



Bridge #05933(Routine, Underwater type 2)

SH 16 Madison Co. over MILL CREEK

Location: 10.52 SO OF WASHINGTON CO

Team Lead: Nathan Rowland **Inspection Date:** January 27, 2022



Latitude:35.82331, Longitude:-93.83230

Route:16 Section:04 Log:10.52

Arnold Road ID:44x16x4xA, Arnold Log mile:10.529

District 09, Madison County

Owner: 1-State Highway Agency



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Inspection Direction : W to E



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IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	05933
(5) Inventory Route	16
(2) Highway Agency District	09
(3) County Code	87-Madison County, Arkansas
(4) Place Code	0
(6) Features Intersected	MILL CREEK
(7) Facility Carried	SH 16 Madison Co.
(9) Location	10.52 SO OF WASHINGTON CO
(11) Mile Point	10.52 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000016040
(16) Latitude	35.8233142547724
(17) Longitude	-93.8322992040316
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	11
Material	1-Concrete
Type	1-Slab
(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	1983
(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	2014
(109) Truck ADT	1 %
(19) Bypass, Detour Length	18 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	33 ft
(49) Structure Length	165 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	32.2 ft
(52) Deck Width Out to Out	34.8 ft
(32) Approach Roadway Width (W/Shoulders)	32.2 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	33.1 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	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	6
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1-Inspected feature meets currently a
(36B) Transitions	0-Inspected feature does not meet cur
(36C) Approach Guardrail	0-Inspected feature does not meet cur
(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	1139
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			01/2022
(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
38	RC Slab	SF	5742	4674	1063	5	0
1080	Delamination/Spall/Patched Area	SF	15	0	11	4	0
1090	Exposed Rebar	SF	1	0	0	1	0
1130	Cracking (RC and Other)	SF	1052	0	1052	0	0
(38)							
01/27/2022 WNR & DBM:							
-The driving surface has numerous full length and short duration longitudinal cracks in all spans with areas of map cracking near the expansion joints.							
-The driving surface of the slab has areas of superficial map cracking in the gutters over the intermediate bents.							
-The vertical faces of slab has hairline vertical flexure cracks.							
Undersurface:							
-Span #3 has an area of spalling with exposed reinforcing steel to the left exterior face of slab over bent #2.							
-The undersurface of the slab has longitudinal cracking with delaminated areas along the edges.							
-Right side of spans #3 and #4 has short duration diagonal cracks with efflorescence in the undersurface adjacent bent #3.							
225	Steel Pile	EA	24	24	0	0	0
515	Steel Protective Coating	SF	1008	947	61	0	0
3440	Effectiveness (Steel Protective Coatings)	SF	61	0	61	0	0
(225)							
01/27/2022 WNR & DBM:							
-Concrete protective coating for pile #6 of bent #3 has vertical cracking in upper portion on ahead face and exterior face.							
-The concrete protective coating has light abrasion at the bases of bents #2 and #3.							
-Channel has light drift accumulation at bent #3.							
234	Reinforced Concrete Pier Cap	LF	212	206	2	4	0
1080	Delamination/Spall/Patched Area	LF	6	0	2	4	0
(234)							
01/27/2022 WNR & DBM:							
-The ahead face of Bent #2 cap has a large delaminated area approximately 3' long in bay #4.							
-The ahead face of Bent #3 cap has a large delaminated area approximately 3' long in bay #2.							
- Abutments:							
-Embankment has minor earth settlement that has exposed one steel pile on left side at abutment #1.							
301	Pourable Joint Seal	LF	128	32	12	84	0
2310	Leakage	LF	96	0	12	84	0
(301)							
01/27/2022 WNR & DBM:							
-The pourable joint seals have adhesion failure in the majority of the length of joints allowing water to leak onto the substructure.							
331	Reinforced Concrete Bridge Railing	LF	330	293	37	0	0
1130	Cracking (RC and Other)	LF	37	0	37	0	0
(331)							

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
01/27/2022 WNR & DBM: -The end of the right bridge railing at abutment 2 has minor spall. -Bridge railing has diagonal cracks that propagate from joints in the railing.							



Inventory looking East.



Downstream view



Upstream view



Upstream view



Downstream view



Channel has light drift at bent 3



Bent 2 cap ahead side delaminated area in bay 4.



General view of abutment 2



General view of abutments



Span 3 over bent 2 spalling to left side with exposed reinforcing steel.



Abutment 1, Left side-piling exposed.



-Bent3 cap ahead side delaminated area in bay 2



General view of span 1



Inventory #1 looking East.



General view of undersurface of span 1



General view of abutment 1.



Concrete coating for pile 6 bent 3 has vertical cracking in top.



Channel view looking South



Slab spalled areas along expansion joints.



Span 2 spalling approximately 5' from bent 2.



Abrasion bent 3



Cracking



Abrasion at bent 2



General view of map cracking



General view of deck cracking



Longitudinal cracking in undersurface span 1 right side.



General view of undersurface of span 2



General view of span 3



General view of span 2



General view of bent 1.



Spall at abutment 2 right side of bridge railing



Delaminated area on undersurface of span 4 right side.



Span 3 Left side delaminated area in undersurface



Deck joint seal at bent 1 has



Elevation looking North



General view of the deck.



Typical longitudinal deck cracking.



Bent #2 cap ahead side delaminated area around Keyways.

Maintenance Needs

Date Reported: 01/09/2012

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Expansion joints - The pourable joint sealant in all locations is deteriorated with adhesion failure allowing water to leak onto the substructure.

Remarks



Expansion joint sealant has adhesion failure.

Date Reported: 01/12/2016

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Channel -

The channel has light drift accumulation at bent #2 and #3

Remarks



Channel has light drift at bent #3.



Drift has accumulated at bent #2 causing localized scour.



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Date Reported: 01/12/2016

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Deck - The driving surface has sealable longitudinal cracking with areas of mapcracking in all spans.

Remarks



Deck - sealable longitudinal cracks located in the driving surface.



Typical of deck cracking in all spans.

Date Reported: 01/11/2018

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Substructure - Bent caps #2 and #3 have large delaminated area on the ahead face.

Remarks



Bent 2 cap ahead side delaminated area in bay 4.



-Bent3 cap ahead side delaminated area in bay 2



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Date Reported: 01/11/2018

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

Deficiency Description

Substructure - The embankment on the left side of abutment #1 has minor earth settlement that has exposed one steel pile.

Remarks



Abutment 1, Left side-piling exposed.

Date Reported: 01/13/2018

Priority: D- Routine

Type of Work: None

Status: Monitor

Inspection Direction W to E

Component:

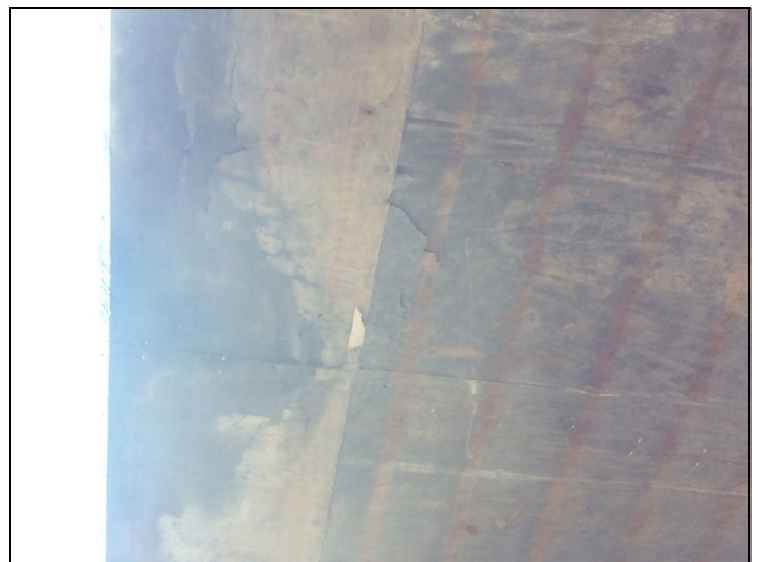
Deficiency Description

Superstructure - The undersurface of the slab has longitudinal cracking with delaminated areas along the edges. Span #3 has an area of spalling with exposed reinforcing steel to the left exterior face of slab over bent #2.

Remarks



Span #3 has an area of spalling with exposed reinforcing steel to the left exterior face of slab over bent #2.



Delaminated area along exterior edge of undersurface.



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Inspection Comments

01/27/2022 WNR & DBM:

Routine inspection conducted this date. See element notes for documentation.