



Bridge #06409(Routine, Underwater type 2)

Madison Co. SH 23 over HENDERSON CREEK

Location: .1 MI SO JCT 127 & 23

Team Lead: Nathan Rowland **Inspection Date:** November 15, 2021



Latitude:35.99509, Longitude:-93.70274

Route:23 Section:08 Log:20.29

Arnold Road ID:44x23x8xA, Arnold Log mile:20.195

District 09, Madison County

Owner: 1-State Highway Agency



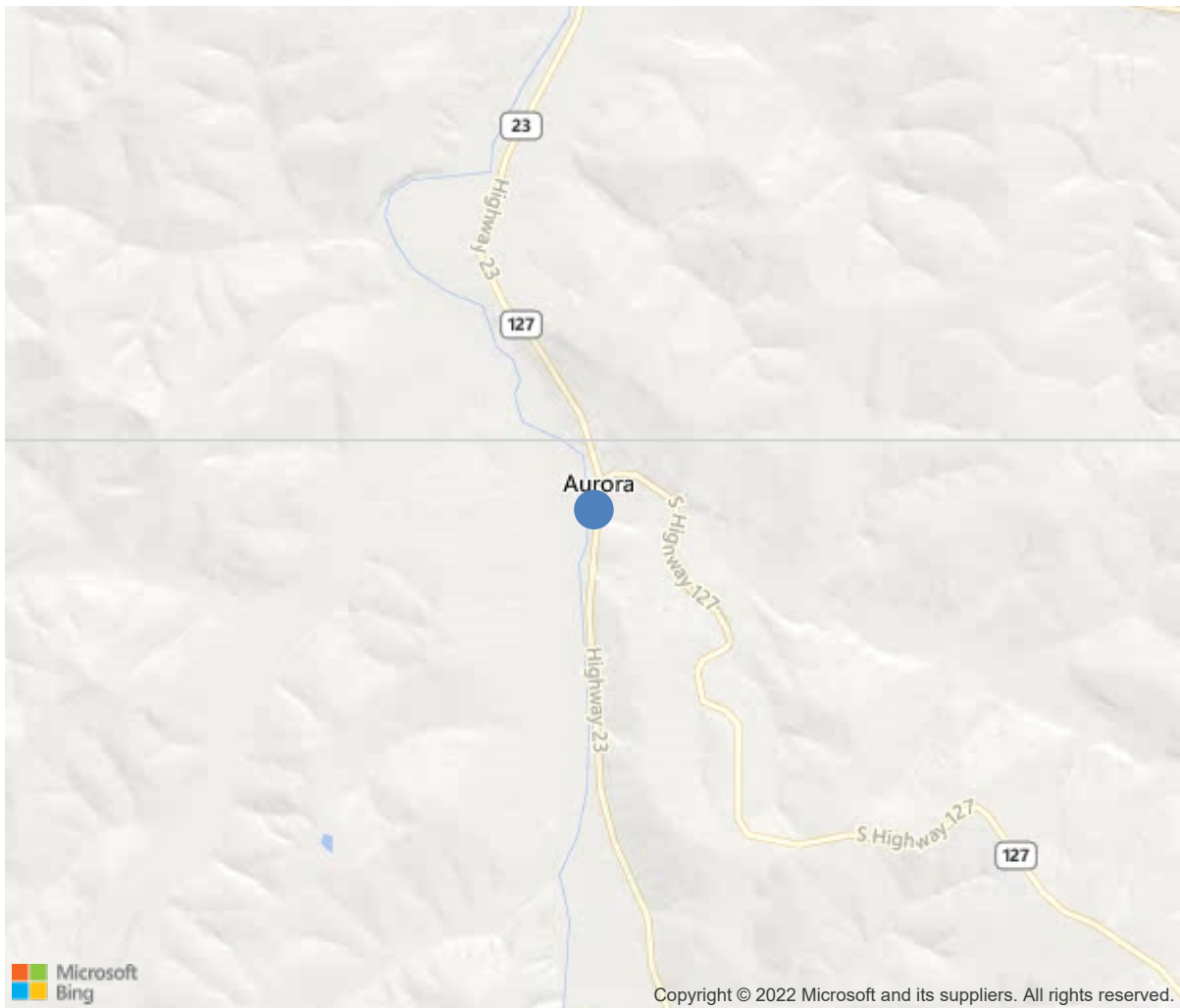
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35.99509, -93.70274

Inspection Direction : S to N



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IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	06409
(5) Inventory Route	23
(2) Highway Agency District	09
(3) County Code	87-Madison County, Arkansas
(4) Place Code	0
(6) Features Intersected	HENDERSON CREEK
(7) Facility Carried	Madison Co. SH 23
(9) Location	.1 MI SO JCT 127 & 23
(11) Mile Point	20.29 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000023080
(16) Latitude	35.99509
(17) Longitude	-93.70274
(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	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	1-Epoxy Coated Reinforcing
AGE AND SERVICE	
(27) Year Built	1994
(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	1100
(30) Year of ADT	2018
(109) Truck ADT	13 %
(19) Bypass, Detour Length	18 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	61 ft
(49) Structure Length	231 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	39 ft
(32) Approach Roadway Width (W/Shoulders)	24 ft
(33) Bridge Median	0-No median
(34) Skew	30 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	6
(59) Superstructure	6
(60) Substructure	6
(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	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 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	5-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	1152
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			11/2021
(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.			



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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	8267	7328	936	3	0
1080	Delamination/Spall/Patched Area	SF	12	0	9	3	0
1130	Cracking (RC and Other)	SF	927	0	927	0	0
(12)	11/15 /2021 WNR & DBM: -The deck has several areas with longitudinal, transverse and diagonal cracking in all spans with superficial mapcracking throughout. -The deck has an area of spalling on the right side of span #1 adjacent to the joint assembly at bent #1. -The undersurface of the deck overhang in the same area has a 3' x 3' spalled / delaminated area with exposed reinforcing steel and soft deteriorated concrete.						
107	Steel Open Girder/Beam	LF	1145	1019	92	34	0
1000	Corrosion	LF	126	0	92	34	0
515	Steel Protective Coating	SF	10744	10361	0	340	43
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	SF	383	0	0	340	43
(107)	11/15 /2021 WNR & DBM: -span #1 girders bottom flange #1 - #3 have welded cover plates varying in size. -The ends of girders over the intermediate bents have abnormal weathering with flaking rust due to leakage through expansion joints. The corrosion and flaking rust extends along the bottom flanges up to approximately 30' in locations where water leaks through the joints and runs along the bottom flanges.						
205	Reinforced Concrete Column	EA	6	4	2	0	0
1190	Abrasion/Wear (PSC/RC)	EA	2	0	2	0	0
(205)	11/15 /2021 WNR & DBM: -Intermediate bents #2 & #3 have minor localized scouring. -Bent #1 columns have light abrasion. -The channel has light drift at column #1 of bent #1. -Columns have minor insignificant scour holes in some locations.						
215	Reinforced Concrete Abutment	LF	84	42	37	5	0
1080	Delamination/Spall/Patched Area	LF	7	0	7	0	0
1130	Cracking (RC and Other)	LF	35	0	30	5	0
(215)	11/15 /2021 WNR & DBM: -The top of abutment backwalls have numerous transverse cracks at random spacing. The cracks propagate down the vertical face of breastwalls in locations. The top of abutment #1 backwall has a horizontal crack approximately 2' long in the right lane. -The top of abutment #2 has areas of shallow spalling and delaminated areas. -the bridge seat at abutment #2 has areas of vertical cracking and horizontal cracking to the vertical face of bridge seat.						
234	Reinforced Concrete Pier Cap	LF	126	105	21	0	0
1130	Cracking (RC and Other)	LF	21	0	21	0	0

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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
(234)							
11/15 /2021 WNR & DBM: -Bent caps have has vertical and horizontal cracking in random locations. -Multiple intermediate bent caps have vertical and horizontal cracking in random locations.							
302	Compression Joint Seal	LF	225	0	201	18	6
2310	Leakage	LF	201	0	201	0	0
2330	Seal Damage	LF	24	0	0	18	6
(302)							
11/15 /2021 WNR & DBM: -The compression joint seal at abutment #1 is deteriorated with tears and portions of the seal missing. -The compression joint seals at bents #1, #2 and #3 have rips in the top of seals. The seals stick up above the assembly in locations. The compression joint seal assemblies have pack rust that has separated the seals from the assemblies allowing water to leak through the joints.							
311	Movable Bearing	EA	20	6	3	11	0
1000	Corrosion	EA	14	0	3	11	0
515	Steel Protective Coating	SF	40	40	0	0	0
(311)							
11/15 /2021 WNR & DBM: -Bearings in all locations have active corrosion with thick flaking rust due to leaking expansion joint seals.							
313	Fixed Bearing	EA	20	5	4	11	0
1000	Corrosion	EA	15	0	4	11	0
515	Steel Protective Coating	SF	40	40	0	0	0
(313)							
11/15 /2021 WNR & DBM: - Bearings in all locations have active corrosion with thick flaking rust due to leaking expansion joint seals.							
331	Reinforced Concrete Bridge Railing	LF	462	338	124	0	0
1130	Cracking (RC and Other)	LF	124	0	124	0	0
(331)							
11/15 /2021 WNR & DBM: -Concrete bridge railing has transverse cracking that corresponds with joints and in other random locations. The bridge railing has areas of mapcracking with light efflorescence in locations. -Southeast approach railing has collision damage that has bent approximately 12' of the railing and twisted one of the railing post.							



View of bearing area at abutment #1



span #1 girders bottom flange #1 - #3 have welded cover plates varying in size.



Typical view of superstructure condition at span #3.



View of bent #1 ahead side



Typical flaking rust at girder ends



View of bearings at abutment #2



View of abutment #2



View of joint at abutment #2



Downstream view



Upstream view



View of joint at abutment #1



General view of deck



Inventory looking north



General view of deck



Span #2 left lane typical longitudinal cracking



Inventory looking North



View of bearings at abutment #2.



Bent #1 joint material condition



General view of deck



Span #3 right transverse cracking.



Abutment #2 joint material condition



Upstream



Bent #3 joint material condition.



View of span #3



Typical condition of bearings at abutment #1.



Span #2 right lane typical diagonal cracking.



Span #1 at Bent #1 right spalling adjacent to road iron.



Abutment #1 expansion joint material lost adhesion.



Localized scouring at bents 2 and 3



Deck span #1 overhang right spalling with steel exposed.



Abutment #1 expansion joint material lost adhesion.



Span #3 typical flaking rust to bottom flange of girders at intermediate bents.



Downstream



Abutment #2 top of abutment backwall cracking and minor spalling.



Southeast approach railing has collision damage that has caused out-of-plane bending to approximately 12° of the railing and twisted one of the railing post.



Elevation looking East

Maintenance Needs

Date Reported: 11/16/2011
Priority: C - Important
Type of Work: None
Status: Monitor
Inspection Direction S to N
Component:

Deficiency Description

Deck - The compression joint seal at abutment #1 is deteriorated with tears and has fallen out of position in several locations.

The compression joint seals at bents #1, #2 and #3 are deteriorated with cracks in the top of seals. The seals stick up above the assembly in locations. The seals in all locations leak allowing water to leak onto the superstructure causing excessive corrosion to bearing devices and ends of girders.

Remarks



Abutment #1-Compression seal deteriorated.



Abutment #1 expansion joint material lost
adhesion.



Abutment #1 expansion joint material lost
adhesion.



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Date Reported: 11/16/2011

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction S to N

Component:

Deficiency Description

Deck - The deck has sealable longitudinal, transverse and diagonal cracking in all spans.

Remarks



Span #2 left lane typical longitudinal cracking



Span #2 right lane typical diagonal cracking.



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Span #1, right lane longitudinal cracking.



Span #3 Left lane adjacent to bent #2 looking South typical deck cracking.

Date Reported: 11/16/2011

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction S to N

Component:

Deficiency Description

Southeast approach railing - Southeast approach railing has collision damage that has caused out-of-plane bending to approximately 12' of the railing and twisted one of the railing post.

Remarks



Southeast approach railing has collision damage that has caused out-of-plane bending to approximately 12' of the railing and twisted one of the railing post.



Southeast approach railing has collision damage that has bent approximately 12' of the railing and twisted one of the railing post.

Date Reported: 11/16/2011

Priority: D- Routine

Type of Work: None

Status: Assigned

Inspection Direction S to N

Component:

Deficiency Description

Deck - The deck has an area of spalling with soft deteriorated concrete approximately 1' wide and 2' long on the right side of span #1 adjacent to the expansion joint assembly. The undersurface of the deck overhang in the same area has a 3' x 3' area of spalling with exposed reinforcing steel. Span #3 right edge of deck and overhang has spalling and deterioration.

Remarks



Deck bent #1 right spalling adjacent to joint and parapet.



Soffit Span 3 right - spall with exposed reinforcing steel.



Deck span #1 overhang right spalling with steel exposed.



Span #1 at Bent #1 right spalling adjacent to road iron.



Span #1, right side over bent #1-Spalling /
delaminated area with exposed reinforcing steel.

Date Reported: 11/15/2021

Priority: D- Routine

Type of Work: Clean

Status: Open

Inspection Direction S to N

Component: Channel

Deficiency Description

Channel - Bent #1 upstream has drift and small trees restricting the flow of water causing localized scour.

Remarks



Bent #1 upstream has drift and small trees restricting the flow of water causing localized scour.



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Inspection Comments

11/15 /2021 WNR & DBM: Routine and Underwater type II inspection conducted this date. See element notes for documentation.

Structure logged South to North.