACTOR 1
(66) INVENTORY RATING- 40.8
(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 8
(68) DECK GEOMETRY 4
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 9
(72) APPROACH ROADWAY ALIGNMENT 6
(36) TRAFFIC SAFETY FEATURES 0111
(113) SCOUR CRITICAL BRIDGES 5

********** 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 9619
(115) YEAR OF FUTURE ADT 2035

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

(90) INSPECTION DATE 08/15 (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)