



Latitude:36.34868, Longitude:-94.44898

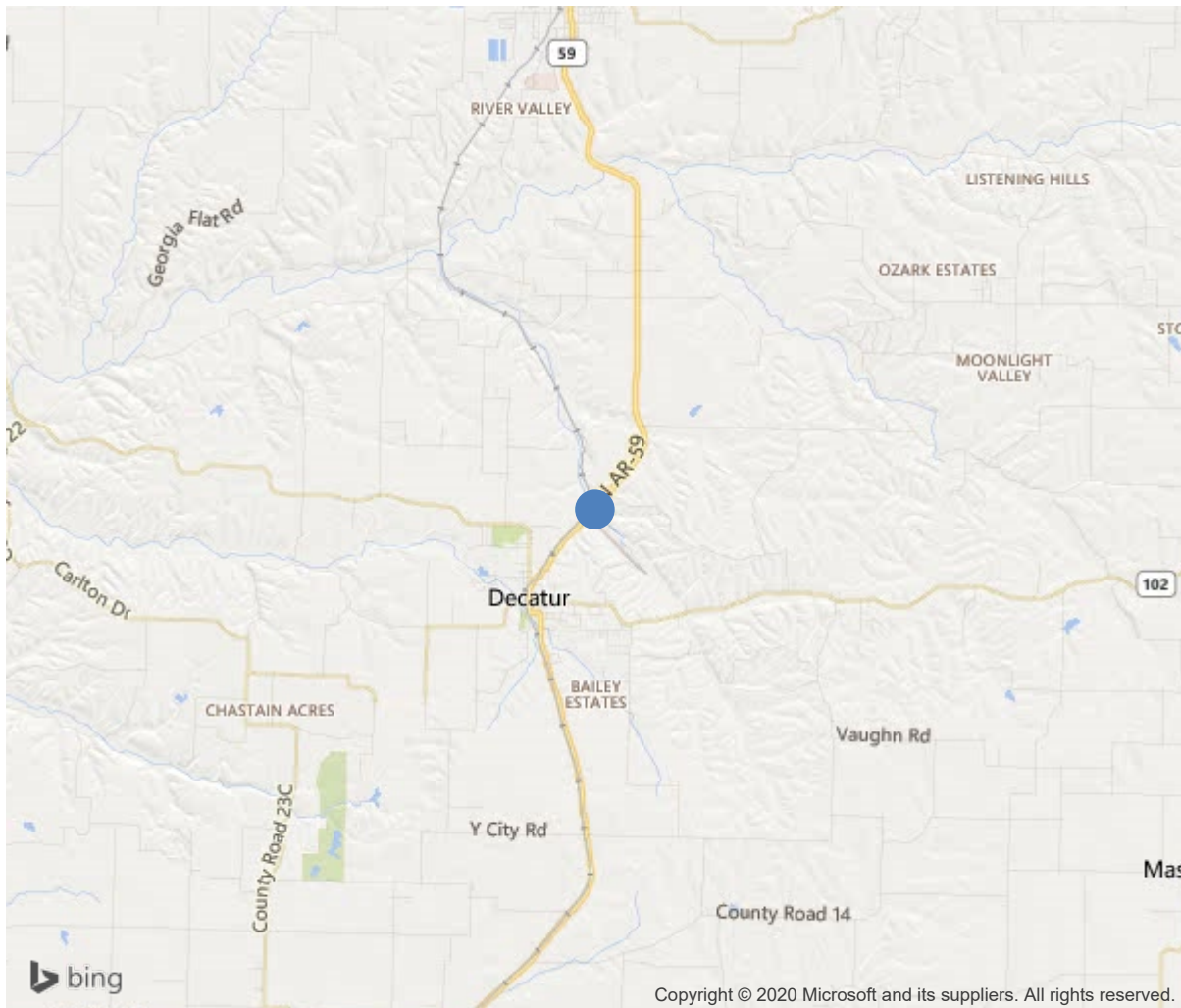
Route:59 Section:01 Log:12.37

Arnold Road ID:4x59x1xA, Arnold Log mile:12.284

District 09, Benton County

Owner: 1-State Highway Agency

.30 MI NE OF DECATUR



36.34868, -94.44898



**Bridge #01999(Load Rating Inspection)**

**SH 59 Benton 2 over WOLF CREEK**

**Location: .30 MI NE OF DECATUR**

**Team Lead: Weston Conard Inspection Date: March 30, 2020**

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	01999
(5) Inventory Route	59
(2) Highway Agency District	09
(3) County Code	7-Benton County, Arkansas
(4) Place Code	0
(6) Features Intersected	WOLF CREEK
(7) Facility Carried	SH 59 Benton 2
(9) Location	.30 MI NE OF DECATUR
(11) Mile Point	12.37 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000059010
(16) Latitude	36.34868
(17) Longitude	-94.44898
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	14
Material	1-Concrete
Type	4-Tee beam
(44) Approach Structure Type	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	2
(46) No. of Approach Spans	0
(107) Deck Structure Type	1-Concrete Cast-in-Place
(108) Wearing Surface/Protective System	
Type of Wearing Surface	6-Bituminous
Type of Membrane	0-None
Type of Deck Protection	0-None
AGE AND SERVICE	
(27) Year Built	1936
(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	6000
(30) Year of ADT	2018
(109) Truck ADT	22 %
(19) Bypass, Detour Length	14 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	30 ft
(49) Structure Length	62 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	24 ft
(52) Deck Width Out to Out	27.7 ft
(32) Approach Roadway Width (W/Shoulders)	27.9 ft
(33) Bridge Median	0-No median
(34) Skew	30 Deg
(35) Structure Flared	No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	24 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	0
(26) Functional Class	6-Rural Minor Arterial
(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	0-The inventory route is not part of
(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	4
(59) Superstructure	4
(60) Substructure	6
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	2-M 13.5 / H 15
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1-Load Factor(LF)
Rating	53
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	2
Rating	32
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	4
(68) Deck Geometry	2
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36) Traffic Safety Features	0001
A) Bridge Railings	0-Inspected feature does not meet cur
B) Transitions	0-Inspected feature does not meet cur
C) Approach Guardrail	0-Inspected feature does not meet cur
D) 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	Replacement of bridge or other
(76) Length of Structure Improvement	87 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 265
(96) Total Project Cost	\$ 632
(97) Year of Improvement Cost Estimate	2002
(114) Future ADT	5641
(115) Year of Future ADT	2028
INSPECTIONS	
(90) Inspection Date	202003
(91) Frequency	24 Months
(92) Critical Feature Inspection	Done Freq. (Mon) Date
A: Fracture Critical Detail	No 24
B: Underwater Inspection	No 0
C: Other Special Inspection	Yes 0 201902

SUFFICIENCY RATING	36.2
STATUS (SD/FO/None)	Structurally Deficient



ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
16	Reinforced Concrete Top Flange	SF	1717	872	269	576	0
1080	Delamination/Spall/Patched Area	SF	56	0	0	56	0
1090	Exposed Rebar	SF	64	0	0	64	0
1120	Efflorescence/Rust Staining	SF	456	0	0	456	0
1130	Cracking (RC and Other)	SF	269	0	269	0	0
(16)							
03/02/2020 WNR & DBM:							
-The left and right concrete bridge railing and posts are deteriorated and damaged with reinforcing steel exposed throughout.							
-The deck has an ACHM driving surface with transverse cracks over the expansion joints.							
-The deck overhangs and concrete curbs are heavily deteriorated with reinforcing steel exposed along both sides of structure with large delaminated and spalled areas around the deck drains. The deck drain on the left side of span #2, near abutment #2 is the most notable area with a 2'x2' spall with exposed reinforcing steel.							
-The undersurface has numerous transverse cracks with efflorescence and light mapcracking throughout.							
110	Reinforced Concrete Open Girder/Beam	LF	180	46	58	46	30
1080	Delamination/Spall/Patched Area	LF	50	0	0	20	30
1090	Exposed Rebar	LF	2	0	0	2	0
1130	Cracking (RC and Other)	LF	82	0	58	24	0
(110)							
03/02/2020 WNR & DBM:							
-Girders #1 and #3 in spans #1 and #2 have concrete deterioration, mapcracking with efflorescence, delaminated areas and wide horizontal cracking.							
-Span #1, Girder #1 has a 10' long x 4" high delaminated area in the lower portion of girder that propagates from bent #1 toward mid-span. The undersurface of girder has heavy mapcracking with efflorescence full length of girder. The end of girder over abutment #1 is spalled with structural steel exposed and has measurable section loss.							
-Girders of spans #1 and #2 have spalling in ends of girders where they make contact over bent #1. The most notable area is Girder #2 of span #1 has a large spall that has structural steel exposed with measurable section loss over bent #1 additionally it has a diagonal shear type crack visible on both sides of girder over bent #1 and longitudinal cracks that propagate from bent #1 toward mid-span. The lower portion of girder is delaminated in locations.							
-Girder #1 of span #1 which has a large area of spalling with exposed reinforcing steel. The lower portion of girder has a 4' long delaminated area that propagates from bent #1 toward mid-span.							
Span #2:							
-Sounding Girder #1 of span #2 indicates that the Girder is delaminated in the lower half of girder that extends the full length of Girder.							
-Span #2, Girder #3 has wide longitudinal cracks in the exterior vertical face and undersurface with hairline and mapcracking the full length of girder. The lower half of girder is delaminated for approximately 1/2 the length of girder. The remainder of the girder has areas of wide longitudinal cracking and hairline mapcracking with efflorescence.							
-Girder #2 of spans #1 and #2 has hairline vertical cracks at random locations.							
205	Reinforced Concrete Column	EA	2	0	2	0	0
1080	Delamination/Spall/Patched Area	EA	1	0	1	0	0
1130	Cracking (RC and Other)	EA	1	0	1	0	0
(205)							



**Team Lead:** Weston Conard, **Inspection Date:** March 30, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
03/02/2020 WNR & DBM: -Column #1 has a shallow spall approximately 8" long on the span #2 side. -Column #2 has minor abrasion at base and horizontal cracking near cap juncture of backface. The ahead face has vertical cracking to left side adjacent to pier wall.							
210	Reinforced Concrete Pier Wall	LF	20	14	6	0	0
1130	Cracking (RC and Other)	LF	6	0	6	0	0
(210)							
03/02/2020 WNR & DBM: -Pier wall has two full height vertical cracks visible from both spans. The ahead side has horizontal cracking approximately 5' long at the cap juncture and vertical cracking on left side. -Base of pier wall on left side has spalling with exposed reinforcing steel at ground.							
215	Reinforced Concrete Abutment	LF	76	51	22	3	0
1080	Delamination/Spall/Patched Area	LF	5	0	3	2	0
1090	Exposed Rebar	LF	1	0	0	1	0
1130	Cracking (RC and Other)	LF	9	0	9	0	0
1190	Abrasion/Wear (PSC/RC)	LF	10	0	10	0	0
(215)							
03/02/2020 WNR & DBM: -The abutments have heavy dirt and debris that has accumulated over the steel bearings. -Abutment #1 has an area of undermining on the right side approximately 6' long that extends up to approximately 18" under web wall. The base of abutment #1 has abrasion. The base of backwall has delaminated areas in bay #2 with diagonal cracking. The right corner of abutment has soft deteriorated concrete and delaminated area that extends under bearing #3. Abutment #2: -The left side of abutment #2 has soft deteriorated concrete and is delaminated under girder #1 and a portion of the monolithic wing wall. The right side of backwall has horizontal cracking behind Girder #3 and mapcracking on the exterior side of Girder #3. -Column #2 has a baseball sized spall with exposed reinforcing steel with initial section loss.							
234	Reinforced Concrete Pier Cap	LF	25	15	5	5	0
1090	Exposed Rebar	LF	5	0	0	5	0
1130	Cracking (RC and Other)	LF	5	0	5	0	0
(234)							
03/02/2020 WNR & DBM: -The backface of bent #1 cap has a short duration horizontal crack under Girder #2. -The ahead side of Bent #1 cap has delaminated and spalled areas with exposed reinforcing steel under girder #1 and two 8" long areas near Girder #2.							
311	Movable Bearing	EA	6	0	0	6	0
1000	Corrosion	EA	6	0	0	6	0
(311)							
03/02/2020 WNR & DBM: -Span #2 bearings #1 and #3 are over rotated. The girders make contact and have spalling that expose the reinforcing steel. -Moveable bearings for span #1, girders #1 and #3 over bent #							
313	Fixed Bearing	EA	6	3	0	3	0
1000	Corrosion	EA	3	0	0	3	0
(313)							

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
03/02/2020 WNR & DBM: -The fixed bearings over abutments #1 and #2 have heavy corrosion with flaking rust. The abutments have heavy dirt and debris that has accumulated over the steel bearings.							
331	Reinforced Concrete Bridge Railing	LF	124	104	0	0	20
1080	Delamination/Spall/Patched Area	LF	20	0	0	0	20
(331)							
03/02/2020 WNR & DBM: -The concrete bridge railing posts have deterioration with spalling that exposes reinforcing steel and cracking to the upper and lower portions of the posts. The bridge railing on the left side of spans #1 and #2 are attached to concrete railing with a clamping device made from salvage road sign posts. -The collision damage to the Southeast approach railing has been repaired since last inspection. -The Northwest approach railing has collision damage that has caused out-of-plane bending and rips / tears to approximately 35' of the railing.							



Span #1 girder #3 over bent #1 structural steel exposed with section loss.



South log mile sign has been displaced.





Left curb



Elevation looking west





Span #2 left deck drain #2 spalling and structural steel exposed with section loss.



Inventory looking South.





Ends of girder #1 over bent #1 spalling with steel exposed.



Span #1 bay #1 transverse cracking with efflorescence.





Patches span one



Span #1 girder #3 horizontal cracking.





Span #1 girder #1 horizontal cracking.



Right curb





Span #1 bay #2 transverse cracking on 2.5' centers.



Inventory looking South





Concrete curb and gutter left side concrete deterioration and steel exposed.



View of deck.



## Maintenance Needs

**Date Reported:** 02/13/2019  
**Priority:** G - General/ Preventive maintenance  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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## Deficiency Description

Log mile sign:  
-South logmile sign has been displaced.

## Remarks

Maintenance forces have repaired logmile sign since last inspection WNR 03/02/2020

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South log mile sign has been displaced.



Maintenance forces have repaired logmile sign since last inspection

**Date Reported:** 03/07/2018  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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### Deficiency Description

Northwest approach railing - The Northwest approach railing has collision damage that has caused out-of-plane bending with rips / tears to approximately 35' of the railing near the bridge end.

### Remarks

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The Northwest approach railing has collision damage that has caused out-of-plane bending and rips / tears to approximately 35' of the railing.



**Date Reported:** 02/08/2017

**Priority:** D- Routine

**Type of Work:** None

**Status:** Monitor

**Component:**

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### Deficiency Description

Abutments - The abutments have heavy dirt and debris that has accumulated against the steel bearing devices promoting corrosion.

### Remarks

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Abutment #2-Dirt accumulation on bearing device.



Dirt and debris accumulated against steel bearing device.

**Date Reported:** 03/22/2012  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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### Deficiency Description

Superstructure / Bearings - The bearings have heavy corrosion with thick flaking rust and section loss. The moveable bearings over bent #1 are the worst case with heavy pack rust between sole and masonry plates that appear to be restricting movement. The bearings are over rotated and spans #1 and #2 make contact over bent #1 causing spalling to ends of girders.

### Remarks

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Span #2, Girder #1-Bearing over rotated with heavy corrosion. photo #1



Heavy corrosion with section loss to bearings over bent #1.





Span #2, Girder #1-Bearing over rotated with heavy corrosion. Photo #2

**Date Reported:** 03/22/2012  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Assigned  
**Component:**

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### Deficiency Description

Deck - The deck overhangs and concrete curbs are heavily deteriorated with reinforcing steel exposed along both sides of structure with large spalls around the deck drains and numerous delaminated areas. The deck drain on the left side of span #2, near abutment #2 is the most notable area with a 2'x2' spall with exposed reinforcing steel. The undersurface has numerous transverse cracks with efflorescence and light mapcracking throughout.

### Remarks

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Deck overhang on left side-Spalling with concrete deterioration and mapcracking with efflorescence.



Span #2, Left side-Spalling around deck drain.



**Date Reported:** 03/22/2012  
**Priority:** C - Important  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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**Deficiency Description**

Bent #1 right column at ground line [per plans]  
Large spall with rebar exposed

**Remarks**

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Deterioration with rebar exposed at upstream  
ground line of pier #1

**Date Reported:** 03/22/2012  
**Priority:** B - Pressing; 6 month completion goal  
**Type of Work:** None  
**Status:** Monitor  
**Component:**

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### Deficiency Description

#### Superstructure:

- Concrete girders #1 and #3 in spans #1 and #2 have areas of wide horizontal and mapcracking with spalls to the ends of girders that expose the reinforcing steel.
- The lower portions of several girders are delaminated for the majority of length of girders.
- Girder #2 of span #1 has a shear cracking over bent #1.
- Girder #3 span #1 over bent #1 has a large spall with structural steel exposed that has section loss.

### Remarks

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Span #1, Girder #1-Delaminated area.



Span #2, Girder #3-Spalling delaminated area near abutment #2.





Span #1, Girder #2-Shear type cracking over bent #1.



Span #1 girder #1 horizontal cracking.



Span #1, Girder #3-Delaminated area adjacent to bent #1.



Span #1 girder #3 horizontal cracking.





Ends of girder #1 over bent #1 spalling with steel exposed.



Span #1 girder #3 over bent #1 structural steel exposed with section loss.



Span #1, Girder #1-Spalling over bent #1.



Span #1, Girder #2 over bent #1-Delaminated with wide cracking.





Concrete deterioration to girders still exists as of this inspection.



**Bridge #01999**(Load Rating Inspection)

**SH 59 Benton 2 over WOLF CREEK**

**Location: .30 MI NE OF DECATUR**

**Team Lead:** Weston Conard **Inspection Date:** March 30, 2020

### **Inspection Comments**

03/02/2020 WNR & DBM: Routine and Underwater Type II inspection conducted this date. See element notes for documentation.

Logged North to South.

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