



Latitude:36.15214, Longitude:-93.49275

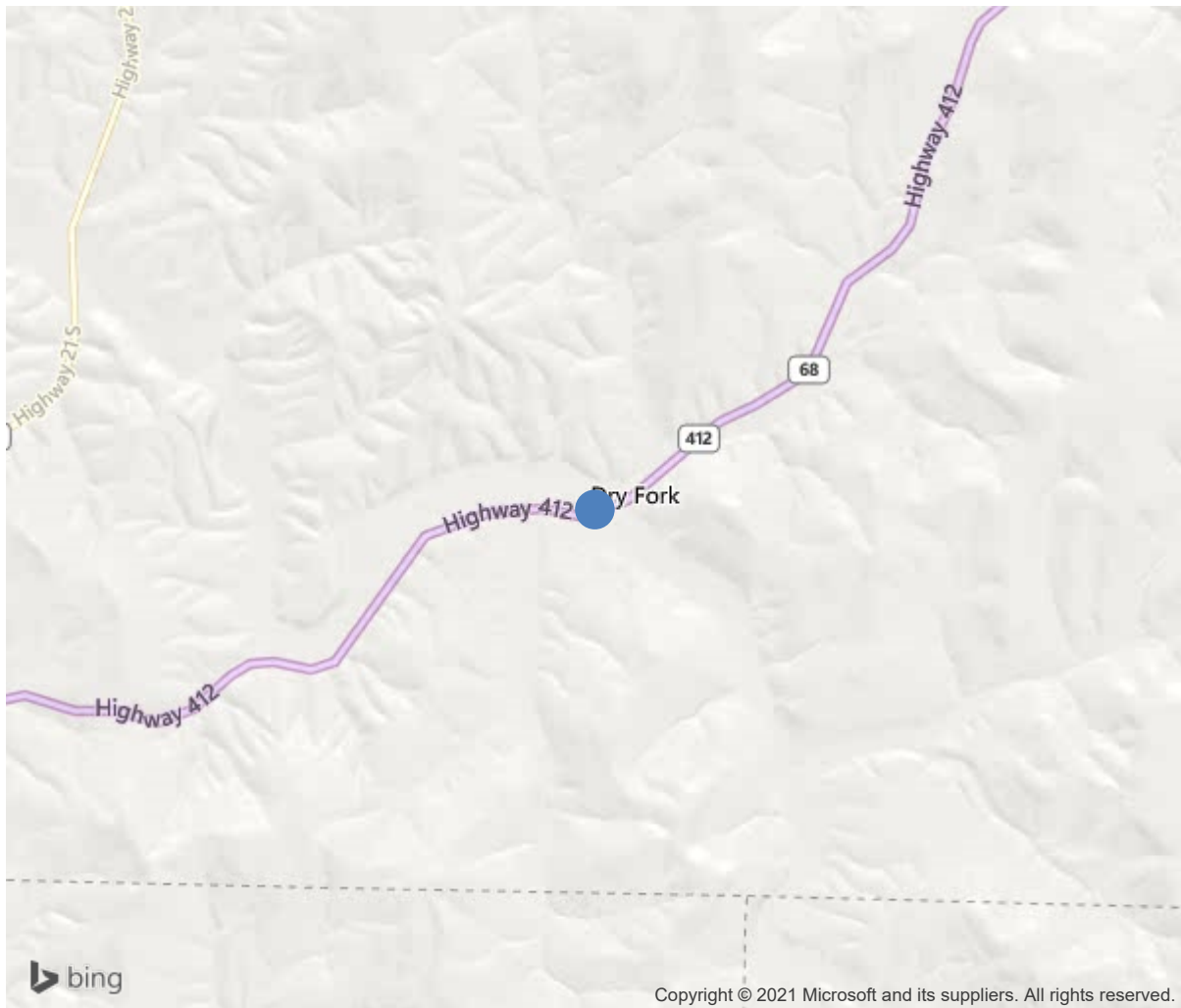
Route:412 Section:05 Log:3.82

Arnold Road ID:8x412x5xA, Arnold Log mile:3.81

District 09, Carroll County

Owner: 1-State Highway Agency

3.82 MI NE SH 21



36.15214, -93.49275



Bridge #06577(Routine)

US 412 S-5 Carroll over DRY FORK

Location: 3.82 MI NE SH 21

Team Lead: Benjamin Smith Inspection Date: May 26, 2020

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	06577
(5) Inventory Route	412
(2) Highway Agency District	09
(3) County Code	15-Carroll County, Arkansas
(4) Place Code	0
(6) Features Intersected	DRY FORK
(7) Facility Carried	US 412 S-5 Carroll
(9) Location	3.82 MI NE SH 21
(11) Mile Point	3.82 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000412050
(16) Latitude	36.15214
(17) Longitude	-93.49275
(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	1995
(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	4200
(30) Year of ADT	2014
(109) Truck ADT	1 %
(19) Bypass, Detour Length	14 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	65 ft
(49) Structure Length	177 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	42.9 ft
(32) Approach Roadway Width (W/Shoulders)	41 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	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 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	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	7
(59) Superstructure	7
(60) Substructure	7
(61) Channel & Channel Protection	7
(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	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	6
(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	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	4453
(115) Year of Future ADT	2028
INSPECTIONS	
(90) Inspection Date	05/2020
(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





Bridge #06577(Routine)

US 412 S-5 Carroll over DRY FORK

Location: 3.82 MI NE SH 21

Team Lead: Benjamin Smith, Inspection Date: May 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	7593	6723	870	0	0
1120	Efflorescence/Rust Staining	SF	48	0	48	0	0
1130	Cracking (RC and Other)	SF	822	0	822	0	0
(12)	<p>The driving surface of the deck has a tined finish that has wear in the wheel paths, this wear was not quantified due to longitudinal cracking in the same location.</p> <p>Driving surface- has 14' of wear in the wheel paths for the length of the structure. Longitudinal hairline cracking exists in the same location as the wear for the length of the structure in all spans. Very few transverse cracks were noted in the gutter lines. The cracking has been sealed in the past with epoxy.</p> <p>Undersurface- the undersurface has sip forms in all bays of all spans. Very minor corrosion was noted in the sip forms beneath a construction joint in span #2.</p> <p>Span 1- has 12' of cs2 efflorescence in the overhangs.</p> <p>Span 2- has 22' of cs2 efflorescence in the overhangs.</p> <p>Span 3- has 14' of cs2 efflorescence in the overhangs.</p>						
107	Steel Open Girder/Beam	LF	1050	1050	0	0	0
515	Steel Protective Coating	SF	9240	9240	0	0	0
(107)	<p>The weathering steel protective coating includes the diaphragms.</p> <p>6 beam system. Protective coating surface area- Beams are 6.88 per foot. Diaphragms are 21' each.</p> <p>Span #1- no corrosion was noted at the beam ends. No deficiencies noted.</p> <p>Span #2- no deficiencies noted.</p> <p>Span #3- no deficiencies noted. No corrosion was noted at the beam ends.</p>						
210	Reinforced Concrete Pier Wall	LF	26	26	0	0	0
(210)	<p>The pier walls consist of two columns that are 13' wide.</p> <p>Pier wall #1- no deficiencies noted. The pier wall is cast in solid rock.</p> <p>Pier wall #2- no deficiencies noted. The footing has cover with no evidence of scour.</p>						
215	Reinforced Concrete Abutment	LF	84	72	12	0	0
1130	Cracking (RC and Other)	LF	12	0	12	0	0
(215)	<p>Abutment #1- has 4 vertical hairline cracks. 1 in the back wall and 3 in the vertical face of the bridge seat.</p> <p>Abutment #2- has 8 total hairline cracks. 5 in the back wall and 3 in the vertical face of the bridge seat.</p>						
234	Reinforced Concrete Pier Cap	LF	82	71	11	0	0
1130	Cracking (RC and Other)	LF	11	0	11	0	0



ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
(234)							
Pier cap #1- has 5' of vertical hairline cracks.							
Pier cap #2- has 6' of vertical hairline cracks.							
302	Compression Joint Seal	LF	86	42	44	0	0
2310	Leakage	LF	10	0	10	0	0
2320	Seal Adhesion	LF	17	0	17	0	0
2340	Seal Cracking	LF	17	0	17	0	0
(302)							
Abutment #1 compression joint seal- has pack rust between the joint seal and the armoring plate that is causing loss of adhesion and leakage.							
Abutment #2 compression joint seal- has 17' of cracking in the top of the seal. The seal has pack rust between the joint seal and the armoring plate that is causing loss of adhesion and leakage.							
311	Movable Bearing	EA	12	0	4	8	0
1000	Corrosion	EA	12	0	4	8	0
(311)							
Abutment #1 moveable bearings- bearings #1,4,5,6 have heavy corrosion with flaking rust at the masonry plate and rocker areas, bearings #2,3 have cs2 corrosion. One of the sole plate bolts has sheared off at bearing #5.							
Abutment #2 moveable bearings- bearings #2,3,5,6 have heavy corrosion with flaking rust on the masonry plates and rocker areas. Bearings #1,4 have cs2 corrosion.							
313	Fixed Bearing	EA	12	12	0	0	0
(313)							
Pier #1 fixed bearings - no deficiencies noted.							
Pier #2 fixed bearings- no deficiencies noted. The sole plate bolt at bearing #2 is not fully tightened.							
331	Reinforced Concrete Bridge Railing	LF	350	293	56	1	0
1080	Delamination/Spall/Patched Area	LF	1	0	0	1	0
1130	Cracking (RC and Other)	LF	56	0	56	0	0
(331)							
Left side parapet wall -has 31' of hairline vertical cracking at the saw joints and the top corners of the drain areas.							
Right side parapet wall- has a spall with no rebar exposed at the beginning of the parapet on the top edge. The parapet wall has 25' of vertical hairline cracks at the corners of the drain areas and saw joints..							



Approach view in direction of log mile.



Bearing 4 at abutment 1 showing corrosion with flaking rust. Typical of other locations.





Typical efflorescence in the deck overhangs.



Typical view of the undersurface.





Typical weathering steel protective coating condition.



Downstream channel view.





Upstream channel view.



Typical view of driving surface.





Spall with no rebar exposed at the top edge of the beginning of the right parapet.



Typical view of the undersurface.





Condition of bearings 1,4,5,6 at abutment #1.



Condition of compression joint seal at abutment #1.





Approach view in direction of log mile.



Typical view of the piers.





Upstream channel view.

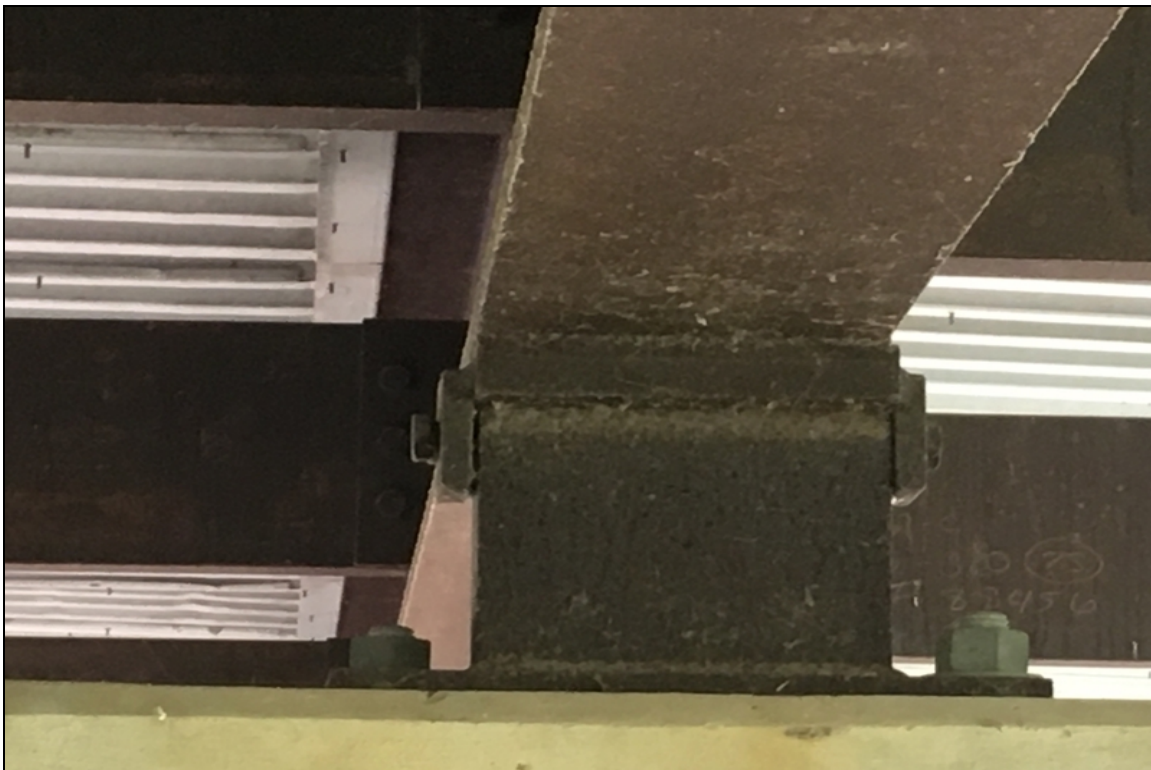


Typical view of driving surface.





Sole plate connection bolt is sheared off at bearing #5 at abutment #1.



Beam #2 over pier #2. The sole plate bolt is not fully tightened. This condition is of little concern.





Bridge plate.



Elevation view. Log mile from left to right.





Bearing condition at pier #2. Typical of all 6 at this location.



Fixed bearing condition at pier #1. Typical of all 6 at this location.



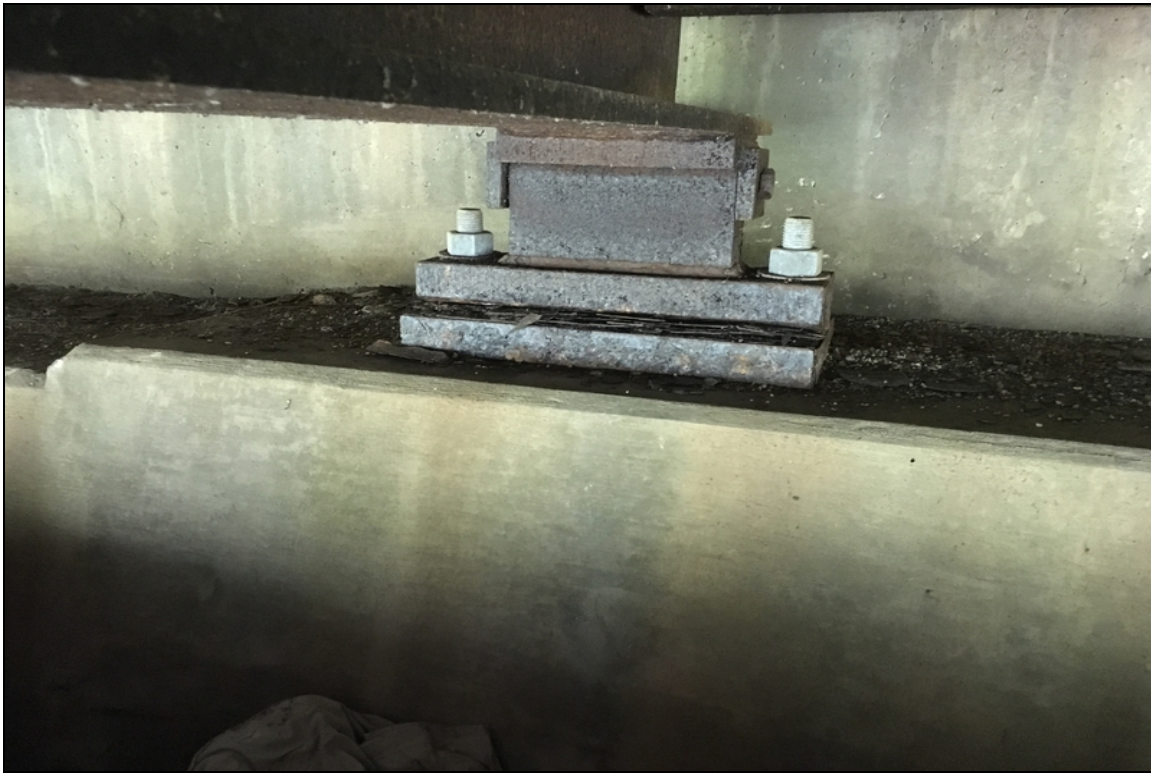


Condition of compression joint seal at abutment #2.



General view of abutment #2. Typical also of abutment #1.





Typical bearing condition of bearings 2,3,5,6 at abutment #2.



Typical view of the protective coating condition.



Downstream channel view.



## Maintenance Needs

**Date Reported:** 05/10/2018

**Priority:** D- Routine

**Type of Work:** Replace

**Status:** Monitor

**Component:**

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## Deficiency Description

The compression joint seals at abutments #1,2 have pack rust between the joint seal and the armoring plate that is causing loss of adhesion and leakage, and is causing corrosion on the bearings.

## Remarks

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Abutment 1 joint seal showing pack rust.





Abutment 2 joint seal condition.





**Bridge #06577** (Routine)

**US 412 S-5 Carroll over DRY FORK**

**Location: 3.82 MI NE SH 21**

**Team Lead:** Benjamin Smith **Inspection Date:** May 26, 2020

### **Inspection Comments**

Structure is logged from SW to NE and is accessible with a small ladder. No bat activity noted.