



Bridge #06512(Routine, Underwater type 2)

SH 23 Madison Co over FLEMING CREEK

Location: 3.4 MI N OF FRANKLIN

Team Lead: Nathan Rowland **Inspection Date:** March 10, 2022



Latitude:35.81317, Longitude:-93.79154

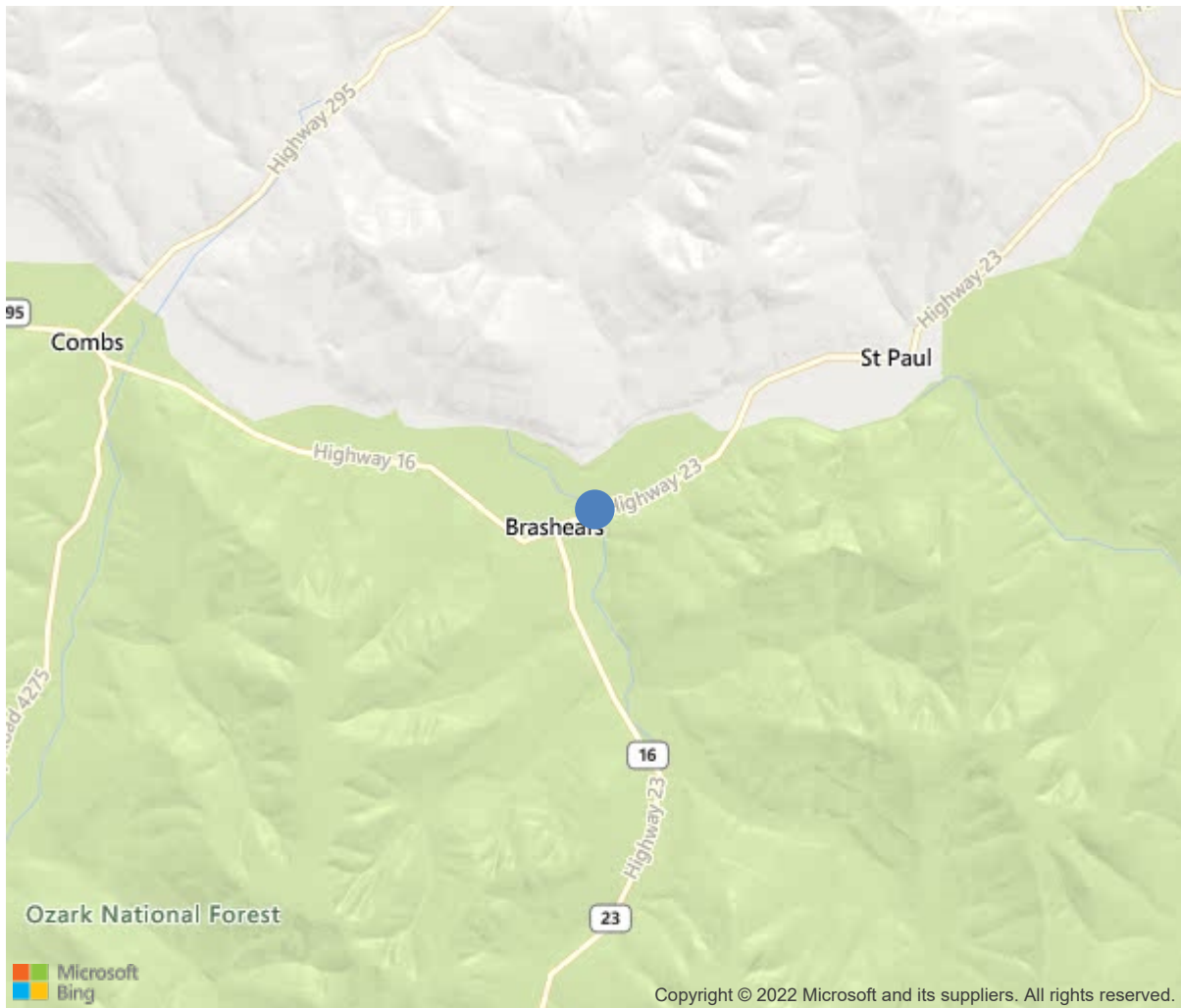
Route:23 Section:08 Log:3.42

Arnold Road ID:44x23x8xA, Arnold Log mile:3.369

District 09, Madison County

Owner: 1-State Highway Agency

3.4 MI N OF FRANKLIN



35.81317, -93.79154

Inspection Direction : W to E



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IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	06512
(5) Inventory Route	23
(2) Highway Agency District	09
(3) County Code	87-Madison County, Arkansas
(4) Place Code	0
(6) Features Intersected	FLEMING CREEK
(7) Facility Carried	SH 23 Madison Co
(9) Location	3.4 MI N OF FRANKLIN
(11) Mile Point	3.42 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000023080
(16) Latitude	35.81317
(17) Longitude	-93.79154
(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	4
(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	1996
(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	1191
(30) Year of ADT	2018
(109) Truck ADT	8 %
(19) Bypass, Detour Length	30 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	65 ft
(49) Structure Length	242 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	36.1 ft
(52) Deck Width Out to Out	38.1 ft
(32) Approach Roadway Width (W/Shoulders)	38 ft
(33) Bridge Median	0-No median
(34) Skew	0 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	37.1 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	0
(26) Functional Class	6-Rural Minor Arterial
(100) Defense Highway	0-The inventory route is not a S
(101) Parallel Structure	N-No parallel structure exists.
(102) Direction of Traffic	2 - way traffic
(103) Temporary Structure	
(105) Federal Lands Highways	0-N/A
(110) Designated National Network	0-The inventory route is not part of
(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	7
(59) Superstructure	7
(60) Substructure	7
(61) Channel & Channel Protection	6
(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	4
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	7
(68) Deck Geometry	6
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	6
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1-Inspected feature meets currently a
(36B) Transitions	1-Inspected feature meets currently a
(36C) Approach Guardrail	1-Inspected feature meets currently a
(36D) 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	1139
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date	03/2022		
(91) Frequency	24 Months		
(92) Critical Feature Inspection	Done	Freq. (Mon)	Date
A: Fracture Critical Detail	No		
B: Underwater Inspection	No		
C: Other Special Inspection	No		
* 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.			

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	8640	4183	4457	0	0
1120	Efflorescence/Rust Staining	SF	48	0	48	0	0
1130	Cracking (RC and Other)	SF	295	0	295	0	0
1190	Abrasion/Wear (PSC/RC)	SF	4114	0	4114	0	0
(12)							
3/10/2022 WNR & DBM: The driving surface of the deck has a tined finish that is showing wear in the driving lanes, the tined finish is worn completely smooth in some locations. All spans on the right-hand side of the deck have transverse cracking that extends from the gutter line into the driving lane, almost all of the cracking was in the right lane of the structure with very few cracks in the left lane. The right deck edge has map cracking between the drain areas, some areas have efflorescence. The left and right deck overhangs have transverse cracking with efflorescence.							
Undersurface- Hairline cracks were visible on the underside of the deck. Bay #3 of span #3 has a short-duration hairline crack with minor efflorescence. Efflorescence leaching was noted on the undersurface beneath the construction joints.							
107	Steel Open Girder/Beam	LF	1200	1182	5	13	0
1000	Corrosion	LF	18	0	5	13	0
515	Steel Protective Coating	SF	11316	11280	10	26	0
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	SF	36	0	10	26	0
(107)							
3/10/2022 WNR & DBM: The weathering steel protective coating includes the diaphragms. 5 beam system. Span #1- Beam #2 has 4' of corrosion on the top of the bottom flange and lower web at abutment #1. Beam #3 has 3' of corrosion with flaking rust on the top of the bottom flange and lower web at abutment #1. Beam #4 has 1' of corrosion with flaking rust on the top of the bottom flange and lower web at abutment #1. Beam #5 has 1' of corrosion with flaking rust on the top of the bottom flange and lower web at abutment #1.							
Span #2- no deficiencies noted. Span #3- no deficiencies noted. Span #4- Beam #2 has 2' of corrosion with flaking rust on the lower web and upper web at the haunch area of abutment #2. Beam #3 has 4' of corrosion with flaking rust on the top of the bottom flange and lower web at abutment #2. Beam #4 has 2' of minor corrosion on the lower web area of the beam over abutment #2. Beam #5 has 1' of minor corrosion on the web and bottom flange at the beam end at abutment #2.							
205	Reinforced Concrete Column	EA	6	4	2	0	0
1190	Abrasion/Wear (PSC/RC)	EA	2	0	2	0	0
(205)							
3/10/2022 WNR & DBM: Bent #1 columns- no deficiencies noted.							

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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
Bent #2 columns- no deficiencies noted. Bent #3 columns- the left and right columns have minor abrasion at the bottom with no loss of coarse aggregate. All column footings have cover with no evidence of scour.							
215	Reinforced Concrete Abutment	LF	78	49	29	0	0
1120	Efflorescence/Rust Staining	LF	2	0	2	0	0
1130	Cracking (RC and Other)	LF	27	0	27	0	0
(215)							
3/10/2022 WNR & DBM: Abt. #1 - has 15' of hairline vertical and diagonal cracking present in the backwall and vertical face of the bridge seat. 2' of the cracking in the back wall has efflorescence present. Abutment #2- has 14' of hairline vertical cracking. 10' of hairline vertical cracking in the back wall and 4' of hairline vertical cracking in the vertical face of the bridge seat.							
234	Reinforced Concrete Pier Cap	LF	111	95	16	0	0
1130	Cracking (RC and Other)	LF	16	0	16	0	0
(234)							
3/10/2022 WNR & DBM: Pier cap #1- has 7 short duration hairline vertical cracks extending from the top edge of the cap Pier cap #2- has 4 short duration hairline vertical cracks extending down from the top edge of the cap. Pier cap #3- has 4 short duration hairline vertical cracks extending from the top edge of the cap and 1 short duration horizontal hairline crack at the right cap end.							
302	Compression Joint Seal	LF	78	8	9	21	40
2310	Leakage	LF	40	0	0	0	40
2320	Seal Adhesion	LF	9	0	9	0	0
2340	Seal Cracking	LF	21	0	0	21	0
(302)							
3/10/2022 WNR & DBM: Abutment #1 seal- has 13' of the joint seal dislodged and sagging onto the bridge seat. 21' of the seal has cracking and/or snow plow damage. The retaining steel bar has become unattached at abutment #1 allowing the compression joint seal to drop out of position. Abutment #2 seal- 32' of the compression joint seal is dislodged and sagging on the bridge seat. The armoring plate has areas of pack rust. The left side of the seal has lost adhesion. The retaining steel bar has become unattached at abutment #1 allowing the compression joint seal to drop out of position.							
311	Movable Bearing	EA	10	2	0	8	0
1000	Corrosion	EA	8	0	0	8	0
(311)							
3/10/2022 WNR & DBM: Abutment #1 moveable bearings- bearings 2,3,4,5 have corrosion with flaking rust, bearing #1 has no deficiencies. Abutment #2 moveable bearings- 2,3,4,5 have corrosion with flaking rust, bearing #1 has no deficiencies.							
313	Fixed Bearing	EA	15	15	0	0	0
(313)							

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Inventory looking east



View of abutment #1



View of bearings at bent #2



View of superstructure at span #3



View of bearings at bent #3 ahead side.



View of joint material at abutment #2.



View of joint at abutment #2



View of joint at abutment #1



General view of deck



Downstream view



Upstream view



Inventory looking East.



Approach view in direction of log mile.



Typical view of driving surface.



General view of abutment #2. Note the compression joint seal.



General view of abutment #1.



Abutment #1 compression joint seal condition.



View of typical bearing corrosion at abutment #1.



Typical bearing condition at bents #1,2,3.



Elevation view. Log mile from left to right.



Efflorescence map cracking in the right and left deck edge. Typical.



Minor abrasion at the left column of bent #3.



Typical undersurface view.



Map cracking on the parapet wall.



Build up on the bridge seat at abutment #1 below the missing joint seal area is promoting corrosion of the bearings.



Typical view of bents.



4' of Minor corrosion on the top of the bottom flange and lower web at beam #2 at abutment #1.



The retaining steel has become unattached at abutment #1 allowing the compression joint seal to drop out of position.



Upstream channel view.



Abutment #2 compression joint seal condition.



Beam end and bearing condition of beam #3 at abutment #2.



View of hairline cracking in the pier caps. Typical.



Downstream channel view.



Build up on the abutment #2 bridge seat.



Elevation looking North.



General view of deck



Joint seal failure at abutment #1



Compression joint material is still displace at abutment #2 allowing water and debris to flow freely onto bridge seat.



View of bearings at bent #2



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Maintenance Needs

Date Reported: 03/27/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Inspection Direction W to E

Component:

Deficiency Description

The pourable construction joint seals are leaking at most locations, causing efflorescence leaching on the underside of the deck.

Remarks



Concrete deck at construction joints
Leakage thru deck



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Date Reported: 03/27/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Inspection Direction W to E

Component:

Deficiency Description

Portions of the compression joint seals at abutments #1,2 are completely unattached from the armoring plate, and are allowing free flow of water and debris.

Remarks



Date Reported: 03/24/2014
Priority: G - General/ Preventive maintenance
Type of Work: None
Status: Assigned
Inspection Direction W to E
Component:

Deficiency Description

Abutments #1,2 have gravel and debris buildup from the missing joint seal that is promoting corrosion on the bearings.

Remarks



Bent #5 concrete cap- gravel and debris buildup



Compression joint material is still displace at abutment #2 allowing water and debris to flow freely onto bridge seat.

Date Reported: 03/08/2016

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Abutment #1- bearings #2,3,4,5 have corrosion with flaking rust.

Abutment #2- bearings #2,3,4,5 have corrosion with flaking rust.

Remarks



Bents #1 and #5 bearings has active corrosion with flaking rust.



Bearing #3 at abutment #1 flaking rust due to leaking joints.



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Inspection Comments

3/10/2022: WNR & DBM Routine and Underwater Type II inspections conducted this date. See element notes for documentation.

Structure is logged from West to East.