



Bridge #M4055(Record Change)

SH 159-08 LM 2.36 over Canal Number 19

Location: 2.36 Mi N SH138-Winchester

Team Lead: Greg Loomis Inspection Date: August 20, 2020



Latitude:33.81046, Longitude:-91.44082

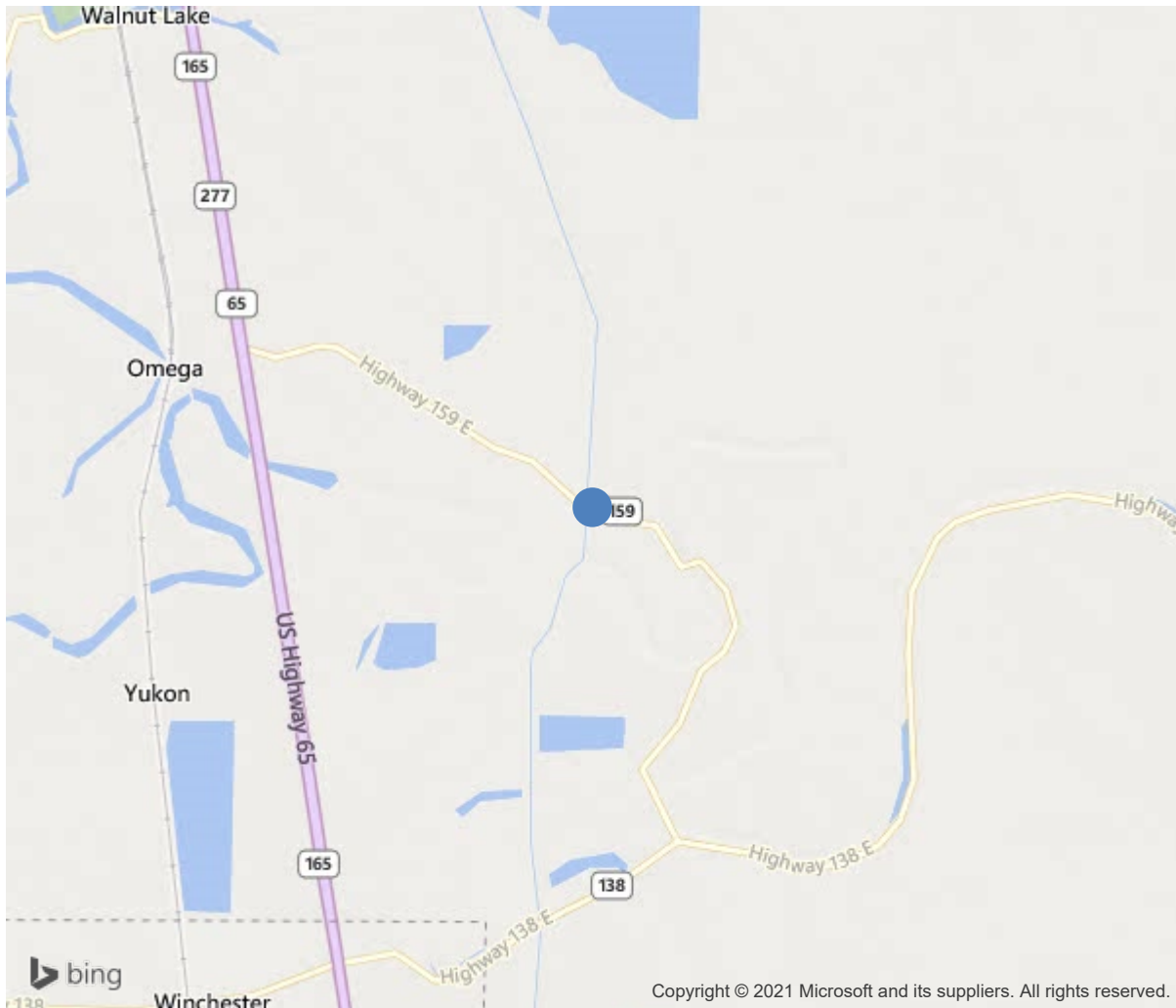
Route:159 Section:08 Log:2.36

Arnold Road ID:21x159x8xA, Arnold Log mile:2.366

District 02, Desha County

Owner: 1-State Highway Agency

2.36 Mi N SH138-Winchester



33.81046, -91.44082



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IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	M4055
(5) Inventory Route	159
(2) Highway Agency District	02
(3) County Code	41-Desha County, Arkansas
(4) Place Code	0
(6) Features Intersected	Canal Number 19
(7) Facility Carried	SH 159-08 LM 2.36
(9) Location	2.36 Mi N SH138-Winchester
(11) Mile Point	2.36 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	0000000000
(16) Latitude	33.8104560660996
(17) Longitude	-91.4408214325375
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	122
Material	1-Concrete
Type	22-Channel beam
(44) Approach Structure Type	00
Material	0-Other
Type	0-Other
(45) No. of Spans in Main Unit	9
(46) No. of Approach Spans	0
(107) Deck Structure Type	2-Concrete Precast Panels
(108) Wearing Surface/Protective System	
Type of Wearing Surface	1-Monolithic Concrete (concurrently placed
Type of Membrane	0-None
Type of Deck Protection	0-None
AGE AND SERVICE	
(27) Year Built	1980
(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	434
(30) Year of ADT	2018
(109) Truck ADT	2 %
(19) Bypass, Detour Length	5 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	31 ft
(49) Structure Length	208 ft
(50) Curb or Sidewalk Width	
Left	0 ft
Right	0 ft
(51) Bridge Roadway Width Curb to Curb	28.2 ft
(52) Deck Width Out to Out	30.8 ft
(32) Approach Roadway Width (W/Shoulders)	27.9 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	29.5 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	5-None present but re-evaluation
(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	8-Rural Minor Collector
(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	7
(59) Superstructure	6
(60) Substructure	4
(61) Channel & Channel Protection	6
(62) Culverts	N
LOAD RATING AND POSTING	
(31) Design Load	0-Other or Unknown
(63) Operating Rating Method	0
(64) Operating Rating	
Type	0-Field evaluation and documented engineering j
Rating	10
(65) Inventory Rating Method	0-Field evaluation and documente
(66) Inventory Rating	
Type	9
Rating	0
(70) Bridge Posting	0-> 39.9% below
(41) Structure Open/Posted/Closed	P-Posted for load (may include o
APPRAISAL	
(67) Structural Evaluation	4
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	5
(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	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	658
(115) Year of Future ADT	2028
INSPECTIONS	
(90) Inspection Date	
(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

Team Lead: Greg Loomis, **Inspection Date:** August 20, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
16	Reinforced Concrete Top Flange	SF	6406	6406	0	0	0
510	Wearing Surfaces	SF	4992	4992	0	0	0
(16)							
Deck: 30.8' wide x 208' long. Wearing surface: Very thin in many places with deck showing through. Visible joints are completely grouted and grout is in very good condition, with a couple joints beginning to crack.							
110	Reinforced Concrete Open Girder/Beam	LF	1664	1248	414	2	0
1080	Delamination/Spall/Patched Area	LF	42	0	40	2	0
1090	Exposed Rebar	LF	14	0	14	0	0
1130	Cracking (RC and Other)	LF	360	0	360	0	0
(110)							
Girders: 8 precast units per span / 208' total span. Units are bolted transversely and longitudinally - no noted missing or loss bolts (except for railing bolts). Scattered areas of cracking, spalling, and exposed rebar (minor corrosion) on the bottom of unit legs. All spans have some vertical (flexure) light cracks near mid span.							
215	Reinforced Concrete Abutment	LF	70	59	5	6	0
6000	Scour	LF	11	0	5	6	0
(215)							
Abutments: 35' each / Bents 1 & 10: Bent 1 left and Bent 10 right have some minor erosion.							
228	Timber Pile	EA	72	34	15	19	4
1020	Connection	EA	1	0	0	1	0
1140	Decay/Section Loss	EA	20	0	7	9	4
1150	Check/Shake	EA	17	0	8	9	0
(228)							
Piling: 6 per bent / Bents 2, 3, 8, & 9; 12 (two rows of 6) per bent / Bents 4-7.							
Bent 2 Pile 1: large checks CS 3 Bent 2 Pile 2: Large checks – CS3 check. Bent 2 Pile 5: Large checks with some decay/hollow area near check – CS3 decay Bent 2 Pile 6: large checks CS3							
Bent 3 Pile 1: Full height check – CS3 check. Bent 3 Pile 2: Decay/hollow from ground up 2-3' – CS4 decay. Bent 3 Piles 5 & 6: Large checks with some decay/hollow area near check – CS3 decay x 2.							
Bent 4 Piles 1, 3, 4, 7, & 8: Some checks, but solid – CS2 check x 5. Bent 4 Pile 2: Decay/hollow 4' up from ground (as high as can be reached from ground) – CS4 decay. Bent 4 Pile 5: Decay/hollow area near connection bolt – CS3 decay. Bent 4 Pile 10: Decay/hollow (from ground up high as can be reached) NO BEARING CAPACITY – CS4 decay.							

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ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>Bent 4 Pile 11: Large check with some decay/hollow area near check – CS3 check. Bent 4 Pile 12: Decay/hollow from ground up (full height) NO BEARING CAPACITY – CS4 decay.</p> <p>Bent 5 Piles 5, 7, & 11: Some checks, but solid – CS2 check x 3. Bent 5 Pile 8: Some decay to outer shell near water line – CS2 decay. Bent 5 Pile 12: Concrete connection has a large crack (full-height) on the ahead side of barrel (No signs of cracking to concrete on back face).</p> <p>Bent 6 Pile 1: Significant decay with checking and ring separation (60% section loss) / pile is noticeably leaning/bowed top to the right ahead – CS3 decay. Bent 6 Pile 2: Large check at the top – CS3 check. Bent 6 Pile 6: Numerous checks / pile is noticeably leaning top to the right (see note) – CS3 check. Bent 6 Pile 7: Large check with a small hollow area / pile is noticeably leaning/bowed top to the right ahead – CS3 check. Bent 6 Pile 10: Some decay to outer shell near water line – CS2 decay. Bent 6 Pile 12: Large check on left ahead / pile is noticeably leaning top to the right (see note) – CS3 check. NOTE: Bent 6 Piles 6 & 12 were replaced in the past after original piling broke under stress of drift/debris/water flow – pile were driven outside of originals and tops pulled over into place under cap/sub-cap.</p> <p>Bent 7 Piles 1 & 7: Some decay to outer shell – CS2 decay x 2. Bent 7 pile 11 has some decay 4' down from cap CS2</p> <p>Bent 8 Pile 1: Large check with small hollow area. CS3 decay Bent 8 Piles 2 & 3: Decay/hollow areas with some core remaining – CS3 decay x 2. Bent 8 pile 5: checking with minor decay CS 3 checks Bent 8 pile 6 : has some decay 2' up from ground line. CS 2 decay.</p> <p>Bent 9 Pile 4: Some decay to outer shell 2' up from ground line – CS2 decay.</p>							
234	Reinforced Concrete Pier Cap	LF	256	205	51	0	0
1080	Delamination/Spall/Patched Area	LF	29	0	29	0	0
1090	Exposed Rebar	LF	22	0	22	0	0
(234)							
<p>Caps (concrete): 32" each / Bents 2-9. Bents 3, 4, 5, & 8: Small spalls with exposed rebar (minor corrosion) on bottom face of cap. Bents 2, 3, 5, 6, 7, 8, & 9: Contact spalls under channel legs.</p>							
235	Timber Pier Cap	LF	96	0	56	28	12
1140	Decay/Section Loss	LF	44	0	32	8	4
1150	Check/Shake	LF	24	0	24	0	0
1170	Split/Delamination (Timber)	LF	28	0	0	20	8
(235)							
<p>Sub-caps (timber): 6 each @ 4' per bent / Bents 4-7 = 96' total. *Sub-caps are placed transversely across double rows of piling supporting concrete caps.</p> <p>Bent 4: Small- to moderate-sized checks. Piling and sub-caps are misaligned to ahead – back edge of Piles 1-6 are aligned with the back side of the concrete cap (cap is centered at joint).</p> <p>Bent 5 Sub-cap 1: Significant decay/rot (hollow on each end) – large split on bottom face – beginning to distort and crush over pile. NO BEARING CAPACITY. Bent 5 Sub-caps 2-5: Large vertical splits (especially Sub-caps 3 & 4). Piling and sub-caps are misaligned to ahead – center of Pile 1 (left side) is aligned with the back side of the concrete cap / back edge</p>							

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[illegible]



Elevation.



Bridge rail bowed due to previous lay damage. Possibly some due bowed pile.



Bent 7 sub cap 2 split.



Bent 8 pile 3 hollow area at ground line.



Bent 6 alignment.



Bent 6 pile 7 not making contact with sub cap.



Bent 6 pile 1 large shake with checking.



Bent 6 pile 1



Bent 6 pile 1 and 7 have large shakes and checks to lower pile near water line.



Bent 5 sub cap 3 split.



Bent 6 pile 1 decay.



Bent 6 pile 1 has outer ring separation and loss of section.



Bent 6 pile 7 large shakes and checking.



Bent 5 pile 6 has outer shell separation.



Bent 5 pile 6 has outer shell decay and separation.

Maintenance Needs

Date Reported: 03/01/2011

Priority: D- Routine

Type of Work: N/A

Status: Monitor

Component:

Deficiency Description

Abutment 1, left side and Abutment 10 right side.
Some erosion active.
Changed from "G" to "D" SDH 2020.

Remarks

No action at this time. Continue to monitor and advise if condition worsens.



Bent 10 pile 1 exposed with decay under cap.



Bent 10 pile 6 exposed from erosion with some decay.

Date Reported: 02/19/2015
Priority: G - General/ Preventive maintenance
Type of Work: N/A
Status: Assigned
Component:

Deficiency Description

Channel/end-slope - Span 3 left: Small tree growing up right along side of bridge.

Remarks

Bryant: remove vegetation, advise when complete



Span 3 right side tree growing alongside bridge.

Date Reported: 02/14/2017
Priority: C - Important
Type of Work: N/A
Status: Monitor
Component:

Deficiency Description

Bent 2 Pile 2: Large checks.

Bent 2 Pile 5: Large checks with some decay/hollow area near check.

Bent 3 Pile 1: Full height check.

Bent 3 Piles 5 & 6: Large checks with some decay/hollow area near check.

Bent 4 Pile 5: Decay/hollow area near connection bolt.

Bent 4 Pile 11: Large check with some decay/hollow area near check.

Bent 5 Pile 12: Concrete connection has a large crack (full-height) on the ahead side of barrel (No signs of cracking to concrete on back face).

Bent 6 Pile 2: Large check at the top.

Bent 6 Pile 6: Numerous checks / pile is noticeably leaning top to the right (see note).

Bent 6 Pile 12: Large check on left ahead / pile is noticeably leaning top to the right (see note).

NOTE: Bent 6 Piles 6 & 12 were replaced in the past after original piling broke under stress of drift/debris/water flow – pile were driven outside of originals and tops pulled over into place under cap/sub-cap.

Bent 8 Pile 1: Large check.

Bent 8 Piles 2 & 3: Decay/hollow areas with some core remaining.

Remarks



Bent 8 Pile 3: Decay



Bent 6 pile 7 has large check with possible fracture 6' above ground with a small hollow area.



Bent 4 Pile 3: Checking



Bent 6 Piles 1, 6, 7, & 12: Leaning/bowed



Bent 5 pile 12 concrete connection had a large crack full height on the ahead side of barrel. (Note no signs of cracking to concrete on back face.)



Bent 2 pile 5 large check with hollow area near check.

Date Reported: 02/14/2017
Priority: A - Safety deficiency; requires prompt action
Type of Work: N/A
Status: Assigned
Component:

Deficiency Description

Sub-caps (timber) -

Bent 5 Sub-cap 1: Significant decay/rot (hollow on each end) – large split on bottom face – beginning to distort and crush over pile. NO BEARING CAPACITY.

Bent 5 Sub-caps 2-5: Large vertical splits (especially Sub-caps 3 & 4).

Bent 7 Sub-caps 1, 4, & 5: Some decay (hollow) on ends.

Bent 7 Sub-caps 2-4: Large vertical splits.

03-18-2019 GGL-KLR: Changed priority from "C" to "B". Changed from "B" to "A" SDH 2020.

Remarks



Bent 6 sub cap over piles 1-7



Bent 5 Sub-caps 1-3: Decay/checking



Bent 7 sub-cap 4-5 have decay.



Bent 5 Sub-caps 1-6: Decay/splitting



Bent 5 sub-cap 1 hollow with large shake.



Bent 7 Sub-caps 4-5: Decay



Bent 5 sub cap has heavy decay with early signs of crushing.



Bent 5 sub cap 1 has large hole in cap.

Date Reported: 02/14/2017

Priority: D- Routine

Type of Work: N/A

Status: Monitor

Component:

Deficiency Description

End-slope - Bents 1 & 10: Some settlement/erosion - with backwall at Bent 1 exposed under cap..

Remarks



Bent 1 has settlement to end slope under abutment exposing a couple of pile and timber back wall.



Bent 10 right side slope erosion exposing bottom of cap with no undermining.

Date Reported: 02/14/2017
Priority: G - General/ Preventive maintenance
Type of Work: N/A
Status: Assigned
Component:

Deficiency Description

Caps (concrete) - Bents 3, 4, 5, & 8: Small spalls with exposed rebar (minor corrosion) on bottom face of cap.

Remarks



Bent 3 bottom of cap has small spalls with exposed rebar.



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Date Reported: 02/19/2015
Priority: C - Important
Type of Work: N/A
Status: Assigned
Component:

Deficiency Description

Log miles signs - both ends: Signs should read "2.36" instead of "2.45" - also signs are installed on wrong ends ("+" is on "-" end and vice versa).

Remarks



Roadway view

Date Reported: 02/14/2017
Priority: B - Pressing; 6 month completion goal
Type of Work: N/A
Status: Assigned
Component:

Deficiency Description

Bent 3 Pile 2: Decay/hollow from ground up 2-3'.

Bent 4 Pile 2: Decay/hollow 4' up from ground (as high as can be reached from ground).

Bent 4 Pile 10: Decay/hollow (from ground up high as can be reached) NO BEARING CAPACITY.

Bent 4 Pile 12: Decay/hollow from ground up (full height) NO BEARING CAPACITY.

Bent 6 Pile 1: Significant decay with checking and ring separation (60% section loss) / pile is noticeably leaning/bowed top to the right ahead.

Bent 6 Pile 7: Large check with a small hollow area / pile is noticeably leaning/bowed top to the right ahead.

Changed from "C" to "B" SDH 2020.

Remarks



Bent 4 Pile 12



Bent 4 pile 12 very large check and hollow 3' down from ground line.



Bent 4 pile 10 hollow with doughy core.



Bent 4 Pile 12: Decay



Bent 4



Bent 4 pile 12 hollow near ground line.



Bent 6 Pile 1: Decay



Bent 4 Pile 10: Decay



Bent 4 pile 10 hollow.



Image is not transferred
to inspectX yet.

Thanks for your patience.

Bent 6 Pile 1: Decay



Bent 6 Piles 1 & 7: Decay/ring separation





Bent 6 pile 1 and 7 bowing with cracking 6' up from ground line.



Bent 6 pile 1 and 7 bowing .



Bent 6 pile 1 and 7 looking back bowing with cracking.



Bent 4 pile 10 hollow from ground up 10'



Bent 4 pile 12 hollow area with very large check 4' down from cap.



Bent 4 pile 12 hollow from ground up 10'.



Bent 6 pile 1 large checks.



Bent 6 pile 1 decay at water line.



Bent 6 pile 1 decay with section loss to lower section near water line.



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Date Reported: 03/31/2020
Priority: C - Important
Type of Work: Repair
Status: Monitor
Component:

Deficiency Description

Various locations channels legs have spalling with exposed rebar.

Remarks



Span 4 unit 3 left leg has large cracking on girders.



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Inspection Comments

Beginning of structure toward SH 138, East End.03-18-2019 GGL-SDH-KLR: Added 6-month Special Recurring inspection to monitor condition of substructure - specifically timber sub-caps (NBI < 5).Removed Underwater Type 2 inspection - bottom of channel visible at low-water.