DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0172
Facility Carried: MODJESKA CANYON RD
Location : 0.1 MI N/O MODJESKA GR R
City :
Inspection Date : 09/18/2015

Bridge Inspection Report

Inspection Type
Routine FC Underwater Special Other
X

STRUCTURE NAME: SANTIAGO CREEK

CONSTRUCTION INFORMATION

Year Built : 1935
Year Widened: N/A
Length (m) : 19.5
Skew (degrees): 68
No. of Joints : 0
No. of Hinges : 0

Structure Description: CIP/RC deck on riveted steel floor beams (5) on simply supported riveted steel through girders (2) on RC pedestals on RC closed end backfilled cantilever abutments on spread footings.

Span Configuration : (S) 1 @ 18.3 m (N) c/c

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15
Inventory Rating: 17.2 metric tons Calculation Method: ALLOWABLE STRESS
Operating Rating: 25.4 metric tons Calculation Method: ALLOWABLE STRESS
Permit Rating : GGGGG
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (W) Steel plate girder, 0.7 m cu, 2 @ 3.0 m, 0.7 m cu, steel plate girder (E)

Total Width: 7.3 m Net Width: 6.1 m No. of Lanes: 2 Speed: 25 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 0.0 Inches

Rail Code: 0000 Rail Description: Steel plate girder

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal.

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
There is 6" deep water with 2 ft wide in the middle of the span, the water in the channel was stagnant. However all the elements were visually inspected by walking on the deck and under the bridge.

MISCELLANEOUS
Caltrans currently does not have a set of AS-Built plans for this structure. The county should provide As-Built Plans.

INSPECTION COMMENTARY

It is steel through girders so item 36a is "0" but the element is included under girder.

SAFE LOAD CAPACITY
The load rating for this structure is being reviewed by SMI Ratings Branch. An updated Load Rating Summary will be archived when this review is complete.

FRACTURE CRITICAL INVESTIGATION
A hands-on visual inspection was performed on 5/28/2014 for the tension stress areas of the left and right girders. No fractures or cracks were found.

During the 05/21/2008 fracture critical member inspection, up to 19 mm (3/4 in) of pack rust was found between the bottom flange plates of the left and right girders at the following locations:

- Girder 1 to Floor Beam 3 connection
- Girder 1 to Floor Beam 5 connection
- Girder 2 to Floor Beam 2 connection
- Girder 2 to Floor Beam 4 connection

No increase in corrosion has occurred at these locations. These areas will continue to be monitored for any significant increase in corrosion during the next scheduled fracture critical member inspection.

STEEL INVESTIGATIONS

This structure qualifies for an in-depth Steel investigation because it possesses the following fracture critical or fatigue prone details :

Plate Girder: FC Members

Fracture Critical: Yes Inspection Freq.: 24 Next Inspection: 05/28/2016

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
12			Deck-RC	2	140	sq.m	38	102	0	0
	1130		Cracking (RC and Other)	2	2		0	2	0	0
	1190		Abrasion (PS Conc./RC)	2	100		0	100	0	0

(12-1130)
There are two longitudinal cracks throughout the soffit 1 mm wide.

(12-1190)
There are abrasion and wearing of 90 % of the deck, the aggregate were exposed but remains secure in the concrete.

107			Girder/Beam-Steel	2	40	m	36	0	4	0
	1000		Corrosion	2	4		0	0	4	0
	515		Steel Coating-Paint	2	182	sq.m	0	91	91	0
		3410	Chalking (Steel PC)	2	182		0	91	91	0

(107-1000)
up to 19 mm (3/4 in) of pack rust was found between the bottom flange plates of the left and right girders at the following locations: Girder 1 to Floor Beam 3 connection, Girder 1 to Floor Beam 5 connection, Girder 2 to Floor Beam 2 connection, and Girder 2 to Floor Beam 4 connection. No

ELEMENT INSPECTION RATINGS AND NOTES

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each Condition State St. 1	St. 2	St. 3	St. 4
increase in corrosion has occurred at these locations sinces 2008.										
(107-515-3410) The paints are chalking and lost pigments at the edges.										
152			**Floor Beam-Steel**	2	56	m	0	56	0	0
	515		**Steel Coating-Paint**	2	94	sq.m	0	47	47	0
		3410	**Chalking (Steel PC)**	2	94		0	47	47	0
(152) There were no significant defects noted.										
(152-515-3410) The paints are chalking and lost pigments at the edges.										
215			**Abutment-RC**	2	30	m	30	0	0	0
(215) There were no significant defects noted.										
311			**Bearing-Moveable**	2	2	each	2	0	0	0
	515		**Steel Coating-Paint**	2	1	sq.m	1	0	0	0
(311) There were no significant defects noted.										
(311-515) There were no significant defects noted.										
313			**Bearing-Fixed**	2	2	each	2	0	0	0
	515		**Steel Coating-Paint**	2	1	sq.m	0	0	1	0
		3410	**Chalking (Steel PC)**	2	1		0	0	1	0
(313) There were no significant defects noted.										
(313-515-3410) The paints are lost pigments and surface rust developed.										

WORK RECOMMENDATIONS

RecDate: 07/07/2013
Action : Paint-Spot Prep/Pain
Work By: LOCAL AGENCY
Status : PROPOSED

EstCost:
StrTarget: 2 YEARS
DistTarget:
EA:

Clean all pack rust and paint it.

Team Leader : Mikhael T. Zaarour

Report Author : Mikhael T. Zaarour

Inspected By : MT.Zaarour/DH.Kim

2/4/16

Mikhael T. Zaarour (Registered Civil Engineer) (Date)

REGISTERED PROFESSIONAL ENGINEER
Mikhael T. Zaarour
No. 68212
09/30/2017
CIVIL
STATE OF CALIFORNIA

STRUCTURE INVENTORY AND APPRAISAL REPORT

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

(1)	STATE NAME- CALIFORNIA	069
(8)	STRUCTURE NUMBER	55C0172
(5)	INVENTORY ROUTE(ON/UNDER)- ON	140000000
(2)	HIGHWAY AGENCY DISTRICT	12
(3)	COUNTY CODE 059 (4) PLACE CODE	00000
(6)	FEATURE INTERSECTED-	SANTIAGO CREEK
(7)	FACILITY CARRIED-	MODJESKA CANYON RD
(9)	LOCATION-	0.1 MI N/O MODJESKA GR RD
(11)	MILEPOINT/KILOMETERPOINT	0
(12)	BASE HIGHWAY NETWORK- NOT ON NET	0
(13)	LRS INVENTORY ROUTE & SUBROUTE	
(16)	LATITUDE	33 DEG 42 MIN 31.16 SEC
(17)	LONGITUDE	117 DEG 38 MIN 10.31 SEC
(98)	BORDER BRIDGE STATE CODE % SHARE	%
(99)	BORDER BRIDGE STRUCTURE NUMBER	

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

(43)	STRUCTURE TYPE MAIN:MATERIAL-	STEEL
	TYPE- GIRDER & FLOORBEAM SYSTEM CODE	303
(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- 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	1935
(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	1000
(30)	YEAR OF ADT 2009 (109) TRUCK ADT	1 %
(19)	BYPASS, DETOUR LENGTH	2 KM

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

(48)	LENGTH OF MAXIMUM SPAN	19.5 M
(49)	STRUCTURE LENGTH	19.5 M
(50)	CURB OR SIDEWALK: LEFT 0.7 M	RIGHT 0.7 M
(51)	BRIDGE ROADWAY WIDTH CURB TO CURB	6.1 M
(52)	DECK WIDTH OUT TO OUT	7.3 M
(32)	APPROACH ROADWAY WIDTH (W/SHOULDERS)	6.1 M
(33)	BRIDGE MEDIAN- NO MEDIAN	0
(34)	SKEW 68 DEG (35) STRUCTURE FLARED	NO
(10)	INVENTORY ROUTE MIN VERT CLEAR	99.99 M
(47)	INVENTORY ROUTE TOTAL HORIZ CLEAR	6.1 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 =	56.5
	STATUS	
	HEALTH INDEX	79.9
	PAINT CONDITION INDEX =	50.1

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

(112)	NBIS BRIDGE LENGTH- YES	Y
(104)	HIGHWAY SYSTEM- NOT ON NHS	0
(26)	FUNCTIONAL CLASS- LOCAL RURAL	09
(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	6
(59)	SUPERSTRUCTURE	6
(60)	SUBSTRUCTURE	8
(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- ALLOWABLE STRESS	2
(64)	OPERATING RATING-	25.4
(65)	INVENTORY RATING METHOD- ALLOWABLE STRESS	2
(66)	INVENTORY RATING-	17.2
(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	3
(69)	UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(71)	WATER ADEQUACY	8
(72)	APPROACH ROADWAY ALIGNMENT	6
(36)	TRAFFIC SAFETY FEATURES	0000
(113)	SCOUR CRITICAL BRIDGES	8

********** PROPOSED IMPROVEMENTS **********

(75)	TYPE OF WORK- REPLACE FOR DEFICIENC CODE	31
(76)	LENGTH OF STRUCTURE IMPROVEMENT	19.5 M
(94)	BRIDGE IMPROVEMENT COST	$328,900
(95)	ROADWAY IMPROVEMENT COST	$65,780
(96)	TOTAL PROJECT COST	$552,552
(97)	YEAR OF IMPROVEMENT COST ESTIMATE	2010
(114)	FUTURE ADT	1052
(115)	YEAR OF FUTURE ADT	2035

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

(90)	INSPECTION DATE 09/15 (91) FREQUENCY	24 MO
(92)	CRITICAL FEATURE INSPECTION:	(93) CFI DATE
A)	FRACTURE CRIT DETAIL- YES 24 MO	A) 05/14
B)	UNDERWATER INSP- NO MO	B)
C)	OTHER SPECIAL INSP- NO MO	C)