



Latitude:36.47529, Longitude:-94.25051

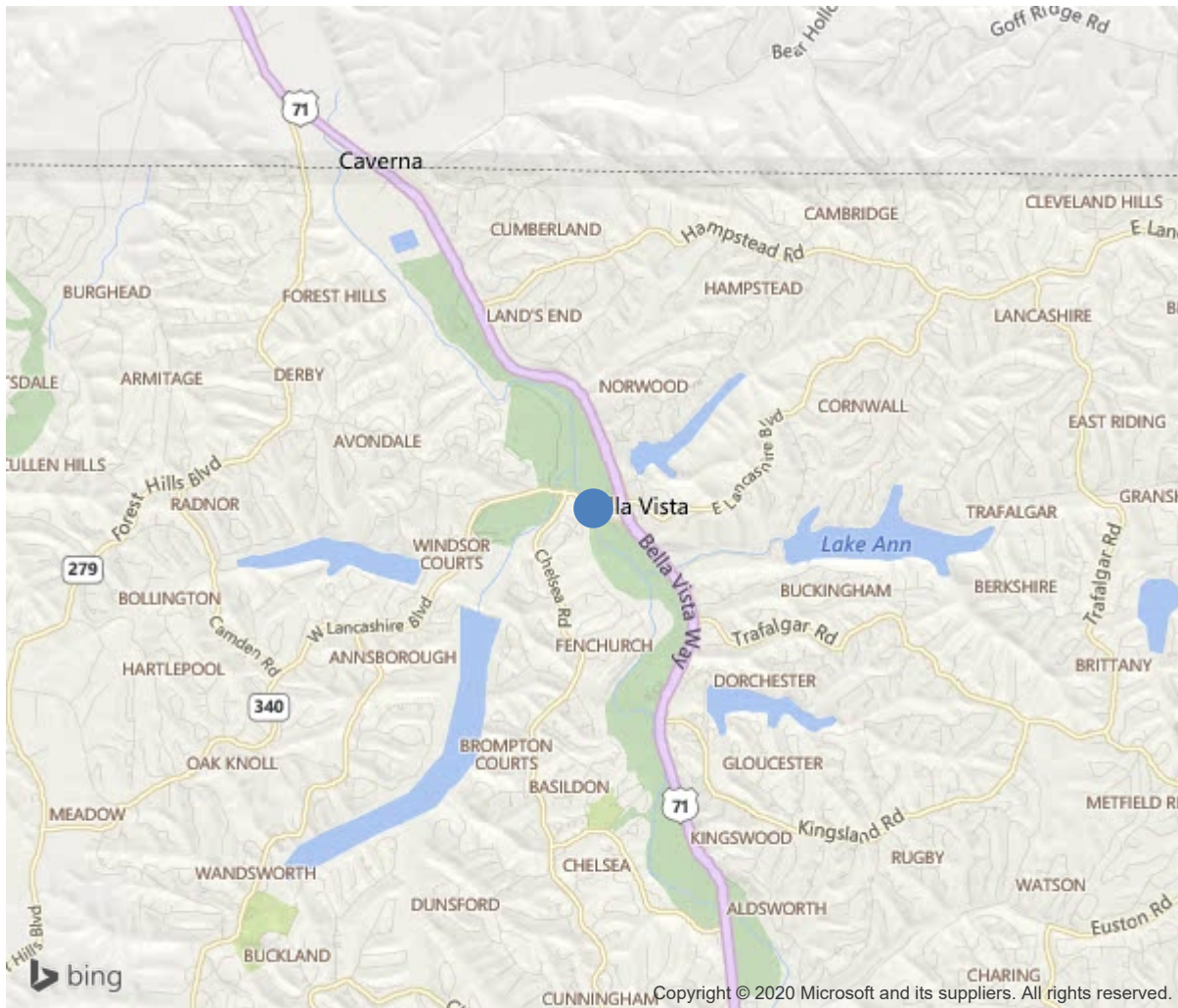
Route:340 Section:01 Log:4.14

Arnold Road ID:4x340x1xA, Arnold Log mile:4.156

District 09, Benton County

Owner: 1-State Highway Agency

.10 SW JCT SH 340-US 71



36.47529, -94.25051



Bridge #05155(Underwater type 2, Routine)

SH 340 Benton 1 over LITTLE SUGAR CREEK

Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland Inspection Date: May 06, 2020

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	05155
(5) Inventory Route	340
(2) Highway Agency District	09
(3) County Code	7-Benton County, Arkansas
(4) Place Code	0
(6) Features Intersected	LITTLE SUGAR CREEK
(7) Facility Carried	SH 340 Benton 1
(9) Location	.10 SW JCT SH 340-US 71
(11) Mile Point	4.14 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	0000000000
(16) Latitude	36.47529
(17) Longitude	-94.25051
(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	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	5
(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	1967
(106) Year Reconstructed	1975
(42) Type of Service	15
On	1-Highway
Under	5-Waterway
(28) Lane	
On	3
Under	0
(29) Average Daily Traffic	12000
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	3 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	57 ft
(49) Structure Length	287 ft
(50) Curb or Sidewalk Width	
Left	1.5 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	42 ft
(52) Deck Width Out to Out	47 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	44 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	16-Urban 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	6
(60) Substructure	5
(61) Channel & Channel Protection	7
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	4-M 18 / H 20
(63) Operating Rating Method	1
(64) Operating Rating	
Type	1-Load Factor(LF)
Rating	55
(65) Inventory Rating Method	1-Load Factor(LF)
(66) Inventory Rating	
Type	5
Rating	33
(70) Bridge Posting	5-Equal to or above legal loads
(41) Structure Open/Posted/Closed	A-Open, no restriction
APPRAISAL	
(67) Structural Evaluation	5
(68) Deck Geometry	4
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36) Traffic Safety Features	1000
A) Bridge Railings	1-Inspected feature meets currently a
B) Transitions	0-Inspected feature does not meet cur
C) Approach Guardrail	0-Inspected feature does not meet cur
D) Approach Guardrail Ends	0-Inspected feature does not meet cur
(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	18334
(115) Year of Future ADT	2028
INSPECTIONS	
(90) Inspection Date	202005
(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 201905

SUFFICIENCY RATING	60.4
STATUS (SD/FO/None)	Structurally Deficient

Team Lead: Nathan Rowland, **Inspection Date:** May 06, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	11085	11056	26	3	0
1080	Delamination/Spall/Patched Area	SF	29	0	26	3	0
510	Wearing Surfaces	SF	11085	10739	79	267	0
3220	Crack (Wearing Surface)	SF	139	0	0	139	0
3210	Delam/Spall/Patched Area/Pothole	SF	207	0	79	128	0
(12)							
5/6/2020 - WNR & DBM:							
Surface:							
-The top of the deck is not visible due to ACHM driving surface.							
-Asphalt wearing surface has spalling and cracking over the expansion joints that has created potholes in the driving surface.							
-This structure has been widened in the past. The left side of structure is the original structure and has large areas of scaling with delaminated areas in undersurface of span #1, bays #1 through #4.							
-Span #1 left lane 6' x 3' concrete patched area.							
-Sounding in Span #1, bays #1, 2 and 3 revealed large delaminated areas.							
Undersurface:							
-Span #1, bay #2 has a 2'x2' area of spalling 32' ahead of abutment #1. Sounding indicated no delamination surrounding the area. In bay #2 approximately 8' from abutment #1 there is a 2'x2' concrete patch.							
-Span #2 undersurface has light scaling the majority of length of span in bays #1 through #4 with areas of short duration longitudinal cracking in bay #3 and transverse cracking with light efflorescence in bays #5 through 7.							
-Span #3 has light scaling in bays 1 through #4. Bays #3 and #4 have the largest areas of scaling.							
-Span #4 has areas of light scaling in bays #1 through #4 with short duration cracking with efflorescence in bay #4.							
-Span #5 has scaling in bays #1 through #4. Bay #3 has large delaminated areas approximately 10' from abutment #2. Bay #4 has an 8" diameter spall with both mats of reinforcing steel visible.							
-Concrete deck has been overlaid with asphalt in 2012. See deck sketch of 2011 linked in "Other file" for condition of the deck and location of patches / repairs.							
(12-510)							
5/6/2020 - WNR & DBM:							
-The asphalt wearing surface has multiple areas of cracking and spalling. Worse cases are at joints.							
107	Steel Open Girder/Beam	LF	2109	1999	110	0	0
1000	Corrosion	LF	110	0	110	0	0
515	Steel Protective Coating	SF	11856	11753	40	56	7
3440	Effectiveness (Steel Protective Coatings)	SF	103	0	40	56	7
(107)							
5/6/2020 - WNR & DBM:							
-Girder #1 has a large Utility connected to it with a "C" type bracing the entire length of structure.							
Girder size is 24" tall x 8" flange x 8 girders. Span #1 has heavy rust to bottom flange of girder #1, all others have minor to moderate rusting to bottom flange.							
205	Reinforced Concrete Column	EA	14	5	0	8	1
1080	Delamination/Spall/Patched Area	EA	6	0	0	6	0
1090	Exposed Rebar	EA	2	0	0	2	0
1130	Cracking (RC and Other)	EA	1	0	0	0	1
(205)							



Bridge #05155(Underwater type 2, Routine)

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Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland, Inspection Date: May 06, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
5/6/2020 - WNR & DBM: Bent 1: -Column 1 behind side has areas of spalling with steel exposed in CS-3. -Column 2 right side has large areas of delaminations. -Column 1 behind side has a large vertical crack that propagates from the hammerhead juncture. Bent 2: -Column 1 behind side has scaling with minor aggregate loss. -Column 2 behind side has spalling with steel exposed that has section loss. -Column 3 behind side behind side large area of scaling. Bent 3: -Column 1 on the ahead side has approximately 25' of delaminated area propagating from the bent cap and has two areas of spalling with steel exposed with section loss. -Column 2 behind side near waterline has large spall due to loss of aggregate. Bent 4: -Column 2 behind side has a large full height vertical crack and delaminated area. Bent #1 column #1 has 15' vertical crack with rebar exposed, Bent #3 right column has 12' rebar exposed. Bent #4 left column has 2' rebar exposed near bottom, Right column has 10' vertical crack.							
215	Reinforced Concrete Abutment	LF	167	155	12	0	0
4000	Settlement	LF	12	0	12	0	0
(215)							
5/6/2020 - WNR & DBM: Abutment #2 has 6-12" settlement towards right side exposing steel piles # 2,3,4.							
234	Reinforced Concrete Pier Cap	LF	155	93	51	10	1
1080	Delamination/Spall/Patched Area	LF	12	0	11	0	1
1090	Exposed Rebar	LF	10	0	0	10	0
1130	Cracking (RC and Other)	LF	40	0	40	0	0
(234)							
5/6/2020 - WNR & DBM: -Bent #1 cap spalled with 3' rebar exposed, horizontal crack under girders #4 and #5, -Bent #1 cap left behind side has a large spalled area that propagates under bearing #1 in span #1 causing minor loss of bearing area. -Bent #4 cap right side underside has 8' exposed rebar. Discolored and beginnings of delamination to face of cap as well as horizontal cracking.							
302	Compression Joint Seal	LF	282	0	0	282	0
2310	Leakage	LF	282	0	0	282	0
(302)							
5/6/2020 - WNR & DBM: Joint seals at abutment #1 and over piers 1 and 2 are leaking on to caps and causing corrosion to bearings and beam ends. Joint areas have been overlaid with asphalt, but the over lay has pot holed over joints.							
311	Movable Bearing	EA	37	8	19	10	0
1000	Corrosion	EA	29	0	19	10	0
(311)							
5/6/2020 - WNR & DBM: -Multiple bearings have active corrosion due to joint leakage. Some bearings have flaking rust. The worst cases are at intermediate bents.							
313	Fixed Bearing	EA	37	10	18	9	0

Team Lead: Nathan Rowland, **Inspection Date:** May 06, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
1000	Corrosion	EA	27	0	18	9	0
(313) 5/6/2020 - WNR & DBM: -Multiple bearings have active corrosion due to joint leakage. Some bearings have flaking rust.							
330	Metal Bridge Railing	LF	287	277	10	0	0
7000	Damage	LF	10	0	10	0	0
(330) 5/6/2020 - WNR & DBM: -The left metal railing in spans 4 and 5 have evidence of collision damage at this inspeciton.							
331	Reinforced Concrete Bridge Railing	LF	287	0	287	0	0
1130	Cracking (RC and Other)	LF	287	0	287	0	0
(331) 5/6/2020 - WNR & DBM: -The right concrete bridge railing has map cracking the entire length of bridge.							



Inventory looking East.



Downstream view



Upstream view



Span #4 undersurface of deck.



Bent #3 ahead side.



General view of deck



Condition of abutment #1 joint



Large concrete patch span #1 left lane.



Condition of joint material & wearing surface at bent #1 joint.



Condition of joint material & wearing surface at bent #2 joint



General view of deck.



Condition of joint material & wearing surface at bent #3 joint



No change since last inspection.



View of bent #1 joint displacement of asphalt overlay material.



View of bent #2 joint displacement of asphalt overlay material.



West approach roadway adjacent left side of abutment #1 pothole has formed.



View of bent #4 joint displacement of asphalt overlay material.



View of bent #3 joint displacement of asphalt overlay material.



Typical exposed reinforcing steel around deck drains.



No change since last inspection.



General view of deck spans #3 and #4.



Right side of span #1 above bent #1 right spalling with reinforcing steel exposed.



General view of deck spans #1 and #2.



Elevation looking South.



Inventory looking East.



Asphalt surface at abutment #1 joint.

Maintenance Needs

Date Reported: 05/23/2012
Priority: C - Important
Type of Work: None
Status: Assigned
Component:

Deficiency Description

Concrete caps bt #1, #2 and #4 have deterioration, delamination, horizontal cracking and spalls with rebar exposed

Remarks



Bent #4 cap right undersurface has exposed rebar



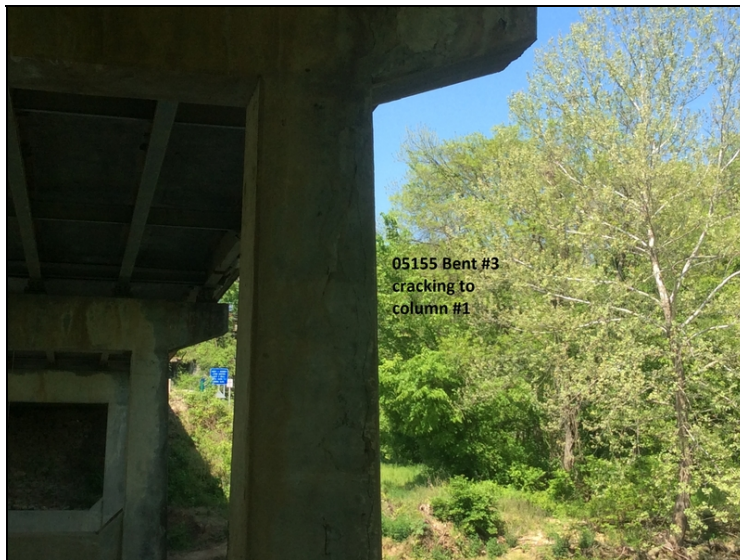
Cap at ahead side of bent #1

Date Reported: 05/23/2012
Priority: C - Important
Type of Work: None
Status: Assigned
Component:

Deficiency Description

Bent #2 column #1,#2, Bent #3 columns #1,#2, Bent #4 column #1 and Bent #5 column #2 all have delamination, cracking and spalls with rebar exposed

Remarks



Bent #3 ahead side of column #1 cracking.



Bent #1 column #1 behind side spalling with steel exposed.



Bent #4 column #1 base of column shallow rebar exposed.



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SH 340 Benton 1 over LITTLE SUGAR CREEK
Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland **Inspection Date:** May 06, 2020

Date Reported: 05/23/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

Steel superstructure all spans
Visible rust

Remarks



steel superstructure active corrosion.

Date Reported: 05/20/2015
Priority: C - Important
Type of Work: None
Status: Assigned
Component:

Deficiency Description

Settlement at abutment #2 exposing steel piles #2 #3 and #4

Remarks



Exposed steel pile #2, #3, & #4 at abutment #2



Abutment 2 left - settlement of end slope



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SH 340 Benton 1 over LITTLE SUGAR CREEK
Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland **Inspection Date:** May 06, 2020

Date Reported: 05/17/2017
Priority: C - Important
Type of Work: None
Status: Monitor
Component:

Deficiency Description

Deck - The ACHM driving surface is breaking apart over all expansion joints creating potholes in the driving surface.

Remarks



West approach-Potholes.



Abutment 2 left lanes approach roadway potholes.



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SH 340 Benton 1 over LITTLE SUGAR CREEK
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Team Lead: Nathan Rowland **Inspection Date:** May 06, 2020



Bent 1 joint



Abutment 1 right lanes approach roadway
potholes.



Bridge #05155(Underwater type 2, Routine)
SH 340 Benton 1 over LITTLE SUGAR CREEK
Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland **Inspection Date:** May 06, 2020



Bent #1-Potholes in ACHM driving surface.



Bent 2 joint

Date Reported: 05/18/2017
Priority: C - Important
Type of Work: None
Status: Monitor
Component:

Deficiency Description

Deck - The undersurface of the deck in the original part of structure (bays #1 through #4) has large delaminated areas in spans #1 and #5. The undersurface has large areas of light / medium scaling in all spans indicating distress. Span #1, bay #4 has a 2'x2' area of spalling. Span #5, bay #3 has an 8" diameter spall with exposed reinforcing steel.

Remarks



Span #1, bay #3-medium scaling with large delaminated area.



Span #1, bay #6-spalling in undersurface.



Span #5 bays #3 and #4 delaminated areas.



Span #5, bay #4-Spalling with exposed reinforcing steel.



Span #1, bay #2-Delaminated area around repair.



Span 1 bay 2 adjacent abutment 1 concrete patch.



Scaling in undersurface typical.

Date Reported: 05/26/2015
Priority: D- Routine
Type of Work: None
Status: Assigned
Component:

Deficiency Description

Deck - The overhang portion of the deck have areas of spalling with exposed reinforcing steel in several locations typically around deck drains.

Remarks



Span #1, right side over bent #1-Spalling with exposed reinforcing steel.



Typical exposed reinforcing steel around deck drains.



Span #5, Left side-Spalling around deck drains.



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SH 340 Benton 1 over LITTLE SUGAR CREEK

Location: .10 SW JCT SH 340-US 71

Team Lead: Nathan Rowland **Inspection Date:** May 06, 2020

Inspection Comments

5/6/2020 - WNR & DBM: Routine and Underwater type II inspections conducted this date. See element notes for documentation.

Logged West to East.

Constructed under job# 009532.

Load posting removed from structure on 8/12/15 after load rating analysis. Per Dennis Vire.

Changed routine inspection frequency from 12 mos to 24 mos.
