



Latitude:35.43623, Longitude:-94.32163

Route:162 Section:01 Log:0.95

Arnold Road ID:17x162x1xA, Arnold Log mile:0.865

District 04, 33 - Crawford County

Owner: 1 - State Highway Agency

Inspection Direction: 4 - W to E

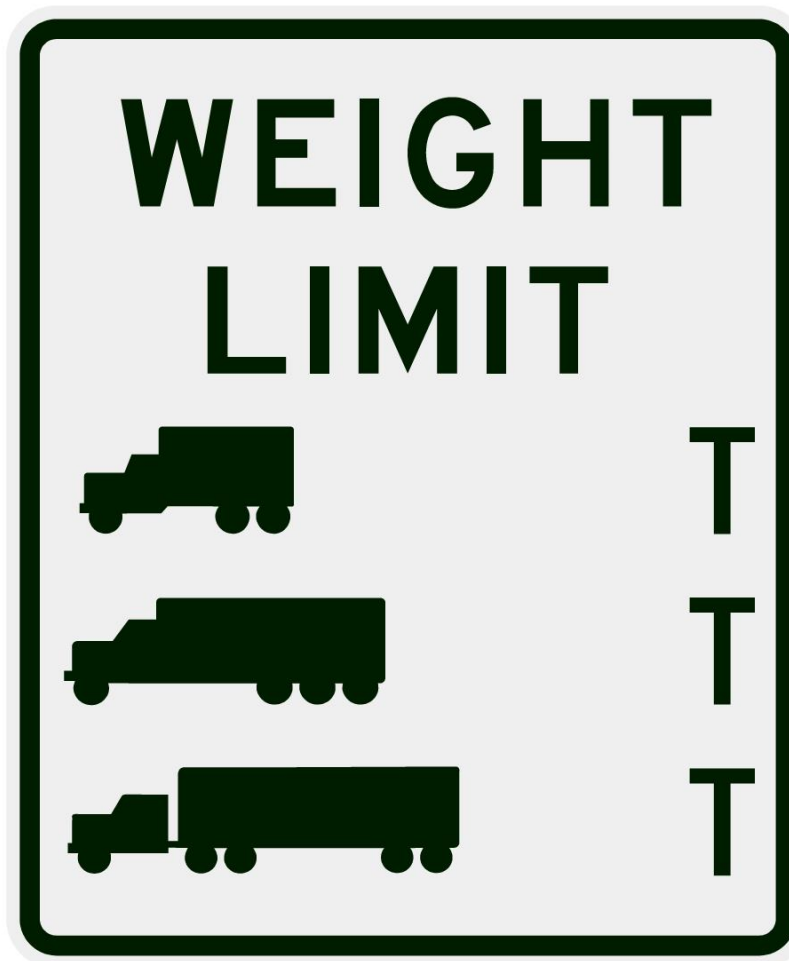
### Bridge Posting Information

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

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

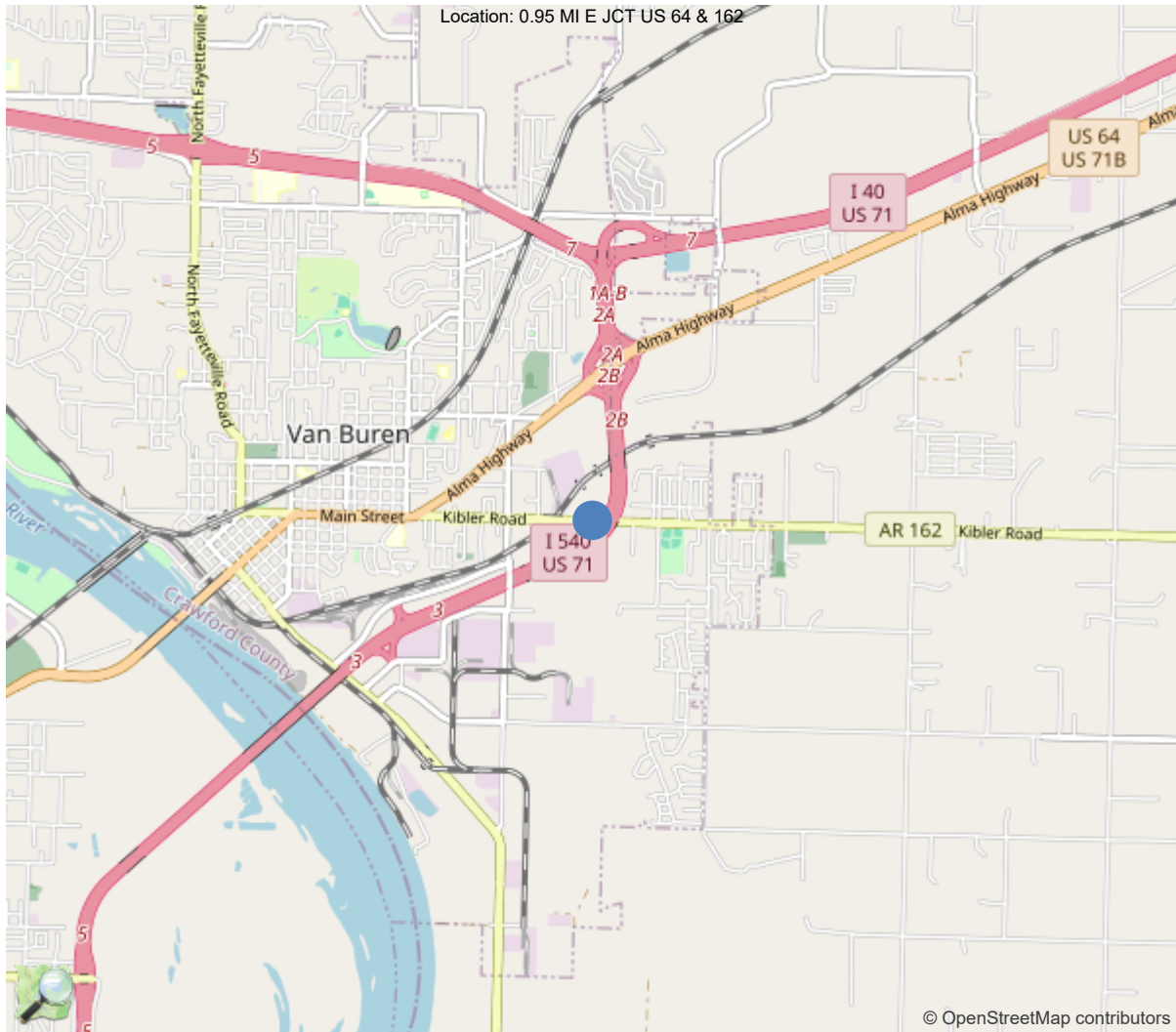
Legal Load	Calculated Capacity	Beginning of Bridge Sign Current Value	End of Bridge Sign Current Value
Code 4 (22 Tons)	40		
Code 9 (31 Tons)	50		
Code 5 (40 Tons)	60		

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





35.43623, -94.32163



**Asset #03960**(Routine, Underwater type 2)  
**State Highway 162 over Flat RockCk-Crawford Co.**  
**Location: 0.95 MI E JCT US 64 & 162**  
**Team Lead: Bob McEntyre Inspection Date: 09/18/2023**

IDENTIFICATION	
(1) State Names	5 - Arkansas
(8) Structure Number	03960
(5) Inventory Route	1
(2) Highway Agency District	04 - District 04
(3) County Code	33 - Crawford County
(4) Place Code	71480
(6) Features Intersected	Flat RockCk-Crawford Co.
(7) Facility Carried	State Highway 162
(9) Location	0.95 MI E JCT US 64 & 162
(11) Mile Point	0.95 mi
(12) Base Highway Network	No
(13) LRS Inventory Rte & Subrte	0000000000
(16) Latitude	35.436226132175
(17) Longitude	-94.3216289308866
(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	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	0 - None (no additional concrete thickne
Type of Membrane	0 - None
Type of Deck Protection	0 - None
AGE AND SERVICE	
(27) Year Built	1967
(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	9700
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	3 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	28 ft
(49) Structure Length	140 ft
(50) Curb or Sidewalk Width	
Left	1.7 ft
Right	1.7 ft
(51) Bridge Roadway Width Curb to Curb	27.9 ft
(52) Deck Width Out to Out	34 ft
(32) Approach Roadway Width (W/Shoulders)	40 ft
(33) Bridge Median	0 - No median
(34) Skew	30 Deg
(35) Structure Flared	0 - No flare
(10) Inventory Route Min Vert Clear	99.99 ft
(47) Inventory Route Total Horiz Clear	27.9 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	0 - The inventory route is not
(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	5
(59) Superstructure	5
(60) Substructure	5
(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	2
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	7
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	0 - Inspected feature does not meet
(36B) Transitions	0 - Inspected feature does not meet
(36C) Approach Guardrail	1 - Inspected feature meets current
(36D) Approach Guardrail Ends	1 - Inspected feature meets current
(113) Scour Critical Bridges	8 - Bridge foundations determined t
PROPOSED IMPROVEMENTS	
(75) Type of Work	31 - Replacement of bridge or
(76) Length of Structure Improvement	169 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 324
(96) Total Project Cost	\$ 860
(97) Year of Improvement Cost Estimate	2002
(114) Future ADT	12028
(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.			





### General Observation

09/19/2023 - RSM & SPC: Routine and Underwater Type II Inspections conducted this date. See element notes and item 61 for documentation. Channel sounded/ profiled this inspection. See Microstation sketch linked in "Files" for sounding measurements.

09/27/2021 - JCJ & TJL - Routine Inspection conducted this date.

09/18/2019 - EJW & JPW - Underwater Type 2 Inspection - Wading, probing and visual observation during low and water conditions indicate that the footings have cover with no apparent scour problems at this inspection.

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**58 - Deck** (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

09/19/2023 - RSM & SPC: The Slab is in fair condition. The driving surface of the slab has numerous areas of medium / heavy scaling along the gutters up to approximately 2" deep in locations. Diagonal cracking in the corners of some of the spans. The cracking in some locations is wide.

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**59 - Superstructure** (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

09/19/2023 - RSM & SPC: The Slab is in fair condition. The undersurface of the slab has areas with light scale/leaching. The undersurface has spalls with exposed reinforcing steel adjacent to the intermediate bent caps and delaminated areas adjacent to the deck drains.

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**60 - Substructure** (5 - FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.)

09/19/2023 - RSM & SPC: The Substructure is in fair condition with cracking and numerous large delaminated and spalled areas in the caps that expose reinforcing steel. Columns of bents # 3 and 4 have medium abrasion at the base. Bent # 4, column # 2 has a 12" spall with exposed reinforcing steel and shallow spalling with exposed # 9 wire that was placed against the forms during the construction process.

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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.)

09/19/2023 - RSM & SPC: Underwater Type II Inspection. Wading, probing and visual observation in low water conditions revealed that all footings with no detectable undermining at this inspection. The Channel has heavy drift accumulation/ large trees at bent # 2 causing localized scour at the base of column # 1 and embankment erosion to the base of the East embankment.

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### A-54 - Sealable Deck Cracks (Y)

09/19/2023 - RSM & SPC: The driving surface of the slab and approach slabs have sealable cracking.

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### A-56 - Joint Cleaning/Flushing Needed (Y)

09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.

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### A-59 - Joint Repair Needed (Y)

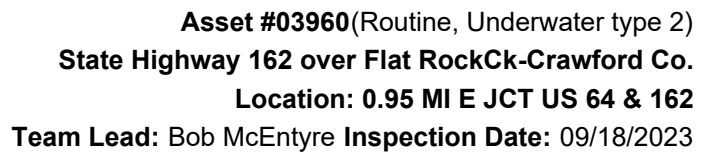
09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.

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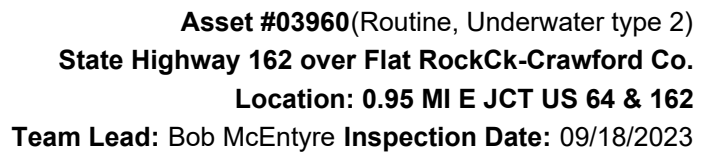
### A-64 - Vegetation Removal Requested (Y)

09/19/2023 - RSM & SPC: Vegetation is growing over the right bridge railing and into the driving lane.

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ELEMENTS	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
38	RC Slab	SF	4200	1521	1804	875	0
1080	Delamination/Spall/Patched Area	SF	24	0	24	0	0
1090	Exposed Rebar	SF	9	0	0	9	0
1130	Cracking (RC and Other)	SF	436	0	436	0	0
1190	Abrasion/Wear (PSC/RC)	SF	2210	0	1344	866	0
(38) Driving Surface: -Numerous areas of medium / heavy scale along the gutters on the driving surface of the slab that is up to approximately 2" deep. -Diagonal cracking in the corners of some of the spans. -Span # 3 driving surface of right lane has diagonal cracks adjacent to bent # 3 and a longitudinal crack near the centerline. -Cracking visible in the exterior edge of slab adjacent to the joints.							
Slab Undersurface: -There are areas with light scale/leaching and spalls with exposed reinforcing steel adjacent to the intermediate bent caps. -Undersurface of the slab has delaminated areas adjacent to the deck drains.							
205	Reinforced Concrete Column	EA	8	3	4	1	0
1080	Delamination/Spall/Patched Area	EA	1	0	0	1	0
1130	Cracking (RC and Other)	EA	1	0	1	0	0
1190	Abrasion/Wear (PSC/RC)	EA	3	0	3	0	0
(205) -Wading, probing and visual observation in low water conditions revealed that all footings with no detectable undermining at this inspection. The channel has heavy drift accumulation/ large trees at bent # 2 causing localized scour at the base of column # 1 and embankment erosion to the base of the East embankment. -Columns of bents # 3 and 4 have medium abrasion at the base. -Bent # 4, column # 2 has a 12" spall with exposed reinforcing steel and shallow spalling with exposed # 9 wire that was placed against the forms during the construction process.							
210	Reinforced Concrete Pier Wall	LF	19	19	0	0	0
(210) 09/19/2023 - RSM & SPC: This element used to document strut between bent # 3 columns.							
215	Reinforced Concrete Abutment	LF	88	88	0	0	0
(215) -Abutments have stains where the keyways leak water on the abutments.							
234	Reinforced Concrete Pier Cap	LF	144	57	38	49	0
1080	Delamination/Spall/Patched Area	LF	33	0	30	3	0
1090	Exposed Rebar	LF	46	0	0	46	0
1130	Cracking (RC and Other)	LF	8	0	8	0	0
(234) -Intermediate bent caps have numerous delaminated areas and spalls with exposed reinforcing steel. Exposed reinforcing steel has active corrosion with up to approximately 25% section loss in areas. Both primary and secondary reinforcing steel is exposed in locations. -Bent # 2 cap aheadface on left side has numerous shallow spalls with exposed reinforcing steel. The right undersurface of cap has two shallow spalls with exposed reinforcing steel. -Bent # 4 cap has a horizontal crack that appears to be a delaminated area that is approximately 20' wide located 4" below the top of cap between the columns. -Bent # 5 cap aheadface has numerous spalls with exposed reinforcing steel and delaminated areas. The cap undersurface near							







Elevation



Inventory 1 looking East



Misalignment of spans



Repairs to East approach roadway





Vegetation growing over right bridge railing.



Vegetation growing over right bridge railing



West approach roadway-Potholes forming at bridge end



Abutment 1 right approach railing-Collision damage





Abutment 1 right approach railing-Collision damage



Heavy drift accumulation causing embankment erosion to East embankment.



Heavy drift accumulation at bent 2



Upstream channel





09/19/2023

Downstream channel



09/19/2023

Probing substructure



09/21/2023

Channel has heavy drift accumulation/ large trees at bent #  
2.



09/19/2023

Channel has heavy drift accumulation/ large trees at bent #  
2.





09/19/2023

Span 3 undersurface



09/21/2023

Span 2 undersurface on right side-Delaminated area  
adjacent to deck drain



09/19/2023

Span 2 undersurface



09/19/2023

Span 1 undersurface





Span # 1 left exterior side adjacent to bent # 2 has an 8" spall with exposed reinforcing steel in bottom edge.



Heavy dirt and debris in gutters



Span 4 driving surface-Scaling



Span # 5, left lane at abutment # 2 has wide diagonal cracking.





Span # 5, left lane at abutment # 2 has wide diagonal cracking.



Span # 5, left lane at abutment # 2 has wide diagonal cracking.



Span # 5, right shoulder has heavy scaling up to approximately 2" deep



Span # 5, right shoulder has heavy scaling up to approximately 2" deep





Span 4, right lane-Scaling



Span # 3 driving surface of right lane has diagonal cracks adjacent to bent # 3 and a longitudinal crack near the centerline.



Span # 3 driving surface of right lane has diagonal cracks adjacent to bent # 3 and a longitudinal crack near the centerline.



Span 3, right lane-diagonal cracks adjacent to bent 3





Span 2, right lane-Medium scaling



Span 1 driving surface



Dirt and debris in gutters



Bent # 4, column # 2-Spalling with exposed reinforcing steel





09/19/2023

Abutment 2



09/19/2023

Abutment 1



09/21/2023

Bent # 5 cap aheadface has numerous The spalls with exposed reinforcing steel and delaminated areas. The cap undersurface near centerline has a spalled area approximately 4' long x 12" wide that exposes several stirrups and two of the primary reinforcing bars. Exposed primary bars have heavy corrosion with thick flaking rust and an estimated 1/8" section loss.



09/19/2023

Bent 5 cap aheadface-Numerous spalls with exposed reinforcing steel





09/21/2023

Bent 5 cap aheadface-Numerous spalls with exposed reinforcing steel



09/19/2023

Bent # 5 cap aheadface has numerous The spalls with exposed reinforcing steel and delaminated areas. The cap undersurface near centerline has a spalled area approximately 4' long x 12" wide that exposes several stirrups and two of the primary reinforcing bars. Exposed primary bars have heavy corrosion with thick flaking rust and an estimated 1/8" section loss.



09/19/2023

Bent # 4 cap aheadface has numerous spalls with exposed reinforcing steel and delaminated areas.



09/19/2023

Bent 5





Bent 4 cap undersurface-Spalling/ delaminated areas with exposed reinforcing steel



Bent # 3 cap left undersurface-Shallow spalls with exposed reinforcing steel



Bent # 2 cap aheadface on left side has numerous shallow spalls with exposed reinforcing steel.



Bent 3





09/19/2023

Bent 2 cap undersurface on right side-Spall with exposed reinforcing steel



09/21/2023

Abutment 2 expansion joint-Debris impaction



09/21/2023

Bent 4 expansion joint



09/21/2023

09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.





Bent 4 expansion joint



Bent 2 expansion joint-Debris impaction



Abutment 1 expansion joint-Debris impaction



Abutment 2 approach slab-Longitudinal cracking.





Abutment 1 approach slab-Wide longitudinal cracking



Span 4, post 1-Collision damage



Abutment 2, left end post-Collision damage



Abutment 1 right end post-Collision damage



### Maintenance Needs

**Date Reported:** 09/19/2023

**Priority:** B - Pressing

**Type of Work:** Channel Work/Drift Removal

**Status:** Open

**Component:**

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### Deficiency Description

Channel -

The Channel has heavy drift accumulation/ large trees at bent # 2 causing localized scour at the base of column # 1 and embankment erosion to the base of the East embankment.

### Remarks

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09/19/2023

The Channel has heavy drift accumulation/ large trees at bent # 2 causing localized scour at the base of column # 1 and embankment erosion to the base of the East embankment.



09/19/2023

The Channel has heavy drift accumulation/ large trees at bent # 2 causing localized scour at the base of column # 1 and embankment erosion to the base of the East embankment.

### Maintenance Needs

**Date Reported:** 09/11/2015

**Priority:** C - Important

**Type of Work:** Substructure Repair

**Status:** Monitor

**Component:** Element

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### Deficiency Description

R.C. Bent Caps -

Intermediate bent caps have numerous delaminated and spalled areas with exposed reinforcing steel. Exposed reinforcing steel has active corrosion with up to 25% section loss. Both primary and secondary reinforcing steel is exposed in locations.

The bent caps have water stains due to leaking deck joints.

### Remarks

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09/19/2023

Bent # 5 cap aheadface has numerous The spalls with exposed reinforcing steel and delaminated areas. The cap undersurface near centerline has a spalled area approximately 4' long x 12" wide that exposes several stirrups and two of the primary reinforcing bars. Exposed primary bars have heavy corrosion with thick flaking rust and an estimated 1/8" section loss.



09/19/2023

Bent # 5 cap aheadface-Numerous spalls with exposed reinforcing steel.





**09/19/2023**

Bent # 2 cap aheadface on left side has numerous shallow spalls with exposed reinforcing steel.



**01/01/2020**

Bent # 5 Span # 5 shallow spalling with exposed reinforcing steel with approximately 25% section loss to the secondary reinforcing steel and approximately 10% to the primary reinforcing steel.

**Maintenance Needs**

**Date Reported:** 09/11/2015

**Priority:** C - Important

**Type of Work:** Joint Repair

**Status:** Monitor

**Component:** Element

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**Deficiency Description**

Bridge Deck Joints -  
Deck joint sealant is deteriorated with the joints compacted with incompressible materials.

**Remarks**

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09/19/2023  
Abutment # 2 expansion joint-Debris impaction.



09/19/2023  
Deck joint sealant is deteriorated with the joints compacted with incompressible materials.



01/01/2020  
Deck joint sealant is deteriorated with the joints compacted with incompressible materials.



### Maintenance Needs

**Date Reported:** 09/11/2015

**Priority:** C - Important

**Type of Work:** Repair (General)

**Status:** Monitor

**Component:** Miscellaneous

### Deficiency Description

Approach Guardrailing -

The approach guardrail at the Northwest and Southwest bridge end has collision damage. Several of the Southwest approach guard rail posts are fractured.

Abutment # 1 right end post and abutment # 2 left end post have spalling with exposed reinforcing steel.

### Remarks

Rail was repaired by Crew #04171 on 1/16/2018. Will schedule spalls repairs at a later date.



Abutment # 1 right approach railing-Collision damage.



Abutment # 1 right approach railing-Collision damage.



Abutment # 2, left end post-Collision damage.



Abutment # 1 right end post-Collision damage.





Abutment # 1 right end post-Collision damage.



### Maintenance Needs

**Date Reported:** 09/18/2019

**Priority:** C - Important

**Type of Work:** Repair (General)

**Status:** Monitor

**Component:** Element

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### Deficiency Description

Bridge Railing -

The left bridge railing has collision damage that has fractured the curb/ deck overhang that the supports post # 1 of span # 4.

### Remarks

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**09/19/2023**

The left bridge railing has collision damage that has fractured the curb/ deck overhang that the supports post # 1 of span # 4.



**01/01/2020**

The left bridge railing has collision damage that has fractured the curb/ deck overhang that the supports post # 1 of span # 4.



### Maintenance Needs

**Date Reported:** 09/11/2015

**Priority:** D- Routine

**Type of Work:** Repair (General)

**Status:** Monitor

**Component:** Element

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### Deficiency Description

R.C. Slab Spans -

The driving surface of the deck has heavy scaling with sealable cracking. The right lanes of spans # 4 and 5 have the most extreme areas of heavy scaling up to approximately 2" deep. The undersurface of the slab has spalls with exposed reinforcing steel with active corrosion and initial section loss. There are delaminated areas adjacent the deck drains and intermediate caps.

### Remarks

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Span # 2 undersurface on right side-Delaminated area adjacent to deck drain.



Span # 1 left exterior side adjacent to bent # 2 has an 8" spall with exposed reinforcing steel in bottom edge.





Span #4 driving surface-Scaling.



Span # 5, right shoulder has heavy scaling up to approximately 2" deep.



Span # 5, right shoulder has heavy scaling up to approximately 2" deep.



Span # 4 & 5 left concrete deterioration with section loss.



## Routine Maintenance

### Check Box Maintenance Items

Type of Maintenance	Is recommended?
A-54 - Sealable Deck Cracks	Yes
A-55 - Deck Washing Needed	
A-56 - Joint Cleaning/Flushing Needed	Yes
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	
A-62 - Hydro and LMC Advised	
A-63 - Missing/Incorrect Log Mile Signage	
A-64 - Vegetation Removal Requested	Yes

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

09/19/2023 - RSM & SPC: The driving surface of the slab and approach slabs have sealable cracking.



Span # 5, left lane at abutment # 2 has wide diagonal cracking.



Span # 3 driving surface of right lane has diagonal cracks adjacent to bent # 3 and a longitudinal crack near the centerline.



**A-55 - Deck Washing Needed**

**A-56 - Joint Cleaning/Flushing Needed (Yes)**

09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.



Bent 4 expansion joint

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

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



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

09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.



09/19/2023 - RSM & SPC: Slab expansion joint sealant is deteriorated/ missing with incompressible material in the joints.

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

**A-61 - Polymer Overlay Advised**

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

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

**A-64 - Vegetation Removal Requested (Yes)**

09/19/2023 - RSM & SPC: Vegetation is growing over the right bridge railing and into the driving lane.



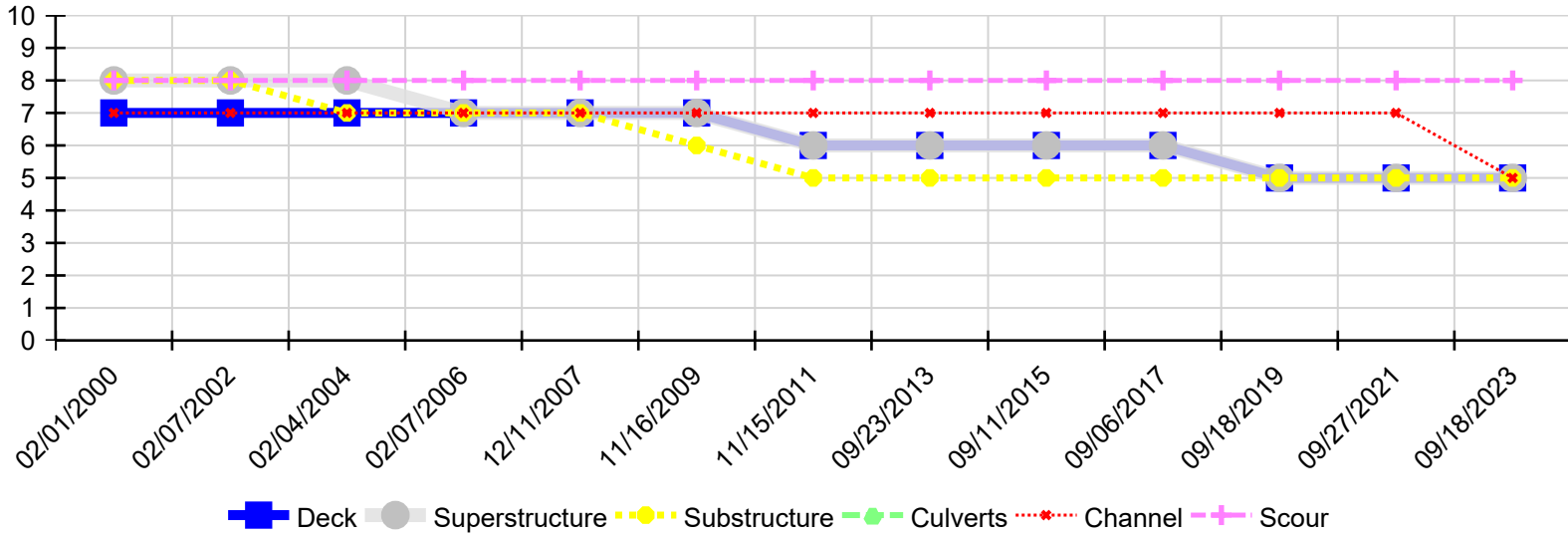
Vegetation growing over right bridge railing.





**Asset #03960**(Routine, Underwater type 2)  
**State Highway 162 over Flat RockCk-Crawford Co.**  
**Location: 0.95 MI E JCT US 64 & 162**  
**Team Lead: Bob McEntyre Inspection Date: 09/18/2023**

Condition History



Inspection Date	Deck	Superstructure	Substructure	Culverts	Channel	Scour
09/18/2023	5	5	5	N	5	8
09/27/2021	5	5	5	N	7	8
09/18/2019	5	5	5	N	7	8
09/06/2017	6	6	5	N	7	8
09/11/2015	6	6	5	N	7	8
09/23/2013	6	6	5	N	7	8
11/15/2011	6	6	5	N	7	8
11/16/2009	7	7	6	N	7	8
12/11/2007	7	7	7	N	7	8
02/07/2006	7	7	7	N	7	8
02/04/2004	7	8	7	N	7	8
02/07/2002	7	8	8	N	7	8
02/01/2000	7	8	8	N	7	8