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





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. Steve Jahs, / SAHS

VASSIL K. SIMEONOV

Office Chief, Specialty Investigations

Structure Maintenance & Investigations - (Specialty Investigations)

**Enclosures** 

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## **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.

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# **Bridge Report Transmittal Sheet**

# Batch <u>35485</u>

County of Orange		Inspection		Outstanding	
Bridge # Bridge Name	Location	Date	Type	Work	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



Structure Maintenance & Investigations

Bridge Number : 55C0174

Facility Carried: SILVERADO CNYN RD.

Location : 1.6 MI E/O SANTIAGO ROAD

City

Inspection Date: 05/19/2016

Inspection Type

Bridge Inspection Report

Routine FC Underwater Special Other

STRUCTURE NAME: SILVERADO CANYON CREEK

CONSTRUCTION INFORMATION

Year Built : 1935 Skew (degrees): 36
Year Widened: N/A No. of Joints : 0
Length (m) : 17.7 No. of Hinges : 0

Structure Description: CIP/RC deck on riveted steel floor beams on simply supported riveted

steel through girders (2) on RC pedestals on RC closed end

backfilled cantilever abutments on spread footings.

Span Configuration : (W) 1 @ 15.5 m (E) c/c

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15

Inventory Rating: RF=0.75 =>24.3 metric tons Calculation Method: LOAD FACTOR Operating Rating: RF=1.15 =>37.3 metric tons Calculation Method: LOAD FACTOR

Permit Rating : GGGGG

Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: (S) 0.7 m cu, 7.0 m, 0.7 m cu, 1.2 m sw (N)

Total Width: 9.7 m Net Width: 7.0 m No. of Lanes: 2 Speed: 45 mph
Min. Vertical Clearance: Unimpaired AC Thickness: 0.0 Inches

Rail Code: 0000

Rail Type Location Length (ft) Rail Modifications

Misc. Right/Left
Steel

### DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal with a cobbled bottom.

## 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.

Printed on: Thursday 06/30/2016 01:25 PM

### 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

Carlos Villalobos

Report Author :

Peyman Kaviani

Inspected By :

P. Kaviani/C. Villalobos

Peyman Kaviani (Registered Civil Engineer)

Peyman Kaviani No. 80665 03/31/2017 CIVIL

# **SILVERADO CANYON CREEK**

1.6 MI E/O SANTIAGO ROAD

05/19/2016 [AAAQ]

100 - PHOTO-Routine-Roadway View





Photo No. 1 Roadway view of the structure



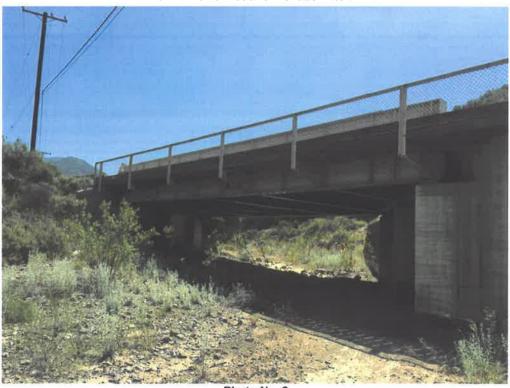


Photo No. 2

North elevation of the structure

# **SILVERADO CANYON CREEK**

1.6 MI E/O SANTIAGO ROAD

05/19/2016 [AAAQ]

101 - PHOTO-Routine-Elevation View



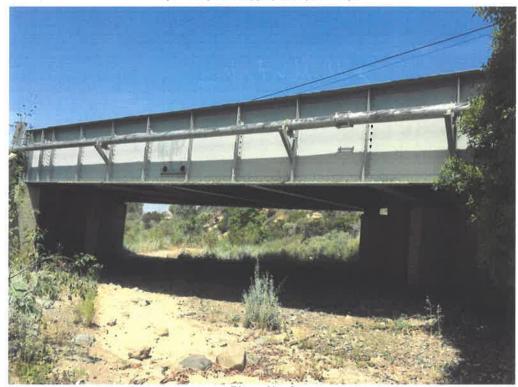


Photo No. 3
South elevation of the structure





Photo No. 4
Underside view of the structure