DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0637
Facility Carried: CROWN VALLEY PKWY
Location : 0.5 MI E/O MARGUERITE PW
City :
Inspection Date : 03/20/2019

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: ARROYO TRABUCO

CONSTRUCTION INFORMATION

Year Built : 2000
Year Modified: 2005
Length (m) : 238

Skew (degrees): 0
No. of Joints : 2
No. of Hinges : 0

Structure Description: Continuous 4-span CIP/PS concrete box girder (5 cells) with RC 2-column bents and RC closed end backfilled cantilever abutments, all supported upon 2 feet diameter (abutments) and 10 feet diameter (bents) CIDH concrete piles.
Widen (North side): Continuous 4-span CIP/PS concrete box girder (3 cells) with RC 1-column bents and RC closed end backfilled cantilever abutments.

Span Configuration : (W) 170.50 feet, 219.75 feet, 219.75 feet, 170.50 feet (E) c/c

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: HL 93
Inventory Rating: RF= 1.00 Calculation Method: ASSIGNED (LRFD)
Operating Rating: RF= 1.30 Calculation Method: ASSIGNED (LRFD)
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (N) 1.00 foot br, 5.00 feet sw, 54.75 feet, 4.00 feet median, 55.00 feet; 5.00 feet sw, 1.00 foot br (S)

Total Width: 38.3 m Net Width: 33.5 m No. of Lanes: 7 Speed: 55 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 inches

Rail Code: 0110

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth canyon.

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 walking on and around the bridge to inspect all visible elements of the bridge structure. Bridge deck was inspected by walking on shoulder and median area. Soffit and all substructure were inspected by walking underneath the bridge.

INSPECTION COMMENTARY

The channel is dry and with vegetation from spans #2 through #4 at the time of inspection.

Pedestrian access underneath the bridge is through a hole in CLF in span 4.

There is no need for a special equipment to inspect this structure.

DECK AND ROADWAY
There are random longitudinal to diagonal cracks, up to 0.06 inches wide and 10.0 feet long throughout the entire deck. There are especially map pattern cracks, up to 0.05 inches wide and 6.0 inches in spacing heavily on westbound lane #1 next to median throughout the entire length.

There are longitudinal cracks 50.0 feet long and up to 0.06 inches wide on both directions above bents #2, #3, and #4; and also, there are few longitudinal cracks 3.0 feet long and up to 0.05 inches wide scattering throughout the deck. The work-recommendation has been made to seal deck cracks with Methacrylate.

Westbound, the middle metal members of the Assembly-Joint are broken, snapped right between lanes #2 and #3 on eastbound at both abutment joints. In addition, The entire rubber strip seal of ELI 303 are twisted, cracked and missing at both abutments. The work-recommendation has been made in the previous bridge inspection report.

The approach and departure slabs have map and longitudinal cracks up to 15.0 feet long and 0.05 inches wide.

Westbound, there are total of eight manholes on the bridge deck.

SUPERSTRUCTURE
There are few longitudinal cracks from 8.0 feet to 12.0 feet long on soffit of the southerly box girder in span #4 about 8.0 feet from the southerly edge.

SUBSTRUCTURE
There is no notable distress observed at the time of inspection.

MISCELLANEOUS
There is a construction project to replace joint seal assembly ELI #303 from Orange County Public Agency at the time of inspection.

ENCROACHMENTS
There are total of 6.0 metal conduits (5 at 2.0 inches diameter, 1 at 2.0 inches diameter) those run across the westerly slope protection at the time of inspection.

SAFE LOAD CAPACITY
A Load Rating Summary Sheet dated 03/19/2013 is on file for this structure. The current rating has been assigned in accordance with SMI procedures.

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	9115	sq.m	7315	1100	700	0
	1130		**Cracking (RC and Other)**	2	1800		0	1100	700	0

(16)
Deck cracks throughout the entire deck.

(16-1130)
There are random longitudinal to diagonal cracks, up to 0.06 inches wide and 10.0 feet long throughout the entire deck. There are especially map pattern cracks, up to 0.05 inches wide and 6.0 inches in spacing heavily on westbound lane #1 next to median throughout the entire length.

There are longitudinal cracks 50.0 feet long and up to 0.06 inches wide on both directions above bents #2, #3, and #4; and also, there are few longitudinal cracks 3.0 feet long and up to 0.05 inches wide scattering throughout the deck.

104			**Box Girder-PS Conc.**	2	476	m	468	8	0	0
	1110		**Cracking (PS Conc.)**	2	8		0	8	0	0

(104)
There were no significant defects noted.

(104-1110)
There are few longitudinal cracks from 8.0 feet to 12.0 feet long on soffit of the southerly box girder in span #4 about 8.0 feet from the southerly edge.

205			**Column-RC**	2	9	each	9	0	0	0

(205)
There were no significant defects noted.

215			**Abutment-RC**	2	90	m	90	0	0	0

(215)
There were no significant defects noted.

252			**Pile-CIDH**	2	1	ea.	1	0	0	0

(252)
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.

256			**Slope Protection**	2	2	ea.	2	0	0	0

(256)
There were no significant defects noted.

303			**Joint-Assembly w/ Seal**	2	76	m	51	20	5	0
	2330		**Seal Damage (Joints)**	2	10		0	10	0	0
	2370		**Metal Deter./Damage (Joints)**	2	15		0	10	5	0

(303)
Aluminum members are broken; and Strip seal are cracked. There is a construction project to replace this bridge element at the time of inspection.

(303-2330)
Westbound, the middle metal members of the Assembly-Joint are broken, snapped right between lanes #2 and #3 on eastbound at both abutment joints. In addition, The entire rubber strip seal of ELI 303 are twisted, cracked and missing at both abutments. The work-recommendation has been made in the previous bridge inspection report.

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
			(303-2370) The middle metal bar is broken at at the stripping line between eastbound lanes #2 and #3 above the west abutment, and this bar is bent and warp in eastbound lanes #1 and #2, therefore the joint seal is torn out. (see photo 4). The middle metal bar is broken at at the stripping line between eastbound lanes #2 and #3 above the east abutment. (see photo 9)							
312			**Bearing-Enclosed**	2	2	each	2	0	0	0
			(312) There were no significant defects noted.							
321			**Approach Slab-RC**	2	555	sq.m	415	80	60	0
	1130		**Cracking (RC and Other)**	2	140		0	80	60	0
			(321) There were no significant defects noted.							
			(321-1130) The approach and departure slabs have map and longitudinal cracks up to 15.0 feet long and 0.05 inches wide.							
331			**Railing-RC**	2	476	m	476	0	0	0
			(331) There were no significant defects noted.							

WORK RECOMMENDATIONS

RecDate: 08/23/2016 Action : Deck-Methacrylate Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Clean and seal the deck cracks and cracks on approach and departure slabs by using methacrylate.
RecDate: 08/23/2016 Action : Joints-Replace Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		Replace the aluminum joints with proper joint seal assembly.
RecDate: 02/10/2013 Action : Super-Misc. Work By: LOCAL AGENCY Status : PROPOSED	EstCost: StrTarget: 2 YEARS DistTarget: EA:		The county has to check the utility pipes inside the box cells where the soffit access is leaking water and the cover place is heavily rusted and corroded in span 4.

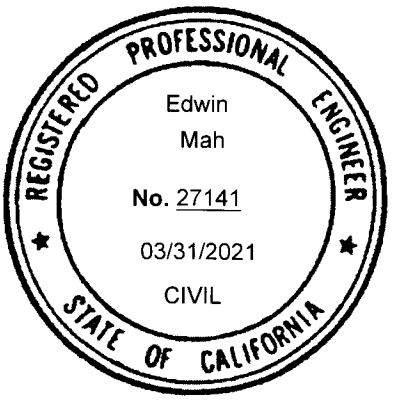
Team Leader : Edwin Mah

Report Author : Nelson N. Vo

Inspected By : NN.Vo/E.Mah

7/17/2019

Edwin Mah (Registered Civil Engineer) (Date)



STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **55C0637**
(5) INVENTORY ROUTE(ON/UNDER)- ON 150000000
(2) HIGHWAY AGENCY DISTRICT 12
(3) COUNTY CODE 059 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- ARROYO TRABUCO
(7) FACILITY CARRIED- CROWN VALLEY PKWY
(9) LOCATION- 0.5 MI E/O MARGUERITE PWY
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 33 DEG 33 MIN 46.01 SEC
(17) LONGITUDE 117 DEG 39 MIN 10.4 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- PRSTR CONC CONT
TYPE- BOX BEAM OR GIRDER - MULTI CODE 605
(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 2000
(106) YEAR RECONSTRUCTED 2005
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 07 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 33160
(30) YEAR OF ADT 2019 (109) TRUCK ADT 1 %
(19) BYPASS, DETOUR LENGTH 20 KM

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

(48) LENGTH OF MAXIMUM SPAN 67.0 M
(49) STRUCTURE LENGTH 238.0 M
(50) CURB OR SIDEWALK: LEFT 1.5 M RIGHT 1.5 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 33.5 M
(52) DECK WIDTH OUT TO OUT 38.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 33.5 M
(33) BRIDGE MEDIAN- CLOSED NON-MOUNTABLE 3
(34) SKEW 0 DEG (35) STRUCTURE FLARED YES
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 16.8 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 = 83.0

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 5
(59) SUPERSTRUCTURE 7
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 9
(62) CULVERTS N

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

(31) DESIGN LOAD- HL 93 A
(63) OPERATING RATING METHOD- ASSIGNED (LRFD) F
(64) OPERATING RATING- RF= 1.30
(65) INVENTORY RATING METHOD- ASSIGNED (LRFD) F
(66) INVENTORY RATING- RF= 1.00
(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 9
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 9
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 0110
(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 60565
(115) YEAR OF FUTURE ADT 2037

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

(90) INSPECTION DATE 03/19 (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)