



DEPARTMENT OF TRANSPORTATION
Structure Maintenance & Investigations

Bridge Number : 42C0317
Facility Carried: WATTS VALLEY RD
Location : 5.59 MI E/O PITTMAN HILL
City :
Inspection Date : 05/09/2018

Bridge Inspection Report

Inspection Type
Routine FC Underwater Special Other

STRUCTURE NAME: WATTS CREEK

11-049

CONSTRUCTION INFORMATION

Year Built : 1937 Skew (degrees): 0
Year Modified: 1973 No. of Joints : 0
Length (m) : 6.7 No. of Hinges : 0

Structure Description: Simply supported single-span TDF timber stringer (21), with timber deck rebuilt in 1973 that is covered with an AC overlay, on timber sills on concrete seat abutments with no wingwalls. (Foundation type unknown, spread footings assumed, no plans on file in Caltrans records.)

Span Configuration : 1 @ 20.0 ft

SAFE LOAD CAPACITY AND RATINGS

Design Live Load: UNKNOWN
Inventory Rating: RF=0.66 =>21.4 metric tons Calculation Method: ALLOWABLE STRESS
Operating Rating: RF=0.95 =>30.8 metric tons Calculation Method: ALLOWABLE STRESS
Permit Rating : 00000
Posting Load : Type 3: Legal Type 3S2: Legal Type 3-3: Legal

DESCRIPTION ON STRUCTURE

Deck X-Section: 0.3 ft br, 16.0 ft, 0.3 ft br
Total Width: 5.1 m Net Width: 4.9 m No. of Lanes: 2 Speed: 55 mph
Min. Vertical Clearance: Unimpaired Overlay Thickness: 4.0 inches
Rail Code: 0000

DESCRIPTION UNDER STRUCTURE

Channel Description: Natural trapezoidal shape with bottom of decomposed granite and cobbles.
(Flow is from west-northwest to east-southeast.)

NOTICE

The bridge inspection condition assessment used for this inspection is based on the American Association of State Highway and Transportation Officials (AASHTO) Bridge Element Inspection Manual 2013 as defined in Moving Ahead for Progress in the 21st Century (MAP-21) federal law. The new element inspection methodology may result in changes to related condition and appraisal ratings on the bridge without significant physical changes at the bridge.

The element condition information contained in this report represents the current condition of the bridge based on the most recent routine and special inspections. Some of the notes presented below may be from an inspection that occurred prior to the date noted in this report. Refer to the Scope and Access section of this inspection report for a description of which portions of the bridge were inspected on this date.

INSPECTION COMMENTARY

SCOPE AND ACCESS

The creek was flowing at a depth of approximately 6 to 12 inches at the time of this investigation. All of the substructure elements were dry and a complete routine inspection was performed on all of the visible elements.

INSPECTION COMMENTARY

MISCELLANEOUS

Ten year routine roadway, elevation and underside photographs were taken during this inspection and are included with this report (see Photos 1 - 3).

SAFE LOAD CAPACITY

A Load Rating Summary Sheet dated 8/18/2011 is on file for this structure. The current rating is based on Caltrans Timber V1.02 software calculations dated 8/13/2011. While this report does not include a check of that analysis, it does verify that the structural conditions observed during this inspection are consistent with those assumed in that analysis. The dead load includes 4 inches of AC wearing surface.

WATERWAY

This bridge has a code "U" for NBI Item 113 because the bridge has unknown foundations.

A Scour Plan of Action dated 8/31/2010 is in place and on file for this structure. The plan calls for regular monitoring of the waterway during routine inspections every 24 months and closure of the structure if settlement of greater than 0.5 inches or loss of embankment fill is observed.

A channel cross section was spot checked and compared to the previous cross section taken on 5/17/2016. No significant changes were noted in the channel elevation/profile since the last cross section was taken.

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each St.	Condition	State	
							1	2	3	
							St. 1	St. 2	St. 3	
							St. 4			
31			Deck-Timber	2	30	sq.m	26	4	0	0
	1140		Decay/Section Loss (Timber)	2	4		0	4	0	0
	510		Deck Wearing Surface-Asphalt	2	30	sq.m	0	30	0	0
		3220	Cracking-AC (WS)	2	30		0	30	0	0
(31)										
There are dry white stains on the bottom surface of the timber deck planks between the timber girders at several random locations. The timber was probed with a geology pick and no section loss was detected.										
(31-1140)										
The outer 6 inches of the left and right edge of the timber deck are showing signs of decay and rot (see Photo 4).										
(31-510-3220)										
There are 0.25 inch wide transverse cracks spaced at 8 to 12 inches apart in the asphaltic concrete overlay (see Photo 1 from the BIR dated 5/17/2016). The cracks follow the edges of the timber deck planks.										
111			Girder/Beam-Timber	2	120	m	120	0	0	0
(111)										

ELEMENT INSPECTION RATINGS AND COMMENTARY

Elem No.	Defect /Prot	Defect	Element Description	Env	Total Qty	Units	Qty in each State	Condition	State	
							St. 1	St. 2	St. 3	St. 4

There were no significant defects noted.

215			Abutment-RC	2	10	m	10	0	0	0
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(215)

There were no significant defects noted.

220			Pile Cap/Footing-RC	2	5	m	0	5	0	0
	6000		Scour	2	5		0	5	0	0

(220-6000)

Local scour is occurring at Abutment 1 and has exposed the top of the footing for its entire length. The footing is exposed 24 inches at the upstream end and 32 inches at the downstream end. No undermining was observed.

330			Railing-Metal	2	14	m	14	0	0	0
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(330)

The height of the bridge rail is 17 inches and does not appear to meet Federal height requirements for bridge rails.

WORK RECOMMENDATIONS

RecDate: 10/27/2014

Action : Scour-Place Counter

Work By: LOCAL AGENCY

Status : PROPOSED

EstCost:

StrTarget: 2 YEARS

DistTarget:

EA:

Provide adequate scour countermeasures at both abutments at the upstream end of this structure. The local agency should investigate and provide adequate scour mitigation in accordance with federal standards. Refer to the current version of FHWA HEC-23 ("Bridge Scour and Stream Instability Countermeasures: Experience, Selection and Design Guidance") for a full description of the requirements for countermeasure methods and design specifications meeting federal standards.

RecDate: 08/19/2002

Action : Railing-Rehab

Work By: LOCAL AGENCY

Status : PROPOSED

EstCost:

StrTarget: 2 YEARS

DistTarget:

EA:

Reset or replace the bridge railing that is set too low.

Team Leader : Warren L. Peterson

Report Author : Warren L. Peterson

Inspected By : WL.Peterson/JE.Edwards

Warren L. Peterson (Registered Civil Engineer) (Date) 8/8/18



STRUCTURE INVENTORY AND APPRAISAL REPORT

***** IDENTIFICATION *****

(1) STATE NAME- CALIFORNIA 069
 (8) STRUCTURE NUMBER 42C0317
 (5) INVENTORY ROUTE(ON/UNDER)- ON 140000000
 (2) HIGHWAY AGENCY DISTRICT 06
 (3) COUNTY CODE 019 (4) PLACE CODE 00000
 (6) FEATURE INTERSECTED- WATTS CREEK
 (7) FACILITY CARRIED- WATTS VALLEY RD
 (9) LOCATION- 5.59 MI E/O PITTMAN HILL
 (11) MILEPOINT/KILOMETERPOINT 0
 (12) BASE HIGHWAY NETWORK- NOT ON NET 0
 (13) LRS INVENTORY ROUTE & SUBROUTE
 (16) LATITUDE 36 DEG 55 MIN 47.16 SEC
 (17) LONGITUDE 119 DEG 23 MIN 01.67 SEC
 (98) BORDER BRIDGE STATE CODE % SHARE %
 (99) BORDER BRIDGE STRUCTURE NUMBER

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

(43) STRUCTURE TYPE MAIN:MATERIAL- WOOD OR TIMBER
 TYPE- STRINGER/MULTI-BEAM OR GDR CODE 702
 (44) STRUCTURE TYPE APPR:MATERIAL- OTHER/NA
 TYPE- OTHER/NA CODE 000
 (45) NUMBER OF SPANS IN MAIN UNIT 1
 (46) NUMBER OF APPROACH SPANS 0
 (107) DECK STRUCTURE TYPE- TIMBER CODE 8
 (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 1937
 (106) YEAR RECONSTRUCTED 1973
 (42) TYPE OF SERVICE: ON- HIGHWAY 1
 UNDER- WATERWAY 5
 (28) LANES:ON STRUCTURE 02 UNDER STRUCTURE 00
 (29) AVERAGE DAILY TRAFFIC 200
 (30) YEAR OF ADT 2004 (109) TRUCK ADT 2 %
 (19) BYPASS, DETOUR LENGTH 35 KM

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

(48) LENGTH OF MAXIMUM SPAN 6.1 M
 (49) STRUCTURE LENGTH 6.7 M
 (50) CURB OR SIDEWALK: LEFT 0.0 M RIGHT 0.0 M
 (51) BRIDGE ROADWAY WIDTH CURB TO CURB 4.9 M
 (52) DECK WIDTH OUT TO OUT 5.1 M
 (32) APPROACH ROADWAY WIDTH (W/SHOULDERS) 3.7 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 4.9 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 M
 (40) NAVIGATION HORIZONTAL CLEARANCE 0.0 M

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

SUFFICIENCY RATING = 50.4
 STATUS
 HEALTH INDEX 99.1
 PAINT CONDITION INDEX = N/A

***** CLASSIFICATION ***** CODE

(112) NBIS BRIDGE LENGTH- YES Y
 (104) HIGHWAY SYSTEM- NOT ON NHS 0
 (26) FUNCTIONAL CLASS- MINOR COLLECTOR RURAL 08
 (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 7
 (60) SUBSTRUCTURE 5
 (61) CHANNEL & CHANNEL PROTECTION 7
 (62) CULVERTS N

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

(31) DESIGN LOAD- UNKNOWN 0
 (63) OPERATING RATING METHOD- ALLOWABLE STRESS 2
 (64) OPERATING RATING- 30.8
 (65) INVENTORY RATING METHOD- ALLOWABLE STRESS 2
 (66) INVENTORY RATING- 21.4
 (70) BRIDGE POSTING- EQUAL TO OR ABOVE LEGAL LOADS 5
 (41) STRUCTURE OPEN, POSTED OR CLOSED- A
 DESCRIPTION- OPEN, NO RESTRICTION

***** APPRAISAL ***** CODE

(67) STRUCTURAL EVALUATION 5
 (68) DECK GEOMETRY 2
 (69) UNDERCLEARANCES, VERTICAL & HORIZONTAL N
 (71) WATER ADEQUACY 6
 (72) APPROACH ROADWAY ALIGNMENT 3
 (36) TRAFFIC SAFETY FEATURES 0000
 (113) SCOUR CRITICAL BRIDGES U

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

(75) TYPE OF WORK- CODE
 (76) LENGTH OF STRUCTURE IMPROVEMENT M
 (94) BRIDGE IMPROVEMENT COST
 (95) ROADWAY IMPROVEMENT COST
 (96) TOTAL PROJECT COST
 (97) YEAR OF IMPROVEMENT COST ESTIMATE
 (114) FUTURE ADT 321
 (115) YEAR OF FUTURE ADT 2036

***** INSPECTIONS *****

(90) INSPECTION DATE 05/18 (91) FREQUENCY 24 MO
 (92) CRITICAL FEATURE INSPECTION: (93) CFI DATE
 A) FRACTURE CRIT DETAIL- NO MO A)
 B) UNDERWATER INSP- NO MO B)
 C) OTHER SPECIAL INSP- NO MO C)

WATTS CREEK

05/09/2018 [AAAJ]

5.59 MI E/O PITTMAN HILL

42C0317

100 - PHOTO-Routine-Roadway View



Photo No. 1
Looking south.

101 - PHOTO-Routine-Elevation View



Photo No. 2
Looking east.

WATTS CREEK

05/09/2018 [AAAJ]

5.59 MI E/O PITTMAN HILL

42C0317

135 - PHOTO-Routine-Underside View



Photo No. 3

Typical view of the soffit looking towards the right from the left side of Span 1.

102 - PHOTO-Deck-Damage/Deterioration



Photo No. 4

The outer 6 inches of the left and right edge of deck are showing signs of decay.