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 : 07/15/2019

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

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

A complete routine inspection was performed by Y. Chen and M. Monajemi. The bridge deck was inspected in accordance with SM&I procedures by walking through the narrow shoulder areas. Access to the area under the bridge was from the northwestern corner. The RC "T" girders, the deck soffit, the middle pier and abutmental walls were inspected by walking through both spans. At the time of inspection, there was up to 12-inch deep water in the channel; there was an ongoing construction activity at the site to reinforce concrete

INSPECTION COMMENTARY

baluster rails with metal beams.

MISCELLANEOUS

There was a tree growing at the top of the south side of pier wall 2.

SAFE LOAD CAPACITY

All girder elements were analyzed by SM&I Ratings Branch using BrR 6.7.0 with AASHTO LRFR engine utilizing moment and shear demands. The section dimensions of the bridge used for analysis were found on aperture cards. A Load Rating Summary Sheet (LRSS) dated on 08/28/2015 is in file. 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.

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 sides of the top flange have a few spalls and incipient spalls +/- 6 inch x 6 inch x 1 inch, mostly at the south elevation.

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

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

(110-1080)
There are spalls at the bottom faces of exterior "T" girders, all with rusted rebars exposed at the following locations:
Girder 1 in Span 1, 18 inch x 4 inch x 1.5 inch (failed patch),
Girder 1 in Span 2 (2 spalls) 18 inch x 18 inch x 1.5 inch, 10 inch x 10 inch x 1.5 inch,
Girder 5 in Span 1, 8 inch x 6 inch x 1 inch.

210			**Pier Wall-RC**	2	14	m	13	1	0	0
	1130		**Cracking (RC and Other)**	2	1		0	1	0	0

(210-1130)
There are 2 vertical cracks on the middle pier wall, 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

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
(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	10	0
	1080		**Delamination/Spall/Patched Area**	2	20		0	10	10	0
(331-1080)										
There are cracks and spalls along the concrete baluster rails in multiple locations up to the size 15 inch x 3 inch x 1 inch.										
The baluster rails were being reinforced with metal beams at the time of inspection.										

WORK RECOMMENDATIONS

RecDate: 07/15/2019 Action : Super-Patch spalls Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Locate the spalled areas at the bottom of experior girders (Girders 1 and 5), remove unsound concrete and all rusts on the exposed rebars, clean and patch the spalled areas.
RecDate: 07/15/2019 Action : Remove Vegetation Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Remove the bushes growing on the top of pier wall 2 at southern side.
RecDate: 05/06/2010 Action : Railing-Repair Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Repair the spalls +/- 15 inch x 3 inch x 1 inch in both concrete baluster railings.

Team Leader : Young Chen

Report Author : Young Chen

Inspected By : Y.Chen/MM.Monajemi

9/16/2019

Young Chen (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

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- 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 42072
(115) YEAR OF FUTURE ADT 2036

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

(90) INSPECTION DATE 07/19 (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)

Photo No. 1
ROADWAY VIEW LOOKING SOUTHWEST

Photo No. 1
SIDE VIEW LOOKING WEST

Photo No. 1
SIDE VIEW LOOKING SOUTHWEST , NOTE THE PLANT GROWING ON THE TOP OF THE MIDDLE PIER

Photo No. 1
SIDE VIEW LOOKING SOUTHEAST

Photo No. 1
UNDER VIEW IN NORTHERN SPAN, LOOKING NORTHWEST

Photo No. 1
UNDER VIEW IN SOUTHERN SPAN, LOOKING WEST