DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Caltrans

Bridge Number : 55C0205
Facility Carried: SANTA ANA AVENUE
Location : 0.1 MI S/O BRISTOL STREE
City :
Inspection Date : 02/07/2018

Bridge Inspection Report

Inspection Type

Routine	FC	Underwater	Special	Other
X				

STRUCTURE NAME: SANTA ANA DELHI CHANNEL

CONSTRUCTION INFORMATION

Year Built : 1960
Year Modified: 1973
Length (m) : 16.5

Skew (degrees): 10
No. of Joints : 0
No. of Hinges : 0

Structure Description: Single span 22 PC/PS concrete beam sections with minimum 2 inches thick AC pavement on the top, on RC pile bent abutments with sheathing walls.

Span Configuration : (S) 53 ft (N)

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=0.52 =>16.8 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Operating Rating: RF=0.87 =>28.2 metric tons Calculation Method: FIELD EVAL/ENG JUDGMENT
Permit Rating : XXXXX
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.6 ft r, 1.3 ft AC dike, 61 ft, 4.5 ft sw, 0.6 ft r (E)
Total Width: 20.4 m Net Width: 18.7 m No. of Lanes: 4 Speed: 45 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 6.5 inches

Rail Code: 1000

Rail Type	Location	Length (ft)	Rail Modifications
MBBR		108	

DESCRIPTION UNDER STRUCTURE

Channel Description: RC rectangular.

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 routine inspection was performed by Y. Chen and M. Monajemi. The conditions of AC pavement surface and rails on the top of the bridge were inspected by walking along the eastern sidewalk and along the AC dike at western side. The conditions of abutments and concrete box beam sections were inspected at the corners of the abutments and with the aid of binoculars. The water in the channel was about 3 inches through a small ditch 5 feet wide in the middle of the channel.

INSPECTION COMMENTARY

REVISIONS

The as-built plans dated back to 1967 show that the PS concrete box beam sections were linked together by #8 rebars welded to connection steel plates, no prestressing involved. Change Element 15 back to Element 16 in ELIM table.

MISCELLANEOUS

There is a tree growing at the seat of Abutment 1 under slab unit 9 (counting from east).

SAFE LOAD CAPACITY

The load rating for this structure is being reviewed by SMI Ratings Branch A request #7766 was sent the load rating department on 07/14/2017. An updated Load Rating Summary will be archived when this review is complete. Load Rating Summary Sheet is archived on 12/12/2014 for this structure.

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	336	sq.m	336	0	0	0
	510		**Deck Wearing Surface-Asphalt**	2	308	sq.m	288	20	0	0
		3220	**Cracking-AC (WS)**	2	20		0	20	0	0
(16) There were no significant defects noted.										
(16-510-3220) There are segmental transverse cracks at both abutments across the roadway, up to 10 feet each and 0.2 inches wide.										
104			**Box Girder-PS Conc.**	2	17	m	14	2	1	0
	1080		**Delamination/Spall/Patched Area**	2	1		0	0	1	0
	1120		**Efflorescence/Rust Staining**	2	2		0	2	0	0
(104-1080) The westerly face of the westerly box girder unit exhibits a spall 12 inches x 8 inches x 1.5 inch at the mid-span.										
(104-1120) There are water brown stains in soffit between the concrete box beam sections.										
215			**Abutment-RC**	2	10	m	10	0	0	0
(215) Monolithic wingwalls (with the RC bent cap) are included in the total quantity.										
234			**Pier Cap-RC**	2	40	m	40	0	0	0
(234) There were no significant defects noted.										
251			**Pile-CISS**	2	2	ea.	0	2	0	0
	1000		**Corrosion**	2	2		0	2	0	0
(251) There are only two piles that are visbile at the north Abutment at the east side.										
(251-1000)										

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
The exterior steel shells of the north piles (east side) are rusted.										
330			**Railing-Metal**	2	33	m	33	0	0	0

(330)
There were no significant defects noted.

WORK RECOMMENDATIONS

RecDate: 02/07/2018
Action : Super-Patch spalls
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:
Patch the side spall at the western exterior PS concrete box beam section, located near the middle of the structure.

RecDate: 02/07/2018
Action : Appr. Roadway-Repair
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:
Seal the AC pavement cracks on the structural surface, especially near both abutments with asphalt slurry.

RecDate: 06/08/2011
Action : Sub-Misc.
Work By: LOCAL AGENCY
Status : PROPOSED
EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:
Remove the small tree growing in Abutment 1 seat beneath the PS concrete box beam section.

Team Leader : Young Chen

Report Author : Young Chen

Inspected By : Y.Chen/MM.Monajemi

6/12/2018

Young Chen (Registered Civil Engineer) (Date)

STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER **55C0205**
(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 DELHI CHANNEL
(7) FACILITY CARRIED- SANTA ANA AVENUE
(9) LOCATION- 0.1 MI S/O BRISTOL STREET
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 33 DEG 39 MIN 55.22 SEC
(17) LONGITUDE 117 DEG 52 MIN 59.41 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- PRESTRESS CONC
TYPE- BOX BEAM OR GIRDER - MULTI CODE 505
(44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
TYPE- OTHER/NA CODE 000
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- PRECAST CONC. PA CODE 2
(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 1960
(106) YEAR RECONSTRUCTED 1973
(42) TYPE OF SERVICE: ON- HIGHWAY-PEDESTRIAN 5
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 04 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 11000
(30) YEAR OF ADT 2008 (109) TRUCK ADT 1 %
(19) BYPASS, DETOUR LENGTH 2 KM

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

(48) LENGTH OF MAXIMUM SPAN 16.2 M
(49) STRUCTURE LENGTH 16.5 M
(50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 1.4 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 18.7 M
(52) DECK WIDTH OUT TO OUT 20.4 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 17.1 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 10 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 18.7 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- NO CONTROL CODE 0
(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 = 64.3
STATUS
HEALTH INDEX 99.4
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 5
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 8
(62) CULVERTS N

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

(31) DESIGN LOAD- UNKNOWN 0
(63) OPERATING RATING METHOD- FIELD EVAL/ENG JUD 0
(64) OPERATING RATING- 28.2
(65) INVENTORY RATING METHOD- FIELD EVAL/ENG JUD 0
(66) INVENTORY RATING- 16.8
(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 4
(68) DECK GEOMETRY 6
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 8
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURES 1000
(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 18984
(115) YEAR OF FUTURE ADT 2038

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

(90) INSPECTION DATE 02/18 (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)