

## Bridge 05653 Inspection Report



Latitude:35.36446, Longitude:-93.53560

Route:109 Section:03 Log:5.729

Arnold Road ID:42x109x3xA, Arnold Log mile:5.711

District 04, 83 - Logan County

Owner: 1 - State Highway Agency

Inspection Direction: 2 - S to N



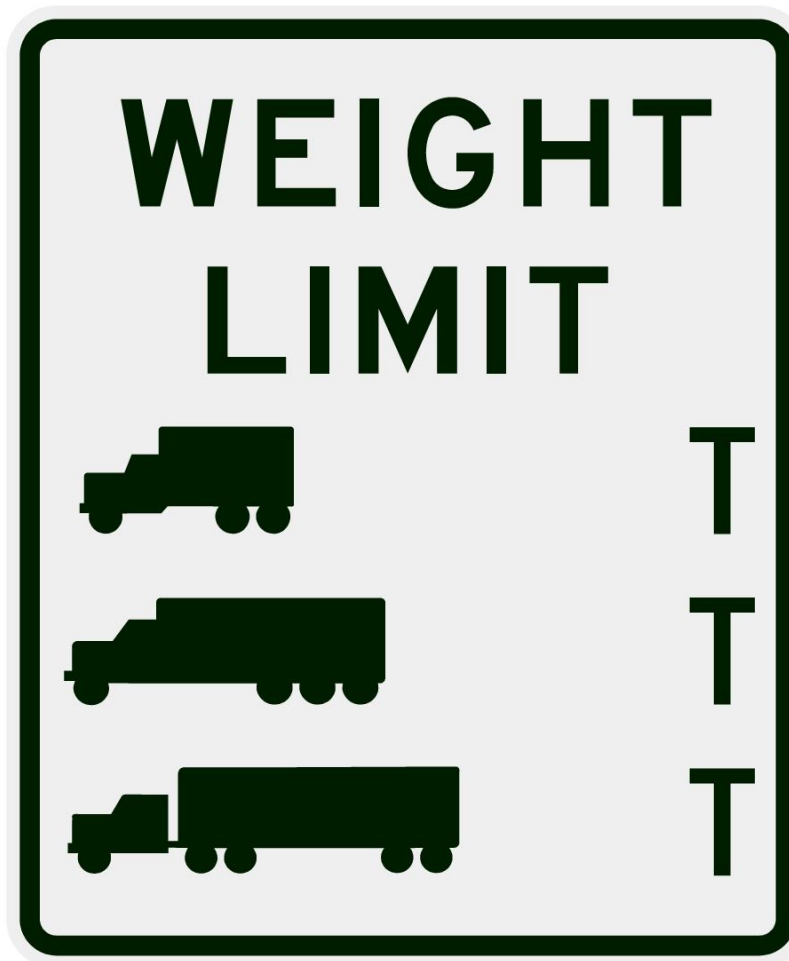
### Bridge Posting Information

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

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

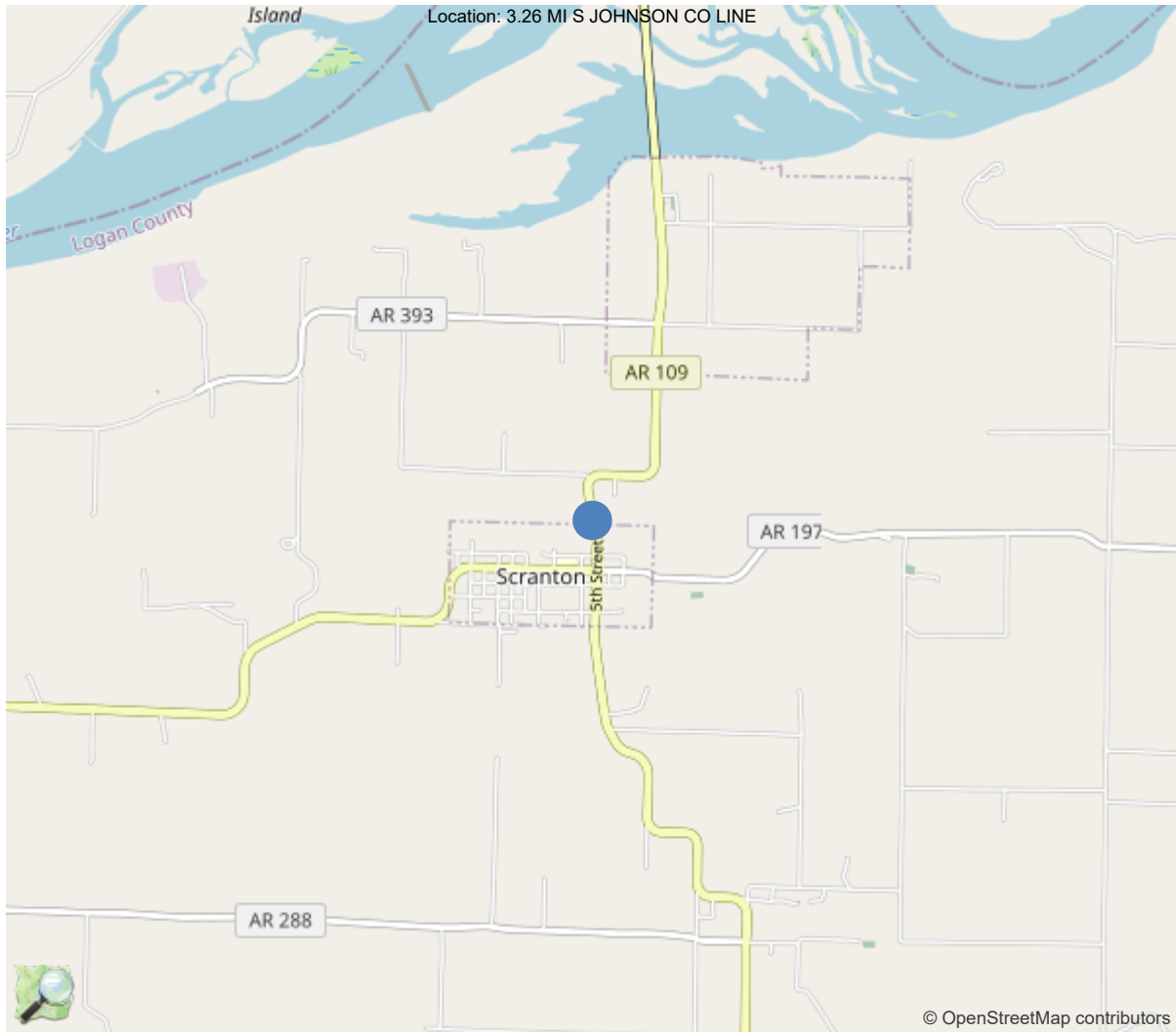
Legal Load	Calculated Capacity	Beginning of Bridge Sign Current Value	End of Bridge Sign Current Value
Code 4 (22 Tons)	40		
Code 9 (31 Tons)	50		
Code 5 (40 Tons)	60		

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





35.36446, -93.53560



## National Bridge Inventory Data Sheet

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	05653
(5) Inventory Route	1
(2) Highway Agency District	04 - District 04
(3) County Code	83 - Logan County
(4) Place Code	62960
(6) Features Intersected	Russ Creek-Logan Co.
(7) Facility Carried	State Highway 109
(9) Location	3.26 MI S JOHNSON CO LINE
(11) Mile Point	5.729 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000109030
(16) Latitude	35.36446
(17) Longitude	-93.5356
(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	1
(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	0 - None
AGE AND SERVICE	
(27) Year Built	1976
(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	3300
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	35 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	75 ft
(49) Structure Length	77 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	29.9 ft
(52) Deck Width Out to Out	32.8 ft
(32) Approach Roadway Width (W/Shoulders)	36.1 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	31.2 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	0
(26) Functional Class	6 - Rural Minor 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	0 - The inventory route is not
(20) Toll	3 - On free road. The structure
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	7
(59) Superstructure	7
(60) Substructure	7
(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	4
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	7
(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	5 - 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	4832
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			08/09/2022
(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: Bob McEntyre, Inspection Date: 08/09/2022

## Specifications for National Bridge Inventory Sheets

IDENTIFICATION	
B.ID.01 Bridge Number	05653
B.ID.02 Bridge Name	
B.ID.03 Previous Bridge No.	
B.W.01 Year Built	

LOCATION	
B.L.01 State Code	5 - Arkansas
B.L.02 County Code	83 - Logan County
B.L.03 Place Code	62960 - Scranton
B.L.04 Highway Agency District	04 - District 04
B.L.05 Latitude	35.36446
B.L.06 Longitude	-93.5356
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	
B.G.02 Total Bridge Length	
B.G.03 Max Span Length	
B.G.04 Min Span Length	
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	
B.G.13 Max Bridge Height	
B.G.14 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	
B.IR.03 UW Inspection Required	
B.IR.04 Complex Feature	

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	
B.C.06 Bridge Railing Transitions Condition	
B.C.07 Bridge Bearings Cond.	
B.C.08 Bridge Joints Condition	
B.C.09 Channel Condition Rating	
B.C.10 Channel Protection Condition	
B.C.11 Scour Condition Rating	
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	
B.AP.03 Scour Vulnerability	
B.AP.04 Scour Plan of Action	
B.AP.05 Seismic Vulnerability	





SNBI #05653(Routine, Underwater type 2)

Team Lead: Bob McEntyre, Inspection Date: 08/09/2022

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

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 #05653**(Routine, Underwater type 2)

**State Highway 109 over Russ Creek-Logan Co.**

**Location: 3.26 MI S JOHNSON CO LINE**

**Team Lead: Bob McEntyre Inspection Date: 08/09/2022**

## Inspection Notes

### General Observation

08/09/2022 - RSM & DJT: Routine and Underwater Type II inspections conducted this date. See element notes for documentation. Channel sounded / profiled this inspection. See MicroStation sketch linked in "Files" tab for sounding measurements.

07/15/2020 - JCJ & TJL - Routine Inspection conducted this date.

07/02/2018 - EJW & JPW - Underwater Type II Inspection conducted on this date. Visual observation indicates no apparent scour problems at this inspection.

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**61 - Channel/Channel Protection** (8 - Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.)

08/09/2022 - RSM - Underwater Type II Inspection: Visual observation in low water conditions revealed that both abutments have no apparent scour problems at this inspection. Channel sounded/profiled this inspection. See Microstation sketch linked in "Files" tab for sounding measurements.

ARDOT Drawing 20218 states in General notes that abutments are founded on HP10x42 piling driven to a minimum bearing capacity of 55 tons per pile and into material designated as rock (Hard Gray Shale) on the boring logs.

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### A-15 - Late Reason (N/A)

08/09/2022 - RSM - Inspection 1 month late due to heavy workload.

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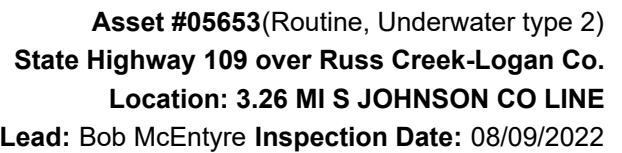




### National Bridge Element Quantities and Notes

ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	2450	2381	69	0	0
1120	Efflorescence/Rust Staining	SF	24	0	24	0	0
1130	Cracking (RC and Other)	SF	45	0	45	0	0
510	Wearing Surfaces	SF	2250	2244	6	0	0
7000	Damage	SF	6	0	6	0	0
(12) Driving Surface: -The driving surface has an asphalt chip seal wearing surface. -Chip and seal wearing surface has areas of scrape marks and gouges in the left lane.  Deck Undersurface: -There are a few transverse cracks in the undersurface of the deck. -Isolated areas of hairline map cracking. -Undersurface of the deck overhangs have transverse cracks with light efflorescence. (510-12) -Chip and seal wearing surface has areas of scrape marks and gouges in the left lane.							
107	Steel Open Girder/Beam	LF	300	295	4	1	0
1000	Corrosion	LF	5	0	4	1	0
515	Steel Protective Coating	SF	2896	0	2896	0	0
3410	Chalking (Steel Protective Coatings)	SF	2896	0	2896	0	0
(107) -The paint system is beginning to chalk. -Light corrosion on the end of beam # 4 at bent # 2. -The exterior web of beam # 4 has two areas with freckled rust that appear to be from shotgun pellet impacts. -No visible cracks apparent during this inspection.							
215	Reinforced Concrete Abutment	LF	80	76	4	0	0
1130	Cracking (RC and Other)	LF	4	0	4	0	0
(215) 08/09/2022 - RSM - Underwater Type II Inspection: Visual observation in low water conditions revealed that both abutments have no apparent scour problems at this inspection. Channel sounded/profiled this inspection. See Microstation sketch linked in "Files" tab for sounding measurements. ARDOT Drawing 20218 states in General notes that abutments are founded on HP10x42 piling driven to a minimum bearing capacity of 55 tons per pile and into material designated as rock (Hard Gray Shale) on the boring logs.  -The abutments and backwalls have staining from apparent water leakage through the deck joint seals and minor vertical cracks in the back wall.							
302	Compression Joint Seal	LF	66	0	0	51	15
2310	Leakage	LF	51	0	0	51	0
2330	Seal Damage	LF	15	0	0	0	15
(302) -The compression joint seals have rips and tears and appear to leak water. -The joint assembly anchorage appears to be sound during this inspection.							
311	Movable Bearing	EA	4	0	1	3	0





ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1000	Corrosion	EA	4	0	1	3	0
515	Steel Protective Coating	SF	4	0	0	1	3
3440	Effectiveness (Steel Protective Coatings)	SF	4	0	0	1	3
(311) -Abutment # 2 bearings have red rust leaching from the tops of the rockers due to apparent fretting. -Bearings have a failing paint system with pack rust forming between the rockers and masonry plates. Bearings # 3 and 4 are the most extreme with heavy corrosion pack rust between rockers and masonry plates.							
313	Fixed Bearing	EA	4	0	0	4	0
1000	Corrosion	EA	4	0	0	4	0
515	Steel Protective Coating	SF	4	0	0	2	2
3440	Effectiveness (Steel Protective Coatings)	SF	4	0	0	2	2
(313) -The paint system is beginning to fail on the masonry plates. -Bearing # 4 has a partial rust coating during this inspection.							
331	Reinforced Concrete Bridge Railing	LF	150	132	18	0	0
1090	Exposed Rebar	LF	5	0	5	0	0
1130	Cracking (RC and Other)	LF	13	0	13	0	0
(331) -Baseball sized spalls with exposed reinforcing steel in the base of the parapet walls. Exposed reinforcing steel has initial section loss during this inspection.							



## Inspection Photos and Notes



Elevation looking West from right side



Inventory 1 looking North



Abutment 2, beam 4-Corrosion at expansion dam



Abutment 2, bearing 4-Corrosion with pack rust between rocker and masonry plate.





Abutment 2, bearing 3-Corrosion with pack rust between rocker and masonry plate.



Abutment 2, bearing 1-Corrosion



Abutment 2 bearing area



Abutment 2





Abutment 1, bearing 4-Corrosion



Abutment 1 bearing area



Undersurface



Abutment 1





Beam 4 exterior side-Apparent impact from shotgun



Abutment 2 expansion joint



Chip and seal wearing surface has areas of scrape marks and gouges in the left lane.



Right parapet-Shallow spall with exposed reinforcing steel





Driving surface



Abutment 1 expansion joint-Cracking with rips



Abutment 1 expansion joint



### Maintenance Needs

**Date Reported:** 06/20/2014

**Priority:** D- Routine

**Type of Work:** Repair (General)

**Status:** Monitor

**Component:** Element

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### Deficiency Description

Bearings -

The bearings have a failing paint system with active corrosion. The bearings at abutment # 2 have heavy corrosion with pack rust between the rockers and masonry plates.

### Remarks

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Abutment # 2, bearing # 4-Corrosion with pack rust between rocker and masonry plate.



Abutment # 2, bearing # 3-Corrosion with pack rust between rocker and masonry plate.



Corrosion on the bearings.



### Maintenance Needs

**Date Reported:** 06/20/2014

**Priority:** D- Routine

**Type of Work:** Repair (General)

**Status:** Monitor

**Component:** Element

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### Deficiency Description

Parapets -

The base of the concrete parapets have areas of shallow spalling with exposed reinforcing steel.

### Remarks

07/15/2020 - JCJ & TJL - Changed priority code to a D - Routine Maintenance.

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Right parapet-Shallow spall with exposed reinforcing steel.



The base of the concrete parapets have areas of shallow spalling with exposed reinforcing steel.



The base of the concrete parapets have areas of shallow spalling with exposed reinforcing steel.



### Maintenance Needs

Date Reported: 07/16/2020

Priority: D- Routine

Type of Work: Replace (General)

Status: Monitor

Component: Element

### Deficiency Description

Expansion Joints -

The expansion joint seals are deteriorated with rips / tears allowing water to leak onto the superstructure and substructure.

### Remarks



The expansion joint seals are deteriorated with rips / tears allowing water to leak onto the superstructure and substructure. Abutment # 1 pictured.



The expansion joint seals are deteriorated with rips / tears allowing water to leak onto the superstructure and substructure.



The expansion joint seals are deteriorated with rips / tears allowing water to leak onto the superstructure and substructure.





**Asset #05653**(Routine, Underwater type 2)  
**State Highway 109 over Russ Creek-Logan Co.**  
**Location: 3.26 MI S JOHNSON CO LINE**  
**Team Lead: Bob McEntyre Inspection Date: 08/09/2022**

## **Routine Maintenance**

### **Check Box Maintenance Items**

<b>Type of Maintenance</b>	<b>Is Recommended?</b>
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	
A-63 - Missing/Incorrect Log Mile Signage	
A-64 - Vegetation Removal Requested	
A-65 - Clogged deck drains?	
A-66 - Approach minor pothole/leveling needed	

**A-54 - Sealable Deck Cracks**

**A-55 - Deck Washing Needed**

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





**Asset #05653**(Routine, Underwater type 2)  
**State Highway 109 over Russ Creek-Logan Co.**  
**Location: 3.26 MI S JOHNSON CO LINE**  
**Team Lead: Bob McEntyre Inspection Date: 08/09/2022**

**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**

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





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**Location: 3.26 MI S JOHNSON CO LINE**  
**Team Lead: Bob McEntyre Inspection Date: 08/09/2022**

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





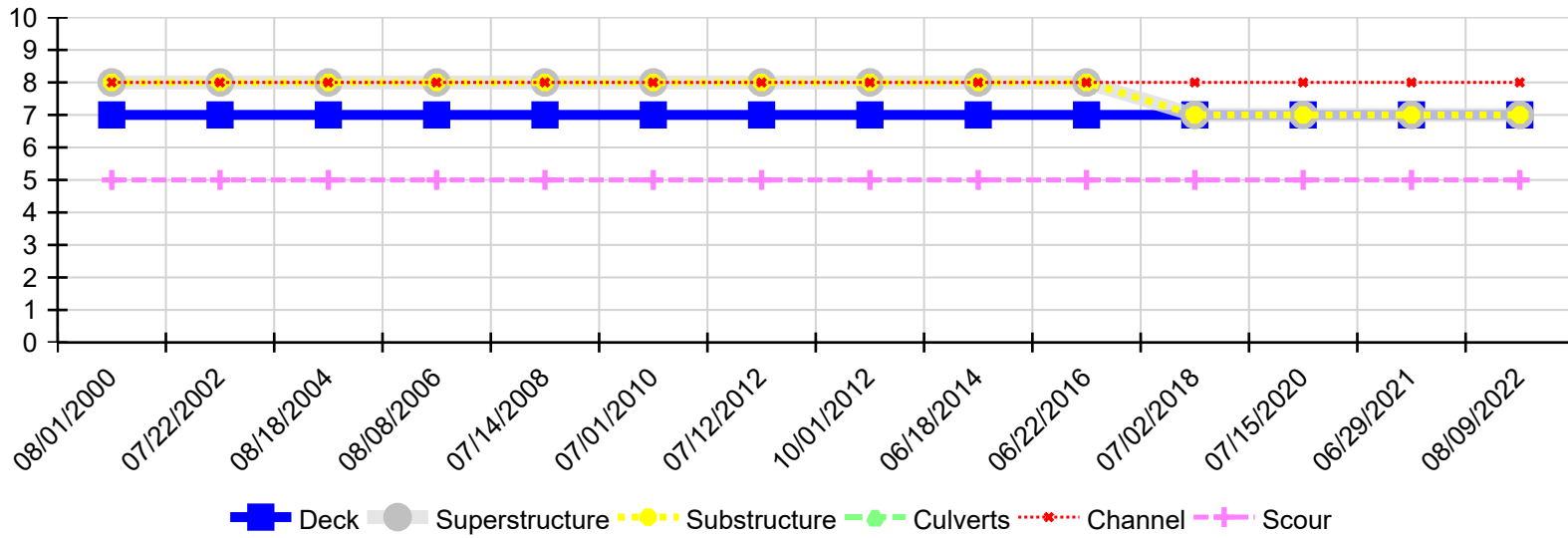
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State Highway 109 over Russ Creek-Logan Co.

Location: 3.26 MI S JOHNSON CO LINE

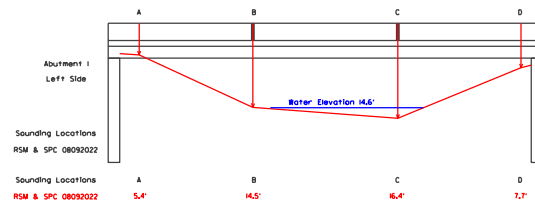
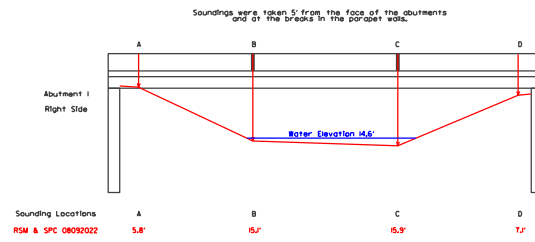
Team Lead: Bob McEntyre Inspection Date: 08/09/2022

### Condition History



Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
08/09/2022	7	7	7	N	8	5
06/29/2021	7	7	7	N	8	5
07/15/2020	7	7	7	N	8	5
07/02/2018	7	7	7	N	8	5
06/22/2016	7	8	8	N	8	5
06/18/2014	7	8	8	N	8	5
10/01/2012	7	8	8	N	8	5
07/12/2012	7	8	8	N	8	5
07/01/2010	7	8	8	N	8	5
07/14/2008	7	8	8	N	8	5
08/08/2006	7	8	8	N	8	5
08/18/2004	7	8	8	N	8	5
07/22/2002	7	8	8	N	8	5
08/01/2000	7	8	8	N	8	5





BRIDGE INSPECTION REPORT  
FORM III

Inspected By: RSM & SPC

Date: 08/09/2022

District: 4 Co.: 42 Rte.: 109 Sect/Zone 03 Log Mile: 5.72 Str. No.: 05653