



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0175
Facility Carried: SILVERADO CANYN RD
Location : 2.2 MI. E/O SANTIAGO ROA
City :
Inspection Date : 07/11/2011

Bridge Inspection Report

Inspection Type

| Routine | FC | Underwater | Special | Other |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

STRUCTURE NAME: LADD CANYON

CONSTRUCTION INFORMATION

| | |
|-------------------|--------------------|
| Year Built : 1947 | Skew (degrees): 60 |
| Year Widened: N/A | No. of Joints : 0 |
| Length (m) : 15.7 | No. of Hinges : 0 |

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

Span Configuration : (W) 1 @ 14.9 m (E) c/c

LOAD CAPACITY AND RATINGS

| | |
|--------------------------------------|---|
| Design Live Load: M-13.5 OR H-15 | |
| Inventory Rating: 20.8 metric tonnes | Calculation Method: LOAD FACTOR |
| Operating Rating: 33.5 metric tonnes | Calculation Method: LOAD FACTOR |
| Permit Rating : 00000 | |
| Posting Load : Type 3: <u>Legal</u> | Type 3S2: <u>Legal</u> Type 3-3: <u>Legal</u> |

DESCRIPTION ON STRUCTURE

| | | |
|--|------------------|------------------|
| Deck X-Section: (S) 0.4 m br, 2 @ 3.6 m, 0.4 m br (N) | | |
| Total Width: 8.2 m | Net Width: 7.4 m | No. of Lanes: 2 |
| Rail Description: MBGR with wooden posts (N); Timber (S) | | Rail Code : 0000 |
| Min. Vertical Clearance: Unimpaired | | |

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal with a cobbled bottom.

CONDITION TEXT

CONDITION OF STRUCTURE

There was 200mm of water running; no underwater investigation was necessary.

There are old concrete patches through the deck surface started to fail, and there are 12 shallow spalls 200 mm x 200 mm x 15 mm with exposed rebar.

There are transverse cracks 1 mm wide and 300 mm spacing throughout the deck.

There are soffit transverse cracks at the following locations:

5 hairline cracks with white efflorescence in bay #1.

5 hairline cracks with white efflorescence and 1 cracks with brown efflorescence in bay #2.

4 hairline cracks with white efflorescence in bay #3.

MISCELLANEOUS

As a consequence of these revisions, the calculated Sufficiency Rating is 43.1 and the bridge is also "Structurally Deficient".

ELEMENT INSPECTION RATINGS

| Elem No. | Element Description | Env | Total | | Qty in each Condition State | | | | |
|-------------|---------------------------------|-----|-------|-------|-----------------------------|-------|-------|-------|-------|
| | | | Qty | Units | St. 1 | St. 2 | St. 3 | St. 4 | St. 5 |
| 12 | Concrete Deck - Bare | 2 | 110 | sq.m. | 0 | 110 | 0 | 0 | 0 |
| 107 | Painted Steel Open Girder/Beam | 2 | 62 | m. | 62 | 0 | 0 | 0 | 0 |
| 215 | Reinforced Conc Abutment | 2 | 34 | m. | 34 | 0 | 0 | 0 | 0 |
| 332 | Timber Bridge Railing | 2 | 14 | m. | 14 | 0 | 0 | 0 | 0 |
| 358 | Deck Cracking | 2 | 1 | ea. | 0 | 0 | 1 | 0 | 0 |
| 359 | Soffit of Concrete Deck or Slab | 2 | 1 | ea. | 0 | 1 | 0 | 0 | 0 |

WORK RECOMMENDATIONS

RecDate: 05/18/2009

EstCost:

Action : Deck-Methacrylate

StrTarget: 3 YEARS

Work By: LOCAL AGENCY

DistTarget:

Status : PROPOSED

EA:

Remove unsound concrete of the deck and patch the spall then provide a coat of methacrylate over entire deck.

Inspected By : MT.Zaarour/A.Shenouda



Mikhael T. Zaarour (Registered Civil Engineer)



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0175
 (5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- LADD CANYON
 (7) FACILITY CARRIED- SILVERADO CANYN RD
 (9) LOCATION- 2.2 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 53.08 SEC
 (17) LONGITUDE 117 DEG 38 MIN 25.5 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 15.2 M
 (49) STRUCTURE LENGTH 15.7 M
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 7.4 M
 (52) DECK WIDTH OUT TO OUT 8.2 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.7 M
 (33) BRIDGE MEDIAN- NO MEDIAN 0
 (34) SKEW 60 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 7.4 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 *****

SUFFICIENCY RATING = 43.1
 STATUS STRUCTURALLY DEFICIENT
 HEALTH INDEX 97.5
 PAINT CONDITION INDEX = 100.0

***** CLASSIFICATION *****

(112) NBIS BRIDGE LENGTH- YES Y
 (104) HIGHWAY SYSTEM- NOT ON NHS 0
 (26) FUNCTIONAL CLASS- MAJOR COLLECTOR RURAL 07
 (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 *****

(58) DECK 4
 (59) SUPERSTRUCTURE 7
 (60) SUBSTRUCTURE 7
 (61) CHANNEL & CHANNEL PROTECTION 7
 (62) CULVERTS N

***** LOAD RATING AND POSTING *****

(31) DESIGN LOAD- M-13.5 OR H-15 2
 (63) OPERATING RATING METHOD- LOAD FACTOR 1
 (64) OPERATING RATING- 33.5
 (65) INVENTORY RATING METHOD- LOAD FACTOR 1
 (66) INVENTORY RATING- 20.8
 (70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
 (41) STRUCTURE OPEN, POSTED OR CLOSED- A
 DESCRIPTION- OPEN, NO RESTRICTION

***** APPRAISAL *****

(67) STRUCTURAL EVALUATION 5
 (68) DECK GEOMETRY 4
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 8
 (72) APPROACH ROADWAY ALIGNMENT 6
 (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 15.7 M
 (94) BRIDGE IMPROVEMENT COST \$282,900
 (95) ROADWAY IMPROVEMENT COST \$56,580
 (96) TOTAL PROJECT COST \$475,272
 (97) YEAR OF IMPROVEMENT COST ESTIMATE 2010
 (114) FUTURE ADT 4121
 (115) YEAR OF FUTURE ADT 2029

***** INSPECTIONS *****

(90) INSPECTION DATE 07/11 (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)