STATE OF CALIFORNIA - CALIFORNIA STATE TRANSPORTATION AGENCY
EDMUND G. BROWN JR., Governor

DEPARTMENT OF TRANSPORTATION
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE & INVESTIGATIONS
1801 30th Street
SACRAMENTO, CA 95816
PHONE (916) 227-8631
FAX (916) 227-8357

Nardy
scan copy
for our
records

Flex your power!
Be energy efficient!

100

July 7, 2016

Mr. Shane Silsby
Director of Public Works
County of Orange
P O Box 4048
Santa Ana, CA 92702-4048

Dear Mr. Silsby:

In accordance with Title 23 of the Code of Federal Regulations (Federal Highway Act) and the National Bridge Inspection Standards (NBIS), Caltrans Structure Maintenance and Investigations performed an inspection of 2 bridges under your jurisdiction. The type of inspection is indicated on the bridge report transmittal sheet. The bridges have been rated to indicate their deficiencies, structural adequacy, safe load carrying capacity and overall general condition.

Enclosed are copies of the Bridge Inspection Reports for the structures noted on the attached transmittal sheet. These reports contain descriptions of physical changes to the structures since the last inspection, recommendations for work to be done, and additional information not recorded in the previous Bridge Reports.

Your attention is directed to the requirements of Title 23, Part 650 of the Code of Federal Regulations, where newly completed structures or any modification of existing structures shall be entered in the inventory within 90 days. Please notify this office of any newly constructed bridge or culvert within your jurisdiction, more than 20 feet measured along the center of the roadway and carrying public vehicular traffic or over a public roadway, in order that it may be entered in the inventory of bridge structures in compliance with Federal requirements.

Should you have any questions regarding the enclosed Bridge Inspection Reports, please contact Stephen Sahs @ (916) 227-7928.

Sincerely, Steve Sahs, /SAHS

FOR
VASSIL K. SIMEONOV
Office Chief, Specialty Investigations
Structure Maintenance & Investigations - (Specialty Investigations)

Enclosures

DEPARTMENT OF TRANSPORTATION
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE & INVESTIGATIONS
1801 30th Street
SACRAMENTO, CA 95816
PHONE (916) 227-8631
FAX (916) 227-8357

Flex your power!
Be energy efficient!

WEB SITES:
The National Bridge Inspection Standards (NBIS) Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, Element Level Inspection, Structure Maintenance and Investigations Manuals, Local Assistance Program Guidelines and other related information are posted on Division of Maintenance, Structure Maintenance and Investigations; Division of Local Assistance, Local Highway Bridge Program (HBP) and FHWA websites.
The websites can be accessed at:
1. "Caltrans Structure Maintenance and Investigations" http://www.dot.ca.gov/hq/structur/strmaint/
2. "Caltrans Division of Local Assistance"
http/www.dot.ca.gov/hq/LocalPrograms/hbrr99/hbrr99a.htm
3. "FHWA" http/www.fhwa.dot.gov/BRIDGE/mtguide.pdf

Inspection Type Definitions

Routine Inspection:
Routine Inspections consist of both the initial Inventory Inspection (the first inspection of the bridge that places it in the bridge inventory or when there has been a change in the configuration of the structure) and subsequent regularly scheduled inspections. The initial inspection provides all the Structural Inventory & Appraisal (SI&A) data required by federal and state regulations, determines the baseline structural conditions, lists any existing problems, and establishes the load capacity of the structure. Subsequent inspections consist of observations, measurements needed to determine the physical and functional condition of the bridge, to identify any changes from the previously recorded conditions, and verification of its load capacity. These inspections are generally conducted from the deck, ground and/or water level, and from permanent work platforms and walkways, if present. Inspection of underwater portions of the substructure is limited to observations during low-flow periods and/or probing for signs of undermining. Special equipment should be utilized in circumstances where its use provides the only practical access to areas of the structure.

Fracture Critical, Special Feature & Underwater Inspections:
Fracture Critical, Special Feature, and Underwater Inspections are up close, hands-on inspections of one or more members above or below the water level to identify any deficiencies not readily detectable using Routine Inspection procedures. These inspections generally require special equipment such as under-bridge inspection equipment, manlifts, boats, traffic control, and railroad flagging. Personnel with special skills such as divers or structural steel inspectors trained in non-destructive testing techniques may be required.

Other Inspections:
Other Inspections are conducted on damaged structures, structures that have developed specific problems, or structures suspected of developing problems. The scope of these investigations should be sufficient to determine the need for emergency load restrictions or closure of the structure, monitor a changing condition, and to assess the level of effort necessary to effect a repair.

DEPARTMENT OF TRANSPORTATION
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE & INVESTIGATIONS
1801 30th Street
SACRAMENTO, CA 95816
PHONE (916) 227-8631
FAX (916) 227-8357

Flex your power!
Be energy efficient!

Bridge Report Transmittal Sheet

Batch 35485

County of Orange

Bridge #	Bridge Name	Location	Inspection Date	Inspection Type	Outstanding Work	Outstanding Cost
55C0172	SANTIAGO CREEK	0.1 MI N/O MODJESKA GR RD	05/19/2016	Fracture Critical	Y	$
55C0174	SILVERADO CANYON CREEK	1.6 MI E/O SANTIAGO ROAD	05/19/2016	Fracture Critical	Y	$

2 Bridge(s) in this Transmittal

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 : 05/19/2016
Inspection Type
Routine FC Underwater Special Other
X

Bridge Inspection Report

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 AC Thickness: 0.0 Inches

Rail Code: 0000 Rail Description: Steel plate girder

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal.

INSPECTION COMMENTARY

SCOPE AND ACCESS

A fracture critical member inspection was performed on 05/19/2016 by Peyman Kaviani and Carlos Villalobos from the Office of Specialty Investigations.

The structure was accessed with a ladder from the ground below. Lane closures and traffic control were not needed.

The investigation was conducted in accordance with the Fracture Critical Member Inspection Plan, dated 05/21/2008.

SUPERSTRUCTURE

A hands-on visual inspection was performed on 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:

INSPECTION COMMENTARY

- 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 :

Girder (Built-Up): FC Members

Fracture Critical: Yes Inspection Freq.: 24 Next Inspection: 05/19/2018

Team Leader : Carlos Villalobos

Report Author : Peyman Kaviani

Inspected By : P.Kaviani/C.Villalobos

Peyman Kaviani 6/30/2016

Peyman Kaviani (Registered Civil Engineer) (Date)

SANTIAGO CREEK

0.1 MI N/O MODJESKA GR RD 05/19/2016 [AAAP] 55C0172

100 - PHOTO-Routine-Roadway View

Photo No. 1

Roadway view of the structure

101 - PHOTO-Routine-Elevation View

Photo No. 2

Elevation view of the structure

SANTIAGO CREEK

0.1 MI N/O MODJESKA GR RD 05/19/2016 [AAAP] 55C0172

135 - PHOTO-Routine-Underside View

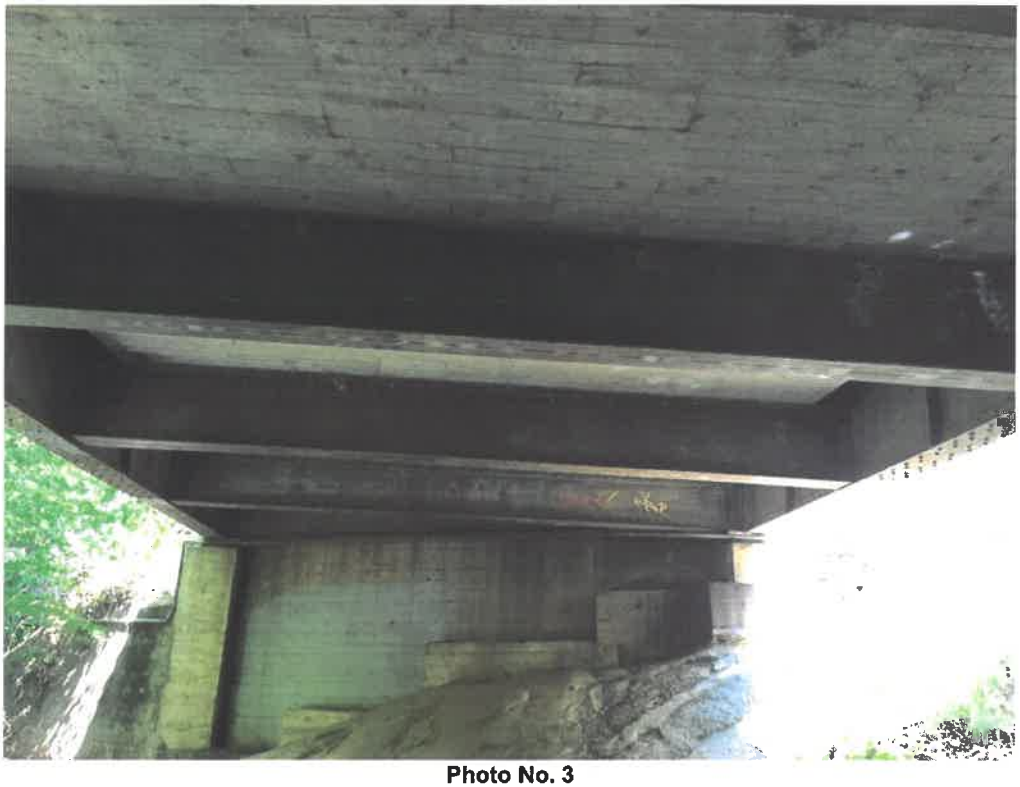

Photo No. 3
Underside view of the structure

107 - PHOTO-Super-Damage/Deteroration

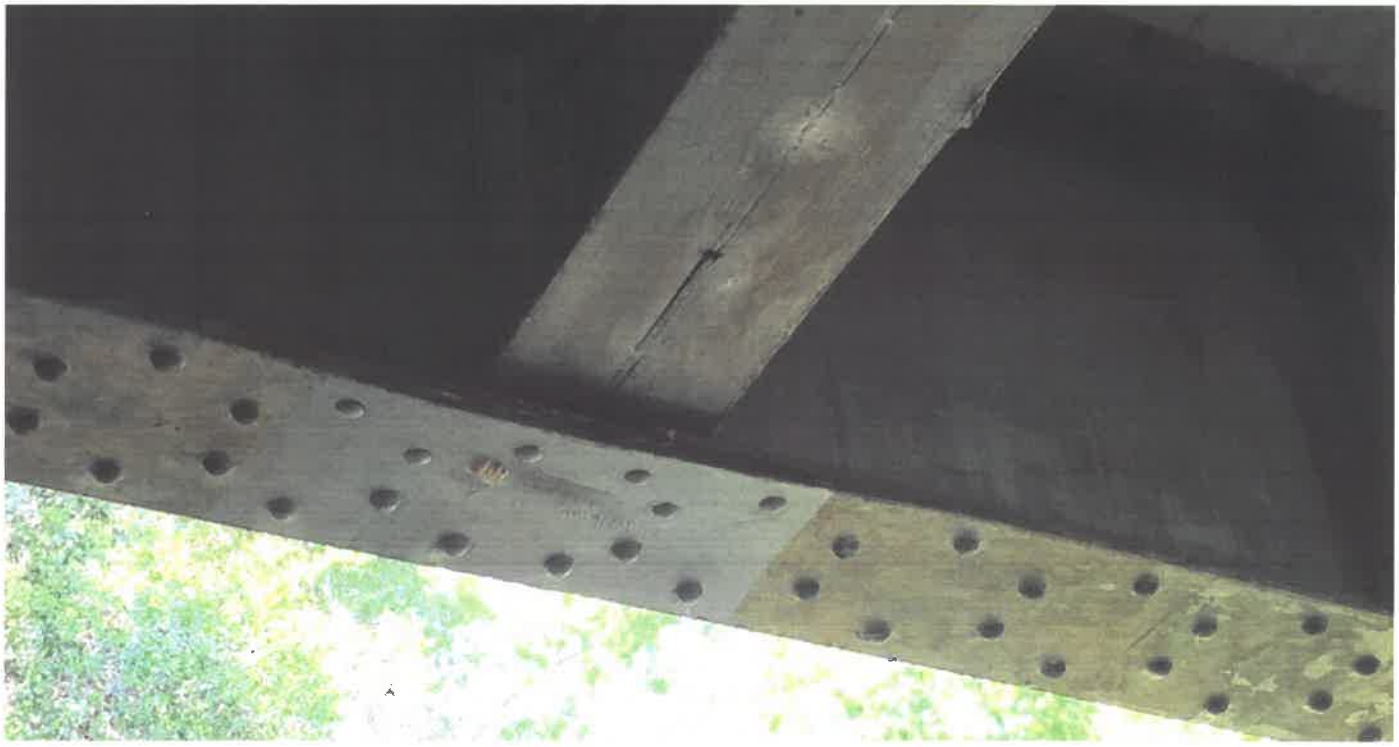

Photo No. 4
Typical view of a girder pack rust corrosion