

*California Department of Transportation  
Division of Maintenance*

*Structure Maintenance and Investigations*

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**B**<sub>RIDGE</sub>

**I**<sub>NSPECTION</sub>

**R**<sub>ECORDS</sub>

**I**<sub>NFORMATION</sub>

**S**<sub>YSTEM</sub>

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DEPARTMENT OF TRANSPORTATION  
Structure Maintenance & Investigations

Bridge Number : 54C0066  
Facility Carried: MT VERNON AVE  
Location : .2 MI S OF RTE 66  
City : SAN BERNARDINO  
Inspection Date : 10/19/2009

### Bridge Inspection Report

Inspection Type				
Routine	FC	Underwater	Special	Other
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**STRUCTURE NAME:** MOUNT VERNON AVENUE OH

#### CONSTRUCTION INFORMATION

Year Built : 1934	Skew (degrees): 99
Year Widened: N/A	No. of Joints : 23
Length (m) : 309.7	No. of Hinges : 0

Structure Description: The south end is a three-span continuous arch soffit CIP/RC deck slab on closed end backfilled RC cantilever abutment on framed RC column (6) bents. Else, eighteen simple plate girder (5) spans and one simple steel girder (9) span with CIP/RC deck on northerly closed end backfilled RC cantilever abutment and on framed steel column (2) bents, all supported on treated timber piles.

Span Configuration : (S) 3.0 m, 2 @ 7.9 m, 2 @ 12.8 m, 8.8 m, 7.6 m, 15.8 m, 15.2 m, 18.3 m, 27.1 m, 18.6 m, 3@18.3 m, 18.9 m, 16.8 m, 2@12.2 m, 13.1 m, 2@12.8 m (N) c/c

#### LOAD CAPACITY AND RATINGS

Design Live Load: M-13.5 OR H-15	
Inventory Rating: 0 metric tonnes	Calculation Method: LOAD FACTOR
Operating Rating: 0 metric tonnes	Calculation Method: LOAD FACTOR
Permit Rating : XXXXX	
Posting Load : Type 3: Legal	Type 3S2: Legal      Type 3-3: Legal

#### DESCRIPTION ON STRUCTURE

Deck X-Section: (W) 0.3 m br, 1.1 m sw, 12.2 m, 1.1 m sw, 0.3 m br (E)  
Total Width: 14.9 m      Net Width: 12.2 m      No. of Lanes: 4  
Rail Description: Concrete Baluster (Aesthetic)      Rail Code : 0000  
Min. Vertical Clearance: Unimpaired

#### DESCRIPTION UNDER STRUCTURE

Facility Name	Func Cla	Lanes	Horiz Clr (m)	Vert Clr (m)
3RD STREET	19	2	6.80	4.03

Channel Description: None.

#### CONDITION TEXT

##### HISTORY

The support numbering used in this report follows the Caltrans convention (Abutment 1, Bent 2, Bent 3, ..., Bent 22 and Abutment 23), which differs from the numbering used in the as-built plans (Abutment, Bent 1, Bent 2, ..., Bent 21 and Abutment).

##### FRACTURE CRITICAL INVESTIGATION

A fracture critical and partial special feature inspection was performed on 10/19/2009 and 06/01/2010 by Carlos Villalobos from the Office of Specialty Investigations and

**CONDITION TEXT**

Bridge Management. The structure was accessed from the deck with the Under Bridge Inspection Truck (UBIT) operated by Mike Barrios. Lane closures and traffic control were provided by the City of San Bernardino. The investigation was performed in accordance with the Fracture Critical and Special Feature Member Inspection Plan, dated 08/13/2007.

A hands-on visual inspection was performed on: (i) the tension stress areas in the steel cap in Bents 5 to 22, (ii) the steel girders with Category "E" intermittent longitudinal fillet welds connecting the partial-length cover plates to the tension flanges in Spans 12 to 14, (iii) the steel girders with Category "D" intermittent vertical fillet welds connecting the vertical stiffeners to the webs in the tension zones in Spans 7 to 8 and Spans 12 to 15, and (iv) the steel girders with Category "D" transverse fillet welds connecting the vertical stiffeners to the tension flanges in Spans 7 to 8 and Spans 12 to 15. No new fractures or cracks were found.

Up to 16 mm (5/8 in) of pack rust was typically found between the top flange and the RC deck of Bents 5 to 22. These areas will be monitored for any significant increase in corrosion during the next scheduled inspection.

During the 04/28/2004 and 08/13/2007 fracture critical inspections, several cracks were found on the girder to steel cap connections of Bents 7, 8, 14, 18, 19 and 20. No growth has occurred at these locations. The cracks will be monitored for any new growth at the next scheduled inspection.

See the Steel Element NDT Inspection Table below for a listing of all cracks that were found during the 2004 and 2007 inspections.

**STEEL INVESTIGATIONS**

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

Cap: FC Members

Plate Girder with Category D Welds, Category E Welds

Stringer(Rolled) with Category D Welds, Staggered X-Frames/Girders

Fracture Critical: Yes

Inspection Freq.: 24

Next Inspection: 10/19/2011

**Steel Element NDT Inspection**

Span	Girder	Bay	Element	Method	Inspection Result
6	2		BENT 7	ANGLE	305 mm vertical crack in east angle. (Crack found 08/14/2007)
6	4		BENT 7	ANGLE	127 mm vertical crack in east angle. (08/14/2007)
7	1		BENT 7	WEB	163 mm girder web crack. (04/28/2004)
7	3		BENT 7	WEB	70 mm girder web crack. (04/28/2004)
7	5		BENT 7	WEB	89 mm girder web crack. (04/28/2004)
7	7		BENT 7	WEB	67 mm girder web crack. (04/28/2004)
7	8		BENT 7	WEB	57 mm girder web crack. (04/28/2004)
7	5		BENT 8	WEB	1 mm girder web crack. (04/28/2004)
7	9		BENT 8	WEB	75 mm girder web crack. (04/28/2004)
7	9		BENT 8	ANGLE	305 mm vertical crack in east angle. (08/14/2007)
14	1		BNT 14	WEB	150 mm girder web crack. (04/28/2004)
18	5		BNT 18	ANGLE	150 mm vertical crack in west angle. (04/28/2004)
18	5		BNT 18	ANGLE	178 mm vertical crack in east angle. (04/28/2004)
19	1		BNT 19	ANGLE	44 mm vertical crack in west angle. (04/28/2004)
19	1		BNT 19	ANGLE	44 mm vertical crack in east angle. (04/28/2004)

Span	Girder	Bay	Element	Method	Inspection Result
19	2		BNT 19	ANGLE	102 mm vertical crack in west angle. (04/28/2004)
19	2		BNT 19	WEB	95 mm girder web crack. (04/28/2004)
19	3		BNT 19	WEB	381 mm girder web crack. (04/28/2004)
19	4		BNT 19	WEB	70 mm girder web crack. (04/28/2004)
19	5		BNT 19	ANGLE	559 mm vertical crack in west angle. (04/28/2004)
19	5		BNT 19	ANGLE	150 mm vertical crack in east angle. (04/28/2004)
19	7		BNT 19	WEB	35 mm girder web crack. (04/28/2004)
19	9		BNT 19	ANGLE	125 mm vertical crack in west angle. (04/28/2004)
19	1		BNT 20	ANGLE	572 mm vertical crack in east angle. (04/28/2004)
19	2		BNT 20	ANGLE	105 mm vertical crack in east angle. (04/28/2004)
19	3		BNT 20	ANGLE	254 mm vertical crack in east angle. (04/28/2004)
19	4		BNT 20	ANGLE	150 mm vertical crack in east angle. (04/28/2004)

Inspected By : C.Villalobos

*Carlos F. Villalobos*

Registered Civil Engineer

