Bridge Inspection Report

A5984

I-49 SB L Benton
over
CORD 831-G

Inspection Date:

Inspected By:

Inspection Type(s):

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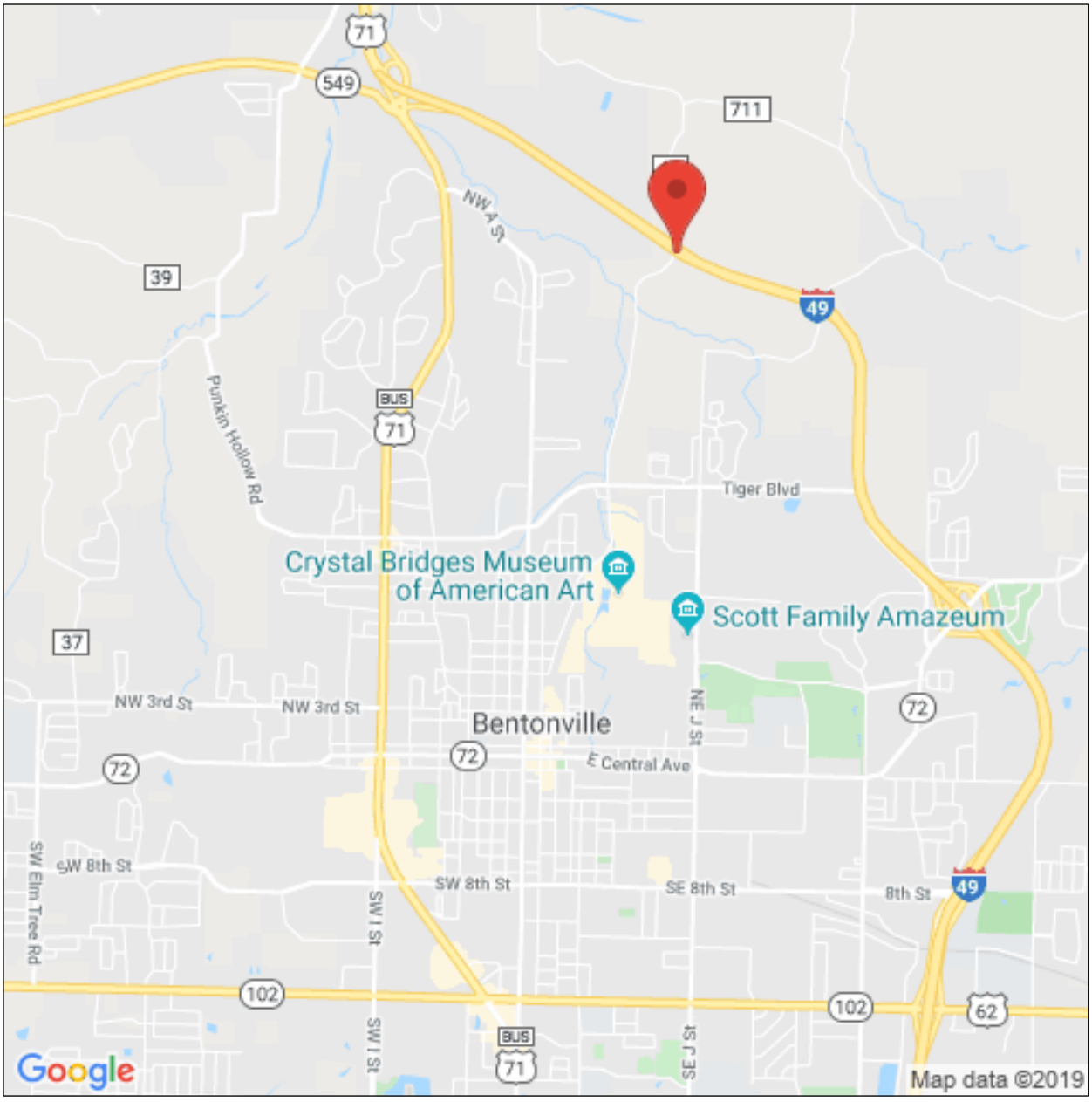
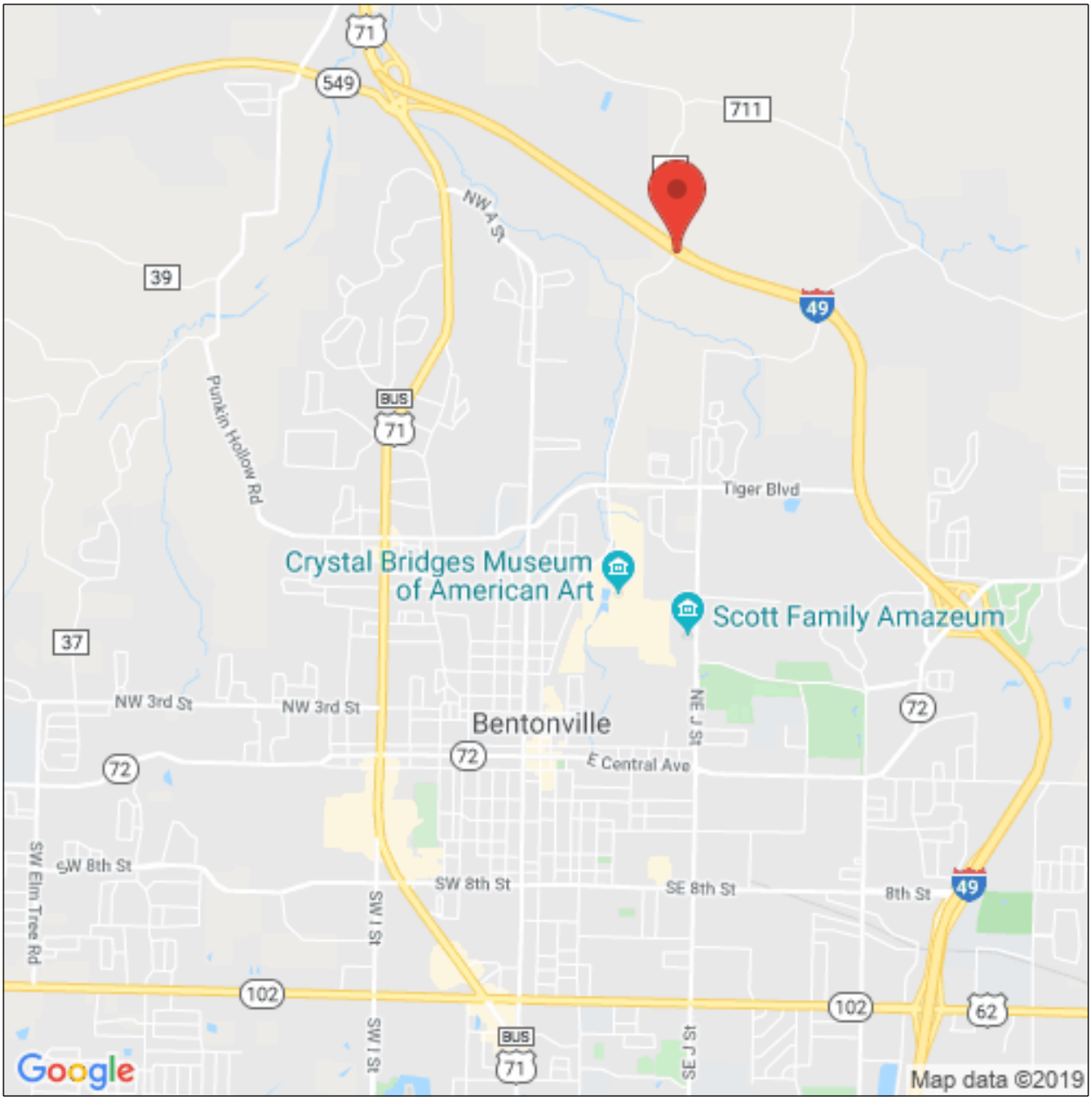
Location Map



Latitude: 36.40420

Longitude: -94.19798

Location Map



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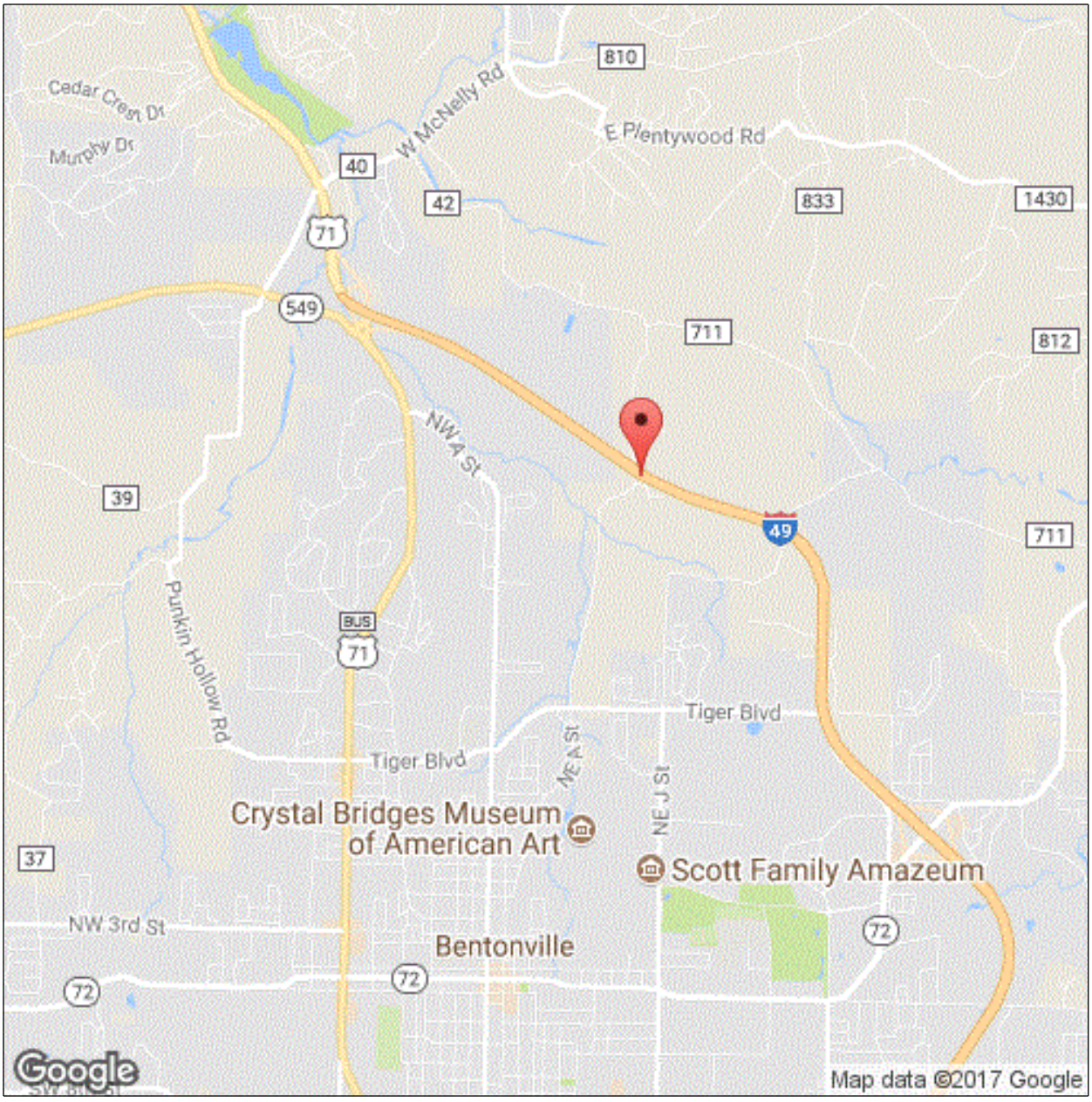

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Location Map

Latitude: 36.40420

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Executive Summary

Logged South to North.

Inspector: **Structure Number:** A5984

Inspection Date: **Facility Carried:** I-49 SB L Benton

Bridge Inspection Report

National Bridge Inventory

IDENTIFICATION

(1) STATE CODE 056 - Arkansas
(8) STRUCTURE NUMBER A5984
(5) INV. ROUTE (ON/UNDER) 1 1 1 49 3
(2) HIGHWAY AGENCY 09 (3) COUNTY CODE 007
(4) PLACE CODE 00000
(6) FEATURES INTERSECTED CORD 831-G
(7) FACILITY CARRIED I-49 SB L Benton
(9) LOCATION 2.25 MI N SH 72
(11) MILEPOINT 90.110 (12) BASE HIGHWAY NETWORK 1
(13A) LRS INVENTORY ROUTE 0000049090 (13B) SUBROUTE NUMBER 00
(16) LATITUDE 36.40420 (17) LONGITUDE -94.19798
(98A) BORDER BRIDGE CODE
PERCENT RESPONSIBILITY (99) BORDER BRIDGE STRUCT

STRUCTURE TYPE AND MATERIAL

(43) STRUCTURE TYPE, MAIN
A) KIND OF MATERIAL/DESIGN: 4 - Steel continuous
B) TYPE OF DESIGN/CONSTR: 02 - Stringer/Multi-beam or Girder
(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 3 (46) NUMBER OF APPROACH 0
(107) DECK STRUCTURE TYPE 1 (108A) WEARING SURFACE 1
(108B) DECK MEMBRANE 0 (108C) DECK PROTECTION 1

AGE OF SERVICE

(27) YEAR BUILT 1989 (106) YEAR RECONSTRUCTED 0000
(42) TYPE OF SERVICE ON 1 UNDER 1
(28) LANES ON 02 UNDER 02
(29) AVERAGE DAILY TRAFFIC 47883 (19) BYPASS DETOUR LENGTH 1
(30) YEAR OF AVERAGE DAILY TRAFFIC 2014
(109) AVERAGE DAILY TRUCK TRAFFIC 1

GEOMETRIC DATA

(48) LENGTH OF MAX SPAN (ft.) 66 (49) STRUCTURE LENGTH (ft.) 181
(50) CURB/SIDEWALK WIDTHS (ft.) LEFT 0 RIGHT 0
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.) 40.0
(52) DECK WIDTH, OUT-TO-OUT (ft.) 42.8
(32) APPROACH ROADWAY WIDTH (ft.) 40.0
(33) BRIDGE MEDIAN 0 (34) SKEW (DEG.) 19
(35) STRUCTURE FLARED 0 (10) INV RTE, MIN VERT CLEAR (ft.) 99.99
(47) TOTAL HORIZONTAL CLEARANCE (ft.) 41.0
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.) 99.99
(54) VERTICAL UNDER CLEARANCE (ft.) H 26.42
(55) LATERAL UNDER CLEARANCE RIGHT (ft.) H 7.2
(56) MIN LATERAL UNDER CLEARANCE (ft.) 0

PROPOSED IMPROVEMENTS

(75A) TYPE OF WORK PROPOSED (75B) WORK DONE BY
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.) 0
(94) BRIDGE IMPROVEMENT COST ($) 0
(95) ROADWAY IMPROVEMENT COST ($) 0
(96) TOTAL PROJECT COST 0
(97) YEAR OF IMPROVEMENT COST ESTIMATE
(114) FUTURE ADT 21860 (115) YEAR OF FUTURE ADT 2028

INSPECTIONS

(90) INSPECTION DATE 10/23/2019
(91) DESIGNATED INSPECTION FREQUENCY 24
(92) CRITICAL FEATURE INSPECTION (93) CFI DATE
A. FRACTURE CRITICAL DETAIL N
B. UNDERWATER INSPECTION N
C. OTHER SPECIAL N

CONDITION

(58) DECK 7
(59) SUPERSTRUCTURE 6 (60) SUBSTRUCTURE 7
(61) CHANNEL & CHANNEL PROTECTION N (62) CULVERT N

LOAD RATING AND POSTING

(31) DESIGN LOAD 5
(63) METHOD USED TO DETERMINE OPERATING RATING 1
(64) OPERATING RATING 60.0
(65) METHOD USED TO DETERMINE INVENTORY RATING 1
(66) INVENTORY RATING 36.0
(70) BRIDGE POSTING 5
(41) STRUCTURE OPEN/POSTED/CLOSED A

APPRAISAL

(67) STRUCTURAL EVALUATION 6
(68) DECK GEOMETRY 7
(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL 4
(71) WATERWAY ADEQUACY N
(72) APPROACH ROADWAY ALIGNMENT 8
(36) TRAFFIC SAFETY FEATURE
36A) BRIDGE RAILINGS: 1
36B) TRANSITIONS: 0
36C) APPROACH GUARDRAIL: 0
36D) APPROACH GUARDRAIL ENDS: 0
(113) SCOUR CRITICAL BRIDGES N
SUFFICIENCY RATING 89.4 STATUS 0

CLASSIFICATION

(112) NBIS BRIDGE LENGTH Y
(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE 1
(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE 11
(100) STRAHNET HIGHWAY DESIGNATION 1
(101) PARALLEL STRUCTURE DESIGNATION L
(102) DIRECTION OF TRAFFIC 1
(103) TEMP STRUCTURE
(105) FEDERAL LANDS HIGHWAYS 0
(110) DESIGNATED NATIONAL NETWORK 1
(20) TOLL 3
(21) MAINTENANCE RESPONSIBILITY 01
(22) OWNER 01
(37) HISTORICAL 5

NAVIGATION DATA

(38) NAVIGATION CONTROL N
(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

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	1- Ben.	7160	sq. ft.	5312	1848	0	0
	10/23/2019 - WNR & DBM: -The driving surface of the deck has full length longitudinal cracks in both lanes. -The gutters have transverse cracking that correspond with joints in bridge railing. -The wheel paths have light abrasion. -The right gutter has moderate dirt and debris accumulation.						
1120 - Efflorescence/Rust Staining		60		0	60	0	0
1130 - Cracking (RC and Other)		348		0	348	0	0
1190 - Abrasion/Wear (PSC/RC)		1440		0	1440	0	0
107 - Steel Open Girder/Beam	1- Ben.	1074	ft.	1057	9	8	0
	10/23/2019 - WNR & DBM: -The webs of the girders over the abutments have corrosion with initial section loss at the deck haunch juncture. -Span #2, Girder #2 has one loose bolt in the vertical splice plate. -Span #3, girders #4 and #6 have a loose bolt in the bottom flange splice plate connection. -The majority of the paint system is oxidized.						
1000 - Corrosion		17		0	9	8	0
515 - Steel Protective Coating		7904	sq. ft.	7887	0	2	15
3440 - Effectiveness (Steel Protective Coatings)		17		0	0	2	15
205 - Reinforced Concrete Column	1- Ben.	4	each	4	0	0	0
	10/23/2019 - WNR & DBM: -No noteworthy deficiencies at this inspection.						
215 - Reinforced Concrete Abutment	1- Ben.	92	ft.	60	32	0	0
	10/23/2019 - WNR & DBM: -The top of the abutment backwalls have transverse cracking at random spacing and shallow spalling along the expansion joint assemblies. -Abutment #1 adjacent to bearing #6 has softball-sized delaminated area in the vertical face of breastwall.						
1080 - Delamination/Spall/Patched Area		16		0	16	0	0
1130 - Cracking (RC and Other)		16		0	16	0	0
234 - Reinforced Concrete Pier Cap	1- Ben.	84	ft.	84	0	0	0
	10/23/2019 - WNR & DBM: -No noteworthy deficiencies at this inspection.						
302 - Compression Joint Seal	1- Ben.	92	ft.	31	50	11	0
	10/23/2019 - WNR & DBM: -Compression joint seals have deterioration with cracking. -Abutment #2 compression joint seal has dirt and debris impaction randomly throughout joint that has caused the seals to separate from the assemblies allowing water to leak onto the superstructure.						

Element Inspection

2310 - Leakage		35		0	35	0	0
2340 - Seal Cracking		15		0	15	0	0
7000 - Damage		11		0	0	11	0
310 - Elastomeric Bearing	1- Ben.	12	each	12	0	0	0
	10/23/2019 - WNR & DBM: -No noteworthy deficiencies at this inspection.						
311 - Movable Bearing	1- Ben.	12	each	1	6	5	0
	10/23/2019 - WNR & DBM: -The bearings over abutments have corrosion with flaking rust between the rocker devices and the masonry plates. -Abutment #1 bearing #1 left side of rocker does not make contact with masonry plate. -abutment #1 bearings #5 & #6 are the worst cases at abutment #1. -Abutment #2, bearing #3 has movement under live load where the beam is attached to the bearing device. -Bearings have rust staining in locations indicating wear due to fretting.						
1000 - Corrosion		11		0	6	5	0
515 - Steel Protective Coating		36	sq. ft.	7	0	6	23
3440 - Effectiveness (Steel Protective Coatings)		29		0	0	6	23
321 - Reinforced Concrete Approach Slab	1- Ben.	2016	sq. ft.	1385	520	111	0
	10/23/2019 - WNR & DBM: -The approach slabs have wide longitudinal, transverse and diagonal cracking with light abrasion in the wheel paths.						
1130 - Cracking (RC and Other)		155		0	44	111	0
1190 - Abrasion/Wear (PSC/RC)		476		0	476	0	0
331 - Reinforced Concrete Bridge Railing	1- Ben.	362	ft.	334	28	0	0
	10/23/2019 - WNR & DBM: -The concrete bridge railing has vertical cracks in random locations. -The bases of bridge railing has light scaling in several locations.						
1130 - Cracking (RC and Other)		28		0	28	0	0

Pictures

PHOTO 1

Description

PHOTO 1

Description

Pictures

PHOTO 2

Description

PHOTO 3

Description

Sketches

Maintenance Needs

Date Reported: 10/11/2011 12:00:00 AM

Priority: D - Routine

Work Code:

Deficiency Description:

Moveable bearings - The moveable bearings over both abutments have corrosion with thick pack rust between the rocker devices and masonry plates.
Bearing #3 over abutment #2 appears to have wear in the bolted connection that attaches the beam to the bearing device. The bearing has significant movement under live load.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor

PHOTO 1 Description Bearings #6 abutment #1 pack rust.

Stage: Monitor

PHOTO 2 Description Abutment #2 bearing #6 flaking rust.

Maintenance Needs

Stage: Monitor

PHOTO 3 Description Abutment #2 bearing #2 fretting between rocker and sole plate.

Maintenance Needs

Date Reported: 10/11/2011 12:00:00 AM

Priority: G - General/ Preventive maintenance

Work Code:

Deficiency Description:

Superstructure - Span #2, Girder #2 has one loose bolt in the vertical splice plate.
Span #3, Girders #4 and #6 have one loose bolt in the bottom flange splice plate connection.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor

PHOTO 1 Description Span #2 Girder #2 vertical splice plate - loose bolt.

Stage: Monitor

PHOTO 2 Description Span 3, Girder 6 bottom splice plate - loose bolt.

Maintenance Needs

Stage: Monitor

PHOTO 3 Description Span #3, Girders #6 have one loose bolt in the bottom flange splice plate connection.

Maintenance Needs

Date Reported: 10/11/2011 12:00:00 AM

Priority: D - Routine

Work Code:

Deficiency Description:

Deck expansion joints - Compression joint seals are deteriorated with areas of cracking and dirt and debris impaction that has caused the seals to separate from the assemblies allowing water to leak onto the superstructure.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor

PHOTO 1 Description Dirt and debris in expansion joint assemblies.

Stage: Monitor

PHOTO 2 Description Abutment #1 expansion joint tearing and cracking

Maintenance Needs

Date Reported: 10/19/2017

Priority: D - Routine

Work Code:

Deficiency Description:

Deck / Approach slabs - The driving surface of the deck has sealable longitudinal and transverse cracking in all spans. The North and South approach slabs have sealable longitudinal, transverse and random cracking.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Monitor

PHOTO 1 Description Longitudinal and transverse cracking in south approach slab

Stage: Open

PHOTO 2 Description North approach slab-Transverse cracking.

Maintenance Needs

Stage: Open

PHOTO 3 Description South approach slab-Longitudinal cracking.

Stage: Open

PHOTO 4 Description Deck has sealable cracking in all spans.

Maintenance Needs

Date Reported: 10/19/2017

Priority: G - General/ Preventive maintenance

Work Code:

Deficiency Description:
Deck - The right gutter has moderate dirt and debris accumulation.

Work Description:

Date Repairs Completed:

Maintenance Comments:

Stage: Assigned

PHOTO 1 Description Right gutterline dirt and debris accumulation

Stage: Open

PHOTO 2 Description Dirt and debris in right gutter.