DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0631
Facility Carried: HARBOR BOULEVARD
Location : 0.2 MI N/O WARNER AVENUE
City :
Inspection Date : 05/16/2012

Bridge Inspection Report

Inspection Type
Routine FC Underwater Special Other
X

STRUCTURE NAME: SANTA ANA RIVER CHANNEL

CONSTRUCTION INFORMATION

Year Built : 1994
Year Widened: N/A
Length (m) : 120.1

Skew (degrees): 45
No. of Joints : 2
No. of Hinges : 0

Structure Description: Continuous 5-span PC/PS I-girder (14 each) with RC pier walls and RC open end seat abutments, all supported upon driven Class 70 and Class 100 PS concrete piles.

Span Configuration : (S) 20.7 m, 3 @ 25.9 m, 20.7 m (N) c/c

LOAD CAPACITY AND RATINGS

Design Live Load: MS-18+MOD OR HS-20+MOD
Inventory Rating: 32.4 metric tonnes Calculation Method: LOAD FACTOR
Operating Rating: 53.1 metric tonnes Calculation Method: LOAD FACTOR
Permit Rating : PPPPP
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.3 m br, 1.5 m sw, 13.4 m, 1.4 m cu med, 13.4 m, 1.5 m sw, 0.3 m br (E)
Total Width: 30.5 m Net Width: 26.8 m No. of Lanes: 6
Rail Description: Type 26 Conc. Rail Code : 1000
Min. Vertical Clearance: Unimpaired

DESCRIPTION UNDER STRUCTURE

Channel Description: RC trapezoidal

INSPECTION COMMENTARY

CONDITION OF STRUCTURE
The water in the channel was 0.1 m deep though the depressed invert in span 3. All substructure elements were inspected.

The deck drains were clogged at the west side.

The concrete deck (at NB and SB lanes) exhibits:
* several longitudinal and transverse cracks, minor to moderate in size 1.0 mm wide at north and south end;
* diagonal cracks, minor to moderate in size 1.0 mm wide at the south end; and
* mostly transverse cracks, minor to moderate in size and minor in density (1.0 mm wide and at 500 mm apart) throughout the deck.

The soffit exhibits few transverse cracks with light white efflorescence in many bays of all spans.

The north diaphragm has a spall (0.5 m W x 1.0 m H x 0.05 m D) at the SE corner of the south abutment.

Pier wall 3 has 2 vertical cracks < 1.0 mm wide.
Pier wall 4 has 7 vertical cracks < 0.5 mm wide.
Pier wall 5 has 5 vertical cracks < 0.5 mm wide, and a diagonal crack 0.5 mm wide.

INSPECTION COMMENTARY

The easterly girder at span #5 (north span) has a damaged spall (600 mm X 150 mm X 50 mm) at 4.0 m north of pier wall #5, may be this damaged spall caused by the hit of maintenance or flood control vehicle that was passing underneath span #5.

ELEMENT INSPECTION RATINGS

Elem No.	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4	St. 5
12	Concrete Deck - Bare	2	3663	sq.m.	3663	0	0	0	0
109	P/S Conc Open Girder/Beam	2	1682	m.	1681	1	0	0	
210	Reinforced Conc Pier Wall	2	176	m.	176	0	0	0	0
215	Reinforced Conc Abutment	2	90	m.	90	0	0	0	
226	P/S Conc Submerged Pile	2	1	ea.	1	0	0	0	0
256	Slope Protection	2	2	ea.	2	0	0	0	0
302	Compression Joint Seal	2	84	m.	84	0	0	0	0
312	Enclosed/Concealed Bearing	2	2	ea.	2	0	0	0	0
321	Reinforced Conc Approach Slab w/ or w/o AC Ovly	2	12	ea.	12	0	0	0	0
331	Reinforced Conc Bridge Railing	2	240	m.	240	0	0	0	0
358	Deck Cracking	2	1	ea.	0	1	0	0	0
359	Soffit of Concrete Deck or Slab	2	1	ea.	0	1	0	0	0

WORK RECOMMENDATIONS

RecDate: 03/02/2007
Action : Drainage Issue
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Open all the deck drains those were clogged at the west side.

RecDate: 03/02/2007
Action : Super-Patch spalls
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Patch the easterly girder at span #5 (north span) that has a damaged spall 600 mm X 150 mm X 50 mm at 4.0 m from pier wall #5

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 **55C0631**
(5) INVENTORY ROUTE(ON/UNDER)- ON 141000000
(2) HIGHWAY AGENCY DISTRICT 12
(3) COUNTY CODE 059 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- SANTA ANA RIVER CHANNEL
(7) FACILITY CARRIED- HARBOR BOULEVARD
(9) LOCATION- 0.2 MI N/O WARNER AVENUE
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- PART OF NET 1
(13) LRS INVENTORY ROUTE & SUBROUTE 000000000000
(16) LATITUDE 33 DEG 42 MIN 59.44 SEC
(17) LONGITUDE 117 DEG 55 MIN 13.74 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- OTHER CODE 600
(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 1994
(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 54000
(30) YEAR OF ADT 2012 (109) TRUCK ADT 1 %
(19) BYPASS, DETOUR LENGTH 2 KM

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

(48) LENGTH OF MAXIMUM SPAN 25.9 M
(49) STRUCTURE LENGTH 120.1 M
(50) CURB OR SIDEWALK: LEFT 1.8 M RIGHT 1.8 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 26.8 M
(52) DECK WIDTH OUT TO OUT 30.5 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 26.8 M
(33) BRIDGE MEDIAN- CLOSED (NO BARRIER) 2
(34) SKEW 45 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 13.4 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

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SUFFICIENCY RATING = 91.9
STATUS
HEALTH INDEX 100.0
PAINT CONDITION INDEX = N/A

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

(112) NBIS BRIDGE LENGTH- YES Y
(104) HIGHWAY SYSTEM- NOT ON NHS 0
(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- MS-18+MOD OR HS-20+MOD 6
(63) OPERATING RATING METHOD- LOAD FACTOR 1
(64) OPERATING RATING- 53.1
(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 ********** CODE

(67) STRUCTURAL EVALUATION 7
(68) DECK GEOMETRY 7
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 9
(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 90374
(115) YEAR OF FUTURE ADT 2029

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

(90) INSPECTION DATE 05/12 (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)