



Latitude:36.17069, Longitude:-94.42929

Route:412 Section:01 Log:8.17

Arnold Road ID:4x412x1xA, Arnold Log mile:8.175

District 09, Benton County

Owner: 1-State Highway Agency



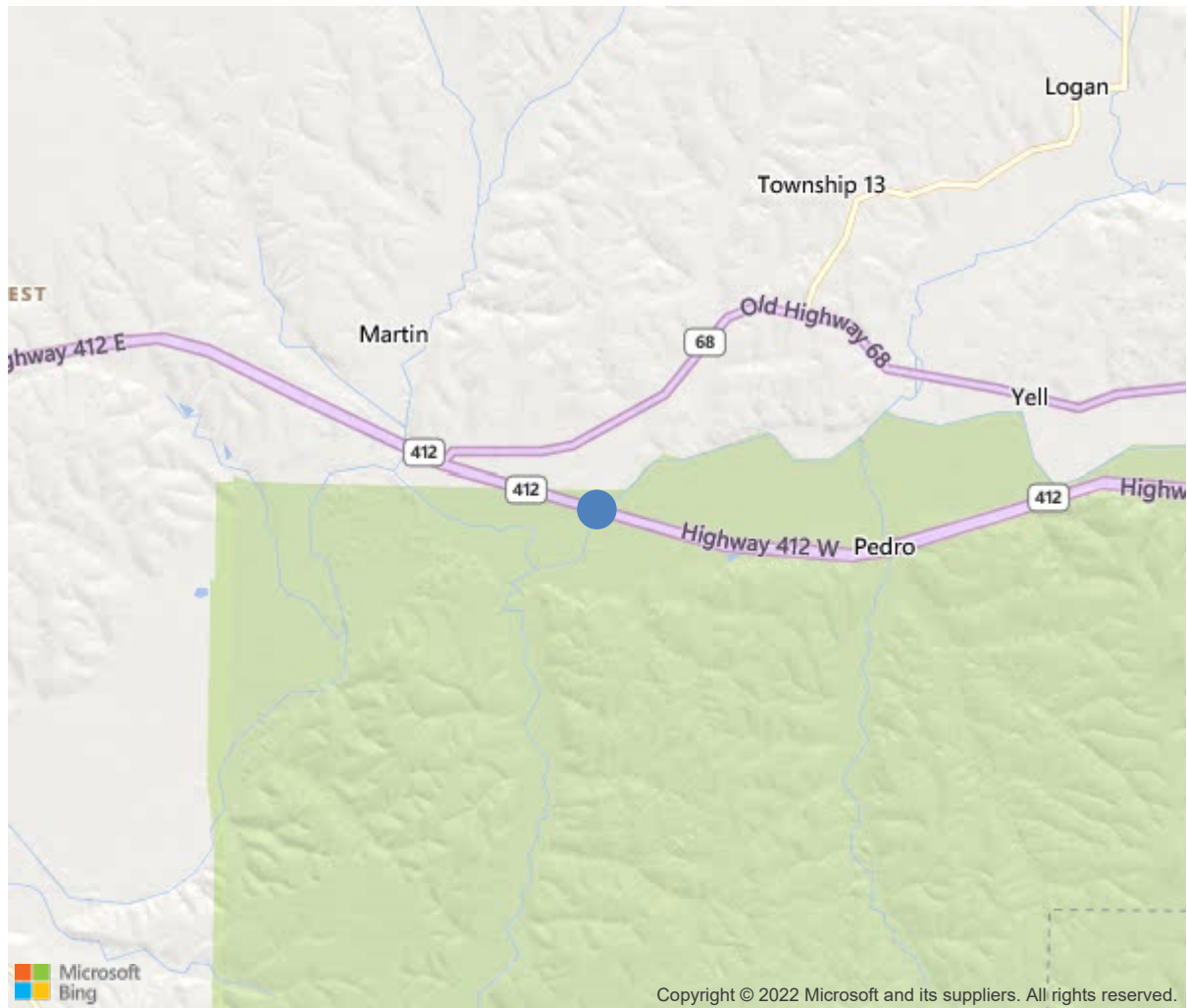
**Bridge #B6476**(Routine, Underwater type 2)

**SH 412 EB Benton 2 over ILLINOIS RIVER**

**Location: Benton Co 8.17 W OKLINE**

**Team Lead:** Nathan Rowland **Inspection Date:** June 15, 2021

Benton Co 8.17 W OKLINE



36.17069, -94.42929

Inspection Direction : W to E



**Bridge #B6476(Routine, Underwater type 2)**

**SH 412 EB Benton 2 over ILLINOIS RIVER**

**Location: Benton Co 8.17 W OKLINE**

**Team Lead: Nathan Rowland Inspection Date: June 15, 2021**

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	B6476
(5) Inventory Route	412
(2) Highway Agency District	09
(3) County Code	7-Benton County, Arkansas
(4) Place Code	0
(6) Features Intersected	ILLINOIS RIVER
(7) Facility Carried	SH 412 EB Benton 2
(9) Location	Benton Co 8.17 W OKLINE
(11) Mile Point	8.17 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000412010
(16) Latitude	36.17069
(17) Longitude	-94.42929
(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	20
(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	20000
(30) Year of ADT	2013
(109) Truck ADT	1 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	120 ft
(49) Structure Length	1379 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	28 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	R-The right structure of paralle
(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	6
(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	49
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	20
Rating	30
(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	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			06/2021
(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.			



Bridge #B6476(Routine, Underwater type 2)

SH 412 EB Benton 2 over ILLINOIS RIVER

Location: Benton Co 8.17 W OKLINE

Team Lead: Nathan Rowland, Inspection Date: June 15, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	55040	51305	3716	19	0
1120	Efflorescence/Rust Staining	SF	19	0	0	19	0
1130	Cracking (RC and Other)	SF	3716	0	3716	0	0
(12)	06/16/2021 WNR & DBM: -The deck has sealable longitudinal, transverse and mapcracking in several locations. -Spans #1 and #2 have light mapcracking in wheel paths of outside lane. -The overhangs of the deck have transverse cracking with efflorescence in locations. -The undersurface of the overhangs have spalling along the expansion joint assemblies. -SIP forms in bay #1 of Span #12 has a basketball sized areas of corrosion. -Multiple spans throughout the undersurface have areas of active corrosion to the SIP forms.						
107	Steel Open Girder/Beam	LF	6820	6820	0	0	0
515	Steel Protective Coating	SF	639205	639205	0	0	0
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	SF	0	0	0	0	0
(107)	06/16/2021 WNR & DBM: Splice plate connections have loose bolts. -Span #2, Girder #5 splice #1 has 3 loose bolts. -Span #3, Girder #3 splice #2 has one loose bolt. -Span #8, Girder #4 has one loose bolt. Girder #5 has 2 loose bolts. -Span #15 Girder #4 has two loose bolts. -Span #18 Girder #5 has one loose bolt. -Span #17, ends of girders #2 and #4 over bent #16 have abnormal corrosion due to leaking joint seal.						
210	Reinforced Concrete Pier Wall	LF	266	242	24	0	0
1080	Delamination/Spall/Patched Area	LF	2	0	2	0	0
1130	Cracking (RC and Other)	LF	22	0	22	0	0
(210)	06/16/2021 WNR & DBM: -Bent #8 has 6 wide diagonal/vertical cracks visible on both sides of column. Cracks extend up the column approximately 9'. -Bent #9 has 3 vertical cracks visible on both sides that extend up the column approximately 7'. -Bent #10 has a small void in Column on right side at cap juncture. -Bent #13 has a hairline vertical crack in both sides of column near centerline.						
215	Reinforced Concrete Abutment	LF	134	114	20	0	0
1130	Cracking (RC and Other)	LF	20	0	20	0	0
(215)	06/16/2021 WNR & DBM: - The top of abutment backwalls have transverse cracking at random spacing.						
234	Reinforced Concrete Pier Cap	LF	855	730	125	0	0

**Team Lead:** Nathan Rowland, **Inspection Date:** June 15, 2021

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1080	Delamination/Spall/Patched Area	LF	5	0	5	0	0
1130	Cracking (RC and Other)	LF	120	0	120	0	0
(234)							
06/16/2021 WNR & DBM:							
-Bent caps have hairline vertical cracks at step downs and other random locations.							
-Bent #5 cap has a baseball sized repair on left side of backface.							
-The back face of bent #5 has 12" long delaminated areas under Girders #1, #2 and #4.							
-The backface of bent #6 cap has a baseball sized delamination under Girder #3.							
Cap at bent #1 show signs of lite deterioration.							
-The undersurface of bent #8 cap has a 5' long area of shallow spalling with exposed reinforcing steel on the right side.							
300	Strip Seal Expansion Joint	LF	282	44	154	84	0
2310	Leakage	LF	84	0	0	84	0
2350	Debris Impaction	LF	154	0	154	0	0
(300)							
06/16/2021 WNR & DBM:							
- The strip seal expansion joints have heavy debris impaction.							
-All joints have minimal loss of adhesive, and are full of sand & debris.							
310	Elastomeric Bearing	EA	125	119	6	0	0
1000	Corrosion	EA	6	0	6	0	0
515	Steel Protective Coating	SF	250	250	0	0	0
3430	Oxide Film Degradation Color/Texture Adherence(Steel Protective Coatings)	SF	0	0	0	0	0
(310)							
06/16/2021 WNR & DBM:							
- The sole plates have abnormal weathering with flaking rust in some locations where the strip seal compression joint seals leak.							
321	Reinforced Concrete Approach Slab	SF	1944	1526	379	39	0
1130	Cracking (RC and Other)	SF	418	0	379	39	0
(321)							
06/16/2021 WNR & DBM:							
-The approach slabs have light abrasion in the wheel paths.							
-The West approach slab has a longitudinal crack in the inside lane approximately 13' long.							
-East approach slab has 3 full length cracks.							
331	Reinforced Concrete Bridge Railing	LF	2758	2389	327	42	0
1120	Efflorescence/Rust Staining	LF	42	0	0	42	0
1130	Cracking (RC and Other)	LF	327	0	327	0	0
(331)							
06/16/2021 WNR & DBM:							
- The vertical face of parapets have areas of map cracking and efflorescence.							
- Map cracking to right wall in spans #4, #8, #9, #12, and #18 (no rebar showing at time of inspection)							



Inventory looking east



View of abutment #2



View of bent #3 behind side.



View of bent #3 behind side.



Upstream view



General view of bearings at bent #1.



General view of abutment #1.



Deck surface concrete patch span #13 on the adjacent bent #13.



Deck surface concrete patch span #13 on the adjacent bent #13.



Large crack in the east abutment.



View of expansion joint at abutment #2.



If cracking sealant was applied it would have been removed during milling operations



If cracking sealant was applied it would have been removed during milling operations



Typical transverse and longitudinal deck cracking.



General view of deck



Mill work on deck surface and traffic abrasion has removed the Tyne wearing surface.



Downstream view



View of abutment #1 expansion joint



Cracking with efflorescence in parapet wall typical.



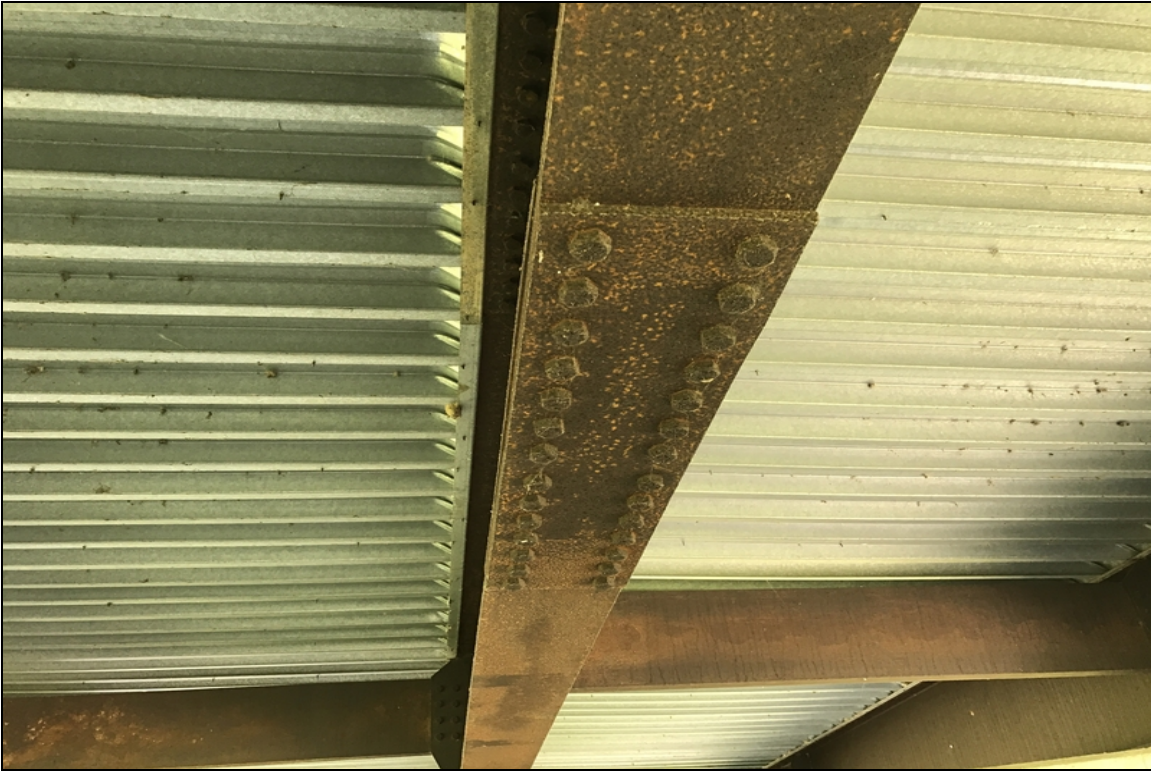
Bent #8 pier vertical and diagonal cracking are still present.



General view of undersurface.



Area of map cracking over bent 11



Typical discoloration of the patina on the superstructure.



Bent #4 expansion joint debris impaction.



Bent #12 expansion joint debris impaction



Bent #6 cap behind side has a 1&rsquo; wide patch at the bottom of cap near centerline.



Span #14 bay #3 adjacent girder #4 active corrosion to SIP forms.



Typical View of pourable joint material displaced from construction joints.



Localized scour at #2 bent of A and B bridge.



Entire deck surface appears to have been milled down.



Inventory looking East



Expansion joint at bent #16 debris impaction.



General view of bearings at bent #2



Span #15 Girder #4 has two loose bolts.



Typical cracking in parapet wall.



Majority of channel under structure has approximately 2' of trapped flood water.



East approach slab cracking.



Bent #10 right side of pier baseball sized spall.



Span #10 right overhang approximately 7' ahead of bent #9 efflorescence with cracking.



Elevation looking south



Abutment #1 expansion joint debris impaction.



Typical condition of deck surface.



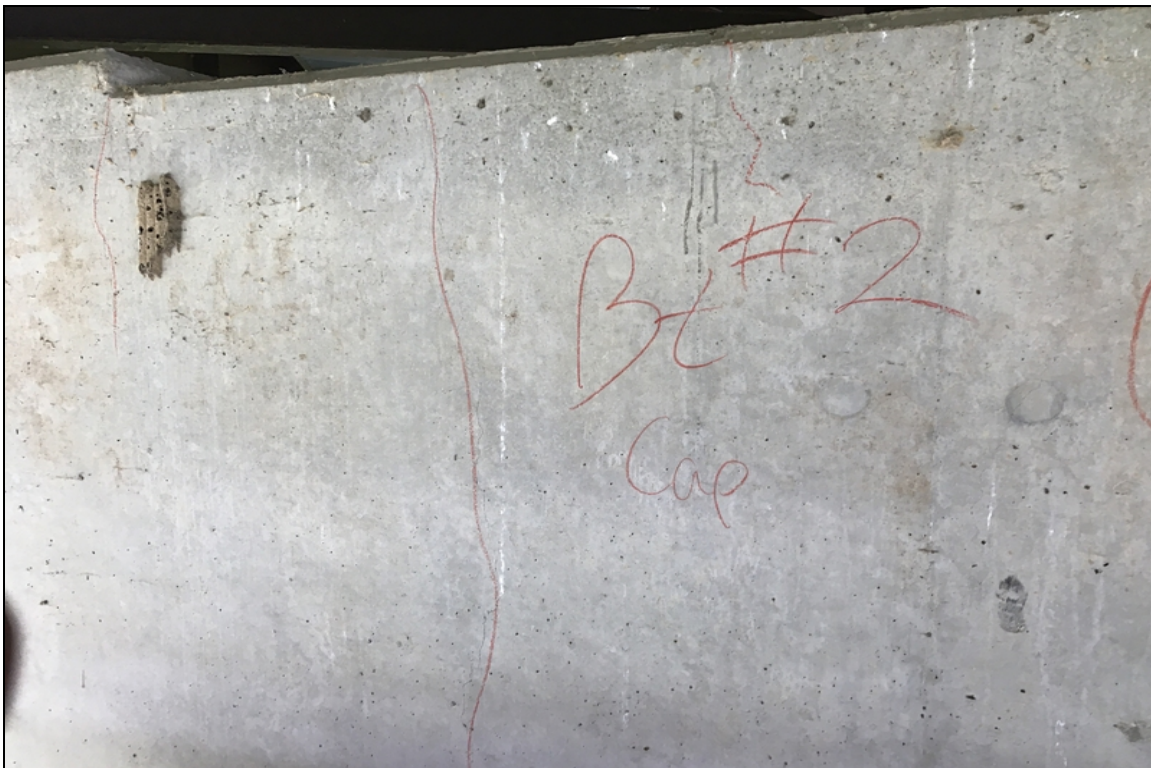
General view of abutment #2 expansion joint material debris impaction



Repaired spall bent #5 pier cap under girder #5



Span #18 Girder #5 has one loose bolt.



Bent #2 Vertical cracking in the pier cap.



Typical heavy vegetation under structure.



Typical transverse and longitudinal cracking of the deck.



Drift accumulation adjacent to bent #14.



Loose bolts still present from last inspection.



Typical Loose bolts still present from last inspection.



Delaminations at Bent #5 are still present from last inspection.



Bent #8 expansion joint.



General view of abutment #2.

## Maintenance Needs

**Date Reported:** 06/15/2011

**Priority:** D- Routine

**Type of Work:** Repair

**Status:** Monitor

**Component:**

---

## Deficiency Description

Deck / West approach slab - The deck has sealable cracking in all spans.  
The West approach slab has a wide longitudinal crack in the inside lane approximately 13' long.

## Remarks

---



Span #2-Deck cracking.



Span #11, outside lane-Wide cracking.



**Bridge #B6476**(Routine, Underwater type 2)

**SH 412 EB Benton 2 over ILLINOIS RIVER**

**Location: Benton Co 8.17 W OKLINE**

**Team Lead: Nathan Rowland Inspection Date: June 15, 2021**



West approach slab-longitudinal cracking.

**Date Reported:** 06/15/2011

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

### Deficiency Description

Expansion joints - The strip seal expansion joints have heavy debris impactation at all locations.  
The sawn construction joints have joint material missing in numerous locations.  
joint filler missing

### Remarks

---



Bent #8 expansion joint.



Strip seal expansion joint-Dirt and debris compaction.



Expansion joint at bent #16 debris impaction.



Sawn construction joint sealant missing.



General view of abutment #2 expansion joint  
material debris impaction

**Date Reported:** 06/16/2015

**Priority:** D- Routine

**Type of Work:** None

**Status:** Assigned

**Component:**

---

### Deficiency Description

Substructure - Bents #8, #9 and #10 has vertical cracks visible on both sides of columns that extend up the columns approximately 10'.

Bents #8 is the most notable case with 6 wide vertical cracks on each side.

### Remarks

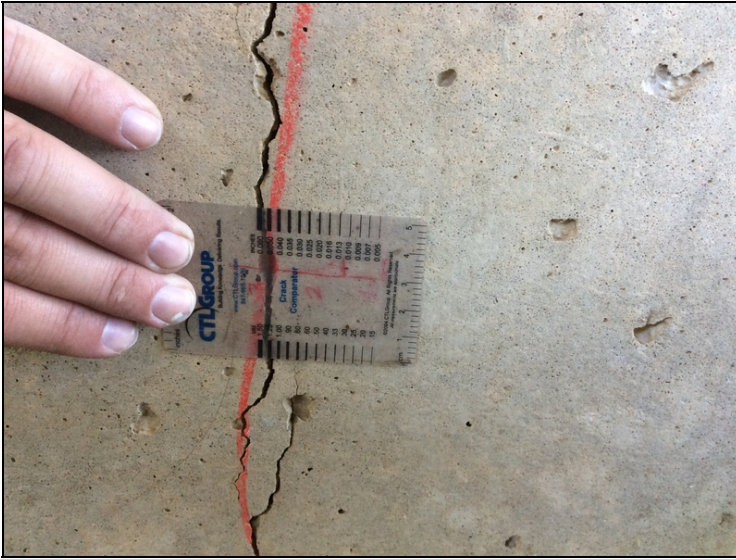
---



Bent #8-Wide cracking in column. Photo #2.



Bent #8 pier vertical and diagonal cracking are still present.



Bent #8-Wide cracking in column.



Vertical crack at bent #9 column

**Date Reported:** 06/08/2017

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

### Deficiency Description

Substructure - The right side of bent #8 has a shallow spall approximately 3' long with exposed reinforcing steel in undersurface.

The back face of bent #5 has 12" long delaminated areas under Girders #1, #2 and #4.

### Remarks

---



Bent #8 cap-Shallow spalling with exposed reinforcing steel in undersurface.



Span #5, bent #5-Delaminated area under Girder #4.

**Date Reported:** 06/08/2017

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

**Deficiency Description**

Channel - The flood plain portion of channel has a tree lodged against bent #14.

**Remarks**

---



Drift accumulation adjacent to bent #14.



Bent #14-Drift.

**Date Reported:** 06/15/2011

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

---

### Deficiency Description

Superstructure - The splice plate connections have loose bolts in several locations.

Splice plate connections have loose bolts.

-Span #2, Girder #5 splice #1 has 3 loose bolts.

-Span #3, Girder #3 splice #2 has one loose bolt.

-Span #8, Girder #4 has one loose bolt. Girder #5 has 2 loose bolts.

-Span #15 Girder #4 has two loose bolts.

-Span #18 Girder #5 has one loose bolt.

### Remarks

---



Span #15 Girder #4 has two loose bolts.



Loose bolts still present from last inspection.



Span #2, girder #5 splice #1 has 3 loose bolts.



Span #8, girder #5-Loose bolt.



Span #18 Girder #5 has one loose bolt.



Typical Loose bolts still present from last inspection.

**Date Reported:** 06/16/2021

**Priority:** D- Routine

**Type of Work:** Repair

**Status:** Open

**Component:** Channel

---

**Deficiency Description**

Erosion:

-The southwest embankment has erosion due to high water event.

**Remarks**

---



Erosion of the southwest embankment.



**Bridge #B6476**(Routine, Underwater type 2)

**SH 412 EB Benton 2 over ILLINOIS RIVER**

**Location: Benton Co 8.17 W OKLINE**

**Team Lead:** Nathan Rowland **Inspection Date:** June 15, 2021

**Date Reported:** 06/21/2021  
**Priority:** B - Pressing; 6 month completion goal  
**Type of Work:** Clean  
**Status:** Open  
**Component:** Channel

---

#### **Deficiency Description**

Large amounts of brush and trees growing next to structure.

#### **Remarks**

---



Vegetation under structure is making it difficult to inspect the structure with inspection equipment.



**Bridge #B6476**(Routine, Underwater type 2)

**SH 412 EB Benton 2 over ILLINOIS RIVER**

**Location: Benton Co 8.17 W OKLINE**

**Team Lead:** Nathan Rowland **Inspection Date:** June 15, 2021

### **Inspection Comments**

06/16/2021 WNR & DBM: Routine inspection conducted this date. See element notes for documentation.  
Logged West to East.

Logged West to East.