



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0344
Facility Carried: ADAMS AVENUE
Location : 0.5 MI E/O BROOKHURST ST
City :
Inspection Date : 01/27/2017

Bridge Inspection Report

Inspection Type

Routine FC Underwater Special Other

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STRUCTURE NAME: SANTA ANA RIVER (ADAMS AVE)

CONSTRUCTION INFORMATION

Year Built : 1977
Year Modified: N/A
Length (m) : 164.6
Skew (degrees): 14
No. of Joints : 2
No. of Hinges : 0

Structure Description: Continuous 5-span CIP/PS concrete box girder (10 cells) with RC pier walls and RC open end seat abutments with monolithic wingwalls, all supported upon concrete piles.

Span Configuration : (W) 89.75 ft, 3 @ 118.00 ft, 89.75 ft c/c (E)

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: MS-18 OR HS-20
Inventory Rating: RF=1.00 =>32.4 metric tons
Operating Rating: RF=2.19 =>71.0 metric tons
Permit Rating : PPPPP
Posting Load : Type 3: Legal
Calculation Method: LOAD FACTOR
Calculation Method: LOAD FACTOR
Type 3S2: Legal
Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (S) 1.00 ft br, 4.00 ft sw, 40.00 ft, 4.00 ft cu. med, 40.00 ft, 4.00 ft sw, 1.00 ft br (N).

Total Width: 28.7 m Net Width: 24.4 m No. of Lanes: 6 Speed: 45 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 Inches

Rail Code: 1000

Rail Type	Location	Length (ft)	Rail Modifications
Type 11	Right/Left	1120	

DESCRIPTION UNDER STRUCTURE

Channel Description: RC vertical walls with sandy earth bottoms.

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

This inspection was performed by walking on the bridge sidewalks, and under spans 1 and 4 of the superstructure. The water in the channel is about 2-2.5 feet deep and the channel bed is not firm spans 2 to 5, except the bike path under span 4. The substructure and the superstructure elements were not inspected in spans 2, 3 and 5. Access into the channel

INSPECTION COMMENTARY

is from the north-west quadrant. All elements were visually inspected in span 1.

REVISIONS

RC-pile #227 (1 each) is added to the element table.

DECK AND ROADWAY

The curb of the southerly sidewalk exhibits few spalls with eba exposed and rusted

SAFE LOAD CAPACITY

A Structure Rating Summary Sheet, dated 05/10/2010, is on-file for this structure. The current rating is based on a BDS computer output, dated 11/30/1979 with zero AC overlay. 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 NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each State	Condition	State
							St. 1	St. 2	St. 3 St. 4
16			Top Flange-RC	2	4724	sq.m	4704	20	0 0
	1080		Delamination/Spall/Patched Area	2	5		0	5	0 0
	1120		Efflorescence/Rust Staining	2	15		0	15	0 0
	521		Concrete Coat.(Meth/Paint/Seal)	2	4016	sq.m	4016	0	0 0

(16-1080)

There are few scattered sound patched areas 1 foot X 1 foot in many locations.

(16-1120)

The soffit at the closure pour between the two box girders exhibits few transverse cracks with white efflorescence at span 4.

(16-521)

There were no significant defects noted.

104			Box Girder-PS Conc.	2	329	m	329	0	0 0
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(104)

There were no significant defects noted.

210			Pier Wall-RC	2	118	m	116	2	0 0
	1130		Cracking (RC and Other)	2	2		0	2	0 0

(210-1130)

Pier wall 4 exhibits few vertical cracks up to 0.05 inches wide.

215			Abutment-RC	2	74	m	74	0	0 0
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(215)

Monolithic wingwalls are included in the total quantity.

227			Pile-RC	2	1	ea.	1	0	0 0
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(227)

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Element Description	Env	Total Qty	Units	Qty in each Condition State			
						St. 1	St. 2	St. 3	St. 4
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.									
303		Joint-Assembly w/ Seal	2	58	m	57	0	0	1
	2370	Metal Deter./Damage (Joints)	2	1		0	0	0	1
(303-2370)									
The east joint at eastbound lane 1 is missing a section 2 feet long and 3 inches wide.									
312		Bearing-Enclosed	2	2	each	2	0	0	0
(312)									
The bearing element is included to indicate the presence of bearings on this structure. The bearings were not exposed for visual inspection. No indication of bearing distress was noted in any substructure element.									
333		Railing-Other	2	330	m	320	9	1	0
	1080	Delamination/Spall/Patched Area	2	5		0	4	1	0
	1130	Cracking (RC and Other)	2	5		0	5	0	0
(333-1080)									
The concrete portion of the south rail exhibits two spalls +/- 12 inches X 10 inches X 1.5 inches with rebar exposed and rusted at 10 feet east of the west end at span 1.									
The concrete portion of the north rail exhibits few spalls and unsound spalls +/- 5 inches X 5 inches in many locations especially at spans 1 & 2.									
(333-1130)									
The concrete portion of the rails exhibits few vertical cracks up to 0.05 inches wide.									

WORK RECOMMENDATIONS

RecDate: 01/27/2017

EstCost:

Action : Joints-Repair/Clean

StrTarget: 1 YEAR

The east joint at eastbound lane 1 is missing a section 2 feet long and 3 inches wide.

Work By: LOCAL AGENCY

DistTarget:

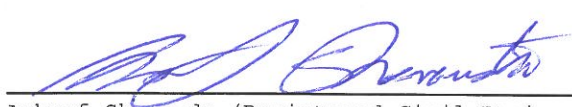
Status : PROPOSED

EA:

Team Leader : Ashraf Shenouda

Report Author : Ashraf Shenouda

Inspected By : A.Shenouda/KD.Henderson


 Ashraf Shenouda (Registered Civil Engineer) (Date)

7-25-17



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 55C0344
 (5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
 (2) HIGHWAY AGENCY DISTRICT 12
 (3) COUNTY CODE 059 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- SANTA ANA RIVER CHANNEL
 (7) FACILITY CARRIED- ADAMS AVENUE
 (9) LOCATION- 0.5 MI E/O BROOKHURST ST
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK- PART OF NET 1
 (13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
 (16) LATITUDE 33 DEG 40 MIN 20.34 SEC
 (17) LONGITUDE 117 DEG 56 MIN 45.94 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 5
 (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 1977
 (106) YEAR RECONSTRUCTED 0000
 (42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
 UNDER- WATERWAY 5
 (28) LANES:ON STRUCTURE 06 UNDER STRUCTURE 00
 (29) AVERAGE DAILY TRAFFIC 39000
 (30) YEAR OF ADT 2010 (109) TRUCK ADT 2 %
 (19) BYPASS, DETOUR LENGTH 3 KM

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

(48) LENGTH OF MAXIMUM SPAN 36.0 M
 (49) STRUCTURE LENGTH 164.6 M
 (50) CURB OR SIDEWALK: LEFT 1.2 M RIGHT 1.2 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 24.4 M
 (52) DECK WIDTH OUT TO OUT 28.7 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 24.4 M
 (33) BRIDGE MEDIAN- CLOSED NON-MOUNTABLE 3
 (34) SKEW 14 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 12.2 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 = 91.5
 STATUS
 HEALTH INDEX 99.8
 PAINT CONDITION INDEX = N/A

***** CLASSIFICATION *****

(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 - PART OF NET 1
 (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 7
 (59) SUPERSTRUCTURE 7
 (60) SUBSTRUCTURE 7
 (61) CHANNEL & CHANNEL PROTECTION 8
 (62) CULVERTS N

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

(31) DESIGN LOAD- MS-18 OR HS-20 5
 (63) OPERATING RATING METHOD- LOAD FACTOR 1
 (64) OPERATING RATING- 71.0
 (65) INVENTORY RATING METHOD- LOAD FACTOR 1
 (66) INVENTORY RATING- 32.4
 (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 7
 (68) DECK GEOMETRY 5
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 8
 (72) APPROACH ROADWAY ALIGNMENT 8
 (36) TRAFFIC SAFETY FEATURES 1000
 (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 90704
 (115) YEAR OF FUTURE ADT 2038

***** INSPECTIONS *****

(90) INSPECTION DATE 01/17 (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)

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

101 - PHOTO-Routine-Elevation View



Photo No. 1

Elevation View looking South

101 - PHOTO-Routine-Elevation View



Photo No. 2

Elevation View looking North-East

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

119 - PHOTO-Rail-Damage/Deterioration



Photo No. 3

South rail has 2 spalls 12"X10"X 1.5 at 10 ft from the west end.

119 - PHOTO-Rail-Damage/Deterioration



Photo No. 4

South rail has 2 spalls 12"X10"X 1.5 at 10 ft from the west end.

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

124 - PHOTO-Joint-Damage/Deterioration

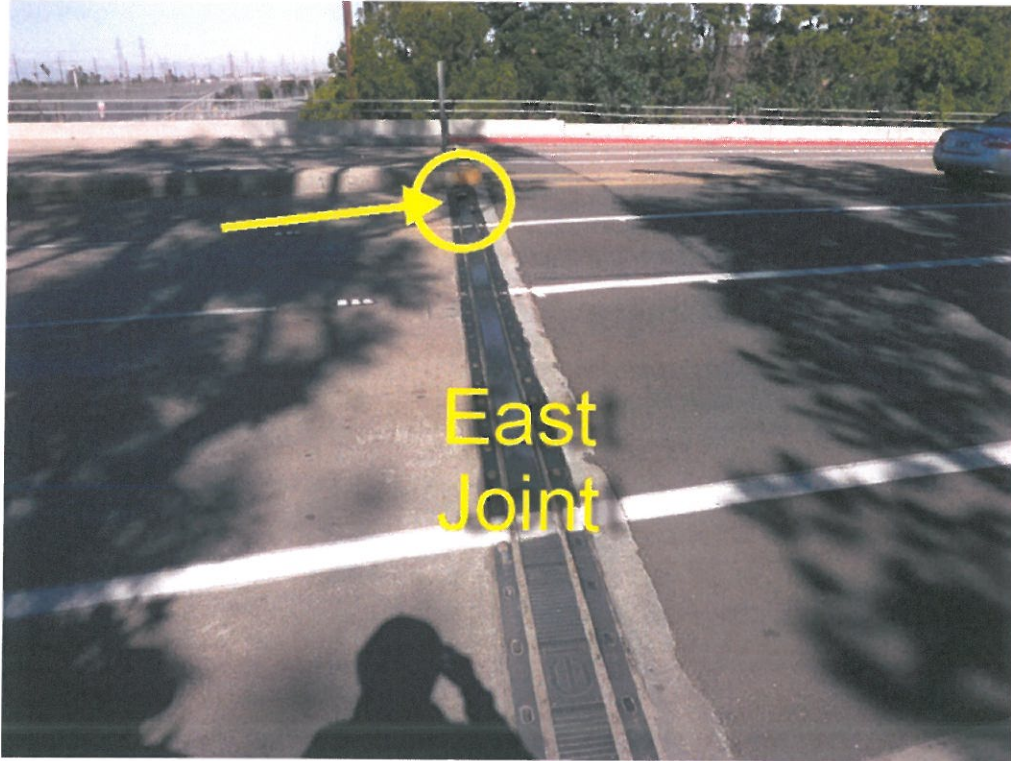


Photo No. 5

East joint is missing 2 feet section at EB lane 1.

124 - PHOTO-Joint-Damage/Deterioration



Photo No. 6

East joint is missing 2 feet section at EB lane 1.

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

124 - PHOTO-Joint-Damage/Deterioration



Photo No. 7

East joint is missing 2 feet section at EB lane 1.

102 - PHOTO-Deck-Damage/Deterioration



Photo No. 8

Soffit between the 2 box girders has transvrs cracks with white efflorescence at span 4.

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

135 - PHOTO-Routine-Underside View



Photo No. 9

Underside View looking East

102 - PHOTO-Deck-Damage/Deterioration

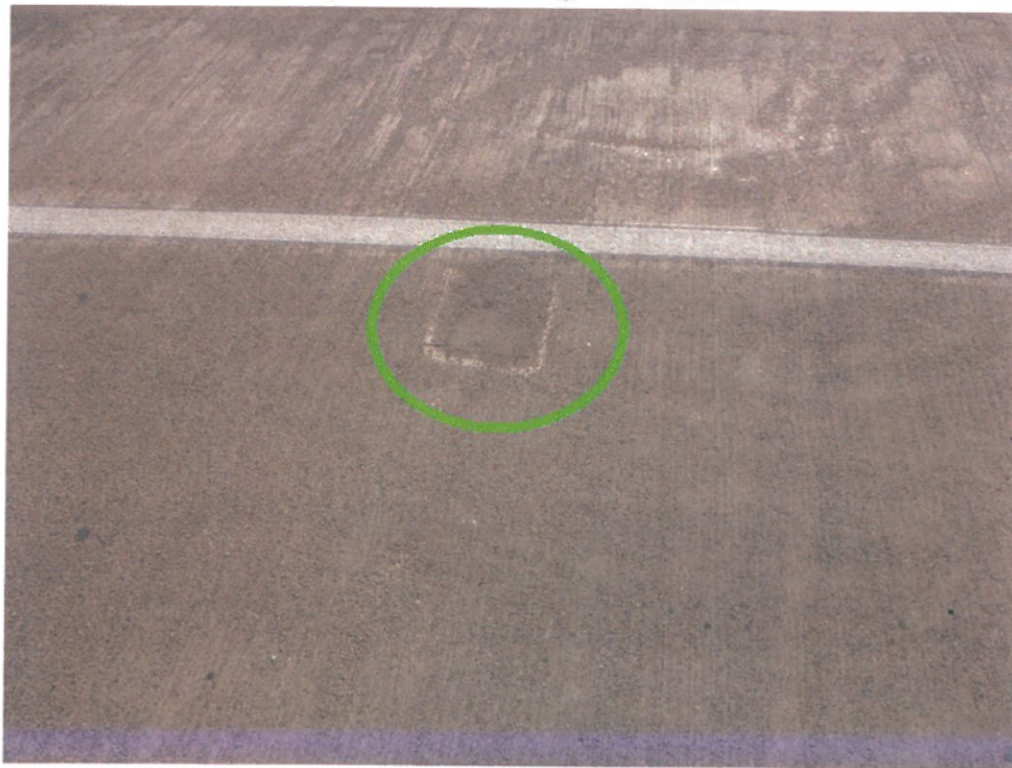


Photo No. 10

Sound patched spalls 1 ft X 1 ft in many locations.

SANTA ANA RIVER (ADAMS AVE)

0.5 MI E/O BROOKHURST ST

01/27/2017 [AAAJ]

55C0344

119 - PHOTO-Rail-Damage/Deterioration

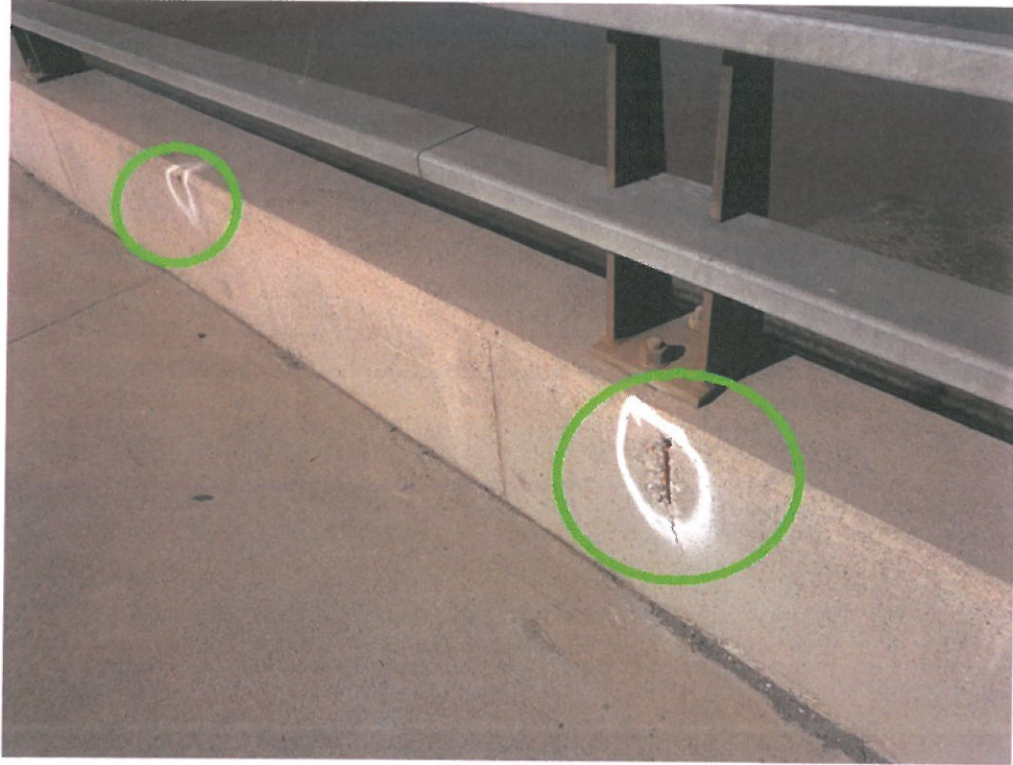


Photo No. 11

The north rail exhibits few spalls 5 inches 5 inches X 1 inches in many locations.