



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 24C0056
Facility Carried: MICHIGAN BAR RD
Location : 1.2 MI N OF S.R. 16
City :
Inspection Date : 02/10/2010

Bridge Inspection Report

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

STRUCTURE NAME: COSUMNES RIVER

CONSTRUCTION INFORMATION

Year Built : 1947	Skew (degrees): 0
Year Widened: N/A	No. of Joints : 3
Length (m) : 107.6	No. of Hinges : 0

Structure Description: Modular concrete panel deck on modular steel box deck trusses (3) in Spans 1 and 2, and steel girders (2) in Spans 3 and 4 on rubble masonry piers and abutments, and on one steel bent.

Span Configuration : 42.1 m, 42.1 m, 11.6 m, 11.6 m

LOAD CAPACITY AND RATINGS

Design Live Load: M-9 OR H-10		
Inventory Rating: 11.3 metric tonnes	Calculation Method: LOAD FACTOR	
Operating Rating: 19.1 metric tonnes	Calculation Method: LOAD FACTOR	
Permit Rating : XXXXX		
Posting Load : Type 3: 18 U.S. Tons	Type 3S2: 23 U.S. Tons	Type 3-3: 25 U.S. Tons

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.1 m br, 0.1 m wg, 3 m, 0.1 m wg, 0.1 m br		
Total Width: 3.4 m	Net Width: 3.1 m	No. of Lanes: 1
Rail Description: timber rail		Rail Code : 0000
Min. Vertical Clearance: Unimpaired		

DESCRIPTION UNDER STRUCTURE

Channel Description: earth and cobble lined

CONDITION TEXT

HISTORY

Some bent truss bars and a 6" sag in the truss portion of the bridge were found. As a result, the bridge was rerated.

EXISTING POSTING

The Posting Order dated November 27, 1979 established the following load limits:

Type 3	20 Tons
Type 3S2	30 Tons
Type 3-3	39 tons

SAFE LOAD CAPACITY

The new ratings with no speed restrictions are:

Type 3	18 Tons
Type 3S2	23 Tons
Type 3-3	25 tons

CONDITION TEXT

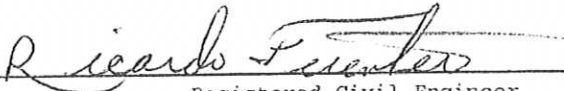
If a speed restriction of 5 mph is set, the new load limits (due to no live load impact) are:

Type 3 24 Tons
Type 3S2 28 Tons
Type 3-3 30 tons

RECOMMENDED POSTING

Posting for lower loads or adding a speed restriction requires a public hearing. It is recommended that a hearing be conducted to change the load limits and set the speed restriction. A speed restriction is reasonable because there is a ninety degree turn at the south approach to the bridge and the deck width allows only one vehicle at a time.

Inspected By : RL.Fuentes/RL.Fuentes



Registered Civil Engineer





DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 24C0056
Facility Carried: MICHIGAN BAR RD
Location : 1.2 MI N OF S.R. 16
City :
Inspection Date : 04/18/2007

Bridge Inspection Report

Inspection Type

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

STRUCTURE NAME: COSUMNES RIVER

CONSTRUCTION INFORMATION

Year Built : 1947	Skew (degrees): 0
Year Widened: N/A	No. of Joints : 3
Length (m) : 107.6	No. of Hinges : 0

Structure Description: Modular concrete panel deck; on modular truss and steel stringer spans; on rubble masonry piers and abutments; and on one steel bent

Span Configuration : 2 @ 138' (trusses) - 2 @ 38'

LOAD CAPACITY AND RATINGS

Design Live Load: M-9 OR H-10	
Inventory Rating: 13.6 metric tons	Calculation Method: LOAD FACTOR
Operating Rating: 20.8 metric tons	Calculation Method: LOAD FACTOR
Permit Rating : XXXXX	
Posting Load : Type 3 20 English tons	Type 3S2 30 English tons Type 3-3 39 English tons

DESCRIPTION ON STRUCTURE

Deck X-Section: 4" br, 4"wg, 10', 4" wg, 4" br		
Total Width: 3.4 m	Net Width: 3.1 m	No. of Lanes: 1
Rail Description: timber rail		Rail Code : 0000
Min. Vertical Clearance: Unimpaired		

DESCRIPTION UNDER STRUCTURE

Channel Description: earth and cobble lined

CONDITION TEXT

REVISIONS

The design live load in SMART was changed to H10 for local agency bridges designed / built between 1944 and 1949 per the Area Bridge Maintenance Engineer Manual.

CONDITION OF STRUCTURE

There was water flowing an average of 4' deep on either side of pier 2. Due to the water depth and velocity, the base of pier 2 was not inspected for scour. It will be inspected this summer at low flow.

There was no identification for this structure.

PAINT CONDITION

The paint is in very poor condition. Although there was no section loss found, only about 5% of the entire steel surface area has any semblance of paint remaining.

On the piles, there is rust with pitting in all locations where the paint has flaked off.

On the truss, there is rust with heavy pitting on most members. There are localized areas

CONDITION TEXT

of minor pack rust through out the structure.

The day of this inspection, all the steel elements were still in need of new paint.

FRACTURE CRITICAL INVESTIGATION

A Fracture Critical inspection was not made during this inspection. The last Fracture Critical inspection was made by the Steel Inspection team in February of 2002. A Fracture Critical inspection will be scheduled by the Steel Inspection team.

SIGNS

Appropriate weight limit signs are in place at each approach.

EXISTING POSTING

Director's order dated November 27, 1979 for the following load restrictions:

20 TONS PER VEHICLE
30 TONS PER SEMI-TRAILER COMBINATION
39 TONS PER TRUCK AND FULL TRAILER

RECOMMENDED POSTING

Retain existing posting.

SAFE LOAD CAPACITY

An analysis done for this structure indicates the the bending controls over panel shear, at Spans 1 and 2. The existing posting is applicable for as long as this structure remains in the same general condition as noted in the Group A inspection dated February 26, 2002.

STEEL INVESTIGATIONS

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

Cap: FC Members,
Plate Girder: FC Members,
Truss: FC Members with Pin and Hanger Assemblies

Fracture Critical: Yes Inspection Freq.: 24 Next Inspection: 02/26/2004

<u>ELEMENT INSPECTION RATINGS</u>									
F#Elem	Element Description	Env	Total	Units	Qty in each Condition State				
					Qty	St. 1	St. 2	St. 3	St. 4
101 12	Concrete Deck - Bare	2	350	sq.m.	0	350	0	0	0
101 107	Painted Steel Open Girder/Beam	2	46	m.	0	46	0	0	0
101 131	Painted Steel Deck Truss	2	503	m.	38	0	100	353	12
101 201	Unpainted Steel Column or Pile Extension	2	2	ea.	0	2	0	0	0
101 211	Other Material Pier Wall	2	10	m.	10	0	0	0	0
101 217	Other Material Abutment	2	7	m.	7	0	0	0	0

F#Elem	Element Description	Env	Total	Units	Qty in each Condition State				
					Qty	St. 1	St. 2	St. 3	St. 4
101 230	Unpainted Steel Cap	2	3	m.	3	0	0	0	0
101 332	Timber Bridge Railing	2	215	m.	0	215	0	0	0
101 361	Scour	2	1	ea.	1	0	0	0	0

WORK RECOMMENDATIONS

RecDate: 04/18/2007 EstCost: Install the bridge identification for
Action : StrTarget: this structure. This is an aid to
Work By: LOCAL AGENCY DistTarget: inspectors and maintenance personnel.
Status : PROPOSED EA:

RecDate: 04/18/2007 EstCost: Repaint all the steel elements with an
Action : StrTarget: appropriate paint system.
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

RecDate: 02/26/2002 EstCost: Repair the damaged members as described
Action : Undefined Work StrTarget: in GROUP "A" INVESTIGATION.
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Inspected By : Ricardo Fuentes

Ricardo Fuentes
Registered Civil Engineer

CC: Steel Inspections: Vassil Simeonov



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 24C0056
 (5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
 (2) HIGHWAY AGENCY DISTRICT 03
 (3) COUNTY CODE 067 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- COSUMNES RIVER
 (7) FACILITY CARRIED- MICHIGAN BAR RD
 (9) LOCATION- 1.2 MI N OF S.R. 16
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 38 DEG 30 MIN 00 SEC
 (17) LONGITUDE 121 DEG 02 MIN 42 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE -1 %
 (99) BORDER BRIDGE STRUCTURE NUMBER

***** STRUCTURE TYPE AND MATERIAL *****

(43) STRUCTURE TYPE MAIN:MATERIAL- STEEL
 TYPE- TRUSS - DECK CODE 309
 (44) STRUCTURE TYPE APPR:MATERIAL- STEEL
 TYPE- STRINGER/MULTI-BEAM OR GDR CODE 302
 (45) NUMBER OF SPANS IN MAIN UNIT 2
 (46) NUMBER OF APPROACH SPANS 2
 (107) DECK STRUCTURE TYPE- CIP CONCRETE CODE 1
 (108) WEARING SURFACE / PROTECTIVE SYSTEM:
 A) TYPE OF WEARING SURFACE- NONE CODE 0
 B) TYPE OF MEMBRANE- NONE CODE 0
 C) TYPE OF DECK PROTECTION- NONE CODE 0

***** AGE AND SERVICE *****

(27) YEAR BUILT 1947
 (26) YEAR RECONSTRUCTED
 (42) TYPE OF SERVICE: ON- HIGHWAY 1
 UNDER- WATERWAY 5
 (28) LANES:ON STRUCTURE 01 UNDER STRUCTURE 00
 (29) AVERAGE DAILY TRAFFIC 50
 (30) YEAR OF ADT 2007 (109) TRUCK ADT 10 %
 (19) BYPASS, DETOUR LENGTH 14 KM

***** GEOMETRIC DATA *****

(48) LENGTH OF MAXIMUM SPAN 42.1 M
 (49) STRUCTURE LENGTH 107.6 M
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 3.1 M
 (52) DECK WIDTH OUT TO OUT 3.4 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 3.0 M
 (33) BRIDGE MEDIAN- NO MEDIAN 0
 (34) SKEW 0 DEG (35) STRUCTURE FLARED NO
 (10) INVENTORY ROUTE MIN VERT CLEAR 99.99 M
 (47) INVENTORY ROUTE TOTAL HORIZ CLEAR 3.1 M
 (53) MIN VERT CLEAR OVER BRIDGE RDWY 99.99 M
 (54) MIN VERT UNDERCLEAR REF- NOT H/RR 0.00 M
 (55) MIN LAT UNDERCLEAR RT REF- NOT H/RR 0.0 M
 (56) MIN LAT UNDERCLEAR LT 0.0 M

***** NAVIGATION DATA *****

(38) NAVIGATION CONTROL- NO CONTROL CODE 0
 (111) PIER PROTECTION- CODE
 (39) NAVIGATION VERTICAL CLEARANCE 0.0 M
 (116) VERT-LIFT BRIDGE NAV MIN VERT CLEAR -1.0 M
 (40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

***** SUFFICIENCY RATING *****

SUFFICIENCY RATING = 20.5
 STATUS STRUCTURALLY DEFICIENT
 HEALTH INDEX .0
 PAINT CONDITION INDEX = 35.9

***** CLASSIFICATION *****

(112) NBIS BRIDGE LENGTH- YES Y
 (104) HIGHWAY SYSTEM- NOT ON NHS 0
 (26) FUNCTIONAL CLASS- LOCAL RURAL 09
 (100) DEFENSE HIGHWAY- NOT STRAHNET 0
 (101) PARALLEL STRUCTURE- NONE EXISTS N
 (102) DIRECTION OF TRAFFIC- 1 LANE, 2 WAY 3
 (103) TEMPORARY STRUCTURE-
 (105) FED.LANDS HWY- NOT APPLICABLE 0
 (110) DESIGNATED NATIONAL NETWORK - NOT ON NET 0
 (20) TOLL- ON FREE ROAD 3
 (21) MAINTAIN- COUNTY HIGHWAY AGENCY 02
 (22) OWNER- COUNTY HIGHWAY AGENCY 02
 (37) HISTORICAL SIGNIFICANCE- NOT ELIGIBLE 5

***** CONDITION *****

(58) DECK 6
 (59) SUPERSTRUCTURE 3
 (60) SUBSTRUCTURE 7
 (61) CHANNEL & CHANNEL PROTECTION 7
 (62) CULVERTS N

***** LOAD RATING AND POSTING *****

(31) DESIGN LOAD- M-9 OR H-10 1
 (63) OPERATING RATING METHOD- LOAD FACTOR 1
 (64) OPERATING RATING- 20.8
 (65) INVENTORY RATING METHOD- LOAD FACTOR 1
 (66) INVENTORY RATING- 13.6
 (70) BRIDGE POSTING- 20.0 - 29.9% BELOW 2
 (41) STRUCTURE OPEN, POSTED OR CLOSED- P
 DESCRIPTION- POSTED FOR LOAD

***** APPRAISAL *****

(67) STRUCTURAL EVALUATION 3
 (68) DECK GEOMETRY 2
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 8
 (72) APPROACH ROADWAY ALIGNMENT 5
 (36) TRAFFIC SAFETY FEATURES 0000
 (113) SCOUR CRITICAL BRIDGES U

***** PROPOSED IMPROVEMENTS *****

(75) TYPE OF WORK- SUP/SUB REHAB CODE 35
 (76) LENGTH OF STRUCTURE IMPROVEMENT 107.6 M
 (94) BRIDGE IMPROVEMENT COST \$293,000
 (95) ROADWAY IMPROVEMENT COST \$29,000
 (96) TOTAL PROJECT COST \$439,000
 (97) YEAR OF IMPROVEMENT COST ESTIMATE 1998
 (114) FUTURE ADT 75
 (115) YEAR OF FUTURE ADT 2020

***** INSPECTIONS *****

(90) INSPECTION DATE 04/07 (91) FREQUENCY 24 MO
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
 A) FRACTURE CRIT DETAIL- YES 24 MO A) 02/02
 B) UNDERWATER INSP- NO MO B)
 C) OTHER SPECIAL INSP- NO MO C)