DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0122
Facility Carried: BREA CANYON BLVD.
Location : 0.6 MI N/O CENTRAL AVENU
City :
Inspection Date : 11/01/2017

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: BREA CANYON CHANNEL

CONSTRUCTION INFORMATION

Year Built : 1930
Year Modified: N/A
Length (m) : 18.9

Skew (degrees): 45
No. of Joints : 0
No. of Hinges : 0

Structure Description: Simply supported 2-span CIP/RC T-beam (5 each) with an RC pier wall and with RC open end diaphragm abutments, all supported upon concrete piles.

Span Configuration : (W) 2 @ 30.00 ft (E)

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15
Inventory Rating: RF= 0.64 Calculation Method: (LRFR) LD & RES FACT RATING
Operating Rating: RF= 0.83 Calculation Method: (LRFR) LD & RES FACT RATING
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (S) 1.00 ft br, 0.67 ft cu, 60.00 ft, 0.67 ft cu, 1.00 ft br (N)
Total Width: 10.1 m Net Width: 9.1 m No. of Lanes: 2 Speed: 55 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 3.0 inches

Rail Code: 0000

Rail Type	Location	Length (ft)	Rail Modifications
Concrete Baluster	Right/Left	190	

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal, RC rectangular through the site.

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 inspection was performed by walking on shoulder and under the bridge. There was about 1-1.5 feet of water in both spans. A full visual inspection is performed for the visible substructure elements. Inspection access to the under of the bridge is from northwest

INSPECTION COMMENTARY

quadrant. A rain boots and binocular is used to perform this inspection.

MISCELLANEOUS

Ten year routine underside photograph was taken during this inspection and is included with this report. (see the attached photo no. 4)

REVISIONS

Element 256 (concrete slope protection) is deleted from element table.

SUBSTRUCTUR

There was a tree growing at the top of the south side of pier wall 2. (see the attached photo no. 5)

SAFE LOAD CAPACITY

Load Rating Summary Sheet dated 8/28/2015 is on file for this structure. While this report does not include a check of that analysis, it does verify that the structural conditions observed during this inspection are consistent with those assumed in that analysis. The current rating is based on LRFR calculation.

ELEMENT INSPECTION RATINGS AND COMMENTARY

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	190	sq.m	180	6	4	0
	1080		**Delamination/Spall/Patched Area**	2	10		0	6	4	0
	510		**Deck Wearing Surface-Asphalt**	2	174	sq.m	124	50	0	0
		3220	**Cracking-AC (WS)**	2	50		0	50	0	0

(16)
There were no significant defects noted.

(16-1080)
The elevation o the top flange has few spalls and incipient spalls +/- 6 inches X 6 inches x 1 inch mostly at the south elevation.

(16-510-3220)
There are two transverse cracks, 0.5 inches wide and a longitudinal crack 20 feet long and 0.50 inches wide.

110			**Girder/Beam-RC**	2	95	m	93	1	1	0
	1080		**Delamination/Spall/Patched Area**	2	2		0	1	1	0

(110-1080)
The concrete girders have few spalls at the bottom face at the north girder at both spans. (see the attached photo no. 6)

210			**Pier Wall-RC**	2	14	m	13	1	0	0

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
	1130		Cracking (RC and Other)	2	1		0	1	0	0
(210-1130) Pierwall 2 has two vertical cracks, up to 0.05 inches wide.										
215			Abutment-RC	2	36	m	36	0	0	0
(215) There were no significant defects noted.										
227			Pile-RC	2	1	ea.	1	0	0	0
(227) The pile element is included to indicate the presence of piles on this structure. The piles were not exposed for visual inspection. No indication of pile distress was noted in any substructure element.										
331			Railing-RC	2	29	m	9	10	9	1
	1080		Delamination/Spall/Patched Area	2	20		0	10	9	1
(331-1080) The concrete balusters at both rails have been cracked or spalled +/- 15 inches X 3 inches X 1 inch in many locations. The west end of the north concrete rail is broken and a crack 1 inch is noticed; and there is a spall 2 feet X 1.5 feet X 5 inches at the exterior face of the north rail westerly end. (see the attached photos no. 2 & 3)										

WORK RECOMMENDATIONS

RecDate: 05/06/2010
Action : Railing-Repair
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Repair the spalls +/- 15 inches X 3 inches X 1 inch in both concrete baluster railings.

RecDate: 05/30/2007
Action : Railing-Repair
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Repair the damaged rail.
The west end post of north rail is damaged and cracked; there is 1 inch wide vertical cracks from top to the bottom of footing.

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A.Shenouda/KD.Henderson

5/11/18

Ashraf Shenouda (Registered Civil Engineer) (Date)

STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **55C0122**
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 12
(3) COUNTY CODE 059 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- BREA CANYON CHANNEL
(7) FACILITY CARRIED- BREA CANYON BLVD.
(9) LOCATION- 0.6 MI N/O CENTRAL AVENUE
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 33 DEG 56 MIN 23.13 SEC
(17) LONGITUDE 117 DEG 53 MIN 26.05 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- CONCRETE
TYPE- TEE BEAM CODE 104
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 2
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- BITUMINOUS CODE 6
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0

********** AGE AND SERVICE **********

(27) YEAR BUILT 1930
(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 19000
(30) YEAR OF ADT 2009 (109) TRUCK ADT 2 %
(19) BYPASS, DETOUR LENGTH 2 KM

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

(48) LENGTH OF MAXIMUM SPAN 9.1 M
(49) STRUCTURE LENGTH 18.9 M
(50) CURB OR SIDEWALK: LEFT 0.2 M RIGHT 0.2 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 9.1 M
(52) DECK WIDTH OUT TO OUT 10.1 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 9.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 45 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 9.1 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 = 61.1
STATUS
HEALTH INDEX 97.2
PAINT CONDITION INDEX = N/A

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

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(26) FUNCTIONAL CLASS- MINOR ARTERIAL URBAN 16
(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- (LRFR) LD & RES FA 8
(64) OPERATING RATING- RF= 0.83
(65) INVENTORY RATING METHOD- (LRFR) LD & RES FA 8
(66) INVENTORY RATING- RF= 0.64
(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 5
(68) DECK GEOMETRY 3
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 9
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 8

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

(75) TYPE OF WORK- SUP/SUB REHAB CODE 35
(76) LENGTH OF STRUCTURE IMPROVEMENT 18.9 M
(94) BRIDGE IMPROVEMENT COST $184,000
(95) ROADWAY IMPROVEMENT COST $36,800
(96) TOTAL PROJECT COST $309,120
(97) YEAR OF IMPROVEMENT COST ESTIMATE 2017
(114) FUTURE ADT 41217
(115) YEAR OF FUTURE ADT 2035

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

(90) INSPECTION DATE 11/17 (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)

BREA CANYON CHANNEL

0.6 MI N/O CENTRAL AVENUE | 11/01/2017 [AAAK] | 55C0122

119 - PHOTO-Rail-Damage/Deterioration

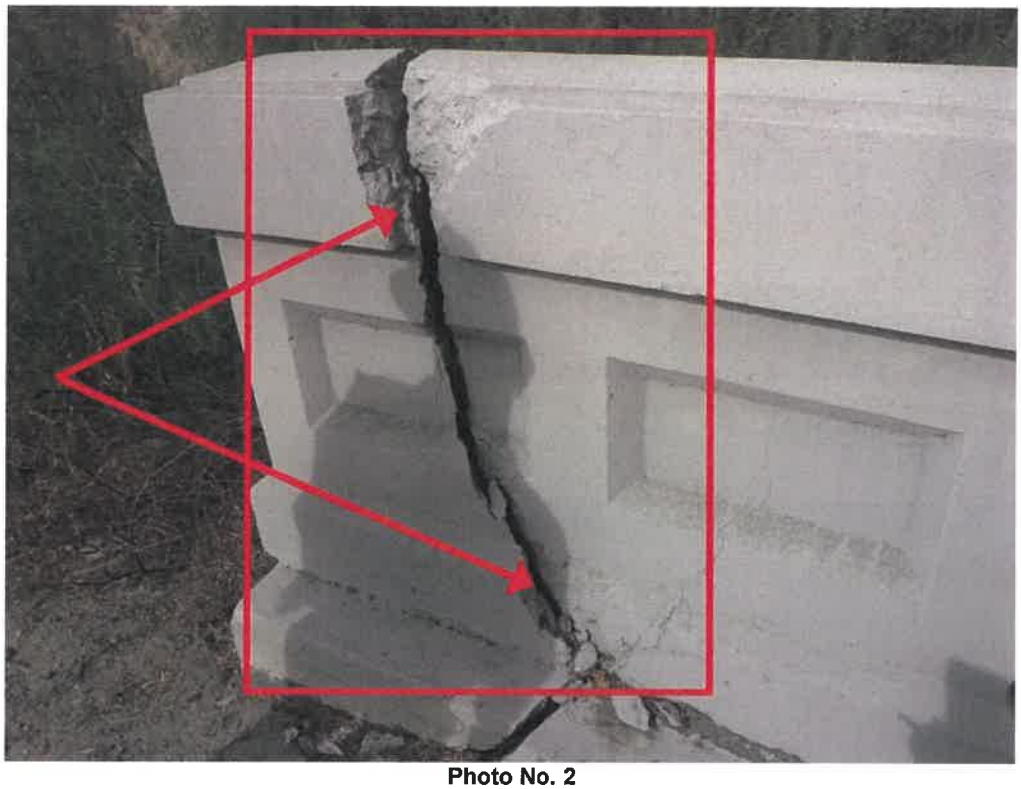

Photo No. 2

North rail wsterly end has a crack 1 inch wide.

119 - PHOTO-Rail-Damage/Deterioration

Photo No. 3

Exterior face of the north rail, westerly end has a spall 2 feet X 1.5 feet X 5 inches.

BREA CANYON CHANNEL

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135 - PHOTO-Routine-Underside View

Photo No. 4

Underside View looking South. (Span 1)

115 - PHOTO-Sub-Unusual Conditions

Photo No. 5

Tree is growing at the top of pierwall 2 , southerly end.

BREA CANYON CHANNEL

0.6 MI N/O CENTRAL AVENUE | 11/01/2017 [AAAK] | 55C0122

107 - PHOTO-Super-Damage/Deteroration

Photo No. 6

Spall with exposed rebar at the bottom of the north girder.