

## Bridge 06788 Inspection Report



Latitude:36.13746, Longitude:-93.58196

Route:412 Section:04 Log:10.28

Arnold Road ID:44x412x4xA, Arnold Log mile:10.249

District 09, 87 - Madison County

Owner: 1 - State Highway Agency

Inspection Direction: 4 - W to E

### Bridge Posting Information

41 - Structure Open/Posted/Closed: A - Open, no restriction

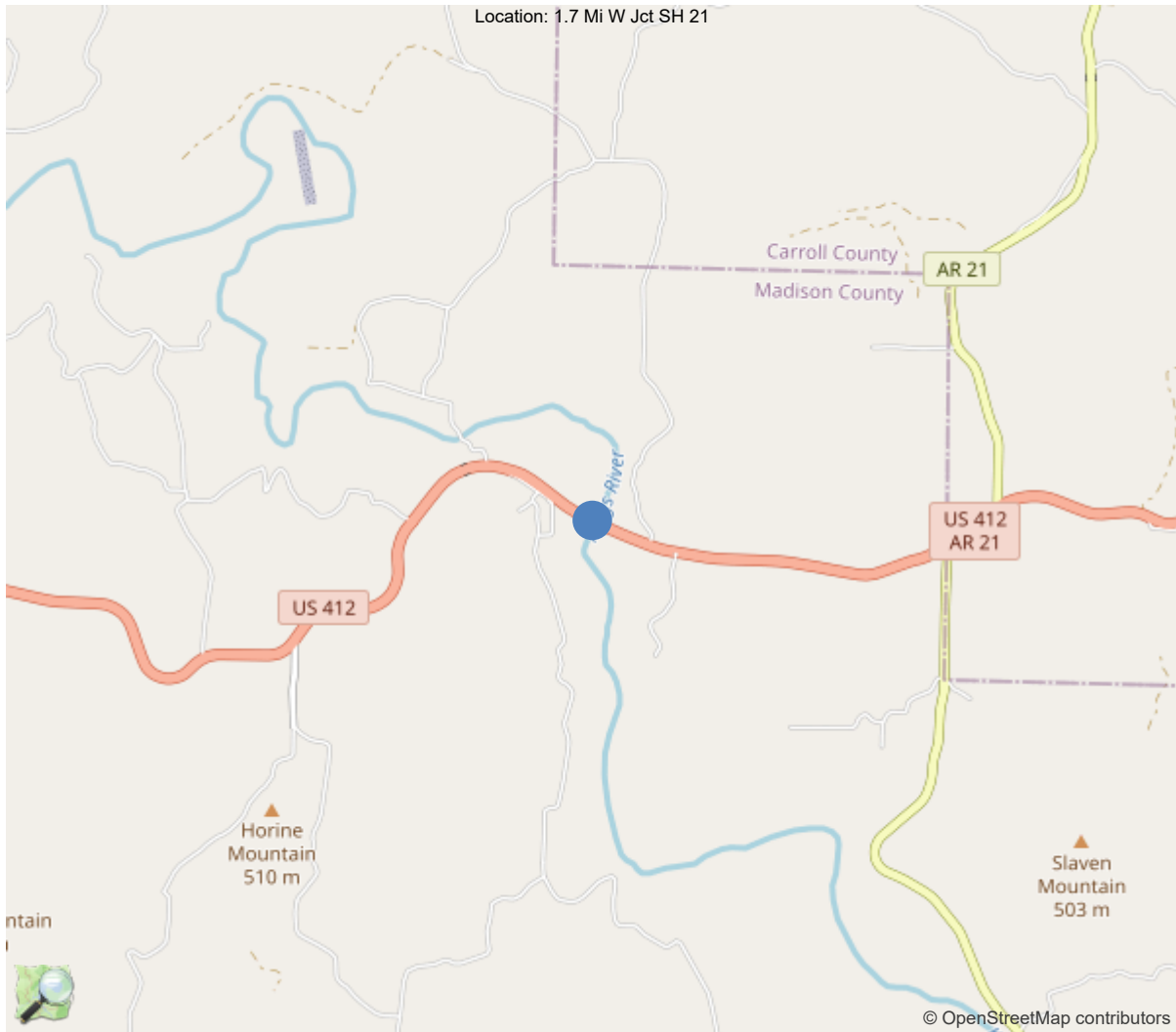
70 - Bridge Posting: 5 - Equal to or above legal loads

Legal Load	Calculated Capacity	Beginning of Bridge Sign Current Value	End of Bridge Sign Current Value
Code 4 (22 Tons)	40		
Code 9 (31 Tons)	50		
Code 5 (40 Tons)	60		

If calculated capacity is less than the Legal Load Listed, the Bridge Legally Requires Posting Signs to be installed by the Bridge Owner.



30"x36" AR



36.13746, -93.58196



## National Bridge Inventory Data Sheet

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	06788
(5) Inventory Route	1
(2) Highway Agency District	09 - District 09
(3) County Code	87 - Madison County
(4) Place Code	0
(6) Features Intersected	KINGS RIVER
(7) Facility Carried	US 412 Madison Co.
(9) Location	1.7 Mi W Jct SH 21
(11) Mile Point	10.28 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000412040
(16) Latitude	36.13746
(17) Longitude	-93.58196
(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	2001
(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	6400
(30) Year of ADT	2018
(109) Truck ADT	14 %
(19) Bypass, Detour Length	25 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	92 ft
(49) Structure Length	422 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	40 ft
(52) Deck Width Out to Out	42.5 ft
(32) Approach Roadway Width (W/Shoulders)	38.1 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	41 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	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	1 - The inventory route is par
(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	8
(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	
(68) Deck Geometry	5
(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	ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$
(96) Total Project Cost	\$
(97) Year of Improvement Cost Estimate	
(114) Future ADT	6356
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			01/31/2024
(91) Frequency			24
(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.			



Team Lead: Nathan Rowland, Inspection Date: 01/31/2024

### Specifications for National Bridge Inventory Sheets

IDENTIFICATION	
B.ID.01 Bridge Number	06788
B.ID.02 Bridge Name	
B.ID.03 Previous Bridge No.	02903
B.W.01 Year Built	

LOCATION	
B.L.01 State Code	5 - Arkansas
B.L.02 County Code	87 - Madison County
B.L.03 Place Code	00000 - N/A
B.L.04 Highway Agency District	09 - District 09
B.L.05 Latitude	36.13746
B.L.06 Longitude	-93.58196
B.L.07 Border Bridge Number	
B.L.08 Border Bridge State or Country Code	
B.L.09 Border Bridge Insp. Resp.	
B.L.10 Border Bridge Designated Lead State	
B.L.11 Bridge Location	
B.L.12 Metropolitan Planning Organization	

CLASSIFICATION	
B.CL.01 Owner	
B.CL.02 Maint. Responsibility	
B.CL.03 Federal or Tribal Land Access	
B.CL.04 Historic Significance	
B.CL.05 Toll	
B.CL.06 Emergency Evacuation Designation	

ROADSIDE HARDWARE	
B.RH.01A Bridge Railing Type	
B.RH.01B Bridge Railing Year (YY)	
B.RH.01C Bridge Railing Test Level	
B.RH.02A Transition Type	
B.RH.02B Transition Year (YY)	
B.RH.02C Transition Test Level	

BRIDGE GEOMETRY	
B.G.01 NBIS Bridge Length	129
B.G.02 Total Bridge Length	
B.G.03 Max Span Length	
B.G.04 Min Span Length	92
B.G.05 Bridge Width Out-to-Out	
B.G.06 Bridge Width Curb-to-Curb	
B.G.07 Left Curb or Sidewalk Width	
B.G.08 Right Curb or Sidewalk Width	
B.G.09 Approach Roadway Width	

B.G.10 Bridge Median	
B.G.11 Skew	
B.G.12 Curved Bridge	N - Not curved
B.G.13 Max Bridge Height	34
B.G.14 Sidehill Bridge	N - Not a sidehill bridge
B.G.15 Irregular Deck Area	
B.G.16 Calculated Deck Area	

LOADS AND LOAD RATING	
B.LR.01 Design Load	
B.LR.02 Design Method	
B.LR.03 Load Rating Date	
B.LR.04 Load Rating Method	
B.LR.05 Inventory Load Rating Factor	
B.LR.06 Operating Load Rating Factor	
B.LR.07 Controlling Legal Load Rating Factor	
B.LR.08 Routine Permit Loads	

INSPECTION REQUIREMENTS	
B.IR.01 NSTM Inspection Required	
B.IR.02 Fatigue Details	N - No E/E' details
B.IR.03 UW Inspection Required	
B.IR.04 Complex Feature	N - Bridge does not have complex fe

COMPONENT CONDITION RATINGS	
B.C.01 Deck Condition Rating	
B.C.02 Superstructure Condition	
B.C.03 Substructure Condition	
B.C.04 Culvert Condition	
B.C.05 Bridge Railing Condition	8 - VERY GOOD - Some inherent
B.C.06 Bridge Railing Transitions Condition	8 - VERY GOOD - Some inherent
B.C.07 Bridge Bearings Cond.	8 - VERY GOOD - Some inherent
B.C.08 Bridge Joints Condition	7 - GOOD - Some minor defects.
B.C.09 Channel Condition Rating	
B.C.10 Channel Protection Condition	7 - GOOD - Some minor defects.
B.C.11 Scour Condition Rating	8 - Insignificant scour.
B.C.12 Bridge Condition Classification	
B.C.13 Lowest Condition Rating	
B.C.14 NSTM Insp. Condition	
B.C.15 UW Inspection Condition	

APPRAISAL	
B.AP.01 Approach Roadway Alignment	
B.AP.02 Overtopping Likelihood	1 - Remote - once every 100 years o
B.AP.03 Scour Vulnerability	
B.AP.04 Scour Plan of Action	
B.AP.05 Seismic Vulnerability	

Team Lead: Nathan Rowland, Inspection Date: 01/31/2024

SPAN SETS			
<b>M1</b>			
B.SP.02 # of Spans	5	B.SP.08 Deck Interaction	CS - Composite - shored constr
B.SP.03 # of Beam Lines	6	B.SP.09 Deck Material and Type	C01 - Reinforced concrete - ca
B.SP.04 Span Material	S01 - Steel - rolled	B.SP.10 Wearing Surface	0 - None
B.SP.05 Span Continuity	2 - Continuous	B.SP.11 Deck Protective System	0 - None
B.SP.06 Span Type	G02 - Girder/beam - I-shaped s	B.SP.12 Deck Reinforcing Protective System	C01 - Coating - epoxy coated
B.SP.07 Span Protective System	P01 - Patina - uncoated weathe	B.SP.13 Deck Stay-In-Place Forms	M01 - Metal

SUBSTRUCTURE SETS			
<b>A1</b>			
B.SB.02 No. of Substructure Units	2	B.SB.05 Substructure Protective System	0 - None
B.SB.03 Substructure Material	C01 - Reinforced concrete - ca	B.SB.06 Foundation Type	P01 - Pile - steel H-shape
B.SB.04 Substructure Type	B03 - Bent - pile	B.SB.07 Foundation Protective System	U - Unknown
<b>P1</b>			
B.SB.02 No. of Substructure Units	4	B.SB.05 Substructure Protective System	0 - None
B.SB.03 Substructure Material	C01 - Reinforced concrete - ca	B.SB.06 Foundation Type	F02 - Footing - on rock
B.SB.04 Substructure Type	P01 - Pier - wall	B.SB.07 Foundation Protective System	U - Unknown

HIGHWAY ROUTES					
Highway Parent	B.RT.01 Route Designation	B.RT.02 Route Number	B.RT.03 Route Direction	B.RT.04 Route Type	B.RT.05 Service Type

WATERWAY FEATURES			
<b>W1</b>			
B.F.02 Feature Location	B - Below bridge	B.N.03 Movable Bridge Max Navigation Vertical Clearance	
B.F.03 Feature Name	Kings River	B.N.04 Navigation Channel Width	
B.N.01 Navigable Waterway	N - Not navigable waters	B.N.05 Navigation Channel Min Horizontal Clearance	
B.N.02 Navigation Min Vertical Clearance		B.N.06 Substructure Navigation Protection	

POSTING STATUS DATA	
B.PS.01 Load Posting Status	B.PS.02 Posting Status Change Date

LOAD EVALUATION AND POSTING			
B.EP.01 Legal Load Configuration	B.EP.02 Legal Load Rating Factor	B.EP.03 Posting Type	B.EP.04 Posting Value



**Asset #06788**(Routine, Underwater type 2)

**US 412 Madison Co. over KINGS RIVER**

**Location: 1.7 Mi W Jct SH 21**

**Team Lead:** Nathan Rowland **Inspection Date:** 01/31/2024

## Inspection Notes

### General Observation

Logged West to East.

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### A-54 - Sealable Deck Cracks (Y)

Transverse and longitudinal cracking in multiple locations ranging from hairline to medium-sized cracking.

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### A-64 - Vegetation Removal Requested (Y)

vegetation under structure needs removal for inspection.

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US 412 Madison Co. over KINGS RIVER

Location: 1.7 Mi W Jct SH 21

Team Lead: Nathan Rowland Inspection Date: 01/31/2024

### National Bridge Element Quantities and Notes

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	17850	13276	4574	0	0
1120	Efflorescence/Rust Staining	SF	442	0	442	0	0
1130	Cracking (RC and Other)	SF	4132	0	4132	0	0
(12) -The driving surface of all spans have moderate width transverse and full length sealable longitudinal cracks. -Undersurface of the overhangs have transverse cracking with efflorescence on approximately 10' spacing.							
107	Steel Open Girder/Beam	LF	2519	2519	0	0	0
515	Steel Protective Coating	SF	28145	28145	0	0	0
(107) No noteworthy deficiencies at this inspection. The weathering steel protective coating appears to be functioning as intended.							
210	Reinforced Concrete Pier Wall	LF	53	53	0	0	0
(210) No noteworthy deficiencies at this inspection.							
215	Reinforced Concrete Abutment	LF	122	102	20	0	0
1080	Delamination/Spall/Patched Area	LF	14	0	14	0	0
1130	Cracking (RC and Other)	LF	6	0	6	0	0
(215) -Abutment #1 has damage to the top of backwall that appears to be from mechanical grinding. -The top of abutment backwalls have a few transverse cracks in random locations visible from the driving surface.							
234	Reinforced Concrete Pier Cap	LF	164	154	10	0	0
1130	Cracking (RC and Other)	LF	10	0	10	0	0
(234) -The bent caps have short duration vertical cracks at the step downs.							
305	Assembly Joint without Seal	LF	78	0	78	0	0
2350	Debris Impaction	LF	78	0	78	0	0
(305) -The sliding plate expansion joints have moderate debris impaction the full length of joints that appear to be from recent snow and ice removal operations.							
310	Elastomeric Bearing	EA	36	36	0	0	0
515	Steel Protective Coating	SF	108	108	0	0	0
(310) No noteworthy deficiencies at this inspection.							
331	Reinforced Concrete Bridge Railing	LF	844	715	129	0	0
1080	Delamination/Spall/Patched Area	LF	2	0	2	0	0

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1130 (331)	Cracking (RC and Other)	LF	127	0	127	0	0
Bridge railing has vertical cracks at random spacing with areas of horizontal cracking with light efflorescence. The bridge railing has minor shallow spalls in two areas.							

## Inspection Photos and Notes



General view of abutment 2.



Deck cracking



Abutment #1 has damage to the top of backwalls that appear to be from mechanical grinding.



Transverse cracking in undersurface of deck





03/25/2020

General view undersurface span 3



03/25/2020

General view of bent one



03/25/2020

General view of splice plates in span 2.



03/25/2020

General cracking



Span 5 has corrosion in span 5 bays 2 and 4.



General view of bent 4.



Abutment #2-General view of bearing devices.



Channel view looking South

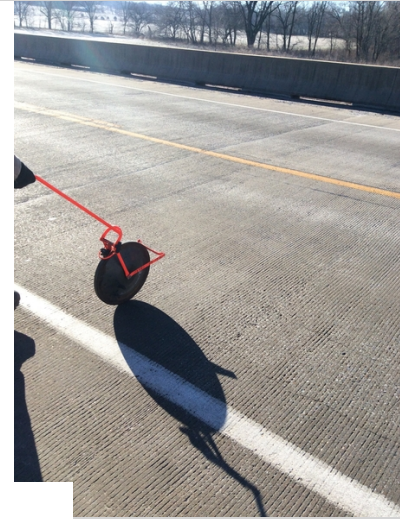


03/25/2020



General view of cracking

03/25/2020



Wheel rolling cracks

03/25/2020



03/25/2020



Transverse and longitudinal cracks





03/25/2020

Bent 2 footings has cover



03/25/2020

Inventory 1 looking East.



03/25/2020

General view of abutment 1



03/25/2020

General view of splice plates in span 5





Span #1, Left lane-Transverse and longitudinal cracking.



Abutment #2-Debris impact in expansion joint.



General view of span 2 undersurface



Longitudinal cracking





General deck cracking



General view of undersurface span one



General view of driving surface.



Bent one footing has cover





Elevation looking south



Abutment #1



View of span #2 over kings river



Abutment #2





Upstream view



Downstream View



General view of deck



View joint at abutment #1



**Asset #06788**(Routine, Underwater type 2)

**US 412 Madison Co. over KINGS RIVER**

**Location: 1.7 Mi W Jct SH 21**

**Team Lead: Nathan Rowland Inspection Date: 01/31/2024**



Inventory looking east



### Maintenance Needs

Date Reported: 01/23/2012

Priority: D- Routine

Type of Work: Deck Repair

Status: Monitor

Component: Deck

### Deficiency Description

Deck - The driving surface of the deck has numerous moderate width longitudinal and transverse cracks in all spans. The longitudinal cracks are full length of structure and appear to be over the girders.

### Remarks



Span #1, Left lane-Transverse and longitudinal cracking.



Longitudinal and transverse deck cracking.



Moderate width deck cracking.



Deck surface typical transverse cracking.



03/25/2020

Deck surface Typical full-length longitudinal cracking



### Maintenance Needs

**Date Reported:** 01/17/2018

**Priority:** D- Routine

**Type of Work:** Miscellaneous

**Status:** Monitor

**Component:** Deck

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### Deficiency Description

Expansion joint assemblies - The sliding plate expansion joint assemblies at both bridge ends have heavy debris accumulation that appears to be from recent ice and snow removal activities.

### Remarks

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03/25/2020

Abutment #1 joint material has heavy debris impactation.



03/25/2020

Debris accumulation.



Asset #06788(Routine, Underwater type 2)

US 412 Madison Co. over KINGS RIVER

Location: 1.7 Mi W Jct SH 21

Team Lead: Nathan Rowland Inspection Date: 01/31/2024

## Routine Maintenance

### Check Box Maintenance Items

Type of Maintenance	Is Recommended?
A-54 - Sealable Deck Cracks	Yes
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	
A-63 - Missing/Incorrect Log Mile Signage	
A-64 - Vegetation Removal Requested	Yes
A-65 - Clogged deck drains?	
A-66 - Approach minor pothole/leveling needed	

#### A-54 - Sealable Deck Cracks (Yes)

Transverse and longitudinal cracking in multiple locations ranging from hairline to medium-sized cracking.

#### A-55 - Deck Washing Needed

#### A-56 - Joint Cleaning/Flushing Needed



**Asset #06788**(Routine, Underwater type 2)

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**A-57 - Girder End and Bearing Painting Needed**

**A-58 - Cap Cleaning/Flushing Needed**

**A-59 - Joint Repair Needed**

**A-60 - Full Girder Painting Needed**

**A-61 - Polymer Overlay Advised**

**A-62 - Hydro and LMC Advised**

**A-63 - Missing/Incorrect Log Mile Signage**

**A-64 - Vegetation Removal Requested (Yes)**  
vegetation under structure needs removal for inspection.

**A-65 - Clogged deck drains?**



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**US 412 Madison Co. over KINGS RIVER**

**Location: 1.7 Mi W Jct SH 21**

**Team Lead: Nathan Rowland Inspection Date: 01/31/2024**

**A-66 - Approach minor pothole/leveling needed**





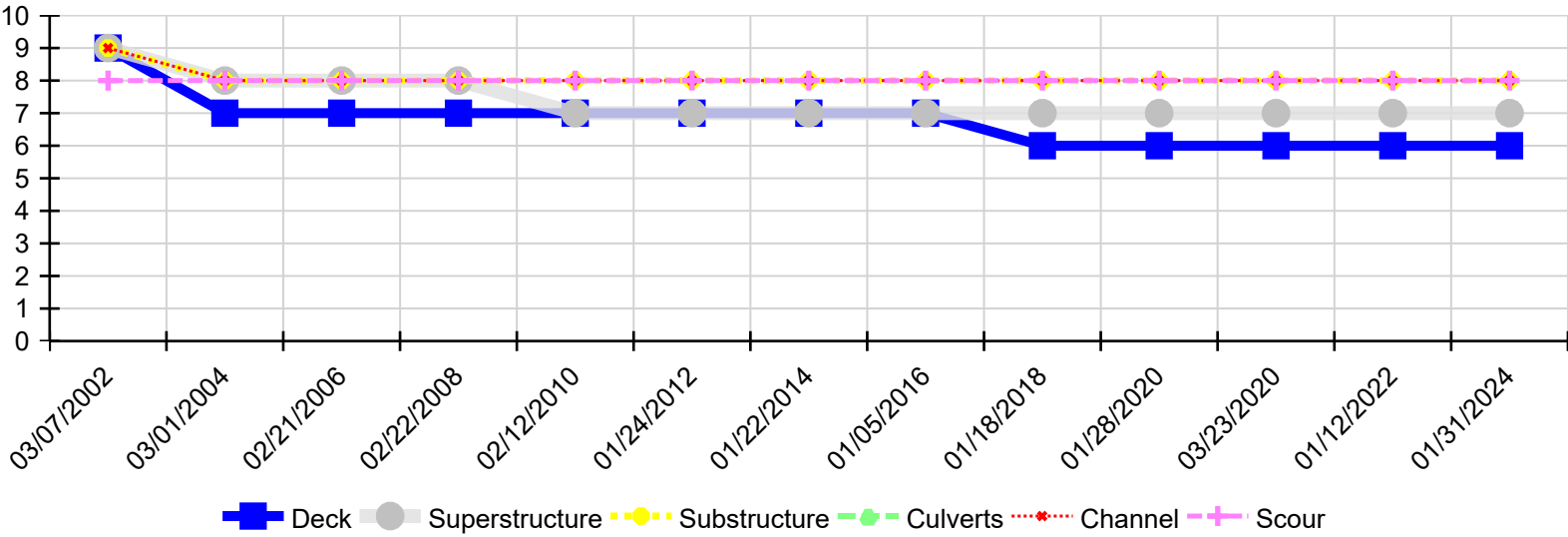
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US 412 Madison Co. over KINGS RIVER

Location: 1.7 Mi W Jct SH 21

Team Lead: Nathan Rowland Inspection Date: 01/31/2024

Condition History



Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
01/31/2024	6	7	8	N	8	8
01/12/2022	6	7	8	N	8	8
03/23/2020	6	7	8	N	8	8
01/28/2020	6	7	8	N	8	8
01/18/2018	6	7	8	N	8	8
01/05/2016	7	7	8	N	8	8
01/22/2014	7	7	8	N	8	8
01/24/2012	7	7	8	N	8	8
02/12/2010	7	7	8	N	8	8
02/22/2008	7	8	8	N	8	8
02/21/2006	7	8	8	N	8	8
03/01/2004	7	8	8	N	8	8
03/07/2002	9	9	9	N	9	8