

Bridge Inspection Report

03368

SH 23-Logan Co.

over

Petit Jean River Relief



Inspection Date:

Inspected By:

Inspection Type(s):

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Inspector:

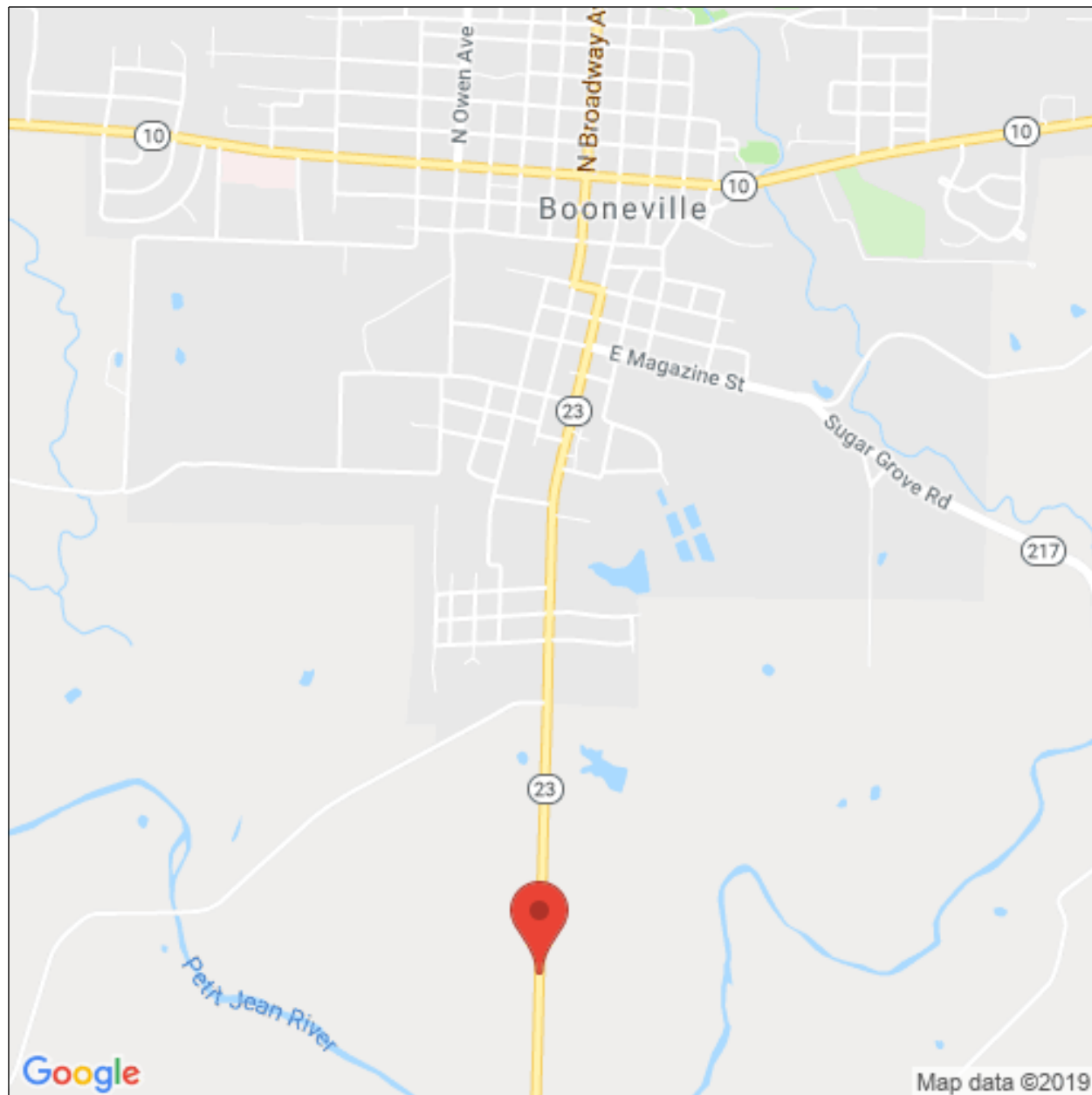
Structure Number: 03368

Inspection Date:

Facility Carried: SH 23-Logan Co.

Bridge Inspection Report

Location Map



Latitude: 35.11449

Longitude: -93.92371

Inspector:

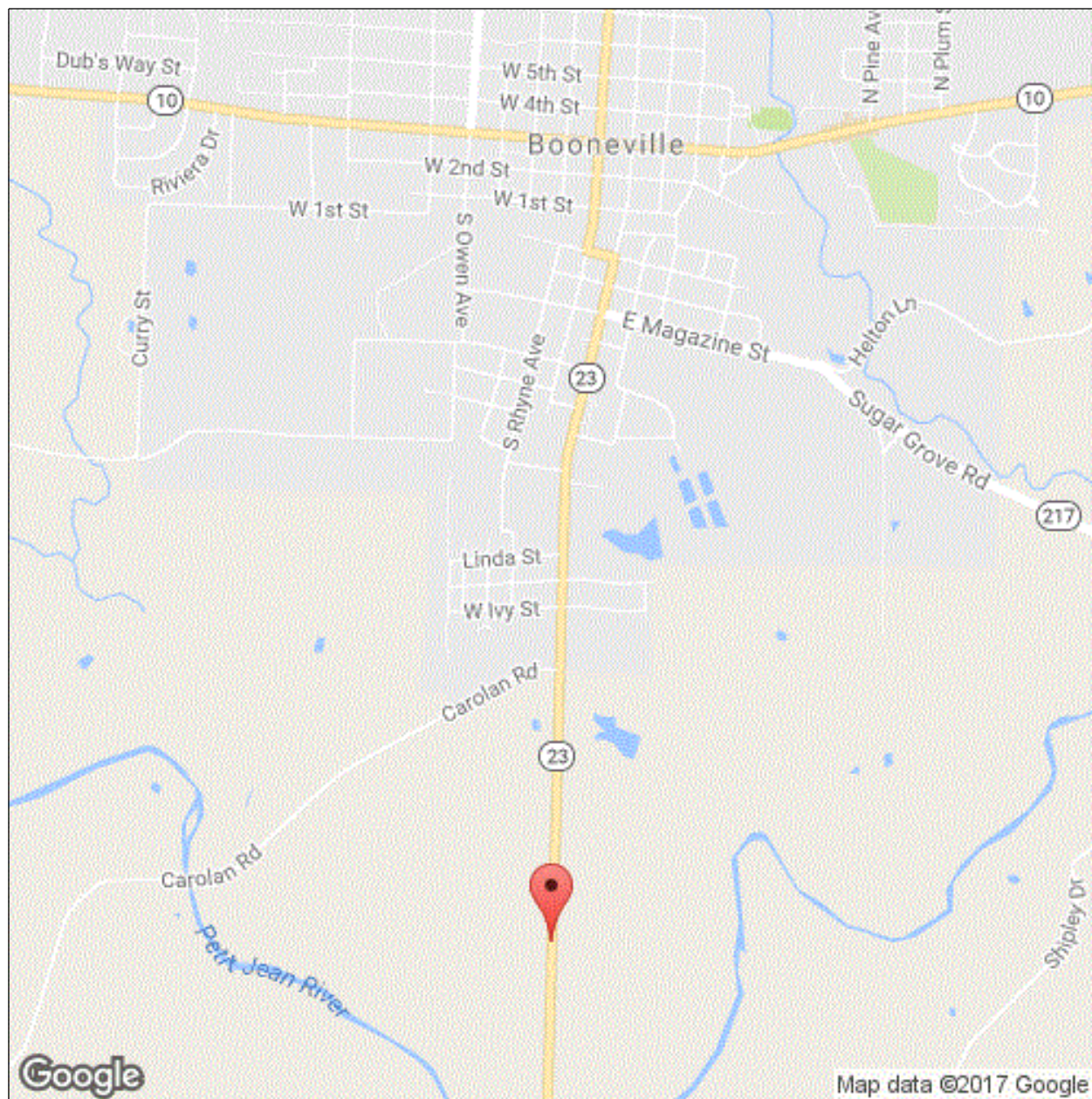
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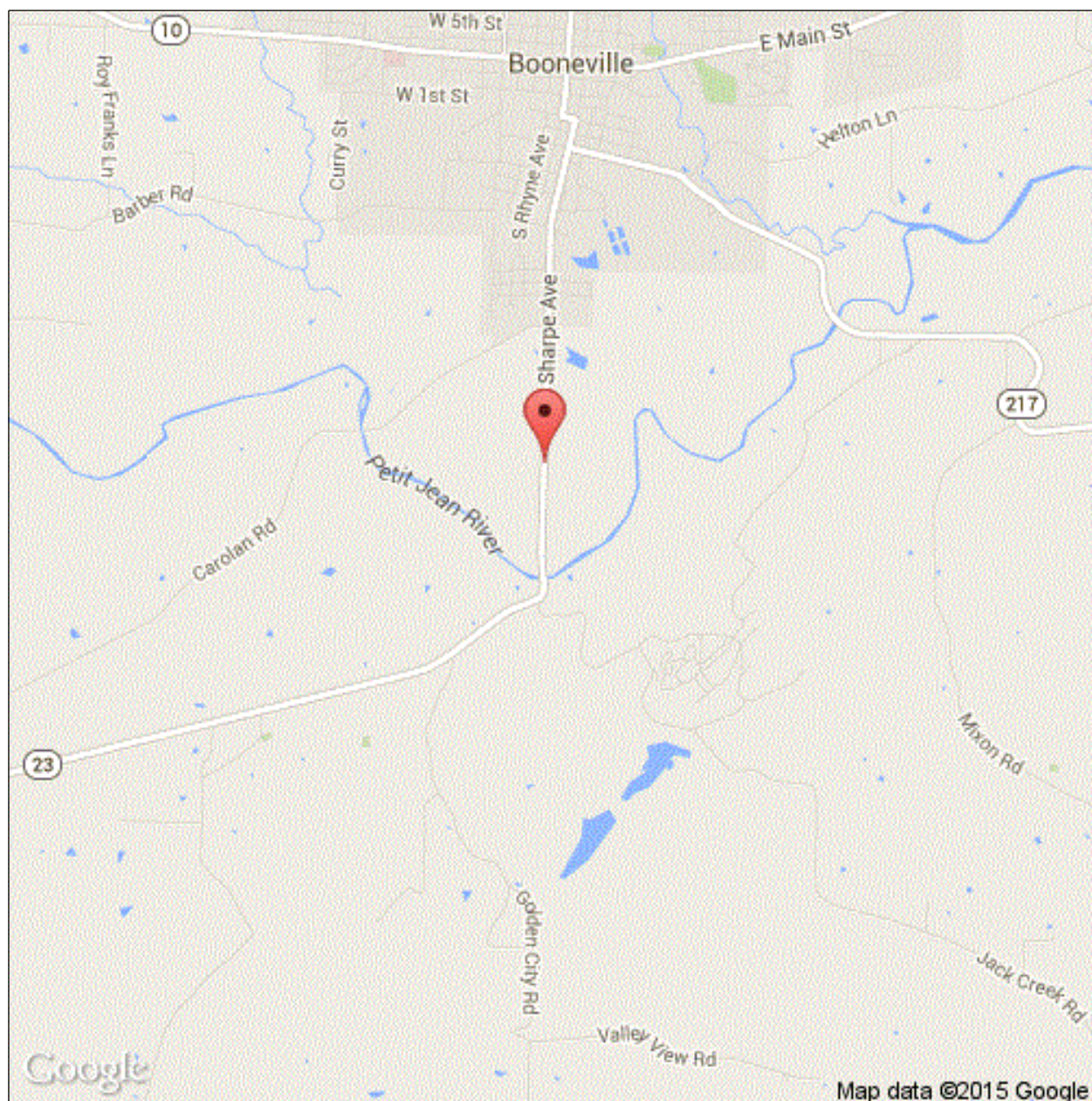
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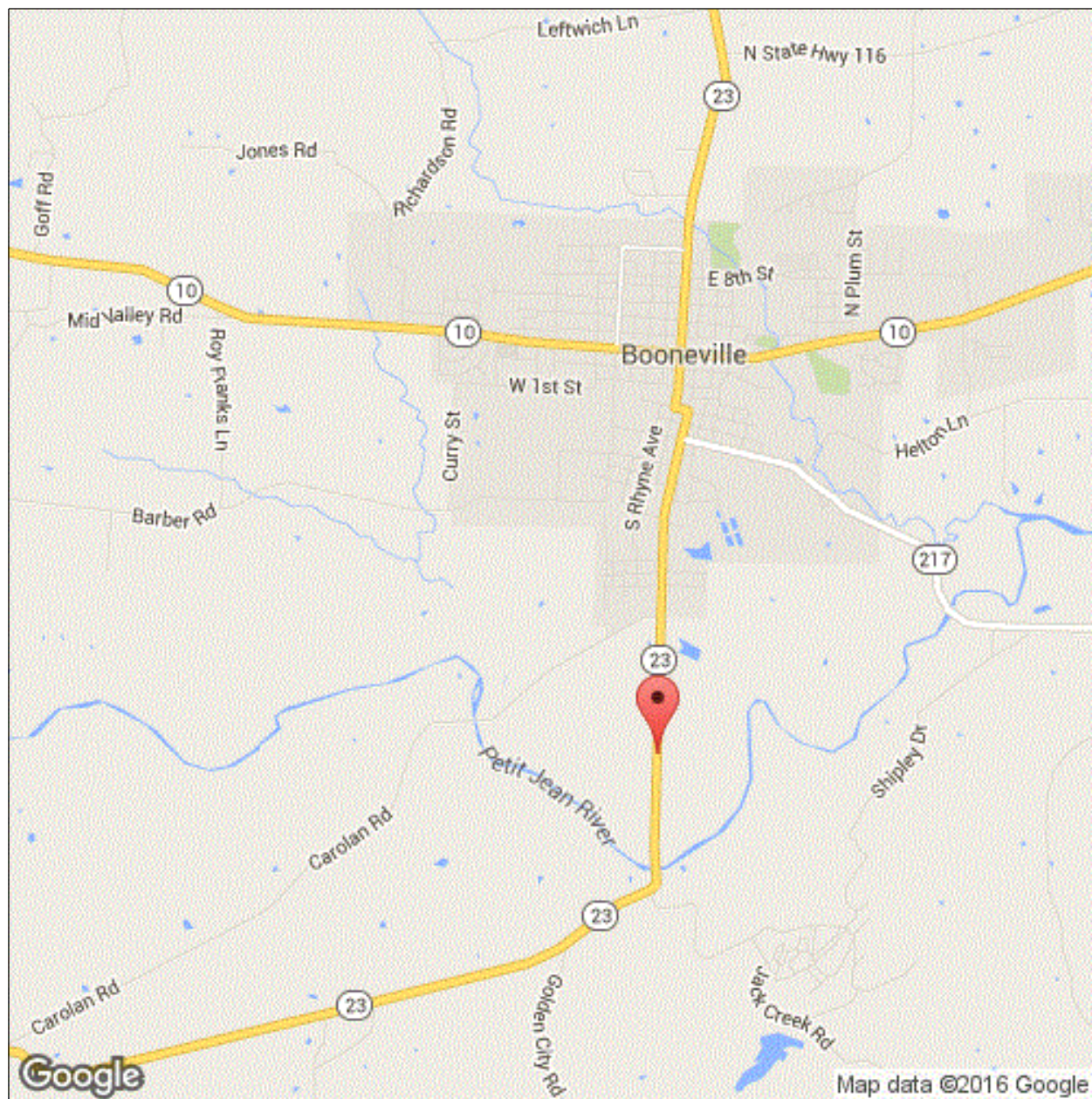
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Bridge Inspection Report

Executive Summary

06/11/2019 - EJW & JPW - Special Recurring Inspection conducted on this date. The superstructure and deck are both rated "4". Numerous spalls with exposed reinforcing steel with active corrosion on the undersurface of the slabs mostly adjacent to the deck drains. No apparent repairs since the last inspection. Numerous spalls on the driving surface with no apparent repairs since the last inspection. No visible shear cracks at this inspection. Several spans have longitudinal cracks that possibly leak water in the voids of the deck. No apparent significant changes or repairs since the last inspection. All spans have long term creep that is visible from the edge of the slabs.

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National Bridge Inventory

IDENTIFICATION		INSPECTIONS	
(1) STATE CODE	056 - Arkansas	(90) INSPECTION DATE	06/12/2018
(8) STRUCTURE NUMBER	03368	(91) DESIGNATED INSPECTION FREQUENCY	24
(5) INV. ROUTE (ON/UNDER)	1 3 1 23 0	(92) CRITICAL FEATURE INSPECTION	(93) CFI DATE
(2) HIGHWAY AGENCY	04 (3) COUNTY CODE 083	A. FRACTURE CRITICAL DETAIL	N
(4) PLACE CODE	00000	B. UNDERWATER INSPECTION	N
(6) FEATURES INTERSECTED	Petit Jean River Relief	C. OTHER SPECIAL	Y 24 06/11/2019
(7) FACILITY CARRIED	SH 23-Logan Co.		
(9) LOCATION	0.61 MI N JCT SH 23 & 116		
(11) MILEPOINT 0.610	(12) BASE HIGHWAY NETWORK 1		
(13A) LRS INVENTORY ROUTE	0000023030 (13B) SUBROUTE NUMBER 00		
(16) LATITUDE 35.11449	(17) LONGITUDE -93.92371		
(98A) BORDER BRIDGE CODE			
PERCENT RESPONSIBILITY	(99) BORDER BRIDGE STRUCT		
STRUCTURE TYPE AND MATERIAL		CONDITION	
(43) STRUCTURE TYPE, MAIN		(58) DECK	4
A) KIND OF MATERIAL/DESIGN: 1 - Concrete		(59) SUPERSTRUCTURE	4 (60) SUBSTRUCTURE 5
B) TYPE OF DESIGN/CONSTR: 01 - Slab		(61) CHANNEL & CHANNEL PROTECTION	7 (62) CULVERT N
(44) STRUCTURE TYPE, APPROACH SPANS			
A) KIND OF MATERIAL/DESIGN: 0 - Other			
B) TYPE OF DESIGN/CONSTR: 00 - Other			
(45) NUMBER OF SPANS IN MAIN 18	(46) NUMBER OF APPROACH 0		
(107) DECK STRUCTURE TYPE 1	(108A) WEARING SURFACE 1		
(108B) DECK MEMBRANE 0	(108C) DECK PROTECTION 0		
AGE OF SERVICE		LOAD RATING AND POSTING	
(27) YEAR BUILT 1961	(106) YEAR RECONSTRUCTED 0000	(31) DESIGN LOAD	4
(42) TYPE OF SERVICE ON 1 UNDER 5		(63) METHOD USED TO DETERMINE OPERATING RATING	1
(28) LANES ON 02 UNDER 00		(64) OPERATING RATING	60.0
(29) AVERAGE DAILY TRAFFIC 2900	(19) BYPASS DETOUR LENGTH 20	(65) METHOD USED TO DETERMINE INVENTORY RATING	1
(30) YEAR OF AVERAGE DAILY TRAFFIC 2014		(66) INVENTORY RATING	36.0
(109) AVERAGE DAILY TRUCK TRAFFIC 1		(70) BRIDGE POSTING	5
		(41) STRUCTURE OPEN/POSTED/CLOSED	A
GEOMETRIC DATA		APPRAISAL	
(48) LENGTH OF MAX SPAN (ft.) 30	(49) STRUCTURE LENGTH (ft.) 540	(67) STRUCTURAL EVALUATION	4
(50) CURB/SIDEWALK WIDTHS (ft.) LEFT 1.5 RIGHT 1.5		(68) DECK GEOMETRY	4
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.)	27.9	(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(52) DECK WIDTH, OUT-TO-OUT (ft.)	33.8	(71) WATERWAY ADEQUACY	8
(32) APPROACH ROADWAY WIDTH (ft.)	32.2	(72) APPROACH ROADWAY ALIGNMENT	8
(33) BRIDGE MEDIAN 0	(34) SKEW (DEG.) 0	(36) TRAFFIC SAFETY FEATURE	
(35) STRUCTURE FLARED 0	(10) INV RTE, MIN VERT CLEAR (ft.) 99.99	36A) BRIDGE RAILINGS:	0
(47) TOTAL HORIZONTAL CLEARANCE (ft.)	30.8	36B) TRANSITIONS:	0
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.)	99.99	36C) APPROACH GUARDRAIL:	0
(54) VERTICAL UNDER CLEARANCE (ft.)	N 0	36D) APPROACH GUARDRAIL ENDS:	1
(55) LATERAL UNDER CLEARANCE RIGHT (ft.)	N 99.9	(113) SCOUR CRITICAL BRIDGES	5
(56) MIN LATERAL UNDER CLEARANCE (ft.)	0	SUFFICIENCY RATING	43.3 STATUS 1
PROPOSED IMPROVEMENTS		CLASSIFICATION	
(75A) TYPE OF WORK PROPOSED	(75B) WORK DONE BY	(112) NBIS BRIDGE LENGTH	Y
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.)	0	(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	0
(94) BRIDGE IMPROVEMENT COST (\$)	0	(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	06
(95) ROADWAY IMPROVEMENT COST (\$)	0	(100) STRAHNET HIGHWAY DESIGNATION	0
(96) TOTAL PROJECT COST	0	(101) PARALLEL STRUCTURE DESIGNATION	N
(97) YEAR OF IMPROVEMENT COST ESTIMATE		(102) DIRECTION OF TRAFFIC	2
(114) FUTURE ADT 3893	(115) YEAR OF FUTURE ADT 2028	(103) TEMP STRUCTURE	
		(105) FEDERAL LANDS HIGHWAYS	0
		(110) DESIGNATED NATIONAL NETWORK	0
		(20) TOLL	3
		(21) MAINTENANCE RESPONSIBILITY	01
		(22) OWNER	01
		(37) HISTORICAL	5
		NAVIGATION DATA	
		(38) NAVIGATION CONTROL	0
		(111) PIER OR ABUTMENT PROTECTION	1
		(39) NAV VERT CLEARANCE (ft.)	0
		(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE (ft.)	0
		(40) NAV HORIZONTAL CLEARANCE (ft.)	0

Inspector:

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Bridge Inspection Report

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
38 - Reinforced Concrete Slab	1- Ben.	15120	sq. ft.	12227	178	2666	49
<p>This structure has a hollow core deck.</p> <ul style="list-style-type: none"> -Span 1 has a 3'x10' patch at center line and a 6'x1.5' over Bent # 2 Lt lane that are still holding. -Span 5 has a 3' X13' area with approximately 1" section loss from concrete deterioration. -Span 7 has a failing concrete patch repair over Bent 8. -Span 9 Lt has exposed reinforcing steel in the gutter with concrete deterioration. -The spall in Span 10 has been repaired since last inspection but has a new 6" X 8" spall developing in the middle of the patch with exposed reinforcing steel. -Span 11 has a longitudinal crack located approximately 2' Rt of centerline. -Span 13 has a 4'X16' patched area and a 4' X 8' patched area. -Span 13 has a new shallow spall with exposed reinforcing steel in the Lt lane near mid span. -Span 15 has a short duration longitudinal crack near centerline. -Span 18 has a longitudinal crack located approximately 2' Rt of centerline. -There are numerous patched areas in the driving lanes and in the gutters. -Gutters have heavy scale with deteriorated epoxy repairs. -Edges of the deck have spalls over the expansion joints. -Numerous areas of longitudinal cracks on the driving surface. <p>Superstructure (Undersurface of the Deck):</p> <ul style="list-style-type: none"> -Span 1 has a full depth repair are that is leaking and has staining and efflorescence. There are longitudinal cracks with staining extending from both ends of the patch. -Span 2 has an area of random cracking with spalling near the middle of the span. -Span 3 NTR -Span 4 has a 2' X 3' spalled area with exposed reinforcing adjacent to Bent 4 over Column 2. There is a spalled area with exposed reinforcing around the Lt deck drain. -Span 5 has spalled areas with exposed reinforcing steel around the Lt and Rt deck drains. -Span 6 has a short duration longitudinal crack with staining near the centerline adjacent to Bent 7. -Span 7 has map cracking around the deck drains with small spalls with exposed reinforcing steel. -Span 8 has a spall with exposed reinforcing steel on the Lt side over Bent 9 and a spall with exposed reinforcing steel on the Rt over Bent 8. -Span 9 has a shallow spall with exposed reinforcing steel on the Lt edge of the deck over Bent 9 and a spall with exposed reinforcing steel at the Rt deck drain. 							

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Element Inspection

-Span 10 has spalling and delamination around th Lt deck drain.
 -Span 12 NTR
 -Span 13 has a shallow spall with exposed reinforcing steel adjacent to the Lt deck drain. There are two full depth repairs visible from the undersurface that appear to be holding at this inspection.
 -Span 14 has three transverse short duration cracks with staining on the Rt side near mid span.
 -Span 15 has a spall with exposed reinforcing steel at the Lt deck drain and a delaminated area adjacent to the Rt deck drain.
 -Span 16 NTR
 -Span 17 The Lt deck drain has a delaminated area. The Lt edge of the deck has an exposed primary reinforcing steel bar approx. 14' long that is resting on Bent 17 cap. There is a spall with exposed reinforcing steel on the Rt edge of deck over Bent 18.
 -Span 18 has longitudinal cracks with staining and a delaminated area near the center of the span. The Lt and Rt deck drains have spalling with exposed reinforcing steel with section loss.

1080 - Delamination/Spall/Patched Area		271		0	178	93	0
1090 - Exposed Rebar		56		0	0	56	0
1120 - Efflorescence/Rust Staining		10		0	0	10	0
1130 - Cracking (RC and Other)		758		0	0	709	49
1190 - Abrasion/Wear (PSC/RC)		1798		0	0	1798	0
225 - Steel Pile	1- Ben.	85	each	0	0	65	20

-Painted steel columns have active corrosion at the water elevation and at the cap juncture in locations. -Most extreme case is Bent 5, Column 5, Steel column is reduced to 1/8" thickness at the cap juncture.

-The bases of the columns below the normal pool elevation have nodules of active corrosion with up to 1/8" deep pitting in numerous locations.

1000 - Corrosion		85		0	0	65	20
515 - Steel Protective Coating		3992	sq. ft.	0	0	2876	1116
3440 - Effectiveness (Steel Protective Coatings)		3992		0	0	2876	1116

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Element Inspection

234 - Reinforced Concrete Pier Cap	1- Ben.	545	ft.	464	24	57	0
<p>-Substructure caps have numerous delaminated areas, spalls with exposed reinforcing steel that have active corrosion with up to 1/8" section loss at this inspection. Areas of note:</p> <p>-Bent 1 has spalling with exposed reinforcing steel.</p> <p>-Bent 2 has spalling with exposed reinforcing steel on the Span 1 side.</p> <p>-Bent 3 has one shallow spall adjacent to the keyway near mid span.</p> <p>-Bent 4 has a small shallow spall with exposed reinforcing steel on the Span 4 side between Columns 2 & 3.</p> <p>-Bent 5 has a spalled area with exposed reinforcing steel on the Rt end of the cap on the Span 4 side and a spall with exposed reinforcing steel on the Lt side on the Span 5 side.</p> <p>-Bent 6 has shallow spalls with exposed reinforcing steel on the Lt and Rt ends of the cap.</p> <p>-Bent 7 has a spalled area with exposed reinforcing steel on the bottom Lt end of the cap.</p> <p>-Bent 8 has a spall over Column 1 and a spall with exposed reinforcing steel on the bottom of the cap adjacent to Column 5.</p> <p>-Bent 11 has a spalled area with exposed reinforcing steel on the Rt end over Column 5.</p> <p>-Bent 12 has a delaminated area of the Lt end of the cap.</p> <p>-Bent 14 has a spalled area with exposed reinforcing steel on the Lt and Rt ends of the cap on the Span 13 side.</p> <p>-Bent 15 has concrete deterioration on the bottom Lt end of the cap with exposed reinforcing steel. The Rt end of the cap over Column 5 has a spalled area that deck juncture. The Span 15 side has delaminated areas over Columns 2 & 3.</p> <p>-Bent 16 has a spalled area on the top Lt corner and a delaminated area over Column 5 on the Span 15 side and 6 shallow spalls with exposed reinforcing steel on the Span 16 side. The bottom side of the cap has shallow spalls with exposed reinforcing steel between Columns 1 & 2.</p> <p>-Bent 17 has a spalled area with exposed reinforcing on the top & bottom Lt. end of the cap. There is a shallow spall on the Rt end of the cap over Column 5 on the Span 16 side.</p> <p>-Bent 18 has a delaminated area on the Lt under Construction Column 1 and a spalled area with exposed reinforcing steel on the Rt.</p> <p>-Water stains on the substructure indicate that the deck joints leak water and debris on the caps.</p> <p>Abutments: There are two 6" delaminated areas in the Lt side of Bent 1.</p>							
1080 - Delamination/Spall/Patched Area		27		0	22	5	0
1090 - Exposed Rebar		37		0	0	37	0
1120 - Efflorescence/Rust Staining		1		0	0	1	0
1130 - Cracking (RC and Other)		16		0	2	14	0

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Element Inspection

302 - Compression Joint Seal	1- Ben.	512	ft.	75	12	425	0
	-Deck joint sealant is deteriorated and leaks water and debris in the deck joints and on the substructure caps. -The deck has incompressibles in the joints that force the concrete slabs apart. Span 1 has moved 5 1/2" on the Rt and 4 3/4" on the Lt past the face of Bent 1 since original construction. Span 18 has moved 3 1/2" (measured on the Lt side) past the face of Bent 19 since original construction.						
2310 - Leakage		425		0	0	425	0
2350 - Debris Impaction		12		0	12	0	0
330 - Metal Bridge Railing	1- Ben.	1080	ft.	1018	50	10	2
	-Concrete post damaged due to traffic impact at Span 5 Lt side. -Loose bridge rail connection over Bent 4 Lt side. -Span 17 Rt at Bent 17 has a fractured bridge rail post with exposed reinforcing steel at the base and is missing the connection bolts. - Span 18 Lt has a new bridge railing and crack concrete posts.						
1000 - Corrosion		50		0	50	0	0
1010 - Cracking		2		0	0	2	0
7000 - Damage		10		0	0	8	2

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Bridge Inspection Report

Pictures

PHOTO 1

Description

PHOTO 2

Description

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Bridge Inspection Report

Sketches

Inspector:

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Bridge Inspection Report

Maintenance Needs

Date Reported: 04/07/2015

Priority: D - Routine

Work Code:

Deficiency Description:

Bridge rail post on the Right side of Span # 17 over Bent # 17.

The deck is fractured at the base of the bridge rail post in Span # 17 over Bent # 17.
Span # 5 Left side has collision damage with spalling and exposed reinforcing steel on the rail post.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor



PHOTO 1 Description Fractured bridge rail post located over span 17 right

Stage: Assigned



PHOTO 2 Description Span # 17 RT fractured rail post.

Inspector:

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Bridge Inspection Report

Maintenance Needs

Date Reported: 04/07/2015

Priority: D - Routine

Work Code:

Deficiency Description:

Substructure. Steel Columns.

Painted steel columns have active corrosion at the water elevation and at the cap juncture. Most extreme case is Bent # 5, Column # 5, Steel column is reduced to 1/8" thickness at the cap juncture.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor



PHOTO 1 Description Bent # 5 Column # 5 active corrosion with section loss.

Stage: Monitor



PHOTO 2 Description Heavy pitting at the column bases.

Inspector:

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Bridge Inspection Report

Maintenance Needs

Date Reported: 04/07/2015

Priority: D - Routine

Work Code:

Deficiency Description:

Substructure. Concrete Caps

Substructure caps have numerous delaminated areas, spalls with exposed reinforcing steel that have active corrosion with up to 1/8" section loss at this inspection. Water stains on the substructure indicate that the deck joints leak water and debris on the caps.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor



PHOTO 1 Description Bent # 5 Lt spalling with exposed reinforcing steel on the bottom of the cap.

Stage: Monitor



PHOTO 2 Description Bent # 14 Lt cap spalling with exposed reinforcing steel. 12

Inspector:

Inspection Date:

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Bridge Inspection Report

Maintenance Needs

Stage: Monitor



PHOTO 3 Description Bent # 17 Lt end of the cap spalling with exposed reinforcing steel.

Inspector:

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Bridge Inspection Report

Maintenance Needs

Date Reported: 04/07/2015

Priority: G - General/ Preventive maintenance

Work Code:

Deficiency Description:

Concrete Slabs

Span # 1 has moved 5 1/2" on the Right and 4 3/4" on the Left past the face of Bent # 1 since original construction. Span # 18 has moved 3 1/2" (measured on the Left side) past the face of Bent # 19 since original construction.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor



PHOTO 1 Description

Inspector:

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Bridge Inspection Report

Maintenance Needs

Date Reported: 04/07/2015

Priority: C - Important

Work Code: Repair

Deficiency Description:

Deck

Gutters have heavy scale with deteriorated epoxy repairs. Edges of the deck have spalls over the expansion joints. There are sealable longitudinal cracks on the driving surface of the deck. There are Spalls with exposed reinforcing steel visible from the undersurface of the deck

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1 Description Span # 4 Lt spalling with exposed reinforcing steel.

Stage: Assigned



PHOTO 2 Description Span # 5 Lt gutter concrete deterioration.