

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!*

November 09, 2012

Mr. Rich Hoisington
Senior Engineer/Bridge Section
County of Orange
P O Box 4048
Santa Ana, CA 92702-4048

Dear Mr. Hoisington:

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 a Fracture Critical inspection of 1 bridge(s) under your jurisdiction. 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 Report(s), please contact Vassil Simeonov @ (916) 227-0719.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Johnson", with a long horizontal line extending to the right.

MICHAEL B. JOHNSON
Office Chief
Structure Maintenance & Investigations - (Specialty Investigations and Bridge Management)

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** **24083**

Br. Number	Bridge Name	Inspection		Outstanding Work
		Date	Type	
55C0174	SILVERADO CANYON CREEK	07/25/2012	Fracture Critical	Y

1 Bridge(s) in this Transmittal



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 55C0174
Facility Carried: SILVERADO CANYON RD.
Location : 1.6 MI E/O SANTIAGO ROAD
City :
Inspection Date : 07/25/2012
Inspection Type
Routine ☒ FC Underwater Special Other

Bridge Inspection Report

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

LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15
Inventory Rating: 24.5 metric tons Calculation Method: LOAD FACTOR
Operating Rating: 37.2 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
Rail Code: 0000 Rail Description: Steel plate girder

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural earth trapezoidal with a cobbled bottom.

INSPECTION COMMENTARY

FRACTURE CRITICAL INVESTIGATION

A fracture critical inspection was performed on 07/25/2012 by Jeff Yang from the Office of Specialty Investigations and Bridge Management. The structure was accessed from the ground below. The investigation was conducted in accordance with the Fracture Critical Member Inspection Plan, dated 05/21/2008.

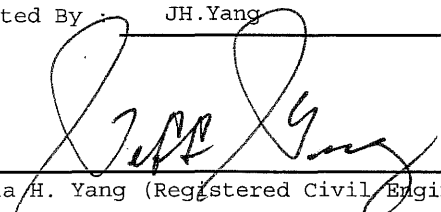
A hands-on visual inspection was performed on the tension stress areas of the left and right girders. No fractures or cracks were found.

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: 07/25/2014

Team Leader : Jia H. Yang
Report Author : Jia H. Yang
Inspected By : JH. Yang

Jia H. Yang (Registered Civil Engineer) 11/2/12



SILVERADO CANYON CREEK

1.6 MI E/O SANTIAGO ROAD

07/25/2012 [AAAM]

55C0174

100 - PHOTO-Routine-Roadway View



Photo No. 1

Roadway view of bridge - looking west

101 - PHOTO-Routine-Elevation View



Photo No. 2

Elevation view of bridge - looking north

SILVERADO CANYON CREEK

1.6 MI E/O SANTIAGO ROAD

07/25/2012 [AAAM]

55C0174

135 - PHOTO-Routine-Underside

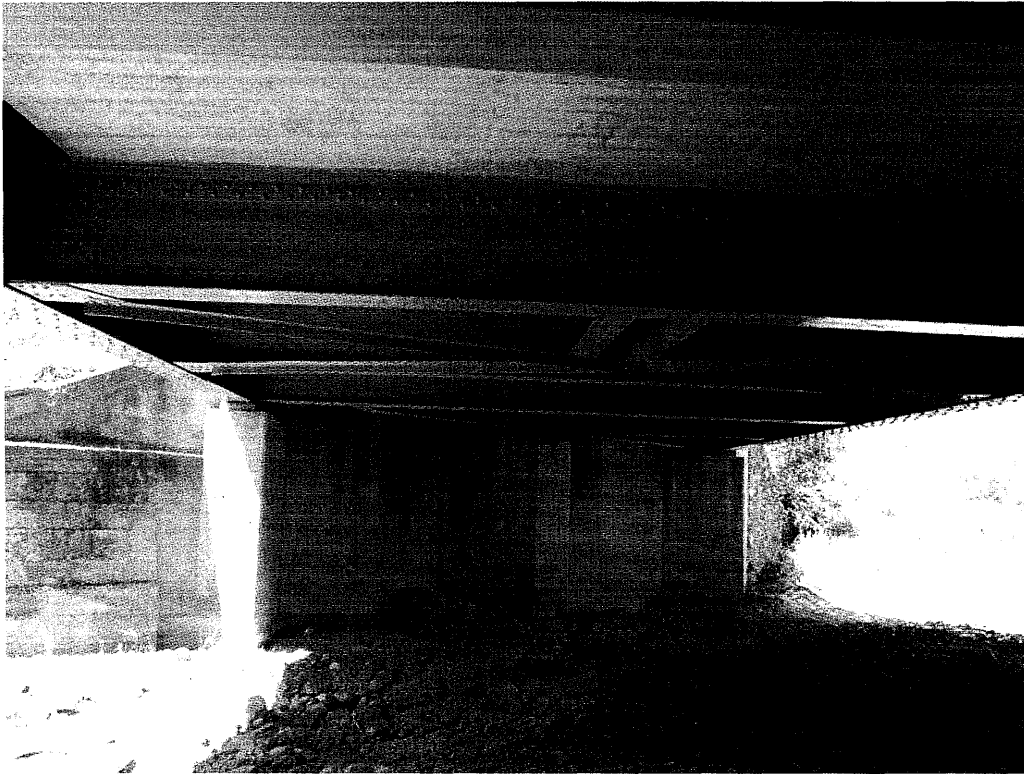


Photo No. 3

Bridge underside view

108 - PHOTO-Super-Details



Photo No. 4

Detail of typical steel girder