



Latitude:35.42096, Longitude:-93.39411

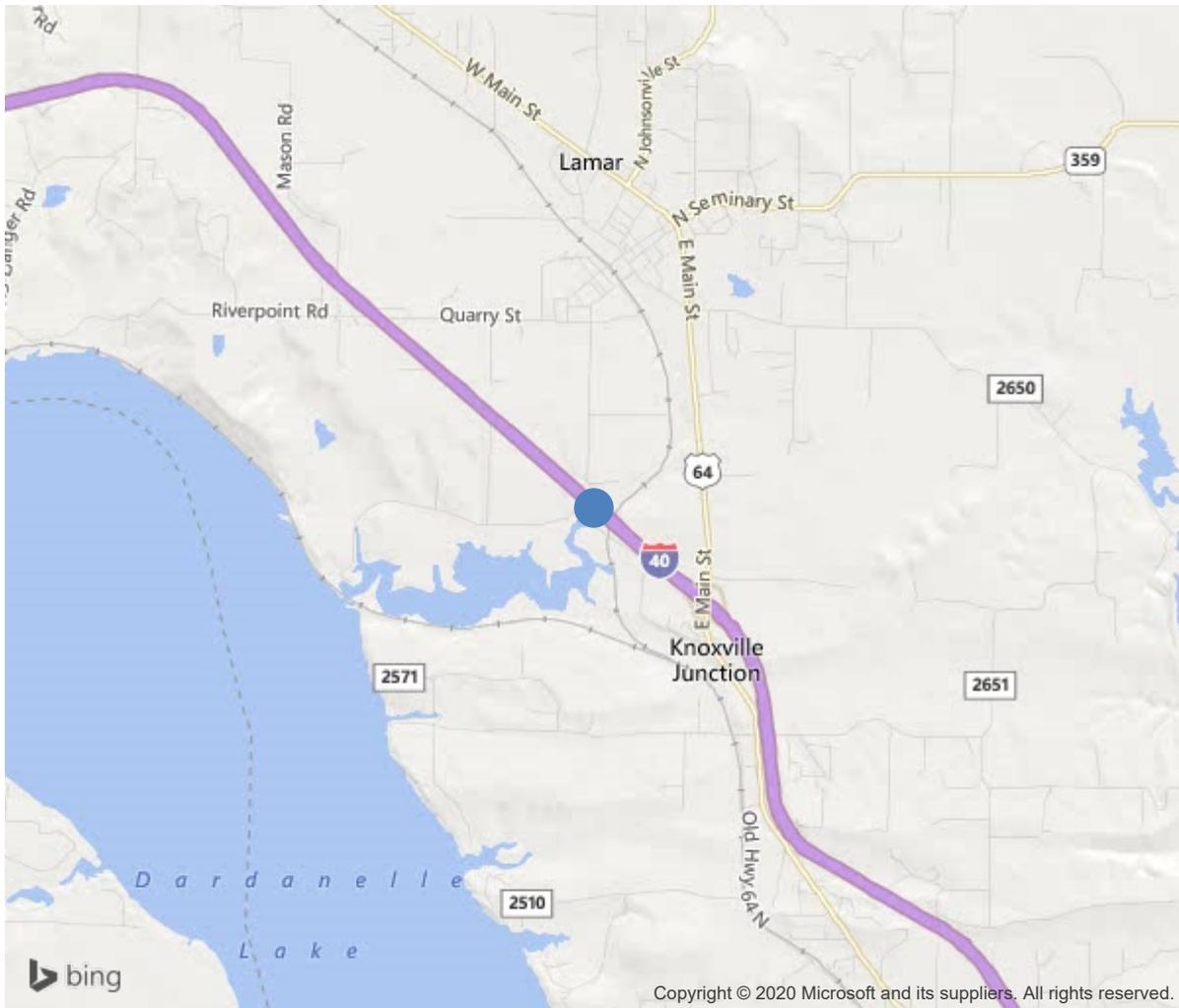
Route:40 Section:21 Log:63.1

Arnold Road ID:36x40x21xA, Arnold Log mile:63.053

District 08, Johnson County

Owner: 1-State Highway Agency

0.73 M NW Of US 64



35.42096, -93.39411



Bridge #B3947(Routine)
I-40, EB LNS over Cabin Creek
Location: 0.73 M NW Of US 64

Team Lead: Kevin Milligan Inspection Date: March 09, 2020

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	B3947
(5) Inventory Route	40
(2) Highway Agency District	08
(3) County Code	71-Johnson County, Arkansas
(4) Place Code	0
(6) Features Intersected	Cabin Creek
(7) Facility Carried	I-40, EB LNS
(9) Location	0.73 M NW Of US 64
(11) Mile Point	63.1 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000040210
(16) Latitude	35.420963
(17) Longitude	-93.394112
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	32
Material	3-Steel
Type	2-Stringer/Multi-beam or girder
(44) Approach Structure Type	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	5
(46) No. of Approach Spans	0
(107) Deck Structure Type	1-Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1-Monolithic Concrete (concurrently placed
Type of Membrane	0-None
Type of Deck Protection	0-None
AGE AND SERVICE	
(27) Year Built	1965
(106) Year Reconstructed	0
(42) Type of Service	15
On	1-Highway
Under	5-Waterway
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	26000
(30) Year of ADT	2014
(109) Truck ADT	1 %
(19) Bypass, Detour Length	12 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	43 ft
(49) Structure Length	217 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	39 ft
(52) Deck Width Out to Out	42.3 ft
(32) Approach Roadway Width (W/Shoulders)	40 ft
(33) Bridge Median	0-No median
(34) Skew	10 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	40 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	99.9 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0-No navigation control on water
(111) Pier Protection	1-Navigation protection not requ
(39) Navigation Vertical Clearance	0 ft
(116) Vert-Lift Bridge Nav Min Vert Clear	0 ft
(40) Navigation Horizontal Clearance	0 ft

CLASSIFICATION	
(112) NBIS Bridge Length	Y
(104) Highway System	1
(26) Functional Class	1-Rural Principal Arterial - Int
(100) Defense Highway	1-The inventory route is on a In
(101) Parallel Structure	R-The right structure of paralle
(102) Direction of Traffic	1 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0-N/A
(110) Designated National Network	1-The inventory route is part of the
(20) Toll	3-On free road. The structure is toll-
(21) Maintain	1-State Highway Agency
(22) Owner	1-State Highway Agency
(37) Historical Significance	5-Bridge is not eligible for the NRHP
CONDITION	
(58) Deck	5
(59) Superstructure	6
(60) Substructure	5
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	6-MS 18+Mod / HS 20+Mod
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1-Load Factor(LF)
Rating	60
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	5
Rating	36
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	5
(68) Deck Geometry	6
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36) Traffic Safety Features	1111
A) Bridge Railings	1-Inspected feature meets currently a
B) Transitions	1-Inspected feature meets currently a
C) Approach Guardrail	1-Inspected feature meets currently a
D) Approach Guardrail Ends	1-Inspected feature meets currently a
(113) Scour Critical Bridges	8-Bridge foundations determined to be
PROPOSED IMPROVEMENTS	
(75) Type of Work	
(76) Length of Structure Improvement	0 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 0
(96) Total Project Cost	\$ 0
(97) Year of Improvement Cost Estimate	
(114) Future ADT	14717
(115) Year of Future ADT	2028
INSPECTIONS	
(90) Inspection Date	
(91) Frequency	24 Months
(92) Critical Feature Inspection	Done Freq. (Mon) Date
A: Fracture Critical Detail	No 24
B: Underwater Inspection	No 0
C: Other Special Inspection	No 0



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Team Lead: Kevin Milligan, Inspection Date: March 09, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	8794	1914	5815	1065	0
1080	Delamination/Spall/Patched Area	SF	756	0	730	26	0
1090	Exposed Rebar	SF	14	0	0	14	0
1130	Cracking (RC and Other)	SF	4180	0	3500	680	0
1190	Abrasion/Wear (PSC/RC)	SF	1930	0	1585	345	0
(12)							
KRM & ADC 3/9/2020 Deck has large /moderate cracks in all spans, right shoulder has large areas of CS3 abrasion and delaminated areas, scale in all spans also. Span 3 left lane spall with exposed reinforcing steel. Span 4 shallow spalls in right lane. Span 4 at bent 5 large spalls in both lanes with exposed reinforcing steel adjacent to the assembly joint. Soffits have transverse/map cracking in all spans, there are spalls with exposed reinforcing steel at the drains on right side of bridge.							
MODERATE CRACKING & SCALE IN ALL SPANS. MINOR "D" CRACKING & SPALLING SOME W / REBAR EXPOSED AT JOINTS W / SOME PATCHED AREAS. MINOR SPALLING THROUGHOUT DECK. MINOR DELAM, CRACKING & SPALLING W / REBAR EXPOSED AROUND DECK DRAINS. MINOR CRACKING W / EFFLOR IN SOFFIT.							
107	Steel Open Girder/Beam	LF	1505	1458	0	47	0
1000	Corrosion	LF	46	0	0	46	0
1010	Cracking	LF	1	0	0	1	0
515	Steel Protective Coating	SF	9406	9406	0	0	0
(107)							
KRM & ADC 3/9/2020 Girders were painted in 2009, protective coating is in good shape. Beam ends over interior bents have section loss in the web below the haunch area. Some beam ends have up to 1/4' section loss and/or holes in the top of webs at the follow locations. Bent 4 beams 3 and 4 have holes in top of web, bent 5 beams 3 and 6 back side and beams 4 and 5 ahead side have holes in top of webs. Bent 3 ahead side beam 5 has a crack in the top portion of the web.							
BEAMS HAVE OLD SECTION LOSS IN WEB BELOW HAUNCH AREA AT ENDS OF BEAMS. SOME BEAMS HAVE HOLES RUSTED THROUGH WEB IN HAUNCHED AREAS: BEAM 5 AT PIER 3 AHD SIDE, BEAM 4 AT PIER 4 BK. SIDE, BEAM 6 AT PIER 5 BK. SIDE, BEAM 4 AT PIER 5 AHD SIDE.							
202	Steel Column	EA	14	0	12	2	0
1000	Corrosion	EA	14	0	12	2	0
515	Steel Protective Coating	SF	1596	1582	0	14	0
3440	Effectiveness (Steel Protective Coatings)	SF	14	0	0	14	0
(202)							
COND. 2 - 12 EA - MINOR RUST & OLD SECTION LOSS UNDER CAPS ON COLUMNS 1 - 7 AT PIER 2 & COLUMNS 1 - 7 AT PIER 5. COLUMNS 2, 3 & 7 AT PIER 5 HAVE BEEN ENCASED AT GROUND LINE. COND. 3 - 2 EA - MODERATE OLD LOSS ON COLUMNS 1 & 5 AT PIER 2.							
205	Reinforced Concrete Column	EA	4	0	4	0	0



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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1130 (205)	Cracking (RC and Other)	EA	4	0	4	0	0
KRM & ADC 3/9/2020 All columns have minor cracks.							
MINOR CRACKING & SCALE THROUGHOUT.							
215	Reinforced Concrete Abutment	LF	96	89	7	0	0
1130 (215)	Cracking (RC and Other)	LF	7	0	7	0	0
KRM & ADC 3/9/2020 Both abutments have vertical cracks.							
MINOR CRACKING.							
225	Steel Pile	EA	14	0	4	10	0
1000	Corrosion	EA	13	0	3	10	0
1900	Distortion	EA	1	0	1	0	0
(225)	KRM & ADC 3/9/2020 Steel piles at bents 2 and 5 have section loss at top and bottom of piles, Bent 5 pile 1 has been repaired but has some distortion approximately 5' above ground level. Protective coating is good.						
COND. 2 - 12 EA - MINOR RUST & OLD SECTION LOSS UNDER CAPS ON COLUMNS 1 - 7 AT PIER 2 & COLUMNS 1 - 7 AT PIER 5. COLUMNS 2, 3 & 7 AT PIER 5 HAVE BEEN ENCASED AT GROUND LINE.							
COND. 3 - 2 EA - MODERATE OLD LOSS ON COLUMNS 1 & 5 AT PIER 2.							
234	Reinforced Concrete Pier Cap	LF	158	109	44	5	0
1080	Delamination/Spall/Patched Area	LF	10	0	10	0	0
1090	Exposed Rebar	LF	25	0	20	5	0
1130 (234)	Cracking (RC and Other)	LF	14	0	14	0	0
KRM & ADC 3/9/2020 Cap at bent 3 has horizontal cracks along top portion of cap. bent 4 has a spall with exposed reinforcing steel in back side of cap. bent 5 there is a large spall with exposed reinforcing steel on under side of cap.							
COND. 1 - 98 LF - MINOR DELAM, CRACKING & SCALE THROUGHOUT CAPS. COND. 2 - 60 LF - MINOR TO MODERATE HORIZONTAL CRACKING IN CAP 3. MINOR DELAM, CRACKING & SPALLING W / REBAR EXPOSED IN BK. FACE OF CAP 4 & BK & BT. FACES OF CAP 5.							
305	Assembly Joint without Seal	LF	238	197	41	0	0
2360	Adjacent Deck or Header	LF	36	0	36	0	0
2370	Metal Deterioration or Damage	LF	5	0	5	0	0
(305)	KRM & ADC 3/9/2020 Bent 5 has approximately 5' of loose joint armor. Joints have spalls along joints.						



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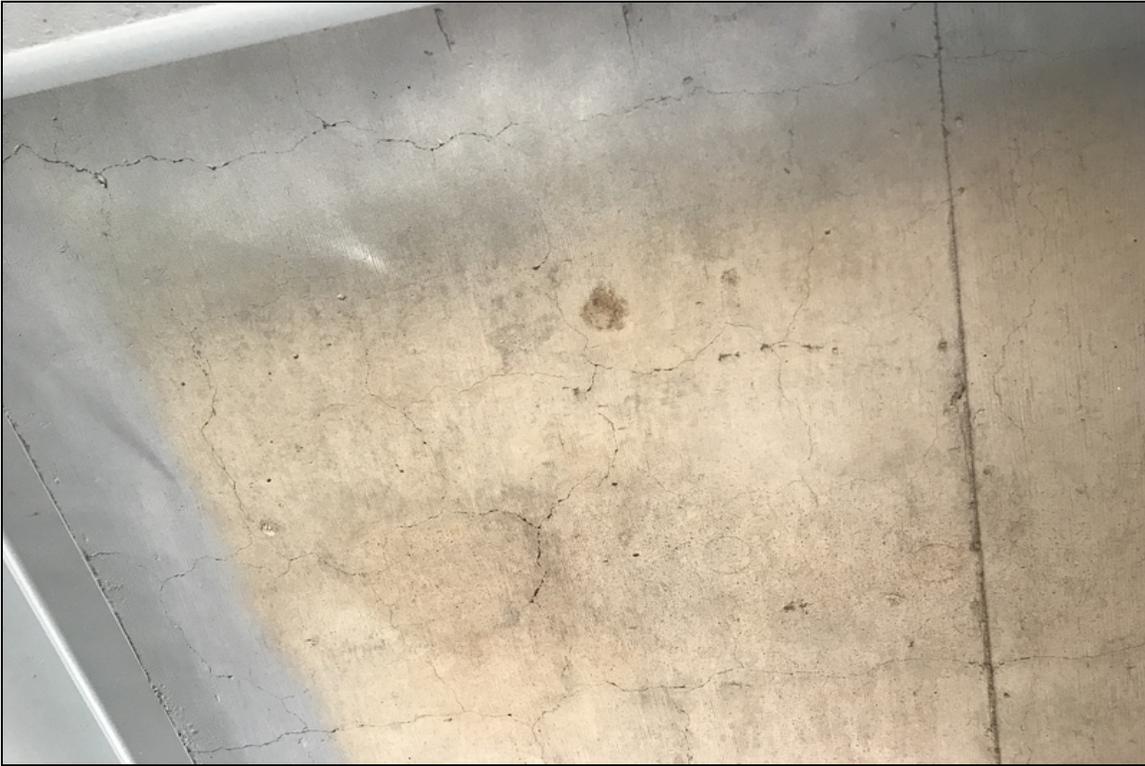
ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
MINOR "D" CRACKING & SPALLING AT JOINTS 1 & 4 & 6.							
311	Movable Bearing	EA	35	0	20	15	0
1000	Corrosion	EA	35	0	20	15	0
515	Steel Protective Coating	SF	105	0	0	105	0
3440	Effectiveness (Steel Protective Coatings)	SF	105	0	0	105	0
(311)							
MINOR TO MODERATE RUST ON ALL BEARINGS.							
313	Fixed Bearing	EA	35	0	10	25	0
1000	Corrosion	EA	35	0	10	25	0
515	Steel Protective Coating	SF	105	0	0	105	0
3440	Effectiveness (Steel Protective Coatings)	SF	105	0	0	105	0
(313)							
MINOR TO MODERATE RUST ON ALL BEARINGS.							
Bent 4 bearings 3 and 4 are floating at on ahead side. Bent 6 bearing 4 is floating Bent 1 bearings 2 thru 4 are floating, making contact under load.							
321	Reinforced Concrete Approach Slab	SF	2880	2154	708	18	0
1130	Cracking (RC and Other)	SF	726	0	708	18	0
(321)							
KRM & ADC 3/9/2020 Both approaches have map cracking in the right lanes and some large transverse cracks.							
MINOR CRACKING THROUGHOUT.							
330	Metal Bridge Railing	LF	434	434	0	0	0
(330)							
KRM & ADC 3/9/2020 No defects noted at this inspection							
Aluminum Rail							
331	Reinforced Concrete Bridge Railing	LF	434	424	10	0	0
1130	Cracking (RC and Other)	LF	10	0	10	0	0
(331)							
KRM & ADC 3/9/2020 Concrete bridge rails have vertical cracks at scattered locations.							
MINOR SCALE IN CONCRETE.							



Inventory



Typical deck.



Span 1 bay 4, typical cracking of soffits.



Bent 1 has a few vertical cracks.



Vegetation at bent 2 right side.



Bent 2 right vegetation up on cap and piles.



Bent 1 girder 4, bearing has corrosion with pack rust.



Bent 1 bearings 2 thru 4 are floating, making contact under load.



Bent 2 all steel piles have corrosion at ground level. Piles 2, 3, 5 and 7 have up to 1/8" section loss at ground level.



West approach right lane, large transverse crack.



West approach has longitude cracking.



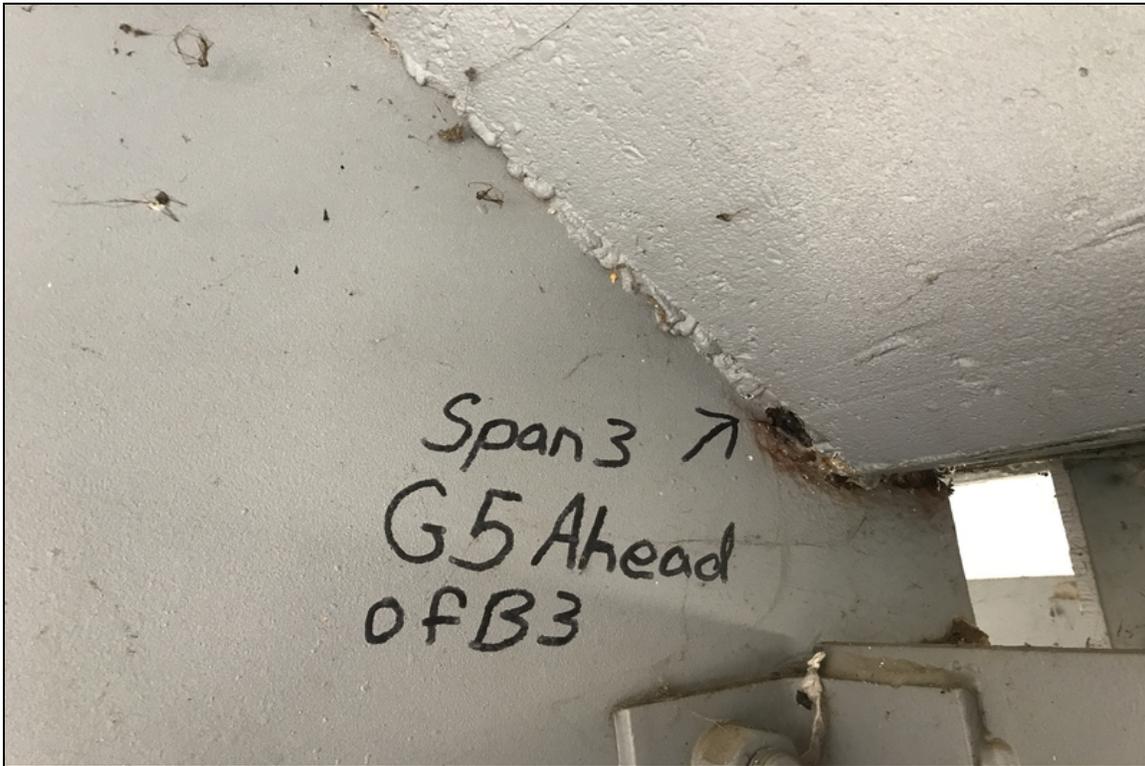
Bridge was painted 3/6/2009



Bent 2 top of girders have section loss in the haunch area at the follow locations. Girders 2 thru 7 back side and girders 3 thru 5 on the head side.



Span 2 girder 7 has corrosion on top flange between diaphragm 2 and 3.



Span 3 Girder 5 ahead of bent 3 there is a crack in haunch area about an 1" long.



Span 2 has 2 spalls with exposed reinforcing steel in the soffits on the right side at the drains.



Bent 3 has horizontal cracking between girders 6 and 7. This is typical on back side of cap.



Moveable bearings at bent 3 have corrosion and some having pack rust. Bearings 4 back side and bearings 3 and 4 ahead side are floating.



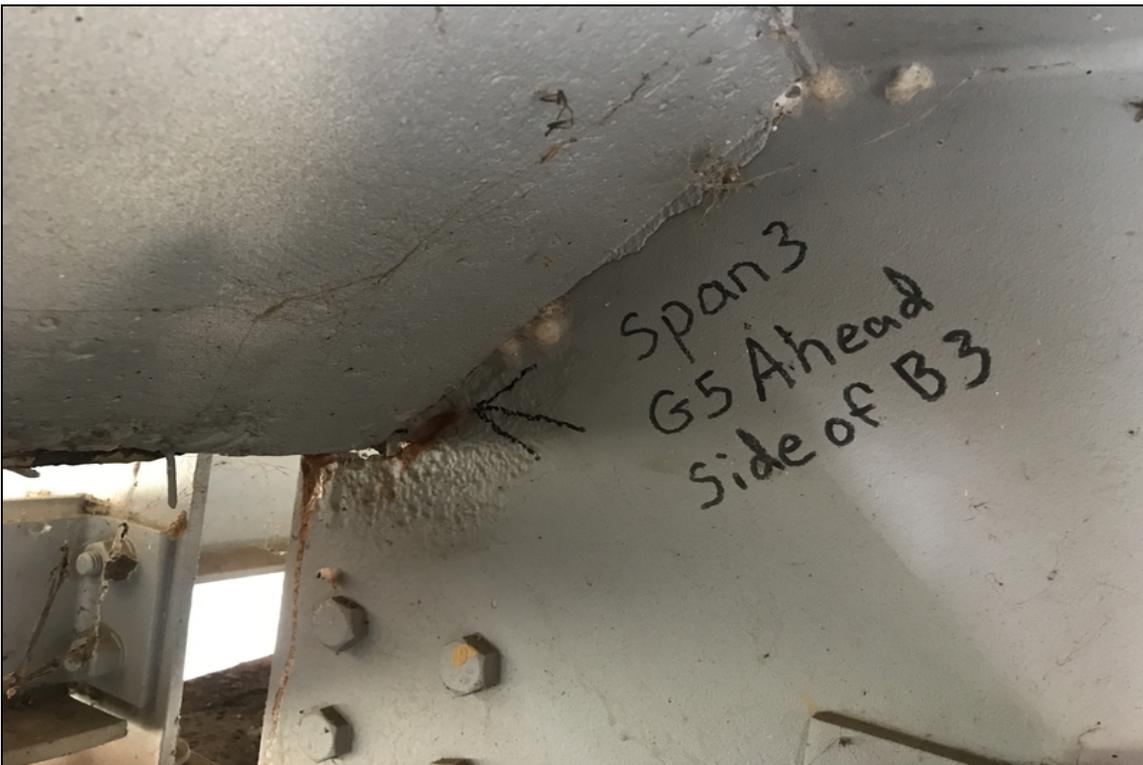
Bent 2 G2 bearing 2 has pack rust, this is typical at G 3, 4, 5.



Bent 2 piles 5 and 7 has section loss at the top of piles.



Typical view of under surface.



Span 3 Girder 5 ahead of bent 3 there is a crack in haunch area about an 1" long.



Bent 4 girders 3 and 4 on back side has holes in top of web in the haunch area.



Bent 5 girder 6 has a hole in the haunch area. Girder 3 is the same on back side.



Bent 5 girder 7 has approximately 1/4" section loss in top of web in the haunch area. Girders 4 and 5 area the same. Back side.



Span 5 deep abrasion in right lane.



Span 5 large transverse cracks.



Span 3 left lane spall with exposed reinforcing steel.



Abrasion along right shoulder this is typical.



Bent 2 sound and unsound at assembly joint.



Span 4 shallow spalls in right lane.



Bent 5 top of pile has section loss some up to knife edge.



Bent 5 pile 1 has been repaired.



Bent 5 pile 1 has a bend in the flange approximately 5' above ground level.



Bent 4 back side 2' spall with exposed reinforcing steel with section loss.



Bent 5 between piles 4 and 5 bottom of cap has a spall with exposed reinforcing steel.



Typical condition of metal bridge rail.



Bent 5 right lane has approximately 5' of loose joint armor.



Span 4 large spalls in both lanes with exposed reinforcing steel.



East approach has large transverse cracks.



Typical map cracking in right lane in east approach.

Maintenance Needs

Date Reported: 02/17/2012
Priority: D- Routine
Type of Work: Repair
Status: Monitor
Component:

Deficiency Description

End of Beams, section loss in the web (small holes rusted completely through the web) below the concrete haunch area.
Location of beams with holes - ahead side of pier # 3, beam # 5
backside of pier # 4, beam # 4.
backside of pier # 5, beam # 6.

Remarks



Pier #4, backside, beam #4, hole rusted through web at haunch area.

Date Reported: 03/07/2018
Priority: D- Routine
Type of Work: None
Status: Open
Component:

Deficiency Description

Large spall in span 4 both lanes at bent 5 with exposed reinforcing steel.
MINOR DELAM, CRACKING, SCALING & SPALLING THROUGHOUT DECK.

Remarks



Typ. Cracking in Deck.



Typ. Scaling in Deck.



Typ. Delam, Cracking, Scaling & Spalling at Joints.



Typ. Delam, Cracking, Scaling & Spalling in Deck.



Span 4 shallow spalls in right lane.



Span 4 large spalls in both lanes with exposed reinforcing steel.



Span 3 left lane spall with exposed reinforcing steel.

Date Reported: 03/10/2020
Priority: D- Routine
Type of Work: None
Status: Open
Component:

Deficiency Description

Vegetation at bent 2.

Remarks



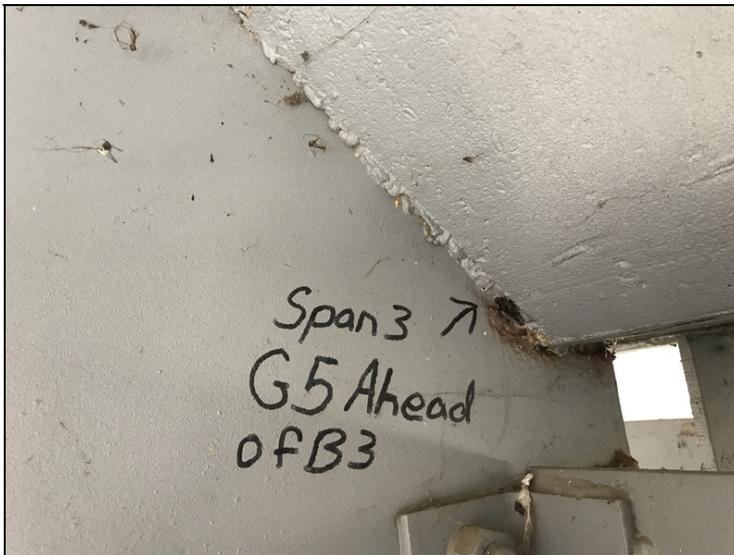
Bent 2 right vegetation up on cap and piles.

Date Reported: 03/10/2020
Priority: C - Important
Type of Work: Repair
Status: Open
Component: 107 - Steel Open Girder/Beam

Deficiency Description

Crack in top of web at girder 5 bent 3 ahead side.

Remarks



Span 3 Girder 5 ahead of bent 3 there is a crack in haunch area about an 1" long.



Span 3 Girder 5 ahead of bent 3 there is a crack in haunch area about an 1" long.

Date Reported: 03/10/2020
Priority: D- Routine
Type of Work: Repair
Status: Open
Component: Superstructure

Deficiency Description

Floating bearings at the following locations Bent 1 bearings 2 thru 4, Bent 3 bearings 4 back side and bearings 3 and 4 ahead side. Bent 4 bearings 3 and 4 are floating at ahead side. Bent 6 bearing 4 is floating.

Remarks



Bent 1 bearings 2 thru 4 are floating, making contact under load.



Moveable bearings at bent 3 have corrosion and some having pack rust. Bearings 4 back side and bearings 3 and 4 ahead side are floating.



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Deck Notes

DECK - MODERATE CRACKING & SCALE IN ALL SPANS. MINOR "D" CRACKING & SPALLING SOME W / REBAR EXPOSED AT JOINTS W / SOME PATCHED AREAS. MINOR SPALLING THROUGHOUT DECK. MINOR DELAM, CRACKING & SPALLING W / REBAR EXPOSED AROUND DECK DRAINS. MINOR CRACKING W / EFFLOR IN SOFFIT. ALUMINUM RAIL - GOOD CONCRETE RAIL - MINOR SCALE IN CONCRETE. APPROACH SLABS - MINOR CRACKING THROUGHOUT.

Superstructure Notes

7 BEAM PAINTED STEEL MULTI BEAM - BEAMS HAVE OLD SECTION LOSS IN WEB BELOW HAUNCH AREA AT ENDS OF BEAMS. SOME BEAMS HAVE HOLES RUSTED THROUGH WEB IN HAUNCHED AREAS: BEAM 5 AT PIER 3 AHD SIDE, BEAM 4 AT PIER 4 BK. SIDE, BEAM 6 AT PIER 5 BK. SIDE, BEAM 4 AT PIER 5 AHD SIDE. BEARINGS - MINOR TO MODERATE RUST ON ALL BEARINGS.

Substructure Notes

KRM & ADC 3/9/2020 During the inspection footings at bent 3 were covered with material , footings at bent 4 column 2 were exposed.

ABUTMENTS - MINOR CRACKING. COLUMNS - MINOR CRACKING & SCALE THROUGHOUT. STEEL COLUMNS - COND. 2 - 12 EA - MINOR RUST & OLD SECTION LOSS UNDER CAPS ON COLUMNS 1 - 7 AT PIER 2 & COLUMNS 1 - 7 AT PIER 5. COLUMNS 2, 3 & 7 AT PIER 5 HAVE BEEN ENCASED AT GROUND LINE. COND. 3 - 2 EA - MODERATE OLD LOSS ON COLUMNS 1 & 5 AT PIER 2. CAPS - COND. 1 - 98 LF - MINOR DELAM, CRACKING & SCALE THROUGHOUT CAPS. COND. 2 - 60 LF - MINOR TO MODERATE HORIZONTAL CRACKING IN CAP 3. MINOR DELAM, CRACKING & SPALLING W / REBAR EXPOSED IN BK. FACE OF CAP 4 & BK & BT. FACES OF CAP 5. CHANNEL: CLAY - MINOR SCOUR.