



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 24C0053
Facility Carried: TWIN CITIES ROAD
Location : 2.0 MI EAST OF RIVER RD
City :
Inspection Date : 04/11/2008

Bridge Inspection Report

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

STRUCTURE NAME: SNODGRASS SLOUGH

CONSTRUCTION INFORMATION

Year Built : 1931	Skew (degrees): 0
Year Widened: 1965	No. of Joints : 3
Length (m) : 316.4	No. of Hinges : 1

Structure Description: Main Span: Corrugated metal deck on steel swing truss with RC pivot piers, and RC seat abutments (hand operated). Rest and pivot Piers founded on 3'-6" diameter steel shells on timber piles.

Approach Spans: RC slab continuous on RC (3) pile bents with diaphragm abutments.

Span Configuration : 9 @ 9.1 m, 24.4 m, 7.2 m, 24.4 m, 19 @ 9.1 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN			
Inventory Rating: 7	metric tons	Calculation Method: LOAD FACTOR	
Operating Rating: 12	metric tons	Calculation Method: LOAD FACTOR	
Permit Rating : XXXXX			
Posting Load : Type 3	10 English tons	Type 3S2	10 English tons Type 3-3 10 English tons

DESCRIPTION ON STRUCTURE

Deck X-Section: Approach: 0.1 m r, 8.5 m, 0.1 m r

Truss: 0.2 m cu, 6.4 m, 0.2 m cu

Total Width: 6.8 m Net Width: 6.4 m No. of Lanes: 2

Rail Description: Appr: metal beam on steel posts Truss: steel Rail Code : 0000
 lattice

Min. Vertical Clearance: 4.110

DESCRIPTION UNDER STRUCTURE

Channel Description: Earth and tulle lined

CONDITION TEXT

FRACTURE CRITICAL INVESTIGATION

A fracture critical inspection was performed on 04/11/2008 by Paul Hartbower from the Office of Specialty Investigations and Bridge Management. The steel trusses were accessed with a lift truck and from the deck. The steel floor beams were inspected with the UBIT operated by Robert Rexin. Lane closures and traffic control were provided by Sacramento County. The investigation was conducted in accordance with the attached Fracture Critical Member Inspection Plan, dated 04/11/2008.

A hands-on visual inspection was performed on: (i) the tension members of the left and right steel truss in Spans 10 to 12 and (ii) the steel floor beams in Spans 10 to 12. No fractures or cracks were found.

The pins were tested ultrasonically. No defect indications were noted. The testing results are listed in the Pin/Hanger UT Inspection table below.

STEEL INVESTIGATIONS

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

Floor Beams: FC Members

Truss: FC Members

Fracture Critical: Yes

Inspection Freq.: 24

Next Inspection: 04/11/2010

Pin/Hanger UT Inspection

C P	a / p H	Transducer Nut	Freq Angle	Hinge Span	Girder	T/B	Ind Face Side	Scan Lvl (db)	Ref Lvl (db)	Sound Lvl (db)	Path From	TO (mm)	Total Length (mm)	Inspection Result
N	P	6"	.5"	0 2.25	12	U3R	T	A/B	62	305			345	No Indications of defects found
N	P	6"	.5"	0 2.25	12	U4R	T	A/B	62	241			280	No Indications of defects found
N	P	6"	.5"	0 2.25	13	U5R	T	A/B	62	241			280	No Indications of defects found
N	P	6"	.5"	0 2.25	13	U6R	T	A/B	62	305			345	No Indications of defects found
N	P	6"	.5"	0 2.25	12	U3L	T	A/B	62	305			345	No Indications of defects found
N	P	6"	.5"	0 2.25	12	U4L	T	A/B	62	241			280	No Indications of defects found
N	P	6"	.5"	0 2.25	13	U5L	T	A/B	62	241			280	No Indications of defects found
N	P	6"	.5"	0 2.25	13	U6L	T	A/B	62	305			345	No Indications of defects found

Inspected By :

PE. Hartbower

Vassil Simeonov
Registered Civil Engineer



FRACTURE CRITICAL MEMBER INSPECTION PLAN
BRIDGE No. 24C0053 (SNODGRASS SLOUGH)
03-SAC-TWIN CITIES ROAD-2.0 MI EAST OF RIVER RD

BRIDGE DESCRIPTION

Main Span: Steel swing truss with corrugated metal deck on RC pivot piers, and RC seat abutments (hand operated). Rest and pivot Piers founded on 3'-6" diameter steel shells on timber piles.
Approach Spans: RC slab continuous on RC (3) pile bents with diaphragm abutments.

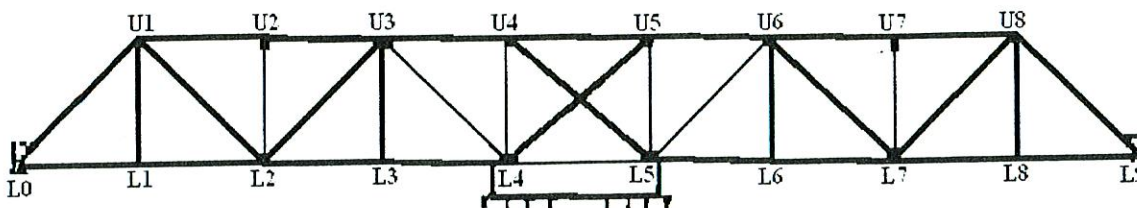
FRACTURE CRITICAL MEMBERS

1. Tension members of the left and right steel truss
2. Steel floor beams

MEMBERS AND DETAILS THAT REQUIRE INSPECTION

SPAN OR SUPPORT	FRACTURE CRITICAL MEMBERS AND FATIGUE PRONE DETAILS	INSPECTION METHOD	INSPECTION COMPLETED	
			YES	NO
Span 10	Upper chord members U1-U2, U2-U3 and U3-U4 of the left truss	VT		
Span 10	Diagonal members L0-U1, U1-L2 and L2-U3 of the left truss	VT		
Span 10	Vertical members L1-U1 and L3-U3 of the left truss	VT		
Span 10	Lower chord members L0-L1, L1-L2, L2-L3 and L3-L4 of the left truss	VT		
Span 10	Pins at U3 and U4 of the left truss (test 50% of all pins ultrasonically every 24 months, alternating between the left and right truss)	UT		
Span 10	Upper chord members U1-U2, U2-U3 and U3-U4 of the right truss	VT		
Span 10	Diagonal members L0-U1, U1-L2 and L2-U3 of the right truss	VT		
Span 10	Vertical members L1-U1 and L3-U3 of the right truss	VT		
Span 10	Lower chord members L0-L1, L1-L2, L2-L3 and L3-L4 of the right truss	VT		
Span 10	Pins at U3 and U4 of the right truss (test 50% of all pins ultrasonically every 24 months, alternating between the left and right truss)	UT		
Span 10	Tension stress areas and end connections of the floor beams at panel points L1 to L3	UT		
Span 11	Upper chord members U4-U5 of the left truss	VT		
Span 11	Diagonal members L4-U5 and U4-L5 of the left truss	VT		
Span 11	Upper chord members U4-U5 of the right truss	VT		
Span 11	Diagonal members L4-U5 and U4-L5 of the right truss	VT		
Span 12	Upper chord members U5-U6, U6-U7 and U7-U8 of the left truss	VT		

Span 12	Diagonal members U6-L7, L7-U8 and U8-L9 of the left truss	VT		
Span 12	Vertical members L6-U6 and L8-U8 of the left truss	VT		
Span 12	Lower chord members L5-L6, L6-L7, L7-L8 and L8-L9 of the left truss	VT		
Span 12	Pins at U5 and U6 of the left truss (test 50% of all pins ultrasonically every 24 months, alternating between the left and right truss)	UT		
Span 12	Upper chord members U5-U6, U6-U7 and U7-U8 of the right truss	VT		
Span 12	Diagonal members U6-L7, L7-U8 and U8-L9 of the right truss	VT		
Span 12	Vertical members L6-U6 and L8-U8 of the right truss	VT		
Span 12	Lower chord members L5-L6, L6-L7, L7-L8 and L8-L9 of the right truss	VT		
Span 12	Pins at U5 and U6 of the right truss (test 50% of all pins ultrasonically every 24 months, alternating between the left and right truss)	UT		
Span 12	Tension stress areas and end connections of the floor beams at panel points L6 to L8	UT		



TRUSS ELEVATION IN SPANS 10 TO 12

INSPECTION METHODS

1. VISUAL INSPECTION (VT)

Visual inspections will be conducted in accordance with NBIS Code of Federal Regulation 23 CFR Part 650. The inspection procedure recommendations in the AASHTO "Manual for Condition Evaluation of Bridges," 1994, second edition and the "Inspection of Fracture Critical Bridge Members" FHWA Report No. FHWA-IP-86-26 will be followed. These inspections shall be hands-on with the inspector being within arm length of the component. Critical areas, if required, shall be specially cleaned prior to the inspection and additional lighting and magnification shall be used.

2. LIQUID PENETRANT TESTING (PT)

The testing will be performed by a Certified ASNT Level II inspector from the Fracture Critical Inspection Team following the Structure Maintenance and Investigations approved procedure No. PT-001, "Procedure for Liquid Penetrant Inspection for the Detection of Cracks in Structural Steel Bridge Components". Use this method to verify crack indications.

3. ULTRASONIC INSPECTION (UT)

The testing will be performed by a Certified ASNT Level II inspector from the Fracture Critical Inspection Team following the Structure Maintenance and Investigation approved procedure No. UT-001, "Procedure for Ultrasonic Inspection for the Detection of Cracks in Structural Steel Bridge Components."

SPECIAL INSPECTION NEEDS

1. TRAFFIC MANAGEMENT PLAN

Lane closures and traffic control will be provided by Sacramento County.

2. EQUIPMENT

The following equipment will be utilized to perform the inspection: flashlight, wire brush, camera and ultrasonic testing machine.

The tension members of the left and right truss will be accessed with a lift truck and from the deck. The floor beams will be accessed with an Under Bridge Inspection Truck (UBIT) on the approaches.

Prepared by: *Paul E Hartbower*
Paul Hartbower (Lead Structural Steel Inspector NDT)

Approved by: *Vassil Simeonov*
Vassil Simeonov (FC Program Senior)