

# Bridge Inspection Report

**02767**

**State Highway 27  
over  
Deer Creak-Montgomery**



**Inspection Date:**

**Inspected By:**

**Inspection Type(s):**

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Inspector:

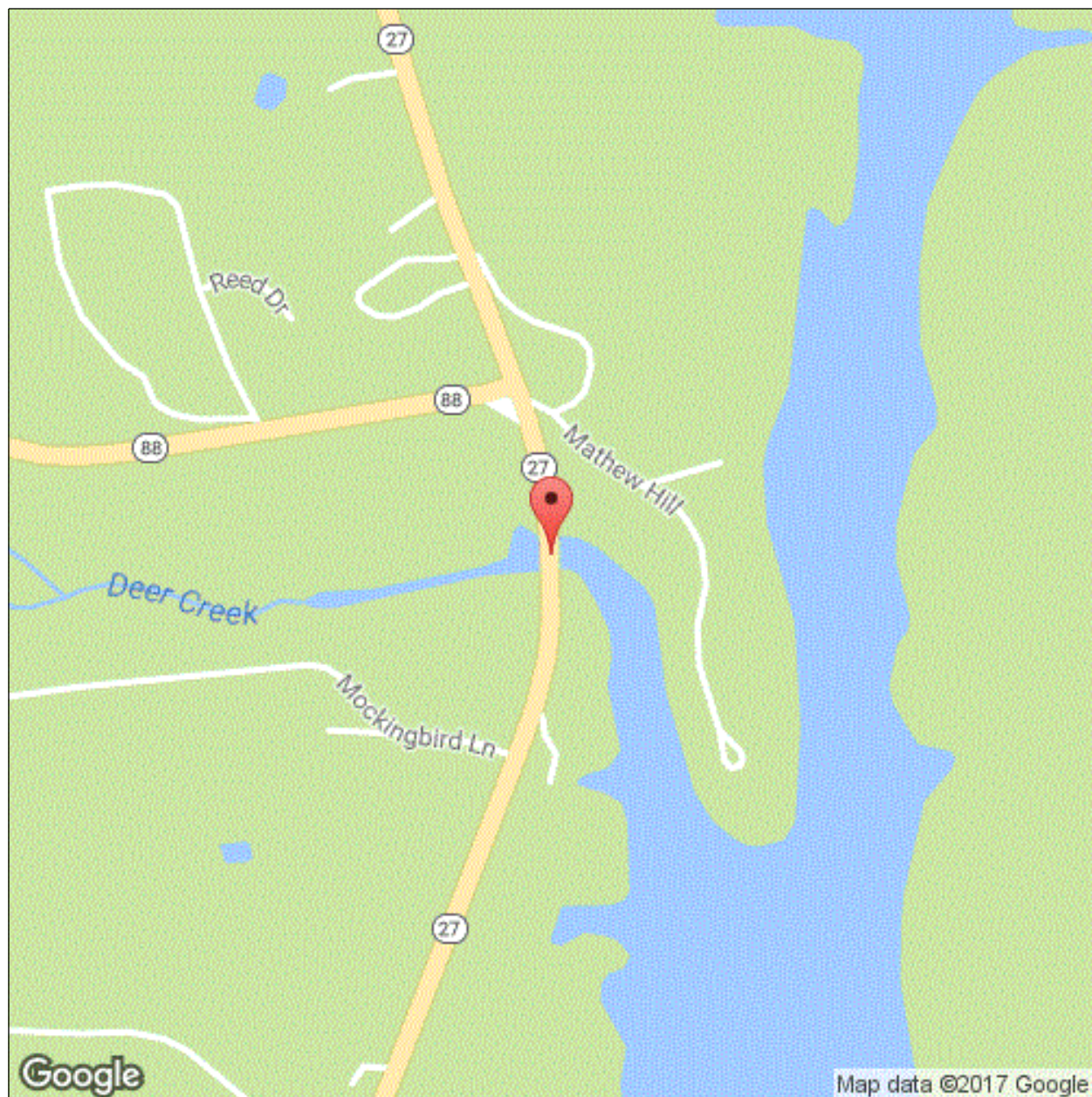
Inspection Date:

Structure Number: 02767

Facility Carried: State Highway 27

## Bridge Inspection Report

### Location Map



Latitude: 34.65122

Longitude: -93.53297

Inspector:

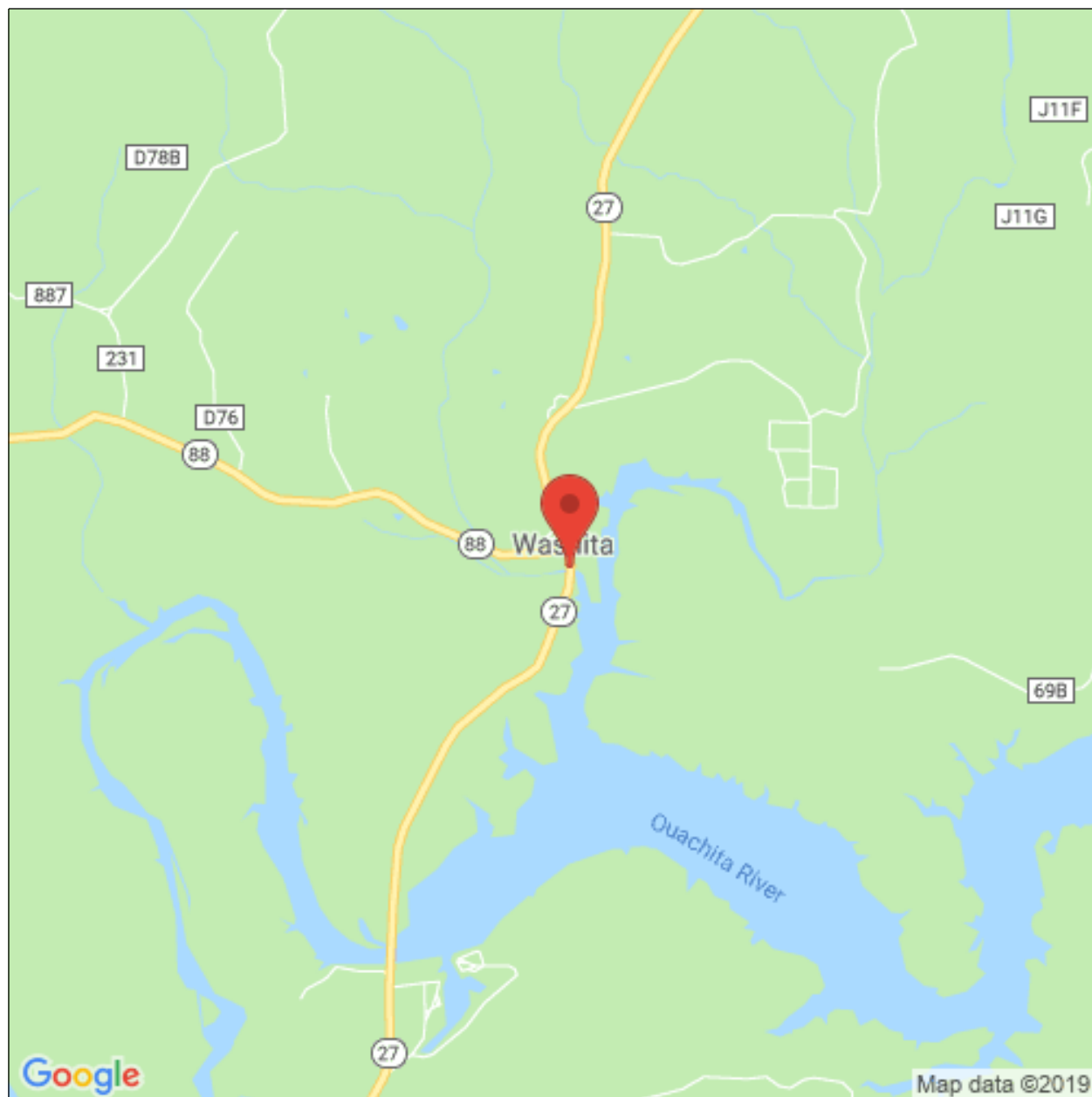
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### Location Map



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Longitude: -93.53297



Inspector:

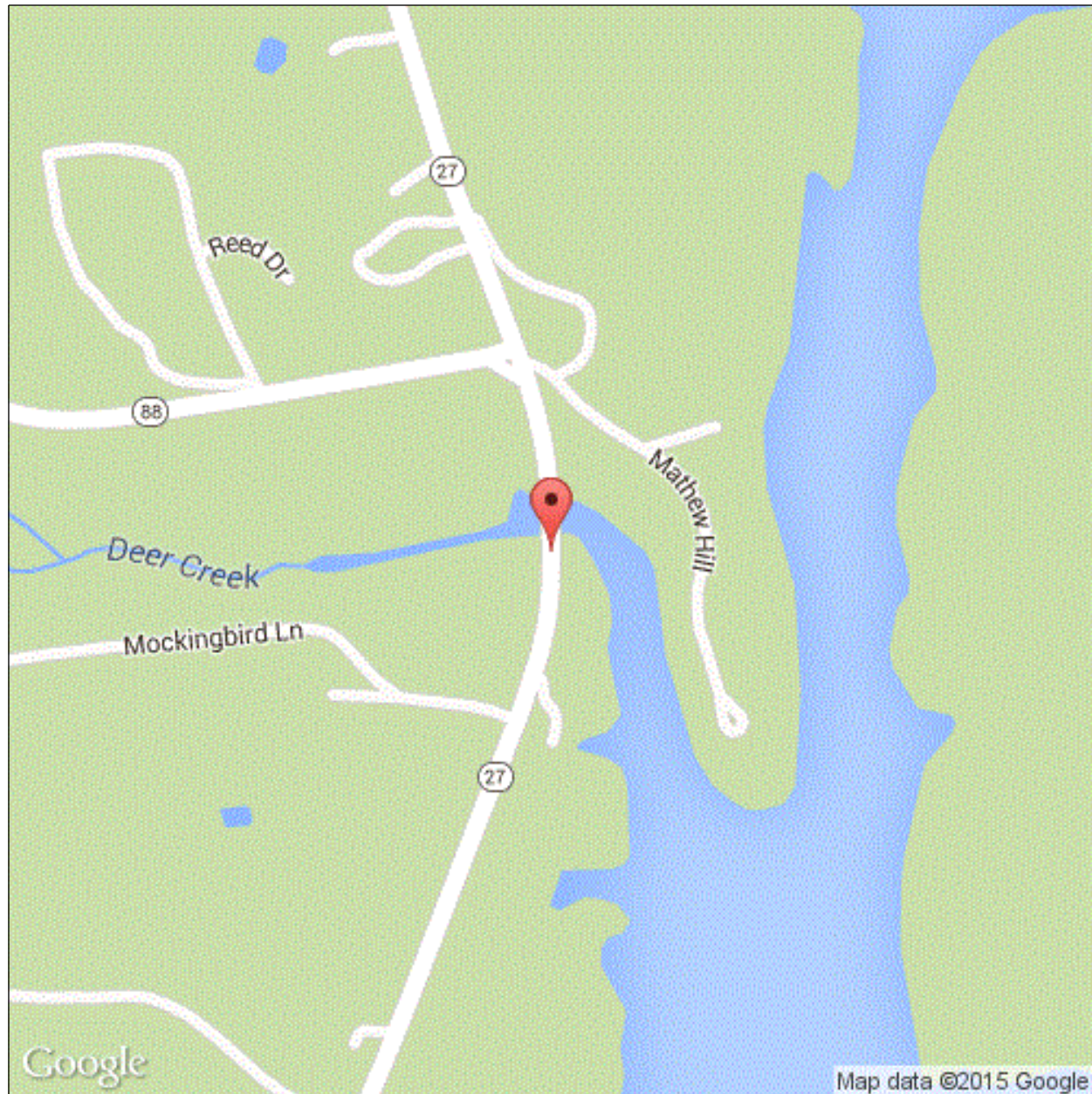
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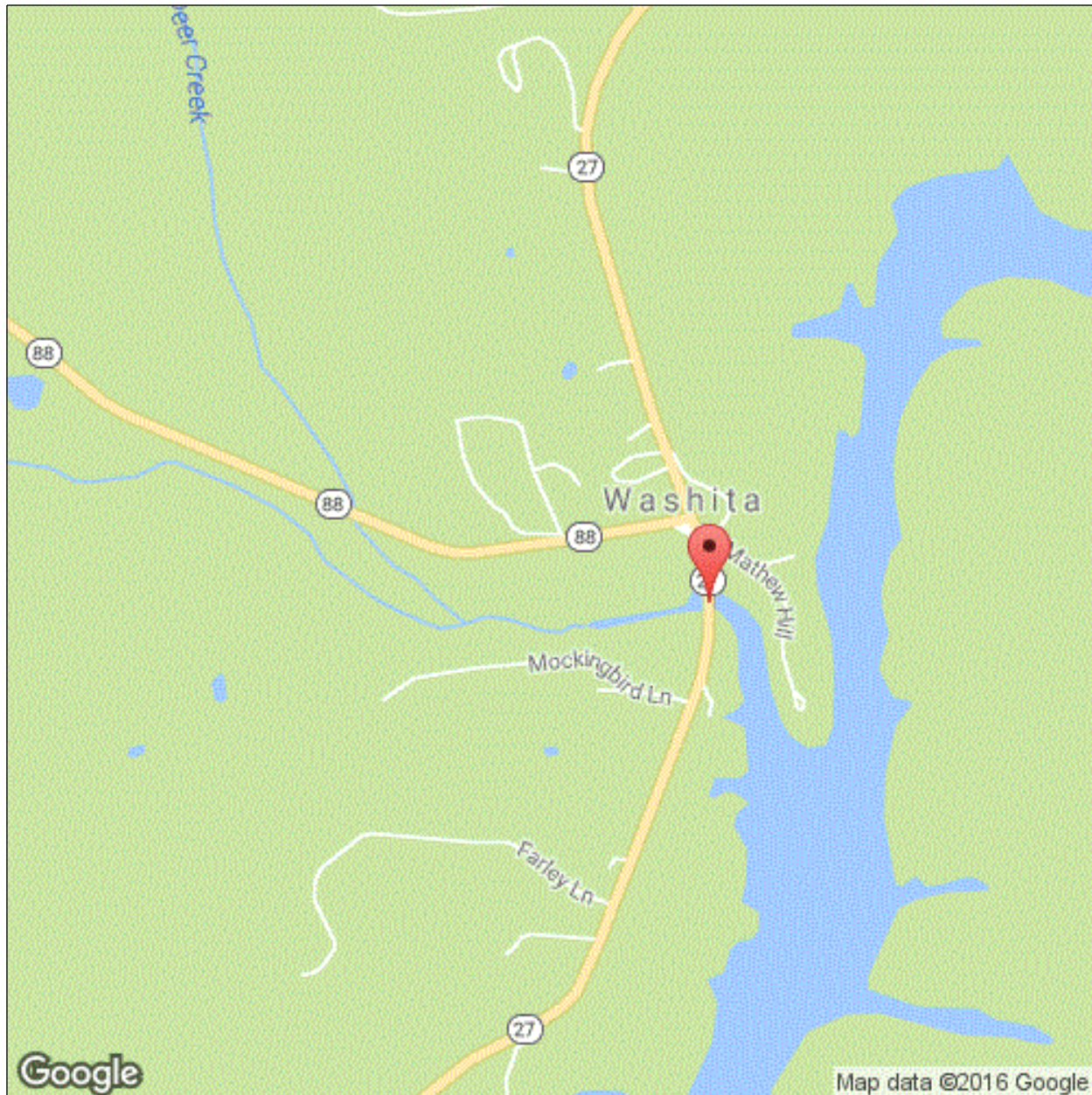
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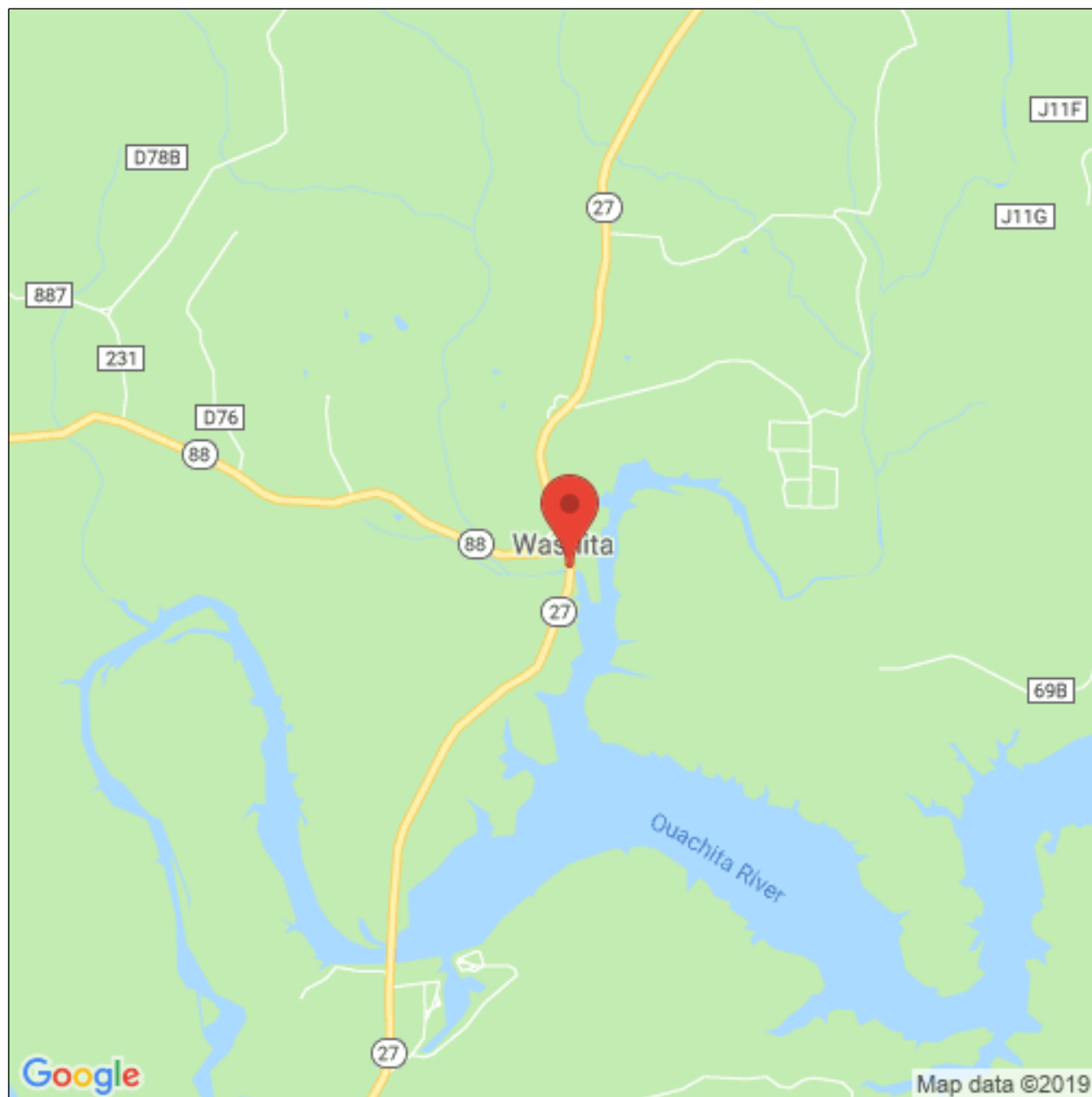
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**Bridge Inspection Report**

**Executive Summary**



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## Bridge Inspection Report

## National Bridge Inventory

IDENTIFICATION		INSPECTIONS	
(1) STATE CODE	056 - Arkansas	(90) INSPECTION DATE	07/16/2018
(8) STRUCTURE NUMBER	02767	(91) DESIGNATED INSPECTION FREQUENCY	24
(5) INV. ROUTE (ON/UNDER)	1 3 1 27 0	(92) CRITICAL FEATURE INSPECTION	(93) CFI DATE
(2) HIGHWAY AGENCY	08 (3) COUNTY CODE 097	A. FRACTURE CRITICAL DETAIL	N
(4) PLACE CODE	00000	B. UNDERWATER INSPECTION	N
(6) FEATURES INTERSECTED	Deer Creak-Montgomery	C. OTHER SPECIAL	Y 24 09/18/2019
(7) FACILITY CARRIED	State Highway 27		
(9) LOCATION	.1 MI S JCT SH 88		
(11) MILEPOINT 9.958	(12) BASE HIGHWAY NETWORK 1		
(13A) LRS INVENTORY ROUTE	0000027070 (13B) SUBROUTE NUMBER 01		
(16) LATITUDE 34.65122	(17) LONGITUDE -93.53297		
(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: 3 - Steel		(59) SUPERSTRUCTURE	5
B) TYPE OF DESIGN/CONSTR: 02 - Stringer/Multi-beam or Girder		(60) SUBSTRUCTURE	5
(44) STRUCTURE TYPE, APPROACH SPANS		(61) CHANNEL & CHANNEL PROTECTION	7
A) KIND OF MATERIAL/DESIGN: 0 - Other		(62) CULVERT	N
B) TYPE OF DESIGN/CONSTR: 00 - Other			
(45) NUMBER OF SPANS IN MAIN	5		
(46) NUMBER OF APPROACH	0		
(107) DECK STRUCTURE TYPE	1		
(108A) WEARING SURFACE	6		
(108B) DECK MEMBRANE	0		
(108C) DECK PROTECTION	0		
AGE OF SERVICE		LOAD RATING AND POSTING	
(27) YEAR BUILT	1953	(31) DESIGN LOAD	2
(106) YEAR RECONSTRUCTED	0000	(63) METHOD USED TO DETERMINE OPERATING RATING	1
(42) TYPE OF SERVICE	ON 1 UNDER 5	(64) OPERATING RATING	42.0
(28) LANES	ON 02 UNDER 00	(65) METHOD USED TO DETERMINE INVENTORY RATING	1
(29) AVERAGE DAILY TRAFFIC	1100	(66) INVENTORY RATING	25.0
(19) BYPASS DETOUR LENGTH	7	(70) BRIDGE POSTING	5
(30) YEAR OF AVERAGE DAILY TRAFFIC	2018	(41) STRUCTURE OPEN/POSTED/CLOSED	A
(109) AVERAGE DAILY TRUCK TRAFFIC	22		
GEOMETRIC DATA		APPRAISAL	
(48) LENGTH OF MAX SPAN (ft.)	40	(67) STRUCTURAL EVALUATION	5
(49) STRUCTURE LENGTH (ft.)	202	(68) DECK GEOMETRY	3
(50) CURB/SIDEWALK WIDTHS (ft.)	LEFT 0.5 RIGHT 0.5	(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.)	22.0	(71) WATERWAY ADEQUACY	8
(52) DECK WIDTH, OUT-TO-OUT (ft.)	26.6	(72) APPROACH ROADWAY ALIGNMENT	5
(32) APPROACH ROADWAY WIDTH (ft.)	27.9	(36) TRAFFIC SAFETY FEATURE	
(33) BRIDGE MEDIAN	0	36A) BRIDGE RAILINGS:	0
(34) SKEW (DEG.)	0	36B) TRANSITIONS:	0
(35) STRUCTURE FLARED	0	36C) APPROACH GUARDRAIL:	0
(10) INV RTE, MIN VERT CLEAR (ft.)	99.99	36D) APPROACH GUARDRAIL ENDS:	0
(47) TOTAL HORIZONTAL CLEARANCE (ft.)	24.0	(113) SCOUR CRITICAL BRIDGES	8
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.)	99.99	SUFFICIENCY RATING	52.0
(54) VERTICAL UNDER CLEARANCE (ft.)	N 0	STATUS	1
(55) LATERAL UNDER CLEARANCE RIGHT (ft.)	N 99.9		
(56) MIN LATERAL UNDER CLEARANCE (ft.)	0		
PROPOSED IMPROVEMENTS		CLASSIFICATION	
(75A) TYPE OF WORK PROPOSED	31	(75B) WORK DONE BY	1
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.)	235	(112) NBIS BRIDGE LENGTH	Y
(94) BRIDGE IMPROVEMENT COST (\$)	0	(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	0
(95) ROADWAY IMPROVEMENT COST (\$)	156	(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	06
(96) TOTAL PROJECT COST	670	(100) STRAHNET HIGHWAY DESIGNATION	0
(97) YEAR OF IMPROVEMENT COST ESTIMATE	2003	(101) PARALLEL STRUCTURE DESIGNATION	N
(114) FUTURE ADT	1200	(102) DIRECTION OF TRAFFIC	2
(115) YEAR OF FUTURE ADT	2038	(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	2
		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

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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
<b>12 - Reinforced Concrete Deck</b>	1- Ben.	4700	sq. ft.	0	3445	1255	0
<p>08/21/2017 - RWF &amp; KRM - The driving surface has failing temporary asphalt patches with potholes forming in the wheel paths. Large sealable cracking in the concrete repairs typical. Light/medium cracking with efflorescence in the undersurface with isolated areas of exposed reinforcing steel in the undersurface.</p> <p>07/17/2018            Span #1 - Right lane is sound concrete patched. Left lane is concrete and asphalt patches with moderate to large cracks and minor spalls.            Span #2 - Right lane is sound concrete patched. Left lane is asphalt wearing surface with concrete patches with moderate to large cracks and minor spalls.            Span #3 - thin asphalt wearing surface with concrete patches and minor spalls.            Span #4 - thin asphalt wearing surface with concrete patches and minor spalls.            Span #5 - All of right lane has sound concrete patches. Left lane has 50% sound concrete patches. Almost all of the thin asphalt wearing surface is gone. Moderate scale and cracks in old existing concrete. There is not enough of the wearing surface left to add a Wearing Surface element to this deck.</p> <p>9/18/2019 - GLD &amp; MLM - Special Recurring inspecting on deck. There had been a full depth failure (hole) in the deck since last inspection at the north end of bridge. This has been repaired. Span #'s 2 &amp; 3 - several spalls at the center line some are greater than 1" deep.</p>							
1080 - Delamination/Spall/Patched Area		4521		0	3445	1076	0
1090 - Exposed Rebar		18		0	0	18	0
1130 - Cracking (RC and Other)		161		0	0	161	0

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## Bridge Inspection Report

## Element Inspection

<b>107 - Steel Open Girder/Beam</b>	1- Ben.	800	ft.	18	758	24	0
<p>Abut #1 - Beams have been cleaned and painted, some rust on bottom flange at bearings.</p> <p>Pier #2, backside - B1 old section loss in bottom flange, B2 tee splice, B3 rust and old section loss in bottom flange, B4 rust on bottom flange. Ahead side - typical of backside.</p> <p>Pier #3 - both sides B2 &amp; B3 have tee splices. B2, B3 &amp; B4 - minor rust on bottom flange.</p> <p>Pier #4 - beam #2, both side have tee splices. Beam #3, both sides have old section loss on bottom flange.</p> <p>Pier #5 - beam #1, both sides old section loss, B2 ahead tee splice. All others have rust and minor section loss.</p> <p>Abut #6 - Beams have been cleaned and painted, some rust on bottom flange at bearings.</p> <p>Beam #2 back &amp; ahead sides at pier #2, beam #'s 2 &amp; 3 back &amp; ahead sides at pier #3, beam #2 back &amp; ahead sides at pier #4 &amp; beam #2 backside at pier #5 have been tee spliced.</p>							
1000 - Corrosion		782		0	758	24	0
515 - Steel Protective Coating		5600	sq. ft.	2600	1500	1000	500
3440 - Effectiveness (Steel Protective Coatings)		3000		0	1500	1000	500
<b>205 - Reinforced Concrete Column</b>	1- Ben.	8	each	5	2	1	0
<p>Pier #2, column #2, backside - minor spall with rebar exposed 1 ea. C3</p> <p>Pier #4, column #1, backside - minor spall with rebar exposed 1 ea. C2</p> <p>Pier #5, column #2, ahead side - minor spalls with rebar exposed 1 ea. C2.</p>							
1090 - Exposed Rebar		3		0	2	1	0
<b>215 - Reinforced Concrete Abutment</b>	1- Ben.	60	ft.	58	2	0	0
<p>Included wings in element quantity.</p> <p>Abut #1, left side - minor spall with rebar exposed in back wall.</p>							
1090 - Exposed Rebar		2		0	2	0	0
<b>234 - Reinforced Concrete Pier Cap</b>	1- Ben.	108	ft.	90	5	13	0
<p>Pier #2, right back side - minor spall with rebar exposed</p> <p>Pier #3, backside - large horizontal crack minor spalls with rebar exposed. Rebar has complete section loss. 5 LF C3 rebar, 4 LF C3 crack.</p> <p>Pier #3, ahead side - spall with rebar exposed 2 LF C3.</p> <p>Pier #4, backside - spalls and delamination 4 LF C2</p> <p>Pier #5, right ahead side - minor spalls with rebar exposed. 2 LF C3</p>							
1080 - Delamination/Spall/Patched Area		5		0	5	0	0
1090 - Exposed Rebar		9		0	0	9	0
1130 - Cracking (RC and Other)		4		0	0	4	0
<b>304 - Open Expansion Joint</b>	1- Ben.	88	ft.	0	88	0	0
MINOR RUST ON JOINT ARMOR. NUMEROUS PATCHED AREAS AROUND JOINTS.							
2360 - Adjacent Deck or Header		88		0	88	0	0

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## Element Inspection

<b>305 - Assembly Joint without Seal</b>	1- Ben.	44	ft.	0	44	0	0
	SLIDE PLATES - MINOR RUST ON PLATES & JOINT ARMOR. NUMEROUS PATCHED AREAS AROUND JOINTS.						
2360 - Adjacent Deck or Header		44		0	44	0	0
<b>311 - Movable Bearing</b>	1- Ben.	20	each	0	13	7	0
	Abut #1, bearing #1 - minor pack rust and minor section loss. B2 & B3 minor pack rust. Pier #2, ahead side - all have minor to moderate rust Pier #3, ahead side - Pier #4, ahead side - Abut #6 - all have minor pack rust and section loss.						
1000 - Corrosion		20		0	13	7	0
515 - Steel Protective Coating		60	sq. ft.	15	20	15	10
3440 - Effectiveness (Steel Protective Coatings)		45		0	20	15	10
<b>313 - Fixed Bearing</b>	1- Ben.	20	each	0	20	0	0
	Pier #2, backside - B1 & B2 minor rust, B3 & B4 moderate rust. Pier #3, backside - all have minor or moderate rust. Pier #4, backside - Pier #5, both sides						
1000 - Corrosion		20		0	20	0	0
515 - Steel Protective Coating		60	sq. ft.	15	20	15	10
3440 - Effectiveness (Steel Protective Coatings)		45		0	20	15	10
<b>330 - Metal Bridge Railing</b>	1- Ben.	404	ft.	0	404	0	0
	Metal rail on concrete post. Moderate rust throughout.						
1000 - Corrosion		404		0	404	0	0
515 - Steel Protective Coating		1212	sq. ft.	0	412	400	400
3440 - Effectiveness (Steel Protective Coatings)		1212		0	412	400	400



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## Pictures

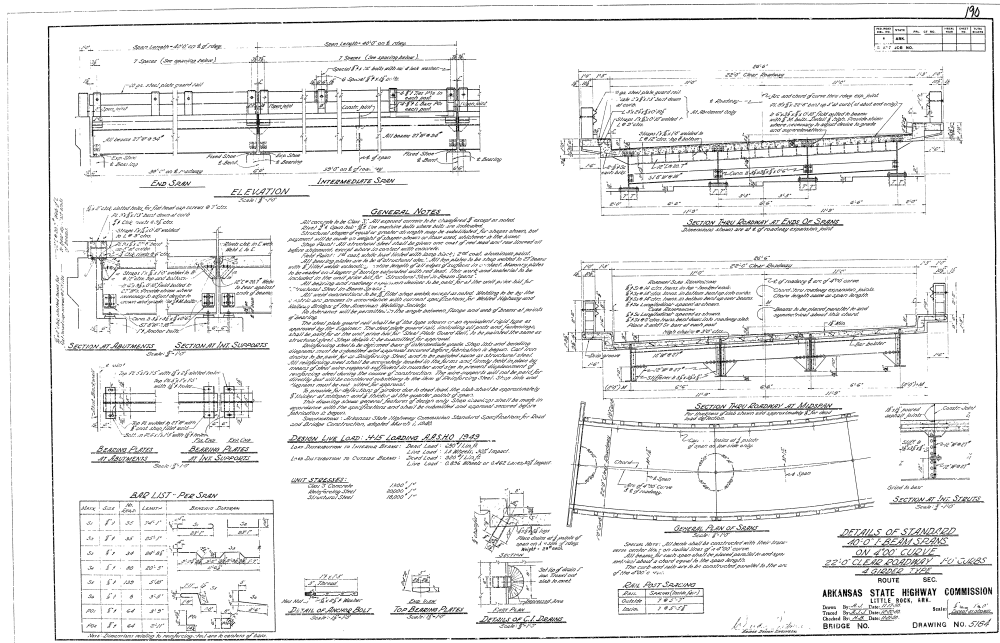


PHOTO 1

Description	Details of Standard 40'-0" I-Beam Spans
1. Span Length	40'-0"
2. I-Beam Size	40" x 13.3 lb/ft
3. Support Spacing	20'-0"
4. Load Type	Uniformly Distributed Load (UDL)
5. Load Magnitude	1.5 k/ft
6. Deflection	0.5 inches
7. Stiffness	1.2 x 10 <sup>6</sup> lb-in
8. Moment	100 k-ft
9. Shear Force	10 k
10. Reaction	10 k

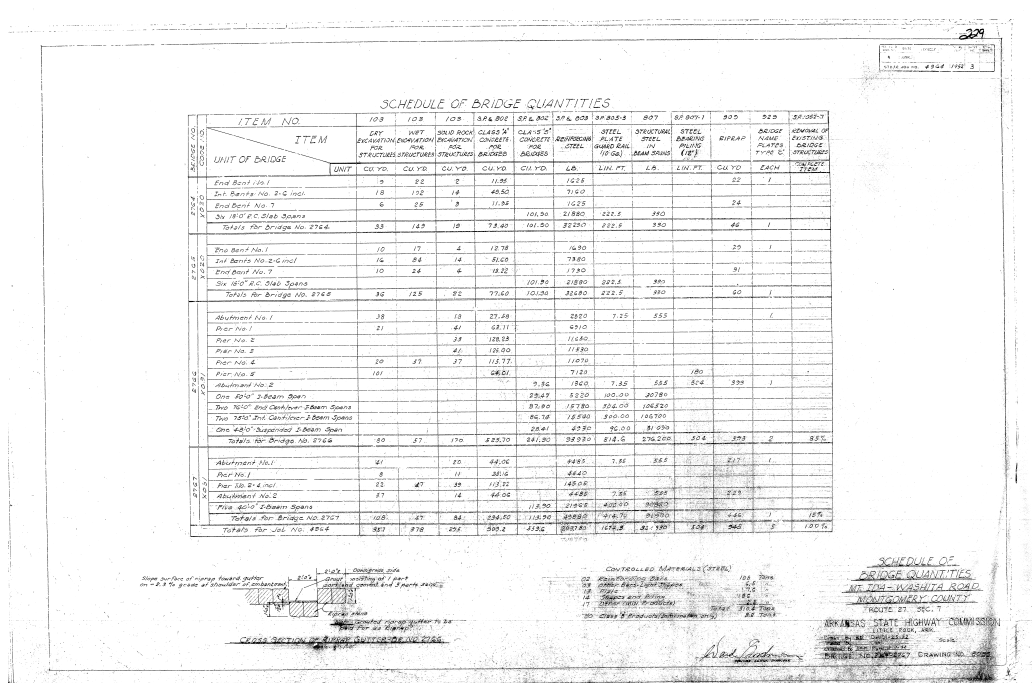
PHOTO 1

### Description

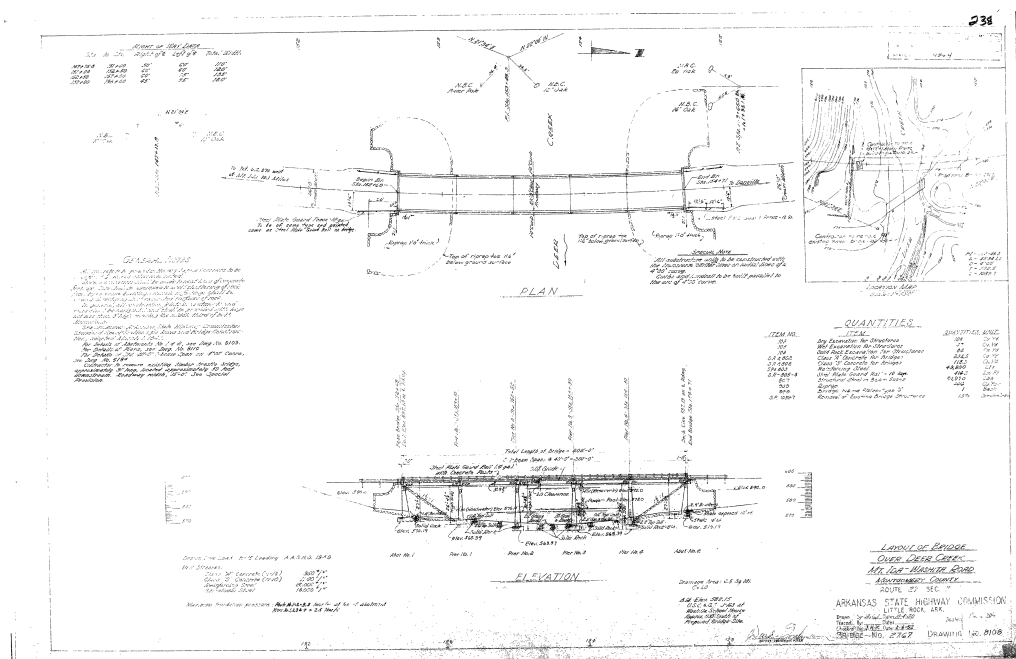
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## Pictures



Description	Quantities
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Description	Layout of Bridge
<p>1. <b>Approach</b></p> <p>2. <b>Abutment</b></p> <p>3. <b>Pier</b></p> <p>4. <b>Span</b></p> <p>5. <b>Deck</b></p> <p>6. <b>Support</b></p> <p>7. <b>Foundation</b></p> <p>8. <b>Structure</b></p> <p>9. <b>Access</b></p> <p>10. <b>Exit</b></p>	

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### Pictures

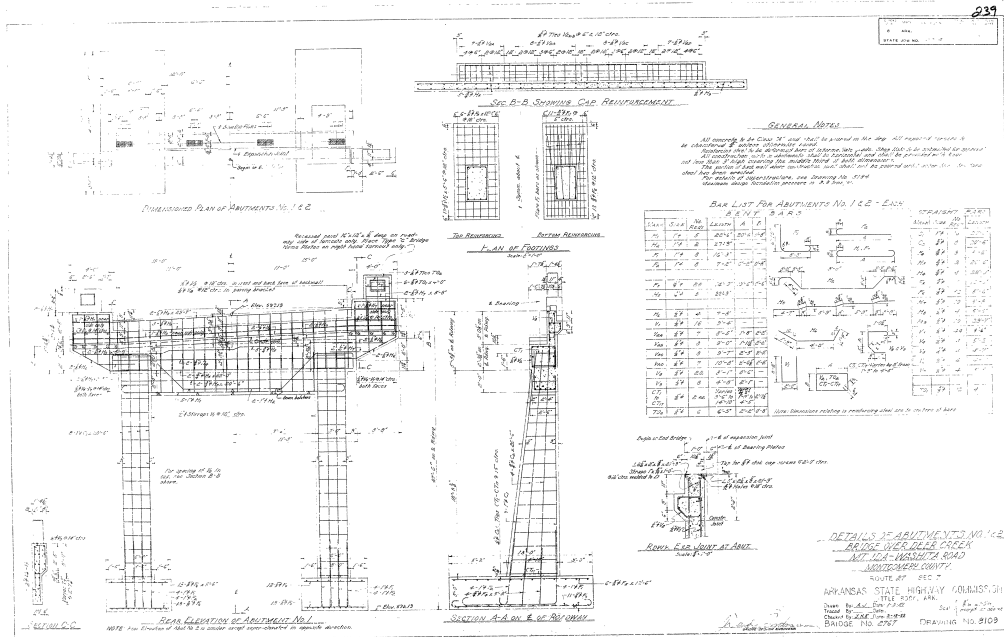


PHOTO 4

Description Details of Abutments No 1 & 2

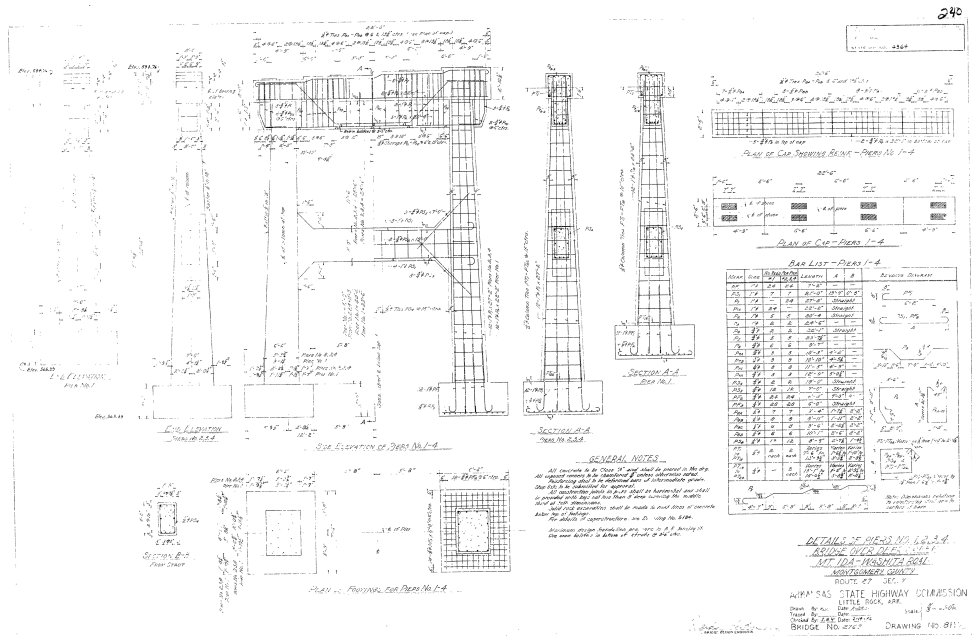


PHOTO 5

Description Details of Piers

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**Bridge Inspection Report**

**Sketches**



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### Bridge Inspection Report

## Maintenance Needs

Date Reported: 08/21/2017

Priority: C - Important

Work Code:

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### Deficiency Description:

Deck

The driving surface has failing temporary asphalt patches with potholes forming in the wheel paths.

9/18/2019 - GLD & MLM - several minor to moderate spalls at centerline in spans 2 & 3.

### Work Description:

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Date Repairs Completed:

Maintenance Comments:

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Stage: Open



PHOTO 1      Description

Stage: Monitor



PHOTO 2      Description      Span #3 - a few spalls



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### Maintenance Needs

Stage: Open



PHOTO 3 Description

Stage: Monitor



PHOTO 4 Description Span #2 - deep spalls.

Stage: Open



PHOTO 5 Description Failing temporary asphalt patches in the driving surface.