



Latitude:33.61594, Longitude:-91.39057

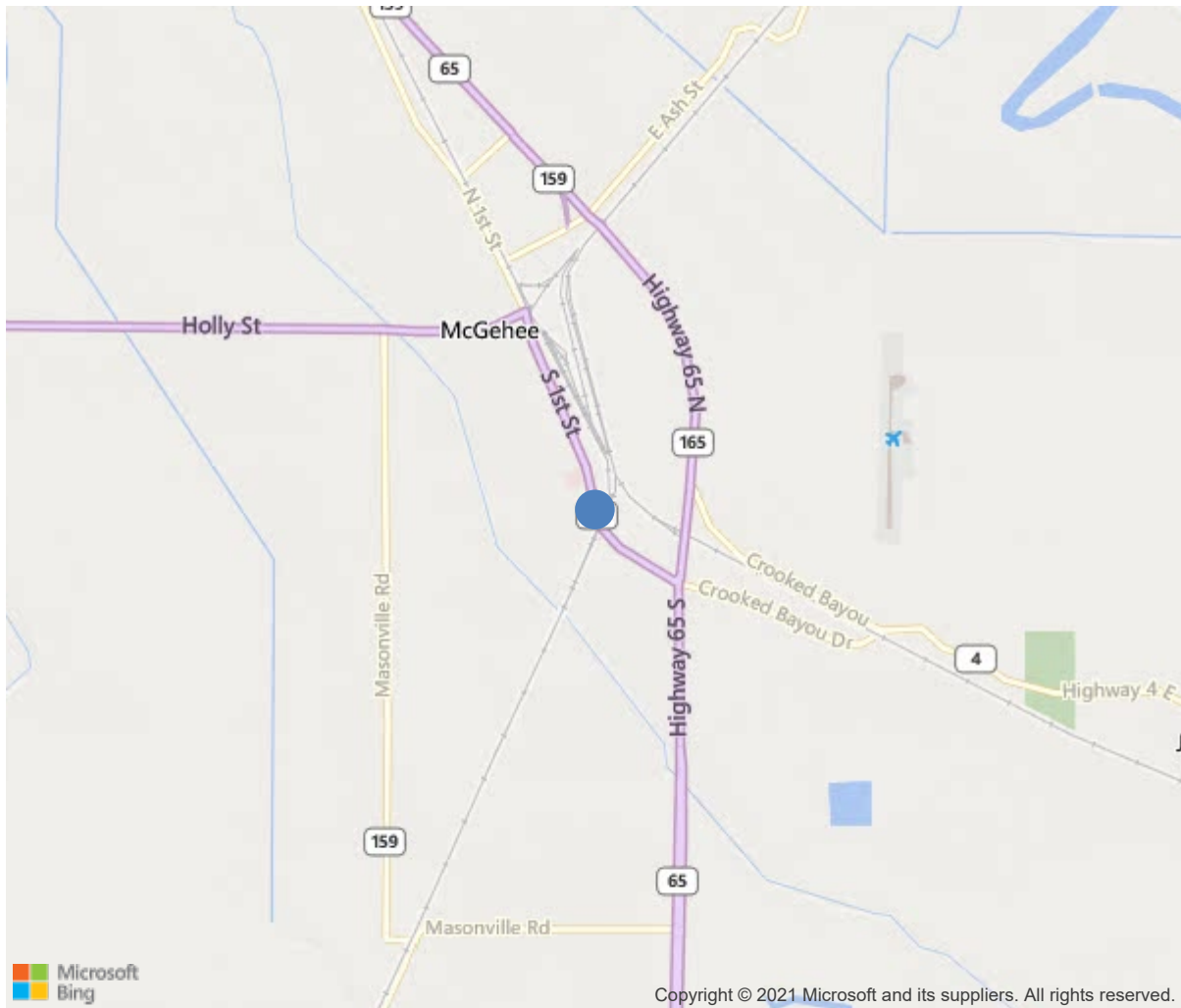
Route:278 Section:16 Log:4.38

Arnold Road ID:21x278x16xA, Arnold Log mile:4.368

District 02, Desha County

Owner: 1-State Highway Agency

0.7 Mi W US 65-McGehee



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33.61594, -91.39057



Bridge #05018(Routine, Other Special Recurring)

SH 278-16 LM 4.38 over Union Pacific R/R

Location: 0.7 Mi W US 65-McGehee

Team Lead: Greg Loomis Inspection Date: April 13, 2021

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	05018
(5) Inventory Route	278
(2) Highway Agency District	02
(3) County Code	41-Desha County, Arkansas
(4) Place Code	0
(6) Features Intersected	Union Pacific R/R
(7) Facility Carried	SH 278-16 LM 4.38
(9) Location	0.7 Mi W US 65-McGehee
(11) Mile Point	4.38 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	0000000000
(16) Latitude	33.61594
(17) Longitude	-91.39057
(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	11
Material	1-Concrete
Type	1-Slab
(45) No. of Spans in Main Unit	14
(46) No. of Approach Spans	4
(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	1969
(106) Year Reconstructed	0
(42) Type of Service	12
On	1-Highway
Under	2-Railroad
(28) Lane	
On	2
Under	0
(29) Average Daily Traffic	6600
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	4 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	68 ft
(49) Structure Length	849.3 ft
(50) Curb or Sidewalk Width	
Left	1.2 ft
Right	1.2 ft
(51) Bridge Roadway Width Curb to Curb	28 ft
(52) Deck Width Out to Out	34 ft
(32) Approach Roadway Width (W/Shoulders)	40 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	30.8 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	22 ft
Ref:	
(55) Min Lat Underclear RT	10 ft
Ref:	
(56) Min Lat Underclear LT	23 ft
NAVIGATION DATA	
(38) Navigation Control	N-Not applicable, no waterway.
(111) Pier Protection	5-None present but re-evaluation
(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	7-Rural Major Collector
(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	1-The inventory route is part of the
(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	3
(59) Superstructure	6
(60) Substructure	7
(61) Channel & Channel Protection	N
(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	14
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	4
(69) Clearances, Vertical/Horizontal	4
(71) Waterway Adequacy	N
(72) Approach Roadway Alignment	6
(36A) Bridge Railings	0-Inspected feature does not meet cur
(36B) Transitions	0-Inspected feature does not meet cur
(36C) Approach Guardrail	0-Inspected feature does not meet cur
(36D) Approach Guardrail Ends	0-Inspected feature does not meet cur
(113) Scour Critical Bridges	N-Bridge not over waterway.
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	6800
(115) Year of Future ADT	2036

INSPECTIONS *			
(90) Inspection Date			04/2021
(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	Yes		04/2021
* 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.			



Bridge #05018(Routine, Other Special Recurring)

SH 278-16 LM 4.38 over Union Pacific R/R

Location: 0.7 Mi W US 65-McGehee

Team Lead: Greg Loomis, Inspection Date: April 13, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	22470	14238	6606	1626	0
1080	Delamination/Spall/Patched Area	SF	5737	0	5195	542	0
1090	Exposed Rebar	SF	137	0	92	45	0
1120	Efflorescence/Rust Staining	SF	621	0	586	35	0
1130	Cracking (RC and Other)	SF	1574	0	574	1000	0
(12)							
Deck - Approach spans (steel girders - Spans 1-6 & Spans 12-18): Spans 1-6 (30' wide [1'-10 1/2" STEP-UP each side] x 54' long [each span] = 324' total) & Spans 12-18 (30' wide [1'-10 1/2" STEP-UP each side] x 51' long [each span] = 357' total) = 20,430 sqft.							
NOTE: An asphalt seal coat has been applied to deck surface prior to 2021 inspection. Seal coat has covered over numerous cracks/spalls/patches; however, deterioration is continuing and numerous patches have been place since seal coat was applied.							
OLD NOTES (prior to seal coat) FOLLOW: Some light abrasive wearing of deck surface - heaviest in wheel ruts.							
Span 1: Several scattered patches - 1-2' square - with several small (3-4") shallow spalls along center-line (Patch CS2 15% = 251). Span 2: A couple patched areas (1' square) with several small shallow spalls, mainly along the center-line - some cracking with a couple places of efflorescence showing on soffit on left side (Patch CS2 25% = 418, Crack CS3 20% = 335, Eff CS2 5% = 84). Span 3: Numerous patches, mainly on left side - a couple patches beginning to deteriorate and spall - an area of cracking with some minor efflorescence showing on soffit on right near Bent 4 (Patch CS2 65% = 1004, Patch CS3 5% = 84, Eff CS2 = 80). Span 4: Several patches, mainly along center-line with a couple small (3-4"), shallow spalls and some map cracking in left lane wheel ruts (Patch CS2 20% = 335, Cracking CS3 10% = 167). Span 5: Numerous patches from curb to curb - a couple spalls (8-12") in left lane and a couple patches beginning to deteriorate and spall. Span 6: Several patches, mainly in left lane, with a couple small shallow spalls - some cracking with efflorescence showing (with a couple small areas of exposed rebar) on soffit (Patch CS2 30% = 502, Eff CS2 30% = 502, ExRebar CS2 = 12). Span 12: A couple patches, mainly along center-line and near Bent 13 - with some reflective cracking/deterioration beginning to show on soffit (CS3 15% = 237). Span 13: A couple minor- to moderate-sized transverse crack along left edge line (Cracking CS3 6' x 12' = 72). Span 14: One or two patches, near Bent 14 on right side (CS2 10% = 158). Heavy cracking in deck surface. Span 15: A couple patches, mainly near center-line - with some reflective cracking/deterioration beginning to show on soffit (CS2 10% = 158). Span 16: Nothing notable. Span 17: An area of patches around 2/3 span along center-line (CS2 20% = 316). Span 18: Numerous small patches, along center-line and closer to Bent 19 (CS2 40% = 632). All spans continue to deteriorate with additional spalling and spalling filled with asphalt. Soffit: Spans 2-6 left side around drains: Some spalling along bottom corner of deck with rebar exposed (minor section loss) (ExRebarCS3 8 sqft each = 40 total) Soffit has large areas of spalling with exposed rebar reflective of spalling/patching on surface of deck.							
38	RC Slab	SF	2940	2696	239	5	0
1080	Delamination/Spall/Patched Area	SF	234	0	229	5	0
1090	Exposed Rebar	SF	0	0	0	0	0



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Team Lead: Greg Loomis, Inspection Date: April 13, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1130	Cracking (RC and Other)	SF	10	0	10	0	0
(38)	<p>Deck - Approach spans (RC slabs -Spans 7 & 8 and 10 & 11): 30' wide [1'-10 1/2" STEP-UP each side] x 98' total (30'+19'+19'+30') long = 2940 sqft.</p> <p>NOTE: An asphalt seal coat has been applied to deck surface prior to 2021 inspection. Seal coat has covered over numerous cracks/spalls/patches; however, deterioration is continuing and numerous patches have been place since seal coat was applied.</p> <p>OLD NOTES (prior to seal coat) FOLLOW: Some light abrasive wearing of deck surface - heaviest in wheel ruts.</p> <p>Spans 7-8: A couple small patches, mainly along center-line and Bent 7. (CS2 15% = 228) Spans 10-11: Small delam at drain opening left side.</p> <p>Joints - Bents 8 & 11: Pourable joint material is missing from joints, allowing stormwater to leak through joint and onto end of slab and cap - joint is filled with dirt and other debris, limiting expansion of spans on both sides.</p>						
107	Steel Open Girder/Beam	LF	3790	1468	2257	65	0
1000	Corrosion	LF	2108	0	2043	65	0
515	Steel Protective Coating	SF	25939	5394	9921	10516	108
3440	Effectiveness (Steel Protective Coatings)	SF	17599	0	8273	9326	0
3420	Peeling/Bubbling/Cracking	SF	1053	0	1053	0	0
(107)	<p>Girders - Approach spans (steel girders - Spans 1-6 & Spans 12-18): Spans 1-6 / 5 girders per span @ 54' each = 324' total & Spans 12-18 / 5 girders per span @ 51' each = 357' total. Coating/paint (W27x94 - 54' spans): 6.82 square feet per linear feet of girder. Coating/paint (W27x84 - 51' spans): 6.78 square feet per linear feet of girder.</p> <p>Scattered flaking rust beginning on web and flanges of girders - with some heavier concentration of rust at ends of girders near joints. High side of girders continuing to rust due to moisture due to leaking joint seals. Spans 1-6: Approximately 60% of protective system with surface rust. Spans 1-6: A couple scattered areas where finish coat of paint is cracking and peeling away (approximately 10%). Spans 2-6: Some small areas of light flaking rust to girder ends at joint seals. Spans 12-18: Approximately 35% of protective system with surface rust - - 35% substantially effective.</p>						
205	Reinforced Concrete Column	EA	34	26	6	2	0
1080	Delamination/Spall/Patched Area	EA	4	0	4	0	0
1090	Exposed Rebar	EA	2	0	1	1	0
1130	Cracking (RC and Other)	EA	1	0	0	1	0
(205)	<p>Columns - Approach spans (steel girders - Spans 1-6 & Spans 12-18): 2 per bent / Bents 2- 6 & 13-18. A few scattered, very small spalls - where reinforcing steel is too close to the surface. Bent 6 Column 1: Large vertical crack.</p>						
215	Reinforced Concrete Abutment	LF	80	76	4	0	0



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Team Lead: Greg Loomis, Inspection Date: April 13, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1080	Delamination/Spall/Patched Area	LF	4	0	4	0	0
(215)	Abutments - Approach spans (steel girders - Spans 1-6 & Spans 12-18): 28' each (with 6' wings each corner) / Bents 1 & 19. A few scattered, very small spalls - where reinforcing steel is too close to the surface.						
234	Reinforced Concrete Pier Cap	LF	523	445	57	21	0
1080	Delamination/Spall/Patched Area	LF	7	0	2	5	0
1090	Exposed Rebar	LF	5	0	4	1	0
1130	Cracking (RC and Other)	LF	62	0	50	12	0
(234)	Caps - Approach spans (steel girders - Spans 1-6 & Spans 12-18): 29' each / Bents 2-6 & 13-18. A few scattered, very small spalls - where reinforcing steel is too close to the surface. Bent 2: Hairline- to moderate-sized horizontal cracking across the ahead and back faces and a spall with exposed rebar - left end on the ahead face. Bent 3 back: Small spalls with exposed rebar and horizontal cracks. Bents 4 & 5: Small spalls with exposed rebar. Bent 15: Horizontal cracking.						
302	Compression Joint Seal	LF	508	0	162	162	184
2310	Leakage	LF	280	0	140	140	0
2320	Seal Adhesion	LF	140	0	0	0	140
(302)	Joints - Approach spans (steel girders - Spans 1-6 & Spans 12-18): 28' each / Bents 1-7 & 12-19. Bents 6, 12, 13, 14, & 16: Preformed joint material is missing from joint, allowing stormwater to leak through and dirt and other debris to build-up on end of girders, bearings, and caps. Bents 1-5, 7, 10, 15, & 17-19: Preformed joint material is tattered and worn, allowing stormwater to leak through and dirt and other debris to build-up on end of girders, bearings, and caps.						
311	Movable Bearing	EA	70	5	30	35	0
1000	Corrosion	EA	60	0	30	30	0
515	Steel Protective Coating	SF	225	120	15	0	90
3440	Effectiveness (Steel Protective Coatings)	SF	90	0	0	0	90
(311)	Movable bearings- Approach spans (steel girders - Spans 1-6 & Spans 12-18): 5 per bent / Bents 2b, 3b, 4b, 5b, 6b, 7b, 12a, 13a, 14a, 15a, 16a, 17a, & 18a. Coating/paint: 3 square feet each. Some scattered flaking rust between bearings and masonry plates. (Bearings 1-3 @ Bents 2-7 and Bearings 1 & 2 @ Bents 12-18).						
313	Fixed Bearing	EA	70	21	34	15	0
1000	Corrosion	EA	44	0	29	15	0
515	Steel Protective Coating	SF	225	120	102	3	0
3440	Effectiveness (Steel Protective Coatings)	SF	90	0	87	3	0

[illegible]



Roadway view



Deck - Spans 15-16: Typical



Soffit - Span 3: Typical



Soffit - Span 17: Typical



Joint - Bent 4: Loss of adhesion



Joint - Bent 16: Material missing



Deck - Spans 1-2: Spalling/patches



Deck - Spans 5-6: Spalling/patches



Deck - Span 10: Patches



Deck - Spans 17-18: Spalling/patches



Soffit - Span 5: Efflorescence/patches



Cap - Bent 2 back: Cracking/spalling



Cap - Bent 10 @ Bearing 4: Spall

Maintenance Needs

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Assigned
Component: 302 - Compression Joint Seal

Deficiency Description

Joints - Bents 8 & 11: Pourable joint material is missing from joints, allowing stormwater to leak through joint and onto end of slab and cap - joint is filled with dirt and other debris, limiting expansion of spans on both sides.

Remarks



Joint - Bent 8

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component: 302 - Compression Joint Seal

Deficiency Description

Joints - Bents 1-5, 7, 10, 15, & 17-19: Preformed joint material is tattered, torn and missing allowing stormwater to leak through and dirt and other debris to build-up on end of girders, bearings, and caps.

Remarks



Joint - Bent 4



Joint - Bent 10



Bent 1 expansion joint damaged. This is Common at all joint.



Bent 13 joint seal missing .



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Team Lead: Greg Loomis **Inspection Date:** April 13, 2021



Joint - Bent 19

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component: Deck

Deficiency Description

Deck - Span 1-18 Several repair patches are beginning to deteriorate and spall -out - forming potholes in deck surface. Heavy scaling and very large cracks in many spans.

Remarks



Deck overview span 5



Deck over view spans 3,4&5.



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Team Lead: Greg Loomis Inspection Date: April 13, 2021



Deck - Span 5



Deck over view spans 6,7&8.

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Assigned
Component: 234 - Reinforced Concrete Pier Cap

Deficiency Description

Cap - Bent 2: Cap has a horizontal crack and delam across the ahead and back faces and a spall with exposed rebar - left end on the ahead face.

Remarks

this is one we may need to look at quickly, this may fall?



Bent 2 cap ahead face left has spall with exposed rebar and delamination with cracking.



Bent 2 cap - left



Bent 2 cap ahead has large horizontal cracks with some rust staining. Cap ahead left end has spall with exposed rebar.

Date Reported: 03/12/2015

Priority: D- Routine

Type of Work: Repair

Status: Monitor

Component: Deck

Deficiency Description

Soffit (bottom of deck) - Spans 2-6 left side around drains: Some spalling along bottom corner of deck with rebar exposed (minor section loss).

Remarks



Span 6 left soffit at overhang drain opening spalling with exposed steel to bottom of deck.



Deck soffit at bent 3 left spalls with exposed rebar near joint armor.



Soffit - Span 2 left side @ drain



Bent 4 joint armor left side is completely closed due to pack rust.

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component: Superstructure

Deficiency Description

Girders Spans 1-6, Span 9 & Span 12-18:

Some light scattered flaking rust beginning on web and flanges of girders - with some heavier concentration of rust at ends of girders near joints

Spans 1-6: Approximately 60% of protective system with surface rust.

Spans 1-6: A couple scattered areas where finish coat of paint is cracking and peeling away (approximately 10%).

Span 9: Approximately 50% of protective system - 25% substantially effective. (NOTE: Girder (and soffit) are covered with a coating from diesel exhaust from passing railroad engines.)

Spans 12-18: Approximately 35% of protective system with surface rust - 35% substantially effective.

Remarks



Bent 4 joint armor left side is completely closed due to pack rust.



Span 1 bent 2 girder 1 has some light flaking rust to end 1'



Bent 18 left has heavy flaking rust to joint armor and girder ends.



Span 3 girders



Span 1 Girder 2 left



Soffit - Span 15



Span 2 bent 3 girder 2 has some light flaking rust to lower web and flange.



Bent 5 span 5 girder 1 has heavy flaking rust with section loss to top flange and lower web and flange.



Soffit - Span 9



Bent 16 back left side of girder 5 has flaking rust in hunch area. Common in many locations.

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component: Superstructure

Deficiency Description

Bearings - Bents 1-7, 9-10, & 12-19:

Bearing 1 Bent 1: Covered with rust and beginning initial section loss.

Remaining bearings: Some scattered light surface rust, heaviest on masonry plates and on left side bearings (Bearings 1-3 @ Bents 1-7 and Bearings 1 & 2 @ Bents 12-19).

Remarks



Bent 5 bearing 1 back has heavy flaking rust.



Bent 4 bearing 1 heavy flaking rust.



Bent 18 Bearings 1-5 ahead



Bent 15 ahead bearing 1 has heavy flaking rust and pack rust..



Bent 17 ahead bearing 4 has some pack rust between plate and bearing.



Bent 15 bearing 3 back has heavy flaking rust.



Bent 19 Bearing 1



Span 2 bent 3 bearing 1 heavy flaking rust to bearing and masonry plate. Common on all bearings this bent to a lesser extent.

Date Reported: 03/12/2015
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component: 302 - Compression Joint Seal

Deficiency Description

Joints - Bents 6, 9, 12, 13, 14, & 16: Preformed joint material is missing from joint, allowing stormwater to leak through and dirt and other debris to build-up on end of girders, bearings, and caps.

Remarks



Joint - Bent 13



Bent 1 expansion joint damaged. This is Common at all joint.



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Team Lead: Greg Loomis Inspection Date: April 13, 2021



Joint - Bent 16



Joint - Bent 14



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Location: 0.7 Mi W US 65-McGehee

Team Lead: Greg Loomis **Inspection Date:** April 13, 2021

Inspection Comments

Bridge is logged from north to south.

Beginning of structure toward SH 1, North End.

8/16/2017 Special inspection for item #58 rating of lowered to 3 due to continued full depth failures in deck .

1 time special inspection due to full depth failure in deck in span 5 near bent 5 / 1' left of centerline. (Failure is approx. 3' by 3'). See photos this report. SDH 8/16/2017 No maintenance needs written due to state forces repairing immediately.

1 time special inspection due to a full depth failure 5-8' back of bent 6 near centerline approx. 6" by 6" (likely to be 2' by 2' or larger soon) and a large spall with exposed rebar 2' by 2' that is likely to be full depth soon(only plywood holding broken concrete in place) 14- 18' ahead of bent 5 near centerline. SDH 11/06/2018 No maintenance needs written due to state forces repairing immediately.

Deck Notes

Special recurring due to deck rating of 3. Many repaired full depth failures.