



Latitude:36.17552, Longitude:-94.44659

Route:412 Section:01 Log:7.148

Arnold Road ID:4x412x1xB, Arnold Log mile:6.518

District 09, Benton County

Owner: 1-State Highway Agency

2.8 MI E OF JT SH59&US412



36.17552, -94.44659

Inspection Direction : W to E



Bridge #A6475(Routine, Underwater type 2)

US 412 WB Benton 2 over BUTLER CREEK

Location: 2.8 MI E OF JT SH59&US412

Team Lead: Benjamin Smith Inspection Date: May 12, 2021

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	A6475
(5) Inventory Route	412
(2) Highway Agency District	09
(3) County Code	7-Benton County, Arkansas
(4) Place Code	0
(6) Features Intersected	BUTLER CREEK
(7) Facility Carried	US 412 WB Benton 2
(9) Location	2.8 MI E OF JT SH59&US412
(11) Mile Point	7.148 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000412010
(16) Latitude	36.17552
(17) Longitude	-94.44659
(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	3
(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	26263
(30) Year of ADT	2013
(109) Truck ADT	1 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	65 ft
(49) Structure Length	167 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	42.8 ft
(32) Approach Roadway Width (W/Shoulders)	40 ft
(33) Bridge Median	0-No median
(34) Skew	20 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	41.3 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	1
(26) Functional Class	2-Rural Principal Arterial - Oth
(100) Defense Highway	0-The inventory route is not a S
(101) Parallel Structure	L-The left structure of parallel
(102) Direction of Traffic	1 - 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	7
(59) Superstructure	7
(60) Substructure	8
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	6-MS 18+Mod / HS 20+Mod
(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	3
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	7
(68) Deck Geometry	7
(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	8-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	11987
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date			05/2021
(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.			

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	6600	6240	330	30	0
1080	Delamination/Spall/Patched Area	SF	7	0	1	6	0
1120	Efflorescence/Rust Staining	SF	4	0	4	0	0
1130	Cracking (RC and Other)	SF	349	0	325	24	0
(12)							
Driving surface- -The driving surface of the deck has sealable cracking in all spans. The most notable area is the outside lane in span #1 which has wide transverse cracks. -Span #1, Left side adjacent to abutment #1 has an area of concrete deterioration with a 12" long delaminated area to the vertical face of deck with cracking and efflorescence in the surrounding area. -Under surface of deck has SIP forms and is not visible. SIP forms have corrosion in span #2, bay #1 adjacent to splice plate connection #2 that appears to be from leakage through the construction joints. Span #2- the left overhang has 1' of cs2 efflorescence. The right overhang has 1' of cs2 efflorescence. -The Left overhang in span #3 has cracking with efflorescence adjacent to abutment #2. Bays #3,4 have corrosion beginning to form in the sip forms near the beginning of the span. -The under surface of the deck on the left side has a 4" galvanized utility conduit attached. One of the utility attachments in span 1 has vibrated loose and is hanging.							
107	Steel Open Girder/Beam	LF	825	792	33	0	0
1000	Corrosion	LF	33	0	33	0	0
515	Steel Protective Coating	SF	8066	8000	66	0	0
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	SF	66	0	66	0	0
(107)							
Span #1- Beam #1 has small sporadic areas of cs2 corrosion on the exterior face. Span #2- beam #1 has 1' of cs2 corrosion on the interior of the 2nd splice panel. Beam #1 has small sporadic areas of cs2 corrosion on the exterior face. Span #3- Beam #1 has small sporadic areas of cs2 corrosion on the exterior face.							
210	Reinforced Concrete Pier Wall	LF	28	27	1	0	0
6000	Scour	LF	1	0	1	0	0
(210)							
Pier wall #1- The channel has a minor scour hole on the upstream side with minor drift accumulation. The footing is not exposed at this inspection. Pier wall #2- no deficiencies noted. The footing has cover.							
215	Reinforced Concrete Abutment	LF	128	115	13	0	0
1130	Cracking (RC and Other)	LF	13	0	13	0	0
(215)							
Abutment #1- has several longitudinal cracks in top of back wall visible from the driving surface. The rip rap is in place and							



Approach view in direction of log mile.



Upstream channel view.



Areas of cs2 corrosion on the exterior of beam #1 in all 3 spans.



Typical view of the weathering steel protective coating condition.



Span #2 has a large tree in the channel.



Downstream channel view.



Typical view of driving surface.



Inventory looking East.



Parapet Railing right cracking with efflorescence.



East approach slab minor spalling adjacent yellow line.



Abutment #1 joint material has debris impaction and loss of adhesion



Construction joint pourable material missing. Typical



Elevation looking South.



Span #2 bay #1 approximately 13' behind bent #2 corrosion of SIP form.



Large cracking in west approach slab.

Maintenance Needs

Date Reported: 05/16/2011

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

Deck - The driving surface of the deck has numerous sealable cracks in all spans. The most notable area is the outside lane in span #1 which has several wide transverse cracks.

Remarks



Deck Left lane over bent 2 longitudinal cracking.



Span #1, outside lane-Transverse cracking.

Date Reported: 05/08/2017
Priority: C - Important
Type of Work: Repair
Status: Repair Documented
Component:

Deficiency Description

Channel - The channel has local scour at the base of bent #1 that has created a scour hole approximately 3' deep on the span #1 side of bent. The footing has cover at this inspection.

Remarks

It was noted during the routine inspection that this area has naturally filled in with stream bed material.



Bent #1-Scour hole.

Date Reported: 05/16/2011

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

Deck -

Span #1, Left side adjacent to abutment #1 has an area of concrete deterioration with a 12" long delaminated area to the vertical face of deck with cracking and efflorescence in the surrounding area.

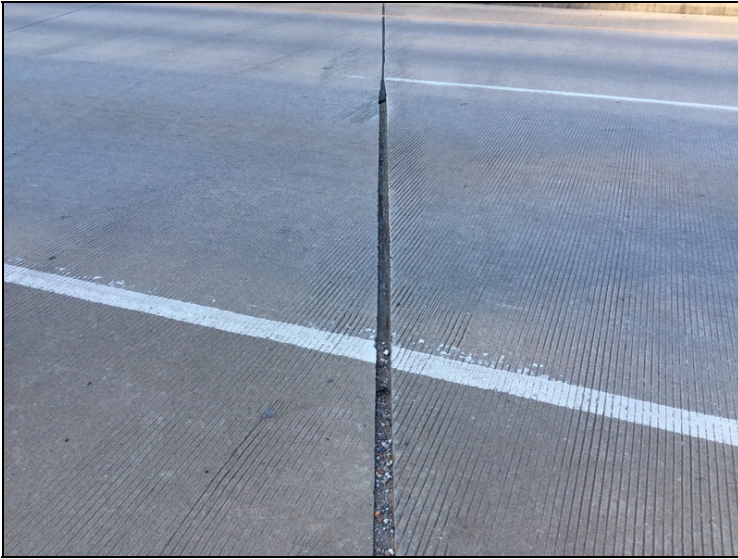
The pourable type construction joint sealant has failed in locations with portions of the sealant missing allowing water leakage that appears to be causing corrosion to SIP forms.

Remarks



Construction joint pourable material missing.
Typical





Constuction joint span 2 near bent 2 joint material missing.



Span #1, Left side-Delaminated area with cracking and efflorescence.



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12' of Pourable joint seal is missing at the beginning of span #2.

Date Reported: 05/08/2017

Priority: D- Routine

Type of Work: None

Status: Monitor

Component:

Deficiency Description

West and East approach slabs -

The East approach slab has an area of spalling 2' wide and 12' long in the left inside wheel path.

The West and East approach slabs have several areas of wide cracking.

Remarks



East approach slab has cracking and spalling.



East approach slab minor spalling adjacent yellow line.

Date Reported: 05/08/2017

Priority: D- Routine

Type of Work: None

Status: Monitor

Component:

Deficiency Description

Expansion joints - The compression joint seals at the East and West bridge ends have debris impaction the full length of joints.

Remarks



Abutment #1 joint material has debris impaction and loss of adhesion



Abutment 1 compression joint seal- debris impaction.



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Date Reported: 05/13/2021

Priority: D- Routine

Type of Work: Repair

Status: Open

Component:

Deficiency Description

The right parapet wall has areas of horizontal cracking with efflorescence. Most notably in span #2.

Remarks



The right side parapet wall in span #2 has horizontal cracking with efflorescence.



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Inspection Comments

Structure is logged from West to East and is accessible with a small extension ladder. The inspection direction is against the flow of traffic.

No bat activity was noted.