



Latitude:36.07414, Longitude:-90.96264

Route:412 Section:06 Log:4.41

Arnold Road ID:38x412x6BxA, Arnold Log mile:4.424

District 10, 75 - Lawrence County

Owner: 1 - State Highway Agency

Inspection Direction: 4 - W to E

### Bridge Posting Information

41 - Structure Open/Posted/Closed: A - Open, no restriction

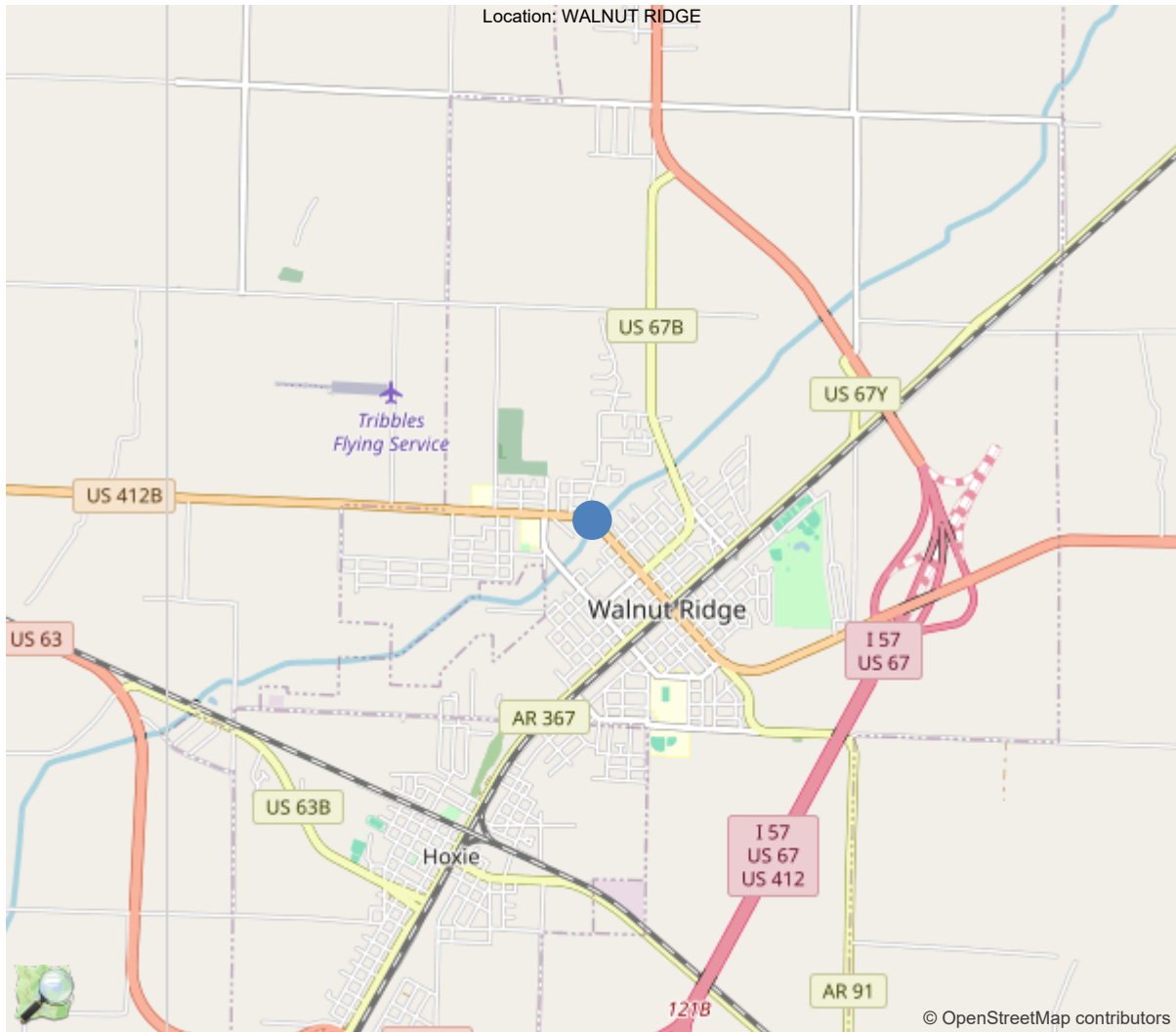
70 - Bridge Posting: 5 - Equal to or above legal loads

Legal Load	Calculated Capacity	Beginning of Bridge Sign Current Value	End of Bridge Sign Current Value
Code 4 (22 Tons)	40		
Code 9 (31 Tons)	50		
Code 5 (40 Tons)	60		

If calculated Capacity is less than the Legal Load Listed, the Bridge Legally Requires Posting Signs to be installed by the Bridge Owner



30"x36" AR



36.07414, -90.96264





Asset #05728(Routine, Underwater type 2)

US 412-06B-LM 4.41 over VILLAGE CREEK

Location: WALNUT RIDGE

Team Lead: Richard Jones Inspection Date: 09/18/2023

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	05728
(5) Inventory Route	1
(2) Highway Agency District	10 - District 10
(3) County Code	75 - Lawrence County
(4) Place Code	72890
(6) Features Intersected	VILLAGE CREEK
(7) Facility Carried	US 412-06B-LM 4.41
(9) Location	WALNUT RIDGE
(11) Mile Point	4.41 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000412060
(16) Latitude	36.07414
(17) Longitude	-90.96264
(98) Border Bridge State Code	
(99) Border Bridge Structure No.	
STRUCTURE TYPE AND MATERIAL	
(43) Main Structure Type	11
Material	1 - Concrete
Type	1 - Slab
(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	0 - None (no additional concrete thickne
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1978
(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	7800
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	35 ft
(49) Structure Length	105 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	42.7 ft
(32) Approach Roadway Width (W/Shoulders)	40 ft
(33) Bridge Median	0 - No median
(34) Skew	0 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	40 ft
(53) Min Vert Clear Over Bridge Rdwy	99.99 ft
(54) Min Vert Underclear	0 ft
Ref:	
(55) Min Lat Underclear RT	0 ft
Ref:	
(56) Min Lat Underclear LT	0 ft
NAVIGATION DATA	
(38) Navigation Control	0 - No navigation control on w
(111) Pier Protection	1 - Navigation protection not
(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
(101) Parallel Structure	N - No parallel structure exis
(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 par
(20) Toll	3 - On free road. The structu
(21) Maintain	1 - State Highway Agency
(22) Owner	1 - State Highway Agency
(37) Historical Significance	5 - Bridge is not eligible for
CONDITION	
(58) Deck	6
(59) Superstructure	6
(60) Substructure	6
(61) Channel & Channel Protection	5
(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	
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	
(68) Deck Geometry	5
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	9
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1 - Inspected feature meets current
(36B) Transitions	0 - Inspected feature does not meet
(36C) Approach Guardrail	0 - Inspected feature does not meet
(36D) Approach Guardrail Ends	0 - Inspected feature does not meet
(113) Scour Critical Bridges	5 - Bridge foundations determined t
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	4373
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date	09/18/2023		
(91) Frequency	24		
(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.			





**Asset #05728**(Routine, Underwater type 2)

**US 412-06B-LM 4.41 over VILLAGE CREEK**

**Location: WALNUT RIDGE**

**Team Lead:** Richard Jones **Inspection Date:** 09/18/2023

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**58 - Deck** (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)

Slabs have unsealed cracks and moderate abrasion.

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**59 - Superstructure** (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)

Span 1 has a large spall with exposed rebar along Rt edge. Exposed rebar has some section loss and loss of embedment.

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**60 - Substructure** (6 - SATISFACTORY CONDITION - structural elements show some minor deterioration.)

Bents 2 and 3 caps have spalls and delaminated areas near keyways.

End bents have erosion on Lt and Rt ends. See elements

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**61 - Channel/Channel Protection** (5 - Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.)

Bent 1 is undermined for 9' on Lt end and 3' on Rt end up to 2' below and 2' back under. Concrete repairs were made on Rt end in the past, but erosion has progressed adjacent to repair.

Bent 4 abutment has a concrete scour repair on Rt end. Embankment is continuing to wash out adjacent to repair. Lt end is undermined for 9' up to 2' below and 2.5' back under.

Dense vegetation growing along channel banks.

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ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
38	RC Slab	SF	4480	3682	630	168	0
1080	Delamination/Spall/Patched Area	SF	53	0	53	0	0
1090	Exposed Rebar	SF	71	0	7	64	0
1120	Efflorescence/Rust Staining	SF	27	0	10	17	0
1130	Cracking (RC and Other)	SF	350	0	350	0	0
1190	Abrasion/Wear (PSC/RC)	SF	297	0	210	87	0
<p>(38) Slabs have unsealed longitudinal and diagonal cracks. Slabs have map cracks and abrasion in wheel path with a few scattered pop outs.</p> <p>Slab soffit has a few small delaminated areas. Slab soffit has a few longitudinal cracks wit light efflorescence. Span 1 has a large spall with exposed rebar along Rt edge. Exposed rebar has some section loss and loss of embedment.</p>							
215	Reinforced Concrete Abutment	LF	111	91	2	18	0
1080	Delamination/Spall/Patched Area	LF	2	0	2	0	0
6000	Scour	LF	18	0	0	18	0
<p>(215) Bent 1 is undermined for 9' on Lt end and 3' on Rt end up to 2' below and 2' back under. Concrete repairs were made on Rt end in the past, but erosion has progressed adjacent to repair. Bent 4 abutment has a few minor spalls. Bent 4 abutment has a concrete scour repair on Rt end. Embankment is continuing to wash out adjacent to repair. Lt end is undermined for 9' up to 2' below and 2.5' back under.</p>							
227	Reinforced Concrete Pile	EA	22	18	4	0	0
6000	Scour	EA	4	0	4	0	0
<p>(227) Abutment piles are exposed on Lt and Rt ends.</p>							
234	Reinforced Concrete Pier Cap	LF	86	77	0	9	0
1080	Delamination/Spall/Patched Area	LF	9	0	0	9	0
<p>(234) Bents 2 and 3 caps have spalls and delaminated areas near keyways.</p>							
301	Pourable Joint Seal	LF	171	11	0	80	80
2330	Seal Damage	LF	160	0	0	80	80
<p>(301) Joint material has loss of adhesion with a few sections missing.</p>							
321	Reinforced Concrete Approach Slab	SF	1080	833	188	59	0
1080	Delamination/Spall/Patched Area	SF	14	0	0	14	0
1130	Cracking (RC and Other)	SF	233	0	188	45	0
<p>(321) Approach slab have unsealed longitudinal cracks. Approach slab at bent 4 has a few spalls.</p>							
331	Reinforced Concrete Bridge Railing	LF	210	210	0	0	0



ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
(331) overall good condition							





Side



Roadway



Deck



Abrasion





09/18/2023

Span 2 soffit



09/20/2021

aerial



09/18/2023

cracks/abrasion with pop outs



09/18/2023

Approach slab at end



**09/18/2023**

Approach slab at beginning



## Maintenance Needs

Date Reported: 09/04/2019

Priority: C - Important

Type of Work: Channel Work/Drift Removal

Status: Monitor

Component: Channel

## Deficiency Description

Bent 1 is undermined for 9' on Lt end and 3' on Rt end up to 2' below and 2' back under. Concrete repairs were made on Rt end in the past, but erosion has progressed adjacent to repair.

Bent 4 abutment has a concrete scour repair on Rt end. Embankment is continuing to wash out adjacent to repair. Lt end is undermined for 9' up to 2' below and 2.5' back under.

## Remarks

Lawrence and Bridge crew reviewed recently to determine best way to repair



2023 - Bent 1 left side



2023 - Bent 1 right side



2023 - Bent 4 left side



2023 - Bent 4 right side





Bent 1 approach gutter LT SIDE 2019



2020 Bent 4 Rt



Bent 4 erosion RT SIDE 2019



Bent 4 Lt 2020



Bent 1 erosion LT SIDE 2019



**Maintenance Needs**

**Date Reported:** 09/04/2019

**Priority:** D- Routine

**Type of Work:** Substructure Repair

**Status:** Monitor

**Component:** Substructure

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**Deficiency Description**

Bents 2 and 3 caps have spalls and delaminated areas near keyways.

**Remarks**

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Bent 2



Bent 2 cap



**Maintenance Needs**

**Date Reported:** 09/11/2017

**Priority:** D- Routine

**Type of Work:** Miscellaneous

**Status:** Monitor

**Component:** Superstructure

**Deficiency Description**

Span 1 has a large spall with exposed rebar along Rt edge. Exposed rebar has some section loss and loss of embedment. Span 2 has a spall with rebar exposed along edge.

**Remarks**



2023 - Span 1 Rt



2021



Span 2



Span 1 RT 2020



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**US 412-06B-LM 4.41 over VILLAGE CREEK**

**Location: WALNUT RIDGE**

**Team Lead:** Richard Jones **Inspection Date:** 09/18/2023

## **Routine Maintenance**

Check Box Maintenance Items

<b>Type of Maintenance</b>	<b>Is recommended?</b>
A-54 - Sealable Deck Cracks	Yes
A-55 - Deck Washing Needed	
A-56 - Joint Cleaning/Flushing Needed	
A-57 - Beam End and Bearing Paint Needed	
A-58 - Cap Cleaning/Flushing Needed	
A-59 - Joint Repair Needed	Yes
A-60 - Full Beam Painting Needed	
A-61 - Polymer Overlay Advised	Yes
A-62 - Hydro and LMC Advised	
A-63 - Missing/Incorrect Log Mile Signage	
A-64 - Vegetation Removal Requested	

**A-54 - Sealable Deck Cracks (Yes)**

**A-55 - Deck Washing Needed**

**A-56 - Joint Cleaning/Flushing Needed**

**A-57 - Girder End and Bearing Painting Needed**

**A-58 - Cap Cleaning/Flushing Needed**

**A-59 - Joint Repair Needed (Yes)**

**A-60 - Full Girder Painting Needed**

**A-61 - Polymer Overlay Advised (Yes)**



cracks/abrasion with pop outs

**A-62 - Hydro and LMC Advised**

**A-63 - Missing/Incorrect Log Mile Signage**





**Asset #05728**(Routine, Underwater type 2)

**US 412-06B-LM 4.41 over VILLAGE CREEK**

**Location: WALNUT RIDGE**

**Team Lead: Richard Jones Inspection Date: 09/18/2023**

**A-64 - Vegetation Removal Requested**



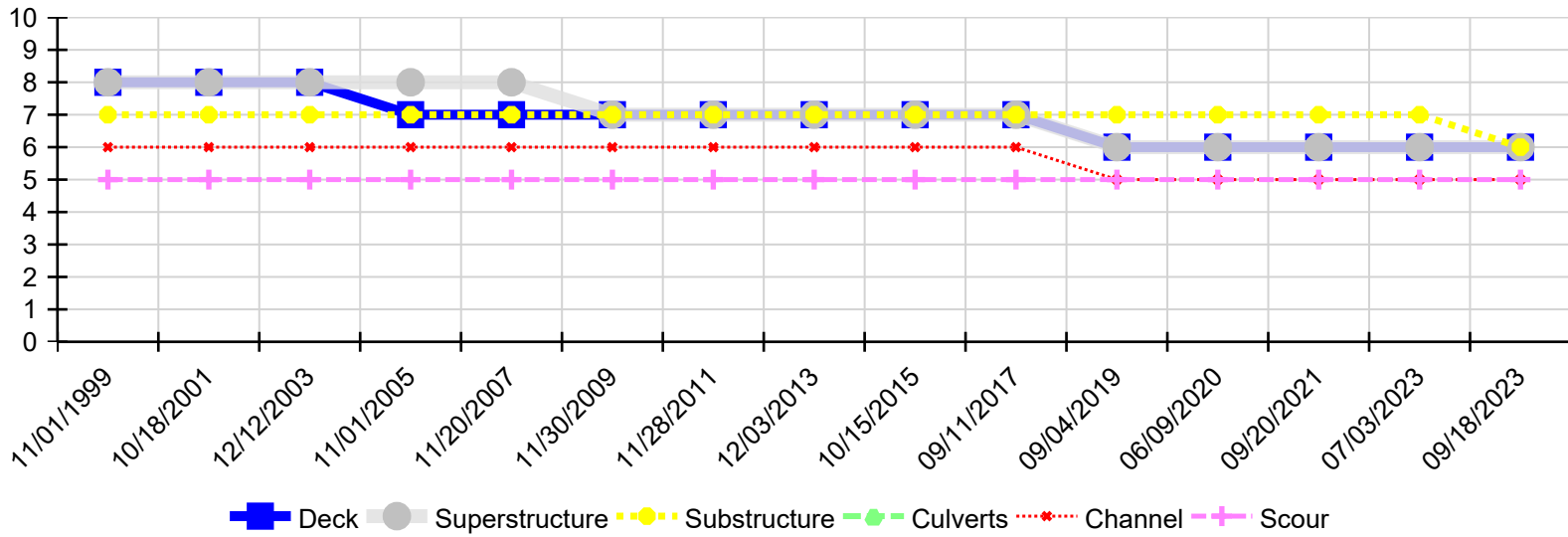
Asset #05728(Routine, Underwater type 2)

US 412-06B-LM 4.41 over VILLAGE CREEK

Location: WALNUT RIDGE

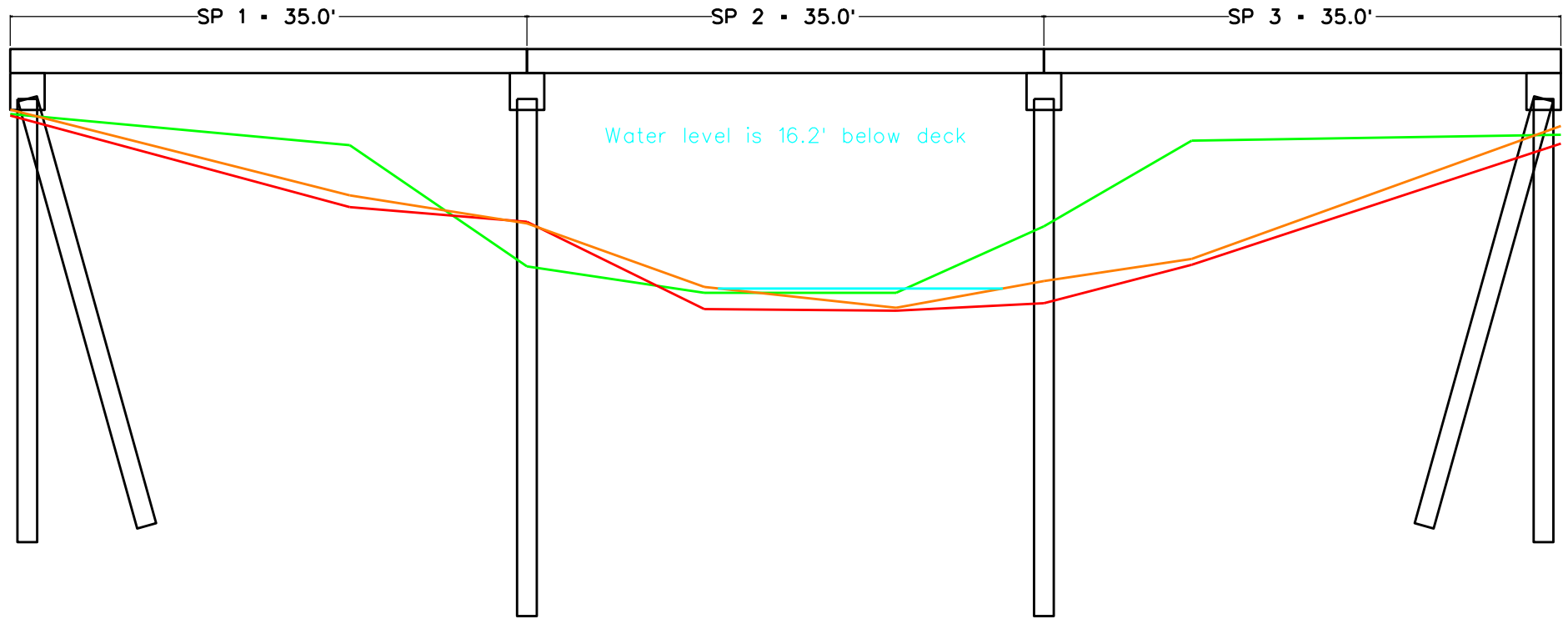
Team Lead: Richard Jones Inspection Date: 09/18/2023

Condition History

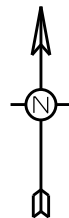
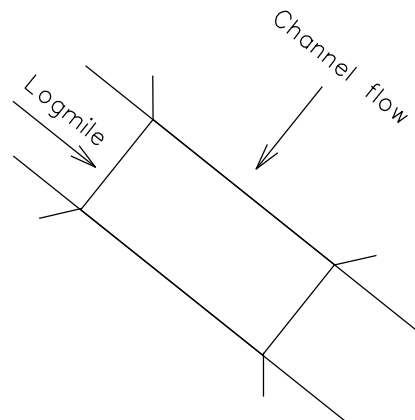


Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
09/18/2023	6	6	6	N	5	5
07/03/2023	6	6	7	N	5	5
09/20/2021	6	6	7	N	5	5
06/09/2020	6	6	7	N	5	5
09/04/2019	6	6	7	N	5	5
09/11/2017	7	7	7	N	6	5
10/15/2015	7	7	7	N	6	5
12/03/2013	7	7	7	N	6	5
11/28/2011	7	7	7	N	6	5
11/30/2009	7	7	7	N	6	5
11/20/2007	7	8	7	N	6	5
11/01/2005	7	8	7	N	6	5
12/12/2003	8	8	7	N	6	5
10/18/2001	8	8	7	N	6	5
11/01/1999	8	8	7	N	6	5

# 3 - 35.0' R.C. Slab Spans



BT 1	+23'	BT 2	+12'	+25'	BT 3	+10'	BT 4
4.4'	6.5'	14.7'	16.5'	16.5'	12.0'	6.2'	5.8'
4.5'	10.7'	11.7'	17.6'	17.7'	17.2'	14.6'	6.4'
4.1'	9.9'	11.8'	16.1'	17.5'	15.7'	14.2'	5.2'



Channel sounded from top of deck, LEFT SIDE  
 Green soundings taken on 8-22-1990  
 Red soundings taken on 9-4-2019  
 Orange soundings taken on 9-18-2023

\*Not to Scale

Bridge No. 05728	Dist. 10	LAWRENCE
Logmile 4.41	US 412	Sect/Zone - 06
Date Drawn 8-14-19	Insp. / Assist.	JFA / CWS

Hospital