

Bridge Inspection Report

A3956

Interstate 540 SB

over

Flat Rock Creek-Crawford



Inspection Date:

Inspected By:

Inspection Type(s):

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Inspector:

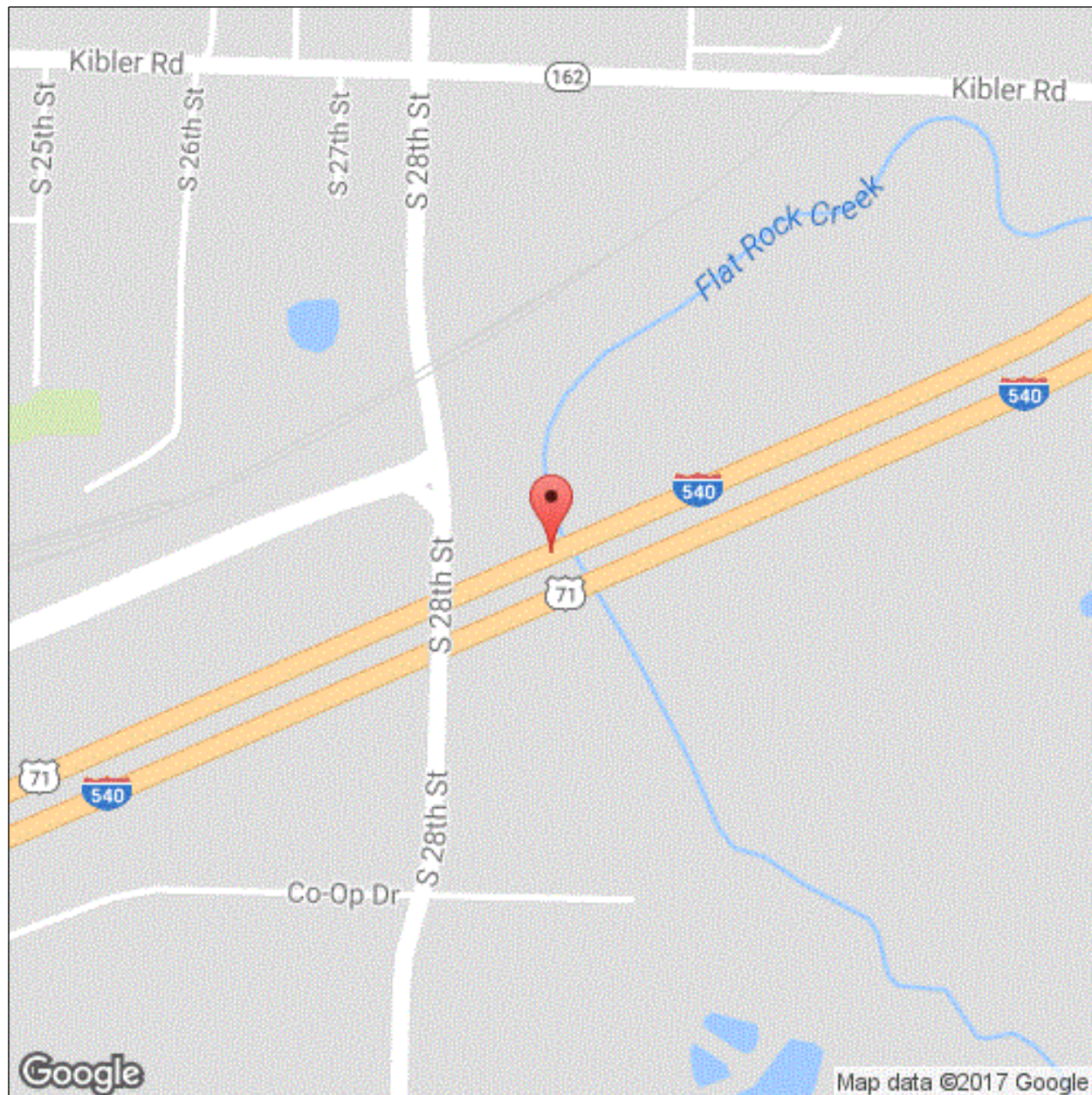
Structure Number: A3956

Inspection Date:

Facility Carried: Interstate 540 SB

Bridge Inspection Report

Location Map



Latitude: 35.432564

Longitude: -94.327911

Inspector:

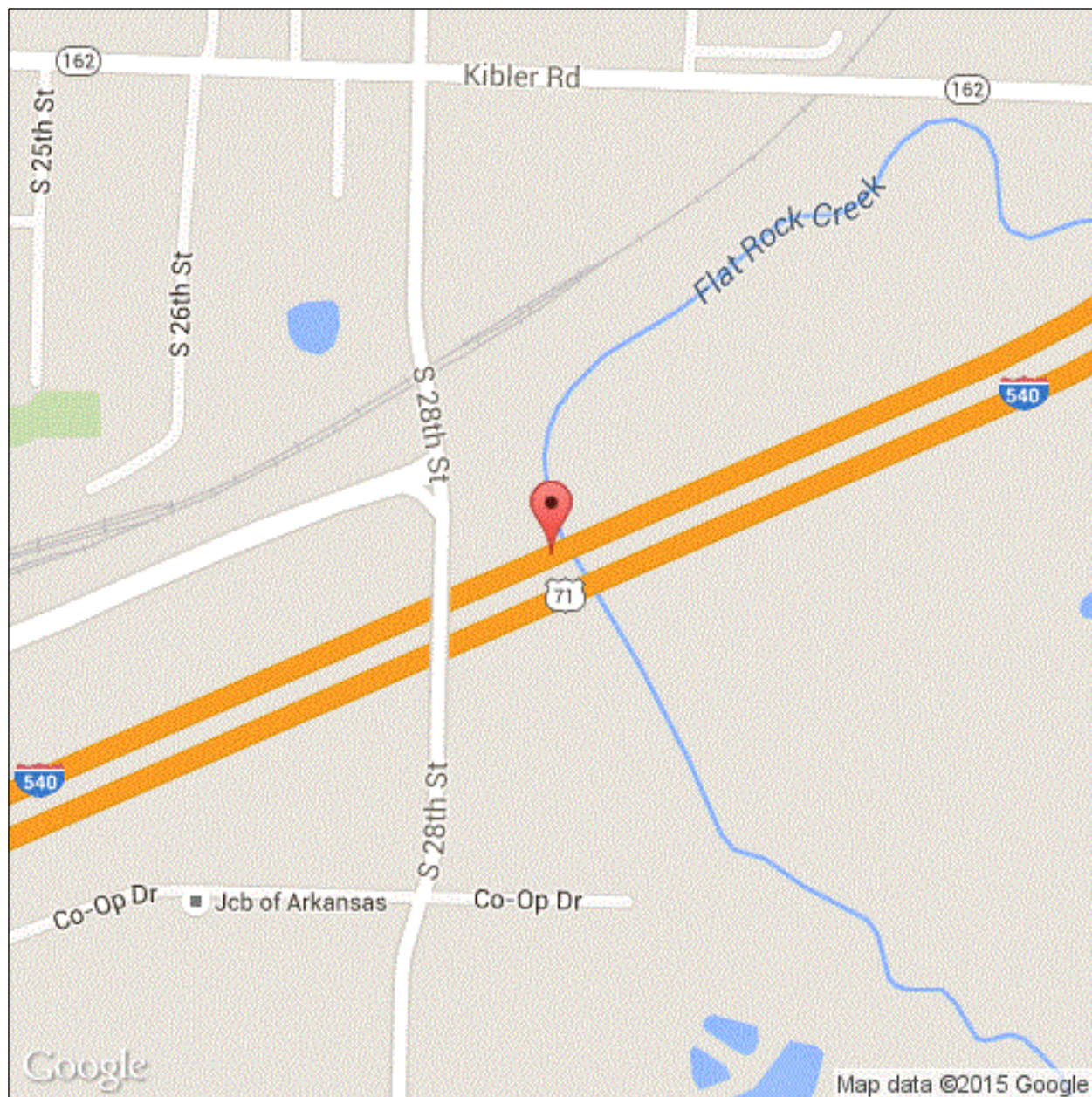
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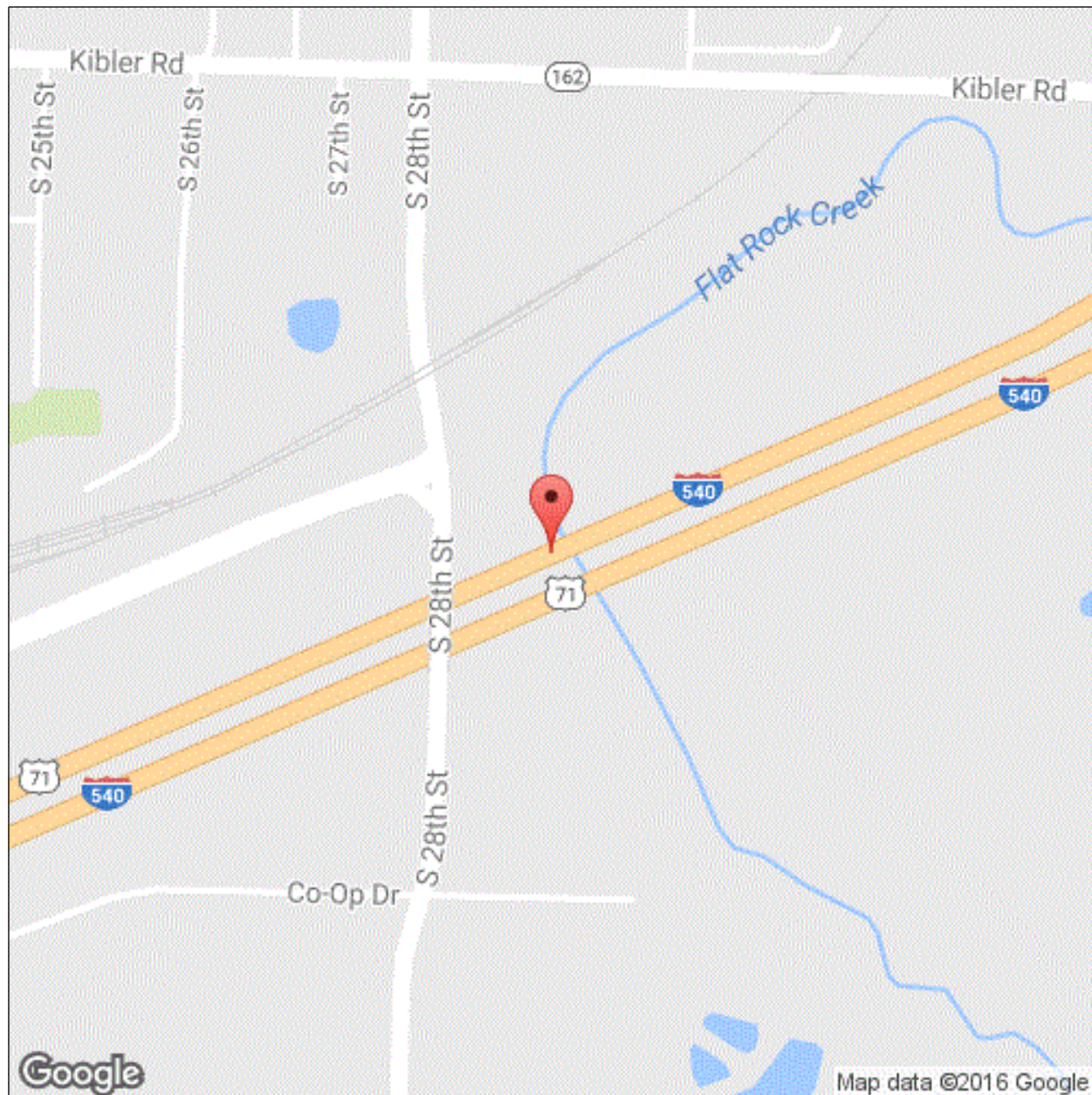
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Location Map



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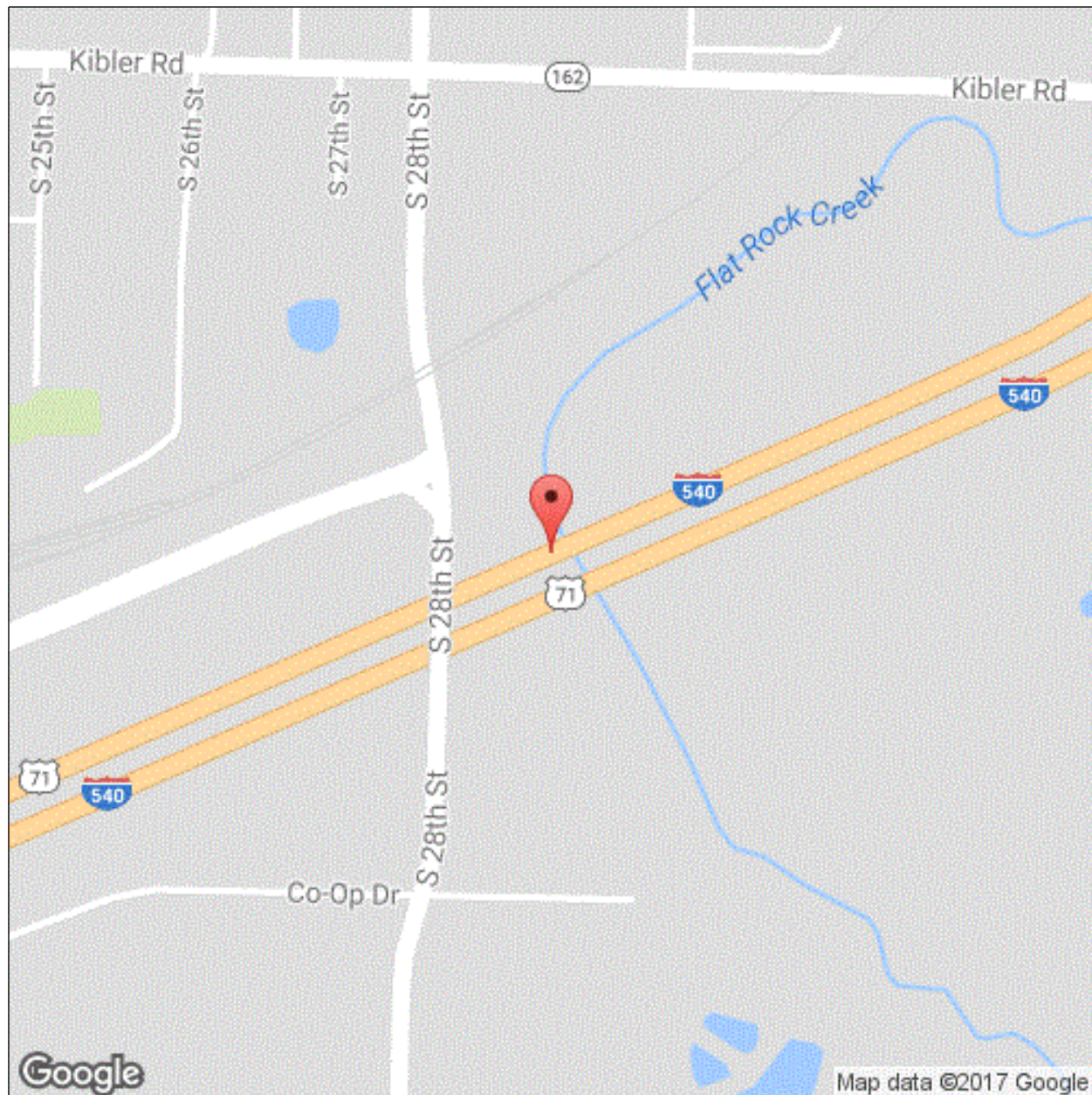
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Executive Summary

09/07/2017 JPB & SPC-Routine and Underwater Type 2 Inspections conducted on this date.

Underwater Type 2 Inspection: Wading and probing indicate that Bent 2, Column 2 footing is exposed on the channel side but not undermined. There is no apparent scour problems at this inspection.

09/22/2016 JPB & SPC-Special Recurring Inspection conducted on this date.

Special Recurring Inspection: Monitoring of the deck. Repairs by state maintenance forces are appear to be breaking apart in areas at this inspection. Numerous new spalls on the deck surface with exposed reinforcing steel at this inspection. Most of the cracks appear to have been sealed with epoxy in the past. Several potholes on the surface in Spans 1 & 2. Shallow spalling on the undersurface with exposed reinforcing steel in Span 1, Bays 1 & 2. The exposed reinforcing steel has up to initial section loss. Map cracking with leeching is visible from the undersurface of the deck especially in Span 1, Bays 1, 2 & 4.

09/15/2015 - JCJ & JML - Special Inspection conducted to monitor the deck. Repairs by state maintenance forces are appear to be breaking apart in areas at this inspection. Numerous spalls on the deck surface with exposed reinforcing steel at this inspection. Most of the cracks appear to have been sealed with epoxy in the past. Several potholes on the surface in Spans # 1 & 2. Shallow spalling on the undersurface with exposed reinforcing steel in Span # 1. The exposed reinforcing steel has up to initial section loss. Map cracking with leaching is visible from the undersurface of the deck. Special Inspection is replaced by a Special Reoccurring Inspection on a 24 month inspection frequency that alternates with the Routine Inspection on a 24 month inspection frequency in accordance with the new Department bridge inspection guidelines.

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Bridge Inspection Report

National Bridge Inventory

IDENTIFICATION		INSPECTIONS	
(1) STATE CODE	056 - Arkansas	(90) INSPECTION DATE	09/07/2017
(8) STRUCTURE NUMBER	A3956	(91) DESIGNATED INSPECTION FREQUENCY	24
(5) INV. ROUTE (ON/UNDER)	1 1 1 540 3	(92) CRITICAL FEATURE INSPECTION	(93) CFI DATE
(2) HIGHWAY AGENCY	04 (3) COUNTY CODE 033	A. FRACTURE CRITICAL DETAIL	N
(4) PLACE CODE	69380	B. UNDERWATER INSPECTION	N
(6) FEATURES INTERSECTED	Flat Rock Creek-Crawford	C. OTHER SPECIAL	Y 24 09/22/2016
(7) FACILITY CARRIED	Interstate 540 SB	CONDITION	
(9) LOCATION	1.37 MI N SEB CO. LINE	(58) DECK	4
(11) MILEPOINT 12.900	(12) BASE HIGHWAY NETWORK 1	(59) SUPERSTRUCTURE	7 (60) SUBSTRUCTURE 6
(13A) LRS INVENTORY ROUTE	0000540020 (13B) SUBROUTE NUMBER 00	(61) CHANNEL & CHANNEL PROTECTION	8 (62) CULVERT N
(16) LATITUDE 35.432564	(17) LONGITUDE -94.327911	LOAD RATING AND POSTING	
(98A) BORDER BRIDGE CODE		(31) DESIGN LOAD	6
PERCENT RESPONSIBILITY	(99) BORDER BRIDGE STRUCT	(63) METHOD USED TO DETERMINE OPERATING RATING	1
STRUCTURE TYPE AND MATERIAL		(64) OPERATING RATING	60.0
(43) STRUCTURE TYPE, MAIN		(65) METHOD USED TO DETERMINE INVENTORY RATING	1
A) KIND OF MATERIAL/DESIGN:	3 - Steel	(66) INVENTORY RATING	36.0
B) TYPE OF DESIGN/CONSTR:	02 - Stringer/Multi-beam or Girder	(70) BRIDGE POSTING	5
(44) STRUCTURE TYPE, APPROACH SPANS		(41) STRUCTURE OPEN/POSTED/CLOSED	A
A) KIND OF MATERIAL/DESIGN:	0 - Other	APPRAISAL	
B) TYPE OF DESIGN/CONSTR:	00 - Other	(67) STRUCTURAL EVALUATION	6
(45) NUMBER OF SPANS IN MAIN	3 (46) NUMBER OF APPROACH	(68) DECK GEOMETRY	6
(107) DECK STRUCTURE TYPE	1 (108A) WEARING SURFACE	(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(108B) DECK MEMBRANE	0 (108C) DECK PROTECTION	(71) WATERWAY ADEQUACY	8
AGE OF SERVICE		(72) APPROACH ROADWAY ALIGNMENT	8
(27) YEAR BUILT	1968 (106) YEAR RECONSTRUCTED	(36) TRAFFIC SAFETY FEATURE	
(42) TYPE OF SERVICE	ON 1 UNDER 5	36A) BRIDGE RAILINGS:	1
(28) LANES	ON 02 UNDER 00	36B) TRANSITIONS:	0
(29) AVERAGE DAILY TRAFFIC	64018 (19) BYPASS DETOUR LENGTH	36C) APPROACH GUARDRAIL:	1
(30) YEAR OF AVERAGE DAILY TRAFFIC	2014	36D) APPROACH GUARDRAIL ENDS:	1
(109) AVERAGE DAILY TRUCK TRAFFIC	1	(113) SCOUR CRITICAL BRIDGES	5
GEOMETRIC DATA		SUFFICIENCY RATING	1 STATUS 88.8
(48) LENGTH OF MAX SPAN (ft.)	40 (49) STRUCTURE LENGTH (ft.)	CLASSIFICATION	
(50) CURB/SIDEWALK WIDTHS (ft.)	LEFT 0.5 RIGHT 0.5	(112) NBIS BRIDGE LENGTH	Y
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.)	39.0	(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	1
(52) DECK WIDTH, OUT-TO-OUT (ft.)	42.4	(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	11
(32) APPROACH ROADWAY WIDTH (ft.)	38.1	(100) STRAHNET HIGHWAY DESIGNATION	1
(33) BRIDGE MEDIAN	0 (34) SKEW (DEG.)	(101) PARALLEL STRUCTURE DESIGNATION	R
(35) STRUCTURE FLARED	0 (10) INV RTE, MIN VERT CLEAR (ft.)	(102) DIRECTION OF TRAFFIC	1
(47) TOTAL HORIZONTAL CLEARANCE (ft.)	40.0	(103) TEMP STRUCTURE	
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.)	99.99	(105) FEDERAL LANDS HIGHWAYS	0
(54) VERTICAL UNDER CLEARANCE (ft.)	N 0	(110) DESIGNATED NATIONAL NETWORK	1
(55) LATERAL UNDER CLEARANCE RIGHT (ft.)	N 99.9	(20) TOLL	3
(56) MIN LATERAL UNDER CLEARANCE (ft.)	0	(21) MAINTENANCE RESPONSIBILITY	01
PROPOSED IMPROVEMENTS		(22) OWNER	01
(75A) TYPE OF WORK PROPOSED	(75B) WORK DONE BY	(37) HISTORICAL	5
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.)	0	NAVIGATION DATA	
(94) BRIDGE IMPROVEMENT COST (\$)	0	(38) NAVIGATION CONTROL	0
(95) ROADWAY IMPROVEMENT COST (\$)	0	(111) PIER OR ABUTMENT PROTECTION	1
(96) TOTAL PROJECT COST	0	(39) NAV VERT CLEARANCE (ft.)	0
(97) YEAR OF IMPROVEMENT COST ESTIMATE		(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE (ft.)	0
(114) FUTURE ADT	28453 (115) YEAR OF FUTURE ADT	(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
12 - Reinforced Concrete Deck	1- Ben.	4758	sq. ft.	81	3229	1447	1
	-Shoulders have epoxy overlay that sounds delaminated in areas. -Concrete patches on the driving surface of the deck have map cracking and are deteriorated and appear to be breaking apart in areas at this inspection. -Numerous pop outs on the driving surface of the deck. -Numerous spalls on the deck surface with exposed reinforcing steel at this inspection. Most of the cracks appear to have been sealed with epoxy in the past. -Several potholes on the surface in Spans 1 & 2. -Shallow spalling on the undersurface with exposed reinforcing steel in Span 1. The exposed reinforcing steel has up to initial section loss. -Map cracking with leeching is visible from the undersurface of the deck especially in Span 1, Bays 1, 2 & 4.						
1080 - Delamination/Spall/Patched Area		1976			1828	147	1
1090 - Exposed Rebar		11			11		
1130 - Cracking (RC and Other)		2600			1300	1300	
1190 - Abrasion/Wear (PSC/RC)		90			90		
107 - Steel Open Girder/Beam	1- Ben.	854	ft.	854			
	-Superstructure has no apparent noteworthy deficiencies at this inspection.						
515 - Steel Protective Coating		4875	sq. ft.	4875			
205 - Reinforced Concrete Column	1- Ben.	4	each	0	4	0	0
	-Light scale at the base of Columns for Bents 2 and 3 at the water elevation.						
1190 - Abrasion/Wear (PSC/RC)		4			4		
215 - Reinforced Concrete Abutment	1- Ben.	64	ft.	58	6	0	0
	-Abutments have vertical hairline shrinkage cracks at variable spacing.						
1130 - Cracking (RC and Other)		6			6		
234 - Reinforced Concrete Pier Cap	1- Ben.	78	ft.	27	37	14	0
	-The Lt end of Bent 2 cap has a 4' long horizontal crack located approximately 8" below the top of cap. -There is an 8" delaminated area under the bearing area of Beam 1. -Span 3 side of Bent 3 cap has delaminated areas and shallow spalling with exposed reinforcing steel where steel was placed against the forms during the construction process. -Concrete cracking and spalling with exposed reinforcing steel over the Rt column of the Span 3 side of Bent 3. -The undersurface of Bent 3 cap has shallow spalls with exposed reinforcing steel outside both columns. Exposed reinforcing steel appears to be # 4 bands that have up to initial section loss. -There is a 3' area of map cracking in the bearing area of Beam 6.						
1080 - Delamination/Spall/Patched Area		3			1	2	
1090 - Exposed Rebar		16			16		

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Element Inspection

1130 - Cracking (RC and Other)		32			20	12	
302 - Compression Joint Seal	1- Ben.	160	ft.	54	100	0	6
	-Compression seals are deteriorated and torn in locations. -Evidence of seal leakage visible on the caps and bearings.						
2310 - Leakage		80			80		
2320 - Seal Adhesion		8			8		
2330 - Seal Damage		6					6
2340 - Seal Cracking		12			12		
311 - Movable Bearing	1- Ben.	21	each	12	9	0	0
	-Bearing have been painted with rust inhibitor in the past as a type of repair. -Bearings have fretting between the masonry plates and the sole plates indicating excessive movement during traffic impacts. -Visible (Approximately 1/16") movement in the bearing at Bent 1, Beam 3 during traffic impact at this inspection.						
1000 - Corrosion		3			3		
2210 - Movement		6			6		
313 - Fixed Bearing	1- Ben.	21	each	17	4	0	0
	-Bearing have been painted with rust inhibitor as a type of repair in the past. -Some areas of light rust is visible between the sole plates and masonry plates.						
1000 - Corrosion		4			4		
321 - Reinforced Concrete Approach Slab	1- Ben.	2736	sq. ft.	2735	1	0	0
	-There is one shallow spall with no exposed reinforcing steel adjacent to the asphalt roadway.						
1080 - Delamination/Spall/Patched Area		1			1		
1130 - Cracking (RC and Other)							
330 - Metal Bridge Railing	1- Ben.	244	ft.	244			
	-There are no apparent noteworthy deficiencies at this inspection.						

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Pictures

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Bridge Inspection Report

Sketches

Inspector:

Structure Number: A3956

Inspection Date:

Facility Carried: Interstate 540 SB

Bridge Inspection Report

Maintenance Needs

Date Reported: 11/4/2011 12:00:00 AM

Priority: D - Routine

Work Code: Repair

Deficiency Description:

Deck -

The undersurface of the deck in Bay 1 of Span 1 near the South abutment has an area of spalling with exposed reinforcing steel with the area surrounding the spall is delaminated in locations. The undersurface of the deck in Bay 2 of Span 1 has an area of spalling with exposed reinforcing steel. The overhang portion of the deck on the Lt side has spalling with exposed reinforcing steel adjacent to deck drains.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1 Description The undersurface of the deck in Bay 1 of Span 1 near the South abutment has an area of spalling with exposed reinforcing steel with the area surrounding the spall is delaminated in locations.

Stage: Assigned



PHOTO 2 Description The undersurface of the deck in Bay 2 of Span 1 has an area of spalling with exposed reinforcing steel.

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Maintenance Needs

Stage: Assigned



PHOTO 3 Description The overhang portion of the deck on the Lt side has spalling with exposed reinforcing steel adjacent to deck drains.

Stage: Assigned



PHOTO 4 Description The overhang portion of the deck on the Lt side has spalling with exposed reinforcing steel adjacent to deck drains.

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Bridge Inspection Report

Maintenance Needs

Date Reported: 11/4/2011 12:00:00 AM

Priority: D - Routine

Work Code: Replace

Deficiency Description:

Deck Joint Seals -

Compression seals are deteriorated and torn in locations. The poured silicone seal at Bent 4 has adhesion failure in locations. Evidence of seal leakage is visible on the caps and bearings.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1 Description Compression seals are deteriorated and torn in locations.

Stage: Assigned

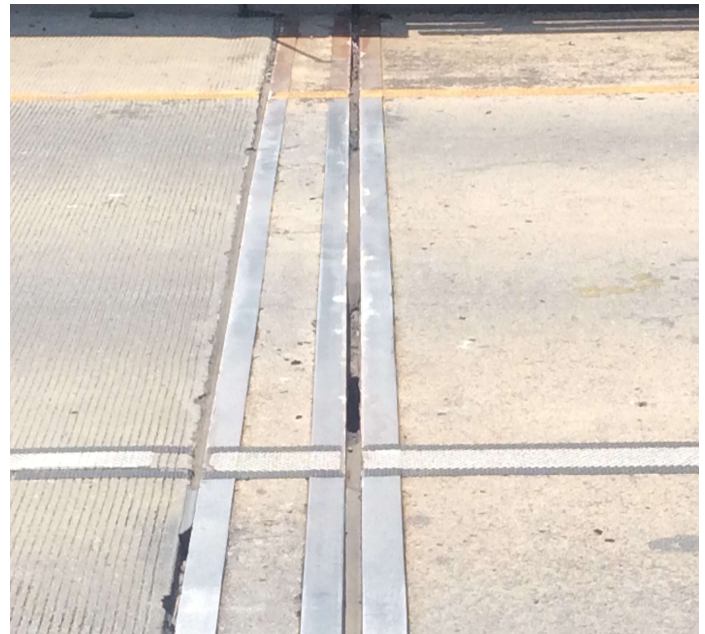


PHOTO 2 Description The poured silicone seal at Bent 4 has adhesion failure in locations.

Inspector:

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Maintenance Needs

Date Reported: 11/4/2011 12:00:00 AM

Priority: D - Routine

Work Code: Repair

Deficiency Description:

Bearings -

Bearings have fine metal powder between the masonry plates and the sole plates indicating excessive movement during traffic impacts. Visible (Approximately 1/16") movement in the bearing at Bent # 1, Beam # 3 during traffic impact at this inspection.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1	Description	Bearings have fine metal powder between the masonry plates and the sole plates indicating excessive movement during traffic impacts. Visible (Approximately 1/16") movement in the bearing at Bent 1, Beam 3 during traffic impact at this inspection.
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Maintenance Needs

Date Reported: 11/4/2011 12:00:00 AM

Priority: D - Routine

Work Code: Repair

Deficiency Description:

Substructure -

The Lt end of Bent 2 cap has a 4' long horizontal crack located approximately 8" below the top of cap. There is an 8" delaminated area under the bearing area of Beam 1.

Span 3 side of Bent 3 cap has delaminated areas and shallow spalling with exposed reinforcing steel where steel was placed against the forms during the construction process. Concrete cracking and spalling with exposed reinforcing steel over the Right column of the Span 3 side of Bent 3. The undersurface of Bent 3 cap has shallow spalls with exposed reinforcing steel outside both columns.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1 Description The Lt end of Bent 2 cap has a 4' long horizontal crack located approximately 8" below the top of cap.

Stage: Assigned



PHOTO 2 Description Span 3 side of Bent 3 cap has delaminated areas and shallow spalling with exposed reinforcing steel where steel was placed against the forms during the construction process.

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Maintenance Needs

Stage: Assigned



PHOTO 3 Description There is a 3' area of map cracking in the bearing area of Beam 6.

Stage: Assigned



PHOTO 4 Description The undersurface of Bent 3 cap has shallow spalls with exposed reinforcing steel outside both columns. Exposed reinforcing steel appears to be #4 bands that have up to initial section loss.

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Maintenance Needs

Date Reported: 9/24/2014 12:00:00 AM

Priority: D - Routine

Work Code: Repair

Deficiency Description:

Deck

The driving surface of the deck has sealable cracking.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned



PHOTO 1 Description The driving surface of the deck has sealable cracking.

Stage: Assigned



PHOTO 2 Description The driving surface of the deck has sealable cracking.