



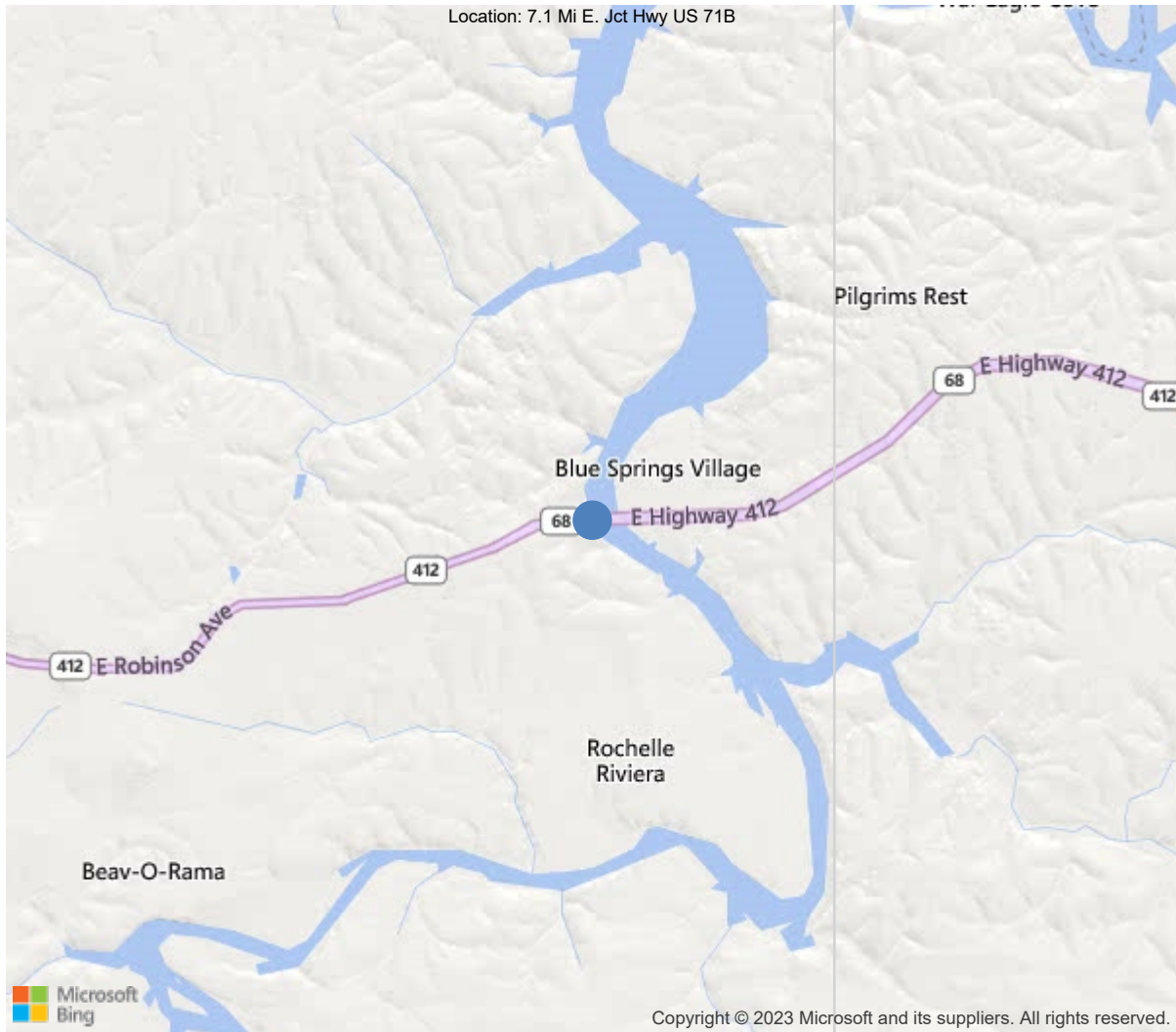
Latitude:36.17117, Longitude:-94.02127

Route:412 Section:02 Log:18.196

Arnold Road ID:72x412x2xA, Arnold Log mile:18.44

District 04, 143 - Washington County

Owner: 1 - State Highway Agency



36.17117, -94.02127



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	B6686
(5) Inventory Route	1
(2) Highway Agency District	04 - District 04
(3) County Code	143 - Washington County
(4) Place Code	0
(6) Features Intersected	Beaver Lake
(7) Facility Carried	US 412-East Bound
(9) Location	7.1 Mi E. Jct Hwy US 71B
(11) Mile Point	18.196 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000041200
(16) Latitude	36.17117
(17) Longitude	-94.02127
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	42
Material	4 - Steel continuous
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 pl
Type of Membrane	0 - None
Type of Deck Protection	1 - Epoxy Coated Reinforcing
AGE AND SERVICE	
(27) Year Built	1999
(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	7513
(30) Year of ADT	2018
(109) Truck ADT	9 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	190 ft
(49) Structure Length	890 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	37.4 ft
(52) Deck Width Out to Out	40.5 ft
(32) Approach Roadway Width (W/Shoulders)	37.1 ft
(33) Bridge Median	0 - No median
(34) Skew	0 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	38.4 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 w
(111) Pier Protection	1 - Navigation protection not
(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	2 - Rural Principal Arterial -
(100) Defense Highway	0 - The inventory route is not
(101) Parallel Structure	R - The right structure of par
(102) Direction of Traffic	1 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0 - N/A
(110) Designated National Network	0 - The inventory route is not
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	6
(59) Superstructure	7
(60) Substructure	5
(61) Channel & Channel Protection	8
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	5 - MS 18 / HS 20
(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	
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	6
(68) Deck Geometry	6
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	9
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1 - Inspected feature meets current
(36B) Transitions	1 - Inspected feature meets current
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	8 - Bridge foundations determined t
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	7736
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date	10/28/2021		
(91) Frequency	24		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	Yes	60	09/30/2019
C: Other Special Inspection			
* The inspection date and frequency information in this box contains the current NBI date and frequency information. Please refer to the report header for the date this inspection was conducted.			



General Observation

10/28, 11/01 & 11/2/2021 - RSM, JCJ, EJW, SPC, TJL & JPW: Routine inspection conducted these dates. NBIS Condition Rating for item "60" lowered from "6" to "5" due to wide excessive cracking in base of columns and ends of intermediate bent caps. Aspen 40 snooper truck was utilized for inspection access. A boat was used to inspect the lower portion of the substructure.

09/30/2019 - JCJ, RSM, SPC, & TJL - Routine Inspection with Aspen 40 Snooper Truck was conducted on this date. 10/01/2019 - JCJ & TJL - A boat was used to inspect the columns at the water elevation this date. The Type 2 Underwater Inspection is replaced by an Underwater Dive Inspection. Underwater Dive Inspection was last conducted on 07/23/2018.

60 - Substructure (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

Added bridge to dive contract to get a better look at the cracks in the drilled shafts see the report in files- ADN 10/2018

A-15 - Late Reason (N/A)

10/28/2021 - RSM - Glitch in InspectX software-Software did not schedule the structure for inspection.

A-46 - Asset Files

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Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	35897	18126	15482	2289	0
1080	Delamination/Spall/Patched Area	SF	7	0	7	0	0
1120	Efflorescence/Rust Staining	SF	112	0	112	0	0
1130	Cracking (RC and Other)	SF	16765	0	14476	2289	0
1190	Abrasion/Wear (PSC/RC)	SF	887	0	887	0	0
(12) -The driving surface has sealable longitudinal and transverse cracking in all spans. -The SIP forms have active corrosion forming adjacent to the beams and under the saw joints. -The wheel paths have light wear. -There are transverse cracks with efflorescence at variable spacing visible from the undersurface of the overhang in the deck. -The exterior edges of the deck have mapcracking with areas of scaling and concrete deterioration. -The undersurface of the deck right deck overhang in span # 4 has a 12" delaminated area adjacent to girder # 4 top flange located near splice connection # 1. -The undersurface of the deck overhang on the right side of span # 5 has two 12" delaminated areas adjacent to the girder top flange.							
107	Steel Open Girder/Beam	LF	3544	3544	0	0	0
515	Steel Protective Coating	SF	68827	68318	200	260	49
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	LF	509	0	200	260	49
(107) -Span # 4, girder # 3, splice # 2, is offset 5/16" in the web at the bottom of the splice. -Span # 5 has graffiti on girder # 4. -The undersurface of the bottom flange of the exterior girders have areas of abnormal weathering with flaking rust visible in the weathering steel protective coating. -No visible cracks or apparent noteworthy deficiencies apparent in the girders at this inspection. -The exterior girders have dirt and debris accumulation behind the splice plate connections that is retaining moisture potentially causing corrosion / abnormal weathering to girders.							
205	Reinforced Concrete Column	EA	8	0	3	5	0
1080	Delamination/Spall/Patched Area	EA	3	0	2	1	0
1130	Cracking (RC and Other)	EA	5	0	1	4	0

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, **Inspection Date:** 10/28/2021

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>(205) The section of columns / top of the drilled shafts in proximity of the average / normal lake elevation have wide vertical, transverse, and map cracking up to an 1/8" wide along with concrete deterioration that exposes the reinforcing steel in areas. Exposed reinforcing steel has very little concrete cover from the construction process. Some columns have vertical cracking that propagates from the top of the drilled shaft concrete into the base of the columns above the water elevation.</p> <p>-Bent # 2 has light scale at the top of the drilled shaft at the water elevation. -Both columns have vertical cracking. -Left column has map cracking with light efflorescence. -The lower portion of bent # 2 columns have 4" shallow delaminated areas in the ahead face.</p> <p>-Bent # 3, left column has wide vertical and map cracking with soft deteriorated concrete that has up to 4" of concrete section loss in areas. The column has exposed epoxy coated reinforcing steel at the top of the drilled shaft at the water elevation that appears to have insufficient concrete coverage from the construction process. -Bent # 3, right column has soft deteriorated concrete with light scale at the top of the drilled shaft at the water elevation. -Bent # 3, right column has vertical cracking. -Bent # 3, right column has soft deteriorated concrete with a 3' shallow spall with exposed reinforcing steel located 1' below the top of the drilled shaft.</p> <p>-Bent # 4, left column has wide vertical and map cracking with soft deteriorated concrete at the top of the drilled shaft. The cracks are up to approximately 3/8" wide at this inspection. -Bent # 4, left column has concrete deterioration with an exposed hoop. -Bent # 4, right column has light scale at the top of the drilled shaft at the water elevation.</p> <p>-Bent # 5, right column has one baseball sized spall with no exposed reinforcing steel on the South side of column located at the top of the horizontal strut. -Bent # 5 drilled shaft has honeycombing with numerous moderate width vertical cracks. -Bent # 5, left column has concrete deterioration with vertical rows of honeycombing at the top of the drilled shaft at the water elevation. -Bent # 5, left column has one isolated area of exposed steel in the left exterior face of the drilled shaft portion of column that appears to be from insufficient concrete coverage during the construction process.</p>							
210	Reinforced Concrete Pier Wall	LF	64	55	9	0	0
1010	Cracking	LF	9	0	9	0	0
<p>(210) -This elements is being used in accordance with the latest ARDOT Bridge Inspection Manual to monitor the horizontal struts. -The top of bent # 5 strut has area of mapcracking.</p>							
215	Reinforced Concrete Abutment	LF	146	101	41	4	0
1080	Delamination/Spall/Patched Area	LF	11	0	11	0	0
1120	Efflorescence/Rust Staining	LF	3	0	3	0	0
1130	Cracking (RC and Other)	LF	24	0	20	4	0
1190	Abrasion/Wear (PSC/RC)	LF	7	0	7	0	0
<p>(215) -One vertical hairline crack in the center of bent # 1. -The right side of abutment # 2 has wide map cracking with cracks up to 1/4" wide. -Abutment # 2 has a wide transverse crack that propagates across the bridge seat in bay # 2 located approximately 2' from girder # 3. The crack is 1/8" wide at this inspection. -The backwalls have a few vertical cracks at random spaces. -There are minor shallow spalls in the top of the backwall adjacent to the approach roadway visible from the driving surface of the deck. -Minor dirt accumulation on the left side of abutment # 2. -State maintenance forces have repaired the embankment erosion adjacent to the Southeast end of the bridge in the past.</p>							

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, **Inspection Date:** 10/28/2021

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
234	Reinforced Concrete Pier Cap	LF	160	93	48	16	3
1080	Delamination/Spall/Patched Area	LF	6	0	6	0	0
1090	Exposed Rebar	LF	2	0	0	2	0
1130	Cracking (RC and Other)	LF	59	0	42	14	3
<p>(234) -Bent # 2 cap has a 5' long delaminated area at the bottom of the cap adjacent to column # 2 on both sides of the cap. -The right end of bent # 2 cap has light map cracking. -Column # 1 has a 2' long delaminated area in the base of the cap. -The undersurface on bent # 2 cap has a 6" spall with exposed reinforcing steel on the right side adjacent to column # 2. Exposed steel has initial section loss. -Map cracking in the right end of the cap.</p> <p>-Bent # 3 cap has heavy map cracking on the right end of the cap. Map cracking ranges from hairline up to 0.035" wide during this inspection. -The undersurface of bent # 3 cap has two 3" shallow spalls with exposed reinforcing steel on the right side adjacent to columns 2.</p> <p>-Bent # 4 cap has heavy map cracking on the right end of the cap. Map cracking ranges from hairline up to 3/8" wide during this inspection. The right end of cap has a 4" delaminated area within the mapped area. -There are several delaminated areas in the right end of the cap when sounded with a hammer. -Bent # 4 has a hairline horizontal crack that appears to follow a cold joint near the mid point of the cap.</p> <p>-Bent # 5 has a transverse crack on the cap located at the left side of girder # 2. The right end of bent # 5 cap has map cracking with one horizontal crack located 20" from the base of the right side of bent # 5 that measures 1/8". The middle of the cap has a full length hairline crack.</p>							
305	Assembly Joint without Seal	LF	80	80	0	0	0
<p>(305) -Expansion joints appear to be functioning as intended. The finger joint assembly over abutment # 2 has a height differential of approximately 3/8" from the portion of assembly on the abutment # 2 side to the portion of assembly on the span # 5 side. -The expansion joint drainage trough has debris accumulation on the left side that restricts drainage.</p>							
310	Elastomeric Bearing	EA	24	24	0	0	0
515	Steel Protective Coating	SF	48	48	0	0	0
<p>(310) -Bearing # 4 at bent # 4 exterior anchor bolts are extended approximately 2" higher than normal but are sound when sounded. No apparent changes since the last inspection.</p>							
331	Reinforced Concrete Bridge Railing	LF	1772	0	1767	5	0
1080	Delamination/Spall/Patched Area	LF	6	0	2	4	0
1090	Exposed Rebar	LF	2	0	2	0	0
1120	Efflorescence/Rust Staining	LF	558	0	558	0	0
1130	Cracking (RC and Other)	LF	1206	0	1205	1	0
<p>(331) -Parapet walls have vertical hairline cracking at random spacing. -Numerous areas of map cracking with efflorescence. -One softball sized spall with exposed reinforcing steel on the left side of span # 1. No apparent section loss to the exposed reinforcing steel. -The right side of span # 3 has a 6' long spall with exposed epoxy coated reinforcing steel. -Wide vertical cracking in exterior side of right parapet at abutment # 2</p>							

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, **Inspection Date:** 10/28/2021

Deck

[illegible]

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, **Inspection Date:** 10/28/2021

Superstructure

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
107	Steel Open Girder/Beam	LF	3544	3544	0	0	0
515	Steel Protective Coating	SF	68827	68318	200	260	49
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	LF	509	0	200	260	49
<p>(107) -Span # 4, girder # 3, splice # 2, is offset 5/16" in the web at the bottom of the splice.</p> <p>-Span # 5 has graffiti on girder # 4.</p> <p>-The undersurface of the bottom flange of the exterior girders have areas of abnormal weathering with flaking rust visible in the weathering steel protective coating.</p> <p>-No visible cracks or apparent noteworthy deficiencies apparent in the girders at this inspection.</p> <p>-The exterior girders have dirt and debris accumulation behind the splice plate connections that is retaining moisture potentially causing corrosion / abnormal weathering to girders.</p>							

Substructure

[illegible]



ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
-There are minor shallow spalls in the top of the backwall adjacent to the approach roadway visible from the driving surface of the deck. -Minor dirt accumulation on the left side of abutment # 2. -State maintenance forces have repaired the embankment erosion adjacent to the Southeast end of the bridge in the past.							
234	Reinforced Concrete Pier Cap	LF	160	93	48	16	3
1080	Delamination/Spall/Patched Area	LF	6	0	6	0	0
1090	Exposed Rebar	LF	2	0	0	2	0
1130	Cracking (RC and Other)	LF	59	0	42	14	3
(234) -Bent # 2 cap has a 5' long delaminated area at the bottom of the cap adjacent to column # 2 on both sides of the cap. -The right end of bent # 2 cap has light map cracking. -Column # 1 has a 2' long delaminated area in the base of the cap. -The undersurface on bent # 2 cap has a 6" spall with exposed reinforcing steel on the right side adjacent to column # 2. Exposed steel has initial section loss. -Map cracking in the right end of the cap. -Bent # 3 cap has heavy map cracking on the right end of the cap. Map cracking ranges from hairline up to 0.035" wide during this inspection. -The undersurface of bent # 3 cap has two 3" shallow spalls with exposed reinforcing steel on the right side adjacent to column s 2. -Bent # 4 cap has heavy map cracking on the right end of the cap. Map cracking ranges from hairline up to 3/8" wide during this inspection. The right end of cap has a 4" delaminated area within the map racked area. -There are several delaminated areas in the right end of the cap when sounded with a hammer. -Bent # 4 has a hairline horizontal crack that appears to follow a cold joint near the mid point of the cap. -Bent # 5 has a transverse crack on the cap located at the left side of girder # 2. The right end of bent # 5 cap has map cracking with one horizontal crack located 20" from the base of the right side of bent # 5 that measures 1/8". The middle of the cap has a full length hairline crack.							

60 - Substructure (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

Comment: Added bridge to dive contract to get a better look at the cracks in the drilled shafts see the report in files- ADN 10/2018



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Culvert

ELEMENTS	DESCRIPTION	UNITS	TOTAL				
				CS1	CS2	CS3	CS4



Elevation looking North from right side.



Inventory 1 looking East.



Submerged drift at bent 4.



The finger joint over abutment # 2 has a height differential of approximately 3/8" from the portion of assembly at abutment # 2 side to the portion of assembly on the span # 5 side.



Span 3, right lane-Mapcracking.



The right parapet in span # 3 has a large spall with exposed epoxy coated and fiberglass reinforcing bar.



Longitudinal deck cracking.



Span 4, left lane-Longitudinal cracking.



Span 5, right lane-Transverse cracking.



Span 5, right lane-Deck cracking.



Span # 5, right side-Delaminated area in deck overhang adjacent to girder top flange.



Span 5, girder 4-Abnormal weathering with large flakes.



Bent 5 cap, right end-Mapcracking.



Bent 5 cap, right end-1/8" wide horizontal cracking.



Span 4, beam 4-Abnormal weathering.



Bent 5 strut has mapcracking in the top surface.



Bent # 5 cap-Transverse crack in top of cap adjacent to beam 2.



Bent 5.



The undersurface of the deck overhang in span # 4 has a 12" delaminated area adjacent to girder # 4 top flange located adjacent to splice connection # 1.



Span 4 superstructure.



Bent 4 cap, right end-Delaminated area.



Bent 4 cap, right end-Mapcracking.



Bent 4 cap, right side-Wide mapcracking.



Bent 4 cap, right side-Wide mapcracking.



Bent 4 cap, right side-Wide mapcracking.



Bent 4 cap-Horizontal hairline crack.



Bent 4 cap.



Span 3 splice connection # 2.



Bent 4 cap.



The exterior girders have dirt and debris accumulation behind the splice plate connections potentially causing corrosion / abnormal weathering to girders.



Bent 3 cap, right end-Mapcracking.



Span 2, girder 4-Abnormal weathering.



Span 2, girder 4-Abnormal weathering.



The undersurface of bent # 3 cap has two 3" shallow spalls with exposed reinforcing steel on the right side adjacent to column # 2.



Bent 3 bearing area.



Span 2, bay 3-Corrosion to SIP forms.



Bent 2 cap, right side-Mapcracking.



The undersurface on bent # 2 cap has a 6" spall with exposed reinforcing steel on the right side adjacent to column # 2. Exposed steel has initial section loss.



Bent 2 cap backface-Delaminated area over column 2.



Typical of span 1 splice connections.



Span 1, girder 4 splice connection.



The exterior edges of the deck have mapcracking with areas of scaling and concrete deterioration.



Span 1, right lane-Longitudinal cracking.



Span 1, right lane-Deck cracking.



Span 1, right lane-Deck cracking.



Snooper inspection.



Span 4, girder # 1, splice # 2.



Bent 4 cap.



Bent 5, column 2-Vertical cracks.



Bent 5 drilled shafts.



Bent 4, column 1-Wide vertical and horizontal cracking.



Bent 4, column 1-Mapcracking.



Bent 4, column # 1 has wide vertical cracks in the drilled shaft up to approximately 3/8" wide.



Bent 4 strut.



Bent 4, column 1-Wide horizontal cracking.



Bent # 4, column 1-Wide vertical cracking.



Bent 3, column 2-Exposed reinforcing steel.



Bent 3, column 2-Wide vertical cracking.



Bent # 3, column 1-Exposed reinforcing steel.



Bent # 3, column # 1-Honeycombing with exposed reinforcing steel.



Bent 3, column 1-Wide vertical cracking.



The lower portion of bent # 2 columns have 4" shallow delaminated areas in the ahead face.



Span 2 undersurface.



Bent 2, column 1-Vertical cracking.



Bent 2, column 1-Light mapcracking.



Bents 2 and 3.



Abutment 2.



The expansion joint drainage trough on the left side of abutment # 2 has debris accumulation that restricts drainage.



Abutment 2, bay 1-Vertical crack in backwall.



Span 5, bay 2.



Bent 5.



Abutment # 2 has a wide transverse crack that propagates across the bridge seat in bay # 2 located approximately 2' from girder # 3. The crack is 1/8" wide at this inspection.
Photo 2.



Abutment # 2 has a wide transverse crack that propagates across the bridge seat in bay # 2 located approximately 2' from girder # 3. The crack is 1/8" wide at this inspection.
Photo 1.



Abutment # 2 bearing area.



Wide mapcracking on right end of abutment # 2 bridge seat.
Photo 2.



Wide mapcracking on right end of abutment # 2 bridge seat.



Expansion joint trough at abutment 1.



Wide cracking in exterior side of right parapet at abutment #
2



Span 5 driving surface.



Abutment # 2 finger joint assembly.



Elevation.



Expansion joint trough at abutment 1.



Unused conduit on left side has a failed connection at abutment # 1.



Utility on left side of structure.



Typical of abutment 1 bearings.



Abutment 1 bearing area.



Utility on right side of abutment 1.



Span 1-Mapcracking in right gutter.



Span 1, right side-Mapcracking in parapet.



Span 1 driving surface.



Asphalt mapcracking with repairs in West approach roadway.



Abutment 1 finger joint assembly.

Maintenance Needs

Date Reported: 09/06/2011
Priority: C - Important
Type of Work: Repair (General)
Status: Monitor
Component: Element

Deficiency Description

Substructure, Bent columns near water elevation.

Wide map cracking in the substructure columns with concrete deterioration and exposed reinforcing steel at the water elevation of the columns.

Remarks



Bent # 4, column # 1-Wide vertical and horizontal cracking.



Bent # 4, column # 1 has wide vertical cracks in the drilled shaft up to approximately 3/8" wide.



Bent # 4, column 1-Wide vertical cracking.



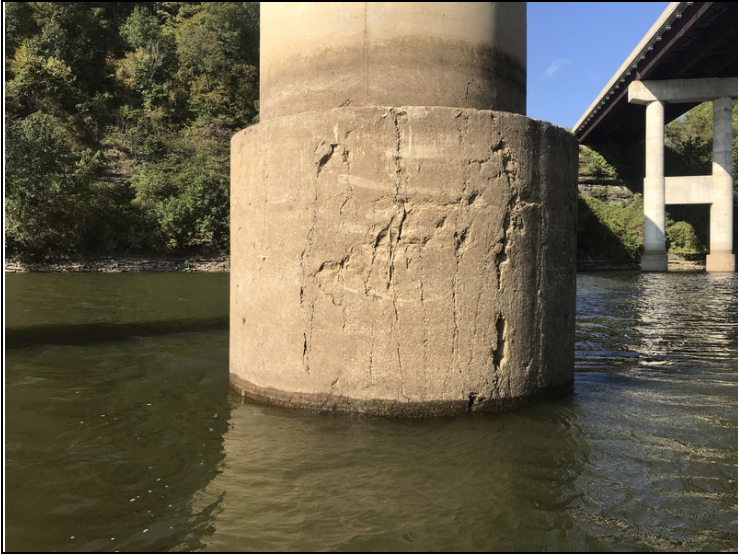
Bent # 3, column 2-Exposed reinforcing steel.



Right column of Bent # 3.



Left column of Bent # 3.



Left column of Bent # 3.



Bent # 3 right column. Exposed reinforcing steel.

Date Reported: 09/06/2011
Priority: C - Important
Type of Work: Repair (General)
Status: Monitor
Component: Substructure

Deficiency Description

Substructure -

The ends of the intermediate bent caps have heavy wide mapcracking.

The right side of abutment # 2 bridge seat has wide map cracking with cracks up to 1/4" wide.

The undersurface of bent # 3 cap has two 3" shallow spalls with exposed reinforcing steel on the right side adjacent to column # 2.

Remarks



Bent # 5 cap, right end-1/8" wide horizontal cracking.



Bent # 4 cap, right end-Delaminated area.



Bent # 4 cap, right side-Wide mapcracking.



Bent # 4 cap, right side-Wide mapcracking.



Wide mapcracking on right end of abutment # 2
bridge seat.



Wide mapcracking on right end of abutment # 2
bridge seat.



Right end of Bent # 3.



Right end of Bent # 5. 1/8" crack.



Right end of Bent # 5 Cap. Map cracking.



Bent # 3 cap, right side-0.035" cracking.



Right end of Bent # 4 cap has 3/8" wide map cracking.



Right end of Bent # 4 cap-Mapcracking.



Right end of Bent # 4.



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Date Reported: 09/06/2011

Priority: (Inactive) (Inactive) G - General/ Preventive maintenance

Type of Work: (Inactive) (Inactive) 1 - Clean

Status: Monitor

Component: Element

Deficiency Description

Superstructure -

The exterior girders have dirt and debris accumulation adjacent to the splice plate connections that is retaining moisture potentially causing corrosion / abnormal weathering to girders.

Graffiti on Beam # 1, Span # 5.

Graffiti on Beam # 4, Span # 5.

Remarks



The exterior girders have dirt and debris accumulation adjacent to the splice plate connections potentially causing corrosion / abnormal weathering to girders.



Span # 5, Girder # 4-Graffiti.



Span # 5. Girder # 1. Interior.

Date Reported: 09/06/2011
Priority: D- Routine
Type of Work: Repair (General)
Status: Monitor
Component: Element

Deficiency Description

Bridge deck -
The driving surface of the deck has numerous sealable longitudinal and transverse cracks.

Remarks



Longitudinal deck cracking.



Sealable transverse cracks in the deck.



Sealable Longitudinal cracking in the deck.



Map cracking.



Sealable crack in the deck.



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Date Reported: 08/28/2013
Priority: D- Routine
Type of Work: Repair (General)
Status: Monitor
Component: Element

Deficiency Description

Concrete Bridge Railing -

The concrete bridge railing on the right side of Span # 3 has a spall approximately 6' long with exposed reinforcing steel. The parapet walls have map cracking with efflorescence.

Remarks



The right parapet in span # 3 has a large spall with exposed epoxy reinforcing steel.



Map cracking with efflorescence in the exterior surface of the Parapet wall.



Right parapet. Typical.



Spall in the Right parapet wall.



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Date Reported: 08/28/2013
Priority: D- Routine
Type of Work: Repair (General)
Status: Monitor
Component: Miscellaneous

Deficiency Description

Transverse Saw Joint Sealant in the Deck -
The transverse saw joint sealant in the deck is deteriorated and appears to leak water.

Remarks



Span # 2, bay # 3-Corrosion to SIP forms.



Corrosion in SIP forms.



Transverse saw joint sealant is deteriorated.

Date Reported: 08/28/2013
Priority: D- Routine
Type of Work: Repair (General)
Status: Monitor
Component: Approach

Deficiency Description

Approach Roadways -
The asphalt of the approach roadways is beginning to settle at the bridge ends.

Remarks



The asphalt of the approach roadways is beginning to settle at the bridge ends.



West approach roadway at Bent # 1.

Date Reported: 11/03/2021
Priority: D- Routine
Type of Work: (Inactive) (Inactive) 1 - Clean
Status: Open
Component: Element

Deficiency Description

Expansion Joints -

The expansion joint drainage trough at abutment # 2 has debris accumulation on the left side that restricts drainage.

Remarks



The expansion joint drainage trough on the left side of abutment # 2 has debris accumulation that restricts drainage.

Date Reported: 11/03/2021
Priority: D- Routine
Type of Work: (Inactive) (Inactive) 1 - Clean
Status: Open
Component: Element

Deficiency Description

Deck -

The undersurface of the right deck overhang in span # 4 has a 12" delaminated area adjacent to girder # 4 top flange located near splice connection # 1.

The undersurface of the deck overhang on the right side of span # 5 has two 12" Delaminated areas adjacent to the girder top flange.

Remarks



The undersurface of the deck overhang in span # 4 has a 12" delaminated area adjacent to girder # 4 top flange located adjacent to splice connection # 1.

Date Reported: 11/04/2021
Priority: C - Important
Type of Work: (Inactive) (Inactive) 1 - Clean
Status: Open
Component: Channel

Deficiency Description

Channel -
The channel has an undetermined amount of submerged drift at the intermediate bents.

Remarks



Submerged drift at bent # 4.



Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Routine Maintenance

Check Box Maintenance Items

Type of Maintenance	Is recommended?
A-54 - Sealable Deck Cracks	
A-55 - Deck Washing Needed	
A-56 - Joint Cleaning/Flushing Needed	
A-57 - Beam End and Bearing Paint Needed	
A-58 - Cap Cleaning/Flushing Needed	
A-59 - Joint Repair Needed	
A-60 - Full Beam Painting Needed	
A-61 - Polymer Overlay Advised	
A-62 - Hydro and LMC Advised	



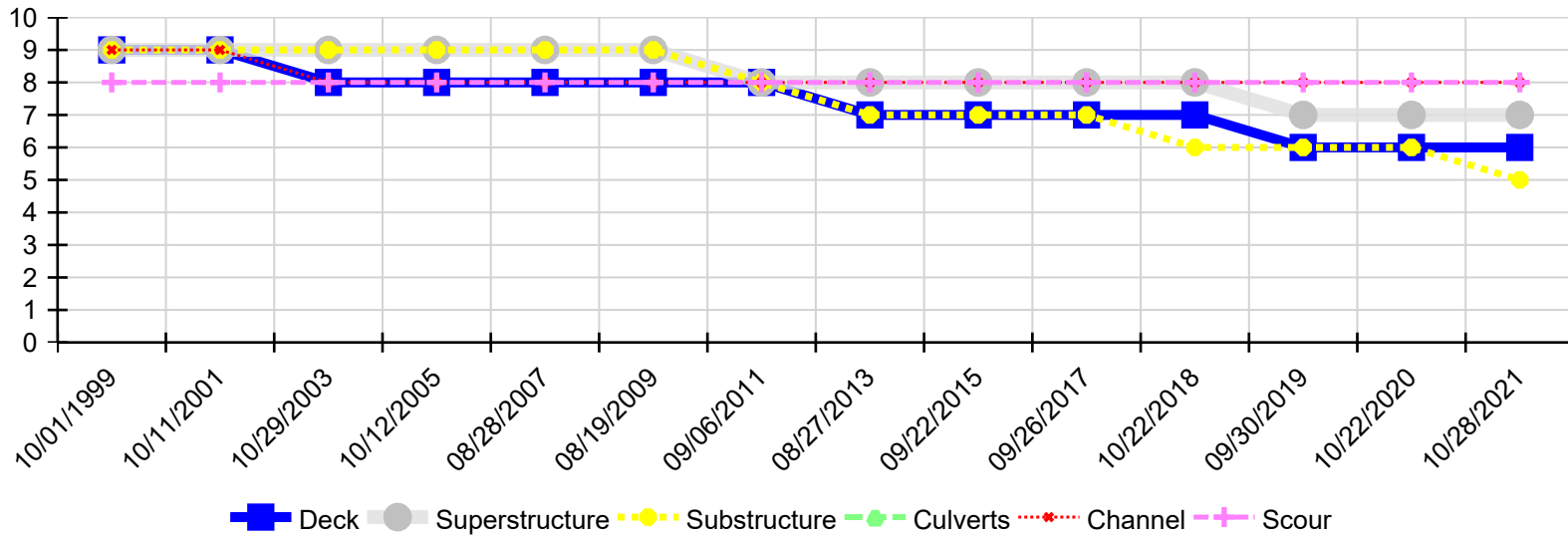
Asset #B6686(Routine)

US 412-East Bound over Beaver Lake

Location: 7.1 Mi E. Jct Hwy US 71B

Team Lead: Bob McEntyre, Inspection Date: 10/28/2021

Condition History



Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
10/28/2021	6	7	5	N	8	8
10/22/2020	6	7	6	N	8	8
09/30/2019	6	7	6	N	8	8
10/22/2018	7	8	6	N	8	8
09/26/2017	7	8	7	N	8	8
09/22/2015	7	8	7	N	8	8
08/27/2013	7	8	7	N	8	8
09/06/2011	8	8	8	N	8	8
08/19/2009	8	9	9	N	8	8
08/28/2007	8	9	9	N	8	8
10/12/2005	8	9	9	N	8	8
10/29/2003	8	9	9	N	8	8
10/11/2001	9	9	9	N	9	8
10/01/1999	9	9	9	N	9	8