



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 : 07/07/2013

Bridge Inspection Report

Inspection Type

Routine FC Underwater Special Other

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STRUCTURE NAME: SANTIAGO CREEK

CONSTRUCTION INFORMATION

Year Built : 1963

Skew (degrees): 0

Year Widened: N/A

No. of Joints : 2

Length (m) : 69.5

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 0.4 m br, 10 m, 0.4 m br

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 Cle 10.8m : Unimpaired 10 m

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.

INSPECTION COMMENTARY

SCOPE AND ACCESS

The channel was dry at the time of the inspection, and all substructure elements were visually inspected.

REVISIONS

Rail type was changed from Type 10 to Type 8 modified.

The rail code was changed from 1111 to 0111.

ELI #234 (Concrete bent cap) was added to ELI table 27 m in state 1.

MISCELLANEOUS

Ten-year bridge roadway, elevation and underside photos were taken during this inspection.

DECK AND ROADWAY

INSPECTION COMMENTARY

The bridge deck cracks were sealed with methacrylate.

SUPERSTRUCTURE

There are few short 2 ft long transverse cracks < 0.02 inch wide with light white efflorescence at the soffit in all spans.
South overhang exhibits few transverse cracks with light white efflorescence at bent #2.

SUBSTRUCTURE

The concrete columns were retrofited by full steel jacket, no significant defects were found 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.

<u>ELEMENT INSPECTION RATINGS</u>									
Elem	Element Description	Env	Total		Qty in each Condition State				
No.			Qty	Units	St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	620	sq.m.	620	0	0	0	0
110	Reinforced Conc Open Girder/Beam	2	348	m.	348	0	0	0	0
215	Reinforced Conc Abutment	2	20	m.	20	0	0	0	0
234	Reinforced Conc Cap	2	27	m.	27	0	0	0	0
254	Steel Seismic Column Shell (Full Height)	2	3	ea.	3	0	0	0	0
256	Slope Protection	2	2	ea.	2	0	0	0	0
301	Pourable Joint Seal	2	20	m.	20	0	0		
311	Moveable Bearing (roller, sliding, etc.)	2	10	ea.	10	0	0	0	0
330	Metal Bridge Railing - coated or uncoated	2	150	m.	150	0	0	0	0
358	Deck Cracking	2	1	ea.	1	0	0	0	
359	Soffit of Concrete Deck or Slab	2	1	ea.	0	1	0	0	0

WORK RECOMMENDATIONS - NONE

Team Leader : Ashraf Shenouda
 Report Author : Ashraf Shenouda
 Inspected By : A. Shenouda/NN.Vo

Ashraf Shenouda (Registered Civil Engineer) (Date)

10-7-2013



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 000000L03000
 (16) LATITUDE 33 DEG 44 MIN 51.79 SEC
 (17) LONGITUDE 117 DEG 40 MIN 32.77 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 2002 (109) TRUCK ADT 5 %
 (19) BYPASS, DETOUR LENGTH 40 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

 SUFFICIENCY RATING = 68.0

STATUS

HEALTH INDEX 100.0

PAINT CONDITION INDEX = N/A

***** 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 6
 (59) SUPERSTRUCTURE 7
 (60) SUBSTRUCTURE 7
 (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 7
 (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 14330
 (115) YEAR OF FUTURE ADT 2029

***** INSPECTIONS *****

(90) INSPECTION DATE 07/13 (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)