

THE BOARD OF SUPERVISORS OF THE COUNTY OF STANISLAUS
ACTION AGENDA SUMMARY

DEPT: Public Works *Mal*

BOARD AGENDA # 9:15 a.m.

Urgent Routine

AGENDA DATE January 13, 2009

CEO Concurs with Recommendation YES NO
(Information Attached)

4/5 Vote Required YES NO

SUBJECT:

Public Hearing to Consider Revising the Load Carrying Capacity of Crabtree Road Bridge Over Dry Creek (38C-0009), Per Section 35754 of the California Vehicle Code

STAFF RECOMMENDATIONS:

1. Find that notice of public hearing was published in compliance with Section 6066 of the Government Code.
2. Conduct a public hearing to receive comments regarding the revision of load carrying capacity of Crabtree Road Bridge over Dry Creek (38C-0009).
3. Accept the bridge modifications from the Caltrans Division of Structure Maintenance and Investigations for the Crabtree Road Bridge over Dry Creek (38C-0009).

FISCAL IMPACT:

If a change to the existing load carrying capacity of Crabtree Road Bridge over Dry Creek is approved, the Department of Public Works will be required to modify existing bridge signs with the new capacity information. The bridge currently contains two signs specifying the load carrying capacity. The bridge signs will need to be modified at an estimated cost of \$1,000, which will be paid out of the County Roads Fund. There is no fiscal impact to the General Fund.

BOARD ACTION AS FOLLOWS:

No. 2009-61

On motion of Supervisor O'Brien, Seconded by Supervisor Monteith

and approved by the following vote,

Ayes: Supervisors: O'Brien, Chiesa, Grover, Monteith, and Chairman DeMartini

Noes: Supervisors: None

Excused or Absent: Supervisors: None

Abstaining: Supervisor: None

1) X Approved as recommended

2) _____ Denied

3) _____ Approved as amended

4) _____ Other:

MOTION:

Christine Ferraro

ATTEST: CHRISTINE FERRARO TALLMAN, Clerk

File No.

Public Hearing to Consider Revising the Load Carrying Capacity of Crabtree Road Bridge Over Dry Creek (38C-0009), Per Section 35754 of the California Vehicle Code

DISCUSSION:

During the biennial bridge inspection of the Crabtree Bridge, the Caltrans Division of Structure Maintenance and Investigations performed new structural calculations on the bridge. These calculations show revised weight capacities for the bridge. The Caltrans Division of Structure Maintenance and Investigations recommends that the bridge weight restrictions be modified to:

<u>Current Weight Restriction</u>	<u>Recommended New Weight Restrictions</u>
17 tons per vehicle	20 tons per vehicle
25 tons per semi-trailer combination	24 tons per semi-trailer combination
29 tons per truck and full trailer	26 tons per truck and full trailer
	No permit loads are allowed

An alternative to revising the weight restrictions would be to replace this bridge, built in 1920, with a modern bridge. This is not financially feasible at this time, due to higher priority bridge projects. Crabtree Bridge is Public Works' ninth highest priority project. The estimated replacement costs in 2008 would be approximately \$1.5 million. During our 2007 speed survey, five trucks and trailers utilized the bridge out of 32 vehicles per day.

POLICY ISSUES:

The Board should consider if the recommended actions are consistent with its priorities of providing a safe community, a healthy community and a well-planned infrastructure system.

STAFFING IMPACT:

There is no staffing impact associated with this item.



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 38C0009
Facility Carried: CRABTREE ROAD
Location : 1.8 MI S WARNERVILLE RD
City :
Inspection Date : 09/18/2007

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: DRY CREEK

CONSTRUCTION INFORMATION

Year Built : 1920 Skew (degrees): 0
Year Widened: N/A No. of Joints : 0
Length (m) : 31.7 No. of Hinges : 0

Structure Description: Riveted steel through Pratt truss with corrugated metal deck and timber stringers on RC seat abutments. Steel "I" bars in tension chords. Foundations are unknown.

Span Configuration : 1 @ 30.5 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
Inventory Rating: 10 metric tons Calculation Method: ALLOWABLE STRESS
Operating Rating: 19.9 metric tons Calculation Method: ALLOWABLE STRESS
Permit Rating : XXXXX
Posting Load : Type 3 17 English tons Type 3S2 25 English tons Type 3-3 29 English tons

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.1 m r, 0.4 m wg, 5.3 m, 0.4 m wg, 0.1 m r
Total Width: 6.3 m Net Width: 5.3 m No. of Lanes: 2
Rail Description: Timber railing on both sides. Rail Code : 0000
Min. Vertical Clearance: 4.010

DESCRIPTION UNDER STRUCTURE

Channel Description: Dirt, gravel and some bedrock.

CONDITION TEXT

CONDITION OF STRUCTURE:

At the time of this investigation, the channel was dry. A complete inspection of the soffit and substructure was performed.

The timber rails on both sides have deteriorated and the timber posts are very loose. The surface paint is mostly faded and peeling. The horizontal members are severely deteriorated and reinforced with supplemental horizontal sections at the posts.

The AC approach at both abutments is settled approximately 1.6" (40 mm) at Abutment 1 and 1.2" (30 mm) at Abutment 2. There are up to 0.25" (6 mm) wide transverse and alligator AC cracks along the entire width at both abutments. The cracks at Abutment 2 are more severe.

There are 0.25" (6 mm) wide transverse AC deck cracks near both abutments with a 3' long x 3" wide (1 m x 75 mm) pothole near Abutment 2.

STEEL INVESTIGATION:

The steel members of the thru-trusses such as lower and upper chords, portal bracings,

CONDITION TEXT

upper lateral bracings, upper lateral struts, sway bracings, sway struts, end posts, verticals, diagonals, and counter diagonals have general surface rust with no observed section loss or deformation. The eyebars at the bottom chords have no significant surface rust or section loss. The upper and lower chord connection pins were ultrasonically inspected in 09/20/06, with no defect indications found.

The paint system on floor beams has faded with surface rust on both flanges and the web sections. No visible cracks were observed.

There is general surface rust on the attached cover plates of the bottom of the floor beams, but no observed section loss. There are no visible cracks or defects found on the intermittent fillet welds (Category E weld) around the cover plates.

SCOUR:

At the left side of Abutment 1, the footing is exposed 32" (0.8 m) high by approximately 13' (4.0 m) long along the left side and return wall. There are exposed reinforcements of up to 24" (0.6 m) at the return wall footing, and up to 48" (1.2 m) at the bottom of the abutment footing.

SIGNS:

The appropriate load posting signs are in place at both approaches.

17 TONS PER VEHICLE
25 TONS PER SEMI-TRAILER COMBINATION
29 TONS PER TRUCK AND FULL TRAILER

In addition, the following signs are in place at both abutments.

ONE LANE BRIDGE
STOP
IMPAIRED VERTICAL CLEARANCE 13'-0" @ BOTH PORTALS

EXISTING POSTING:

The structure is posted by a Director's Order dated December 12, 1979 for the following load restrictions:

17 TONS PER VEHICLE
25 TONS PER SEMI-TRAILER COMBINATION
29 TONS PER TRUCK AND FULL TRAILER

LOAD CAPACITY:

Load capacity calculations are dated August 20, 1979. For a one lane loading, the floor beam controls for the single vehicle and truss member UIU2 controls for the semi-trailer combination and truck and full trailer. The calculated capacities for different load cases are as follows:

17 TONS PER VEHICLE
25 TONS PER SEMI-TRAILER COMBINATION
29 TONS PER TRUCK AND FULL TRAILER

RECOMMENDED POSTING:

CONDITION TEXT

Retain existing posting.

MISCELLANEOUS:

The inspection frequency will remain at 24 months due to the functional classification (Local Rural) with low daily traffic and present condition of the structure.

<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	St. 5
101 30	Steel Deck - Corrugated/Orthotropic/Etc.	2	192	sq.m.	192	0	0	0	0
101 111	Timber Open Girder/Beam	2	17	m.	17	0	0	0	0
101 121	Painted Steel Bottom Chord Thru Truss	2	62	m.	0	0	62	0	0
101 126	Painted Steel Thru Truss (excl. bottom chord)	2	62	m.	0	0	62	0	0
101 152	Painted Steel Floor Beam	2	25	m.	0	0	25	0	0
101 215	Reinforced Conc Abutment	2	13	m.	13	0	0	0	0
101 311	Moveable Bearing (roller, sliding, etc.)	2	2	ea.	2	0	0	0	0
101 313	Fixed Bearing	2	2	ea.	2	0	0	0	0
101 332	Timber Bridge Railing	2	62	m.	0	0	62	0	0

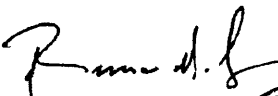
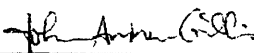
WORK RECOMMENDATIONS

RecDate: 09/18/2007 EstCost: Repair the AC approach at both abutments,
Action : Deck-Resurface StrTarget: 2 YEARS cracks and pothole on deck.
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

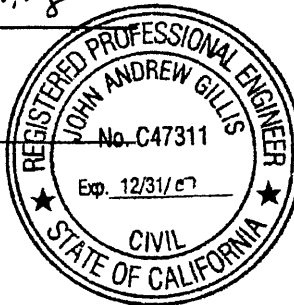
RecDate: 10/26/1999 EstCost: Repaint all the painted steel elements.
Action : Paint-Full prep/ StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

RecDate: 10/26/1999 EstCost: Replace the timber rail on both sides.
Action : Railing-Rehab StrTarget: 2 YEARS
Work By: LOCAL AGENCY DistTarget:
Status : PROPOSED EA:

Inspected By : Ronnie H. Le

Registered Civil Engineer



STRUCTURE INVENTORY AND APPRAISAL REPORT

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***** IDENTIFICATION *****
(1) STATE NAME- CALIFORNIA 069
(8) STRUCTURE NUMBER 38C0009
(5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
(2) HIGHWAY AGENCY DISTRICT 10
(3) COUNTY CODE 099 (4) PLACE CODE 00000
(6) FEATURE INTERSECTED- DRY CREEK
(7) FACILITY CARRIED- CRABTREE ROAD
(9) LOCATION- 1.8 MI S WARNERVILLE RD
(11) MILEPOINT/KILOMETERPOINT 0
(12) BASE HIGHWAY NETWORK- NOT ON NET 0
(13) LRS INVENTORY ROUTE & SUBROUTE
(16) LATITUDE 37 DEG 42 MIN 39 SEC
(17) LONGITUDE 120 DEG 36 MIN 36 SEC
(98) BORDER BRIDGE STATE CODE % SHARE %
(99) BORDER BRIDGE STRUCTURE NUMBER

***** STRUCTURE TYPE AND MATERIAL *****
(43) STRUCTURE TYPE MAIN:MATERIAL- STEEL
TYPE- TRUSS - THRU CODE 310
(44) STRUCTURE TYPE APPR:MATERIAL- NOT APPLICABLE
TYPE- NOT APPLICABLE CODE
(45) NUMBER OF SPANS IN MAIN UNIT 1
(46) NUMBER OF APPROACH SPANS 0
(107) DECK STRUCTURE TYPE- CORRUGATED STEEL CODE 6
(108) WEARING SURFACE / PROTECTIVE SYSTEM:
A) TYPE OF WEARING SURFACE- BITUMINOUS CODE 6
B) TYPE OF MEMBRANE- NONE CODE 0
C) TYPE OF DECK PROTECTION- NONE CODE 0
***** AGE AND SERVICE *****
(27) YEAR BUILT 1920
(106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE: ON- HIGHWAY 1
UNDER- WATERWAY 5
(28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
(29) AVERAGE DAILY TRAFFIC 100
(30) YEAR OF ADT 1990 (109) TRUCK ADT 0 %
(19) BYPASS, DETOUR LENGTH 35 KM
***** GEOMETRIC DATA *****
(48) LENGTH OF MAXIMUM SPAN 30.5 M
(49) STRUCTURE LENGTH 31.7 M
(50) CURB OR SIDEWALK: LEFT 0.4 M RIGHT 0.4 M
(51) BRIDGE ROADWAY WIDTH CURB TO CURB 5.3 M
(52) DECK WIDTH OUT TO OUT 6.3 M
(32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 6.7 M
(33) BRIDGE MEDIAN- NO MEDIAN 0
(34) SKEW 0 DEG (35) STRUCTURE FLARED NO
(10) INVENTORY ROUTE MIN VERT CLEAR 4.01 M
(47) INVENTORY ROUTE TOTAL HORIZ CLEAR 5.3 M
(53) MIN VERT CLEAR OVER BRIDGE RDWY 4.01 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 M
(40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

***** SUFFICIENCY RATING = 37.9
STATUS STRUCTURALLY DEFICIENT
HEALTH INDEX 77.5
PAINT CONDITION INDEX = 50.0

***** CLASSIFICATION ***** CODE
(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- 2 WAY 2
(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 ***** CODE
(58) DECK 7
(59) SUPERSTRUCTURE 5
(60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION 7
(62) CULVERTS N

***** LOAD RATING AND POSTING ***** CODE
(31) DESIGN LOAD- OTHER OR UNKNOWN 0
(63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
(64) OPERATING RATING- 19.9
(65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
(66) INVENTORY RATING- 10.0
(70) BRIDGE POSTING- 20.0 - 29.9% BELOW 2
(41) STRUCTURE OPEN, POSTED OR CLOSED- P
DESCRIPTION- POSTED FOR LOAD

***** APPRAISAL ***** CODE
(67) STRUCTURAL EVALUATION 2
(68) DECK GEOMETRY 2
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
(71) WATER ADEQUACY 7
(72) APPROACH ROADWAY ALIGNMENT 4
(36) TRAFFIC SAFETY FEATURES 0000
(113) SCOUR CRITICAL BRIDGES 8

***** PROPOSED IMPROVEMENTS *****
(75) TYPE OF WORK- REPLACE FOR DEFICIENC CODE 31
(76) LENGTH OF STRUCTURE IMPROVEMENT 40.307 M
(94) BRIDGE IMPROVEMENT COST $300,000
(95) ROADWAY IMPROVEMENT COST $30,000
(96) TOTAL PROJECT COST $450,000
(97) YEAR OF IMPROVEMENT COST ESTIMATE 1999
(114) FUTURE ADT 200
(115) YEAR OF FUTURE ADT 2015

***** INSPECTIONS *****
(90) INSPECTION DATE 09/07 (91) FREQUENCY 24 MO
(92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
A) FRACTURE CRIT DETAIL- YES 24 MO A) 09/06
B) UNDERWATER INSP- NO MO B)
C) OTHER SPECIAL INSP- NO MO C)

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DEPARTMENT OF TRANSPORTATION
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE AND INVESTIGATIONS
1801 30th Street, MS #9-1/9i
P. O. BOX 168041
SACRAMENTO, CA 95816-8041
PHONE (916) 227-8631
FAX (916) 227-8357



*Flex your power!
Be energy efficient!*

10/22/2008

Bridge Number: 38C0009
Bridge Name: DRY CREEK

Mr. Matt Machado
County Of Stanislaus
1010 10th Street, Suite 3500
Modesto, CA 95354

Dear Mr. Machado:

According to Title 23 of the Code of Federal Regulations (Federal Highway Act), Caltrans Structure Maintenance and Investigations made biennial inspections of bridges under your jurisdiction. Enclosed is one copy of a Bridge Inspection Report for the structure noted on the attached transmittal sheet.

Posting for limited load carrying capacities is recommended for this structure. After you have reviewed the report, please notify us within 30 days as to what action you propose to take with regard to the posting (permanent or temporary) or corrective maintenance.

Section 35754 of the California Vehicle Code extends authority to the County to temporarily post restrictive weights on a bridge structure for periods not in excess of ninety (90) days. The most commonly used authority for permanently posting a bridge structure exists in Section 35751. Specific notification, public hearings and a signed posting order are among the requirements contained within that Section.

If you wish to discuss these or other aspects of the bridge posting process, please call Ronnie Le @ (916) 227-6831 or John Gillis @ (916) 227-8774.

Sincerely,

A handwritten signature in black ink, appearing to read "Pete Whitfield", written over a horizontal line.

PETE J. WHITFIELD
Office Chief
Structure Maintenance and Investigations - North

COPY

RECEIVED

OCT 24 2008

STANISLAUS COUNTY
DEPARTMENT OF PUBLIC WORKS

Enclosures



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 38C0009
Facility Carried: CRABTREE ROAD
Location : 1.8 MI S WARNERVILLE RD
City :
Inspection Date : 10/09/2008

Bridge Inspection Report

Inspection Type
 Routine FC Underwater Special Other

STRUCTURE NAME: DRY CREEK

CONSTRUCTION INFORMATION

Year Built : 1920 Skew (degrees): 0
 Year Widened: N/A No. of Joints : 0
 Length (m) : 31.7 No. of Hinges : 0

Structure Description: Riveted steel through Pratt truss with corrugated metal deck and timber stringers on RC seat abutments. Steel "I" bars in tension chords. Foundations are unknown.

Span Configuration : 1 @ 30.5 m

LOAD CAPACITY AND RATINGS

Design Live Load: OTHER OR UNKNOWN
 Inventory Rating: 11.1 metric tons Calculation Method: ALLOWABLE STRESS
 Operating Rating: 19 metric tons Calculation Method: ALLOWABLE STRESS
 Permit Rating : XXXXX
 Posting Load : Type 3 20 English tons Type 3S2 24 English tons Type 3-3 26 English tons

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.1 m r, 0.4 m wg, 5.3 m, 0.4 m wg, 0.1 m r
 Total Width: 6.3 m Net Width: 5.3 m No. of Lanes: 1
 Rail Description: Timber railing on both sides. Rail Code : 0000
 Min. Vertical Clearance: 4.010

DESCRIPTION UNDER STRUCTURE

Channel Description: Dirt, gravel and some bedrock.

CONDITION TEXT

REVISIONS

This structure was load rated using Allowable Stress methods for the truss and stringers and Load Factor methods for the steel floor beams. As a result of this analysis, the following changes were made:

Item 28, Lanes On and Under the Structure, was revised from 2 to 1 to account for the one lane on the truss.

Item 66, Inventory Rating, and Item 64, Operating Rating, were revised from 10.0 to 11.1 metric tonnes and 19.9 to 19.0 metric tonnes, respectively.

Item 70, Bridge Posting, was revised from Code 2 (20 to 30% below legal loads) to Code 1 (30 to 40% below legal loads).

Item 102, Direction of Traffic, was revised from 2-way traffic to Code 3 - One lane bridge for 2-way traffic.

CONDITION OF STRUCTURE

The scope of this report was to update information on this bridge regarding the newly

CONDITION TEXT

calculated load capacity.

SIGNS

As of the last inspection on 9/18/2007, the following load posting signs were in place at both approaches:

17 TONS PER VEHICLE.
25 TONS PER SEMI-TRAILER COMBINATION.
29 TONS PER TRUCK AND FULL TRAILER.
ONE LANE BRIDGE.

SAFE LOAD CAPACITY

The structure was load rated using Allowable Stress methods for the truss and stringers and Load Factor methods for the steel floor beams. The load rating results are summarized on the Structure Rating Summary Sheet dated 7/21/2008. The structure is capable of sustaining the following loads:

20 TONS PER VEHICLE.
24 TONS PER SEMI-TRAILER COMBINATION.
26 TONS PER TRUCK AND FULL TRAILER.
No permit loads are allowed.

The capacity of the structure is controlled by the truss top chord. The calculations were based on one lane of traffic with 2 inches of asphalt concrete on the deck.

EXISTING POSTING

The structure is currently posted by an Order of the Director dated December 12, 1979, for the following loads:

17 TONS PER VEHICLE.
25 TONS PER SEMI-TRAILER COMBINATION.
29 TONS PER TRUCK AND FULL TRAILER.

RECOMMENDED POSTING

Post this structure for the following loads:

20 TONS PER VEHICLE.
24 TONS PER SEMI-TRAILER COMBINATION.
26 TONS PER TRUCK AND FULL TRAILER.
ONE LANE BRIDGE.

RESCIND POSTING

Since the new load rating analysis indicates the new load capacities are lower than the existing posting for Semi-trailer Combination and Truck and Full Trailer, the posting by Order of the Director dated December 12, 1979, shall be rescinded and replaced with a new posting.

CONDITION TEXT

MISCELLANEOUS

Mr. David Leamon of the County of Stanislaus was contacted on October 22, 2008. He will proceed with the scheduling of a public hearing to post this structure.

Inspected By : JAGillis

John Andrew Gillis

Registered Civil Engineer

