



Latitude:36.23250, Longitude:-93.09211

Route:65 Section:02 Log:0.48

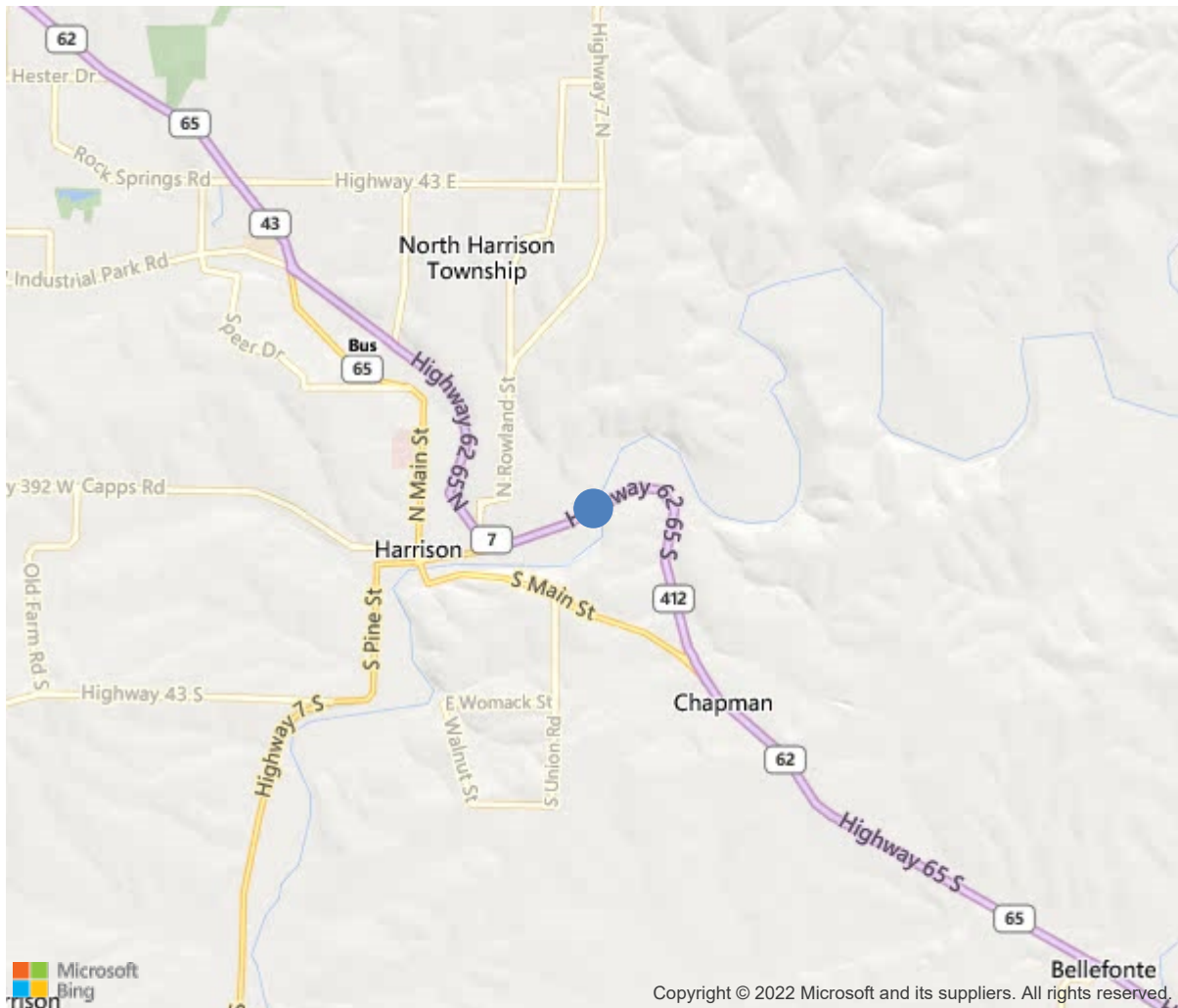
Arnold Road ID:5x65x2xA, Arnold Log mile:0.487

District 09, Boone County

Owner: 1-State Highway Agency

Place Code: 30460 - Harrison

.48 MI E JCT SH 7



36.23250, -93.09211

Inspection Direction : S to N



Bridge #05330(Routine)

US 65 Boone over CROOKED CREEK

Location: .48 MI E JCT SH 7

Team Lead: Benjamin Smith Inspection Date: August 26, 2020

IDENTIFICATION	
(1) State Names	Arkansas
(8) Structure Number	05330
(5) Inventory Route	65
(2) Highway Agency District	09
(3) County Code	9-Boone County, Arkansas
(4) Place Code	30460
(6) Features Intersected	CROOKED CREEK
(7) Facility Carried	US 65 Boone
(9) Location	.48 MI E JCT SH 7
(11) Mile Point	0.48 mi
(12) Base Highway Network	Yes
(13) LRS Inventory Rte & Subrte	0000065020
(16) Latitude	36.2325
(17) Longitude	-93.09211
(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	6
(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	1969
(106) Year Reconstructed	0
(42) Type of Service	55
On	5-Highway-pedestrian
Under	5-Waterway
(28) Lane	
On	5
Under	0
(29) Average Daily Traffic	19000
(30) Year of ADT	2018
(109) Truck ADT	1 %
(19) Bypass, Detour Length	1 mi
GEOMETRIC DATA	
(48) Length of Maximum Span	66 ft
(49) Structure Length	398 ft
(50) Curb or Sidewalk Width	
Left	4 ft
Right	4 ft
(51) Bridge Roadway Width Curb to Curb	49.9 ft
(52) Deck Width Out to Out	58.8 ft
(32) Approach Roadway Width (W/Shoulders)	50 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	58.1 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	1
(26) Functional Class	14-Urban Other Principal 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	1-The inventory route is part of the
(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	5
(59) Superstructure	7
(60) Substructure	6
(61) Channel & Channel Protection	6
(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	6
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	6
(68) Deck Geometry	2
(69) Clearances, Vertical/Horizontal	N
(71) Waterway Adequacy	8
(72) Approach Roadway Alignment	8
(36A) Bridge Railings	1-Inspected feature meets currently a
(36B) Transitions	0-Inspected feature does not meet cur
(36C) Approach Guardrail	0-Inspected feature does not meet cur
(36D) 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	Replacement of bridge or other
(76) Length of Structure Improvement	436 ft
(94) Bridge Improvement Cost	\$ 0
(95) Roadway Improvement Cost	\$ 346
(96) Total Project Cost	\$ 1758
(97) Year of Improvement Cost Estimate	2002
(114) Future ADT	24725
(115) Year of Future ADT	2028

INSPECTIONS *			
(90) Inspection Date	08/2020		
(91) Frequency	24 Months		
(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.			

Team Lead: Benjamin Smith, **Inspection Date:** August 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
12	Reinforced Concrete Deck	SF	23402	15044	7142	1216	0
1080	Delamination/Spall/Patched Area	SF	5	0	0	5	0
1090	Exposed Rebar	SF	35	0	0	35	0
1120	Efflorescence/Rust Staining	SF	6510	0	5334	1176	0
1130	Cracking (RC and Other)	SF	1808	0	1808	0	0
510	Wearing Surfaces	SF	19900	19018	810	72	0
3210	Delam/Spall/Patched Area/Pothole	SF	72	0	0	72	0
3220	Crack (Wearing Surface)	SF	810	0	810	0	0
(12)							
<p>Driving surface- The driving surface has a 4.5" asphalt overlay with reflective cracking at the joints, and random cracking in the driving surface. Spans #1,3,4 have 70 sq ft total of concrete and cold mix patched areas. Span 3 has a pot hole beginning to form in the right south bound lane. The 810' of cracking in the wearing surface has been crack sealed.</p> <p>The 3' overhangs are subtracted from the deck area and added to r/c bridge railing.</p> <p>Undersurface-</p> <p>The majority of the map cracking on the undersurface of the bays is quantified as efflorescence.</p> <p>Span #1- has map cracking with efflorescence in all bays. Bay 4 is the worst case condition of deterioration and efflorescence cracking. The undersurface has small patched areas in some bays from punching through with a pavement breaker. The drain areas have spalling, some with exposed rebar. The deck haunches at the beginning and end of the span have heavy efflorescence.</p> <p>Span #2- has map cracking with efflorescence in all bays, mostly in bays #2-6 and the end of bay #7. The deck haunches at the beginning and end of the span have heavy efflorescence.</p> <p>Span #3- has efflorescence map cracking mostly in bays #3-7. Bay #4 has large contaminated areas near mid span and the end of the span. The drain areas have spalling some with exposed rebar. Bay #2 has a spall with exposed rebar at the beginning of the span.</p> <p>Span #4- has efflorescence map cracking mostly in bays #2-6. Bays #2,4 have large areas of contamination. Bay #5 has a patched area with exposed rebar due to punching through with a pavement breaker. The drain areas have spalling all have rebar exposed.</p> <p>Span #5- has efflorescence map cracking mostly in bays #3-5. The beginning of bay #4 has a large area of contamination. The drain areas have spalling, the drains on the right side have rebar exposed.</p> <p>Span #6- has efflorescence map cracking mostly in bays #2-5. Bays #4,5 have small areas of contamination. The drain area on the left side has the rebar high chair feet exposed. The right side has spalling with exposed rebar.</p>							
107	Steel Open Girder/Beam	LF	3144	3126	15	3	0
1000	Corrosion	LF	18	0	15	3	0
515	Steel Protective Coating	SF	28656	28638	0	15	3
3440	Effectiveness (Steel Protective Coatings)	SF	18	0	0	15	3
(107)							
<p>8 painted steel multi beam system. The paintable beam surface is 33.5" tall x 11.5" wide flange x 8 total. 8.45' per foot. The total includes the diaphragms.</p>							

Team Lead: Benjamin Smith, **Inspection Date:** August 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>The bottom flange cover plates are cut square with the bottom flange and are welded at the ends. No cracking was noted at these locations.</p> <p>Span #1- beam 8 has 2' of cs3 corrosion on the exterior of the bottom flange and lower web at the beginning of the span due to dirt build up.</p> <p>Span #2- beams #2,3,5,6 have 1' of cs2 corrosion each on the bottom flange at the end of the span.</p> <p>Span #3- Beams 6,7 have 1' of cs2 corrosion each on the bottom flange at the beginning of the span.</p> <p>Span #4- beam #1 has 1' of cs2 corrosion on the bottom of the bottom flange at the beginning of the span. Beam #8 has 1' of cs2 corrosion on the bottom flange at the end of the span.</p> <p>Span #5- beams #3,4 at the end of the span have a total of 4' of cs2 corrosion on the bottom flanges.</p> <p>Span #6- beam #8 has 1' of 1/8 deep section loss with minor corrosion on the bottom flange at the bearing area over abutment #2. Beams #4,5 have 3' total of cs2 corrosion beginning to show through the paint on the bottom flange at the beginning of the span.</p>							
205	Reinforced Concrete Column	EA	15	2	6	7	0
1080	Delamination/Spall/Patched Area	EA	5	0	0	5	0
1090	Exposed Rebar	EA	2	0	0	2	0
1130	Cracking (RC and Other)	EA	6	0	6	0	0
(205)							
<p>Bent #1 columns-</p> <p>Column #1- has horizontal hairline cracks.</p> <p>Column #2- has vertical hairline cracks.</p> <p>Column #3- has vertical hairline cracks.</p> <p>Bent #2 columns-</p> <p>Column #1- has hairline vertical cracks.</p> <p>Column #2-has spalling with exposed rebar.</p> <p>Column #3-has large vertical delaminations.</p> <p>Bent #3 columns-</p> <p>Column #1-has a large vertical delamination.</p> <p>Column #2-has hairline vertical cracks.</p> <p>Column #3-has hairline vertical cracks.</p> <p>Bent #4 columns-</p> <p>Column #1- has a large vertical delamination on the exterior corner.</p> <p>Column #2- no deficiencies noted.</p> <p>Column #3- has numerous areas of exposed rebar on the exterior face.</p> <p>Bent #5 columns-</p> <p>Column #1-no deficiencies noted.</p> <p>Column #2-has a large vertical delamination.</p> <p>Column #3-has a large vertical delamination.</p>							
210	Reinforced Concrete Pier Wall	LF	185	127	58	0	0
1130	Cracking (RC and Other)	LF	58	0	58	0	0
(210)							



Bridge #05330(Routine)

US 65 Boone over CROOKED CREEK

Location: .48 MI E JCT SH 7

Team Lead: Benjamin Smith, Inspection Date: August 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
<p>The pier wall consists of 37' of web wall between the columns of each bent.</p> <p>Pier wall #1- has 11' of vertical and diagonal hairline cracking.</p> <p>Pier wall #2- has 12' of vertical and diagonal hairline cracking.</p> <p>Pier wall #3- has 13' of vertical and diagonal cracking.</p> <p>Pier wall #4- has 12' of vertical and diagonal cracking.</p> <p>Pier wall #5- has 10' of vertical and diagonal cracking.</p>							
215	Reinforced Concrete Abutment	LF	140	98	34	8	0
1080	Delamination/Spall/Patched Area	LF	7	0	0	7	0
1090	Exposed Rebar	LF	1	0	0	1	0
1120	Efflorescence/Rust Staining	LF	7	0	7	0	0
1130	Cracking (RC and Other)	LF	27	0	27	0	0
(215)							
<p>Abutment #1- has 7 vertical cracks in the back wall, 5 are quantified as efflorescence. The bridge seat has 6' of vertical cracks and 6' of concrete deterioration on the bridge seat at the right end of the abutment. The rip rap is in place and functioning as intended.</p> <p>Abutment #2- has 7' of cracking in the back wall, 2 are quantified as efflorescence. The right end of the bridge seat has 2' of spalling with rebar exposed at the extreme end with map cracking for 4' in the same area. The bridge seat has 14' of cracking total.</p>							
234	Reinforced Concrete Pier Cap	LF	303	191	34	78	0
1080	Delamination/Spall/Patched Area	LF	67	0	0	67	0
1090	Exposed Rebar	LF	11	0	0	11	0
1130	Cracking (RC and Other)	LF	34	0	34	0	0
(234)							
<p>Bent #1 cap- has 36' of delamination and 4' of spalling with exposed rebar on the span #2 side. The cap has vertical hairline cracks, but the cracking is in the same footage as other defects.</p> <p>Bent #2 cap- has 12' of hairline vertical cracking at random locations and exposed rebar on both sides totaling 6'. The span #3 side has 6' of delamination.</p> <p>Bent #3 cap- has 8' of hairline vertical cracking. It has a 4' delamination on the span #3 side and 4' of delamination on the span #4 side.</p> <p>Bent #4 cap- has 8' of large delamination on the span #5 side. The right side has a spall with 1' of exposed rebar on the span #5 side and on the underside of the right cantilever in the same footage. The cap has 3' of vertical hairline cracks under bays #1,2.</p> <p>Bent #5 cap- has 9' of horizontal delamination on the span #6 side with 11' of vertical hairline cracking.</p>							
302	Compression Joint Seal	LF	350	276	0	56	18
2310	Leakage	LF	18	0	0	0	18
2320	Seal Adhesion	LF	48	0	0	48	0
2340	Seal Cracking	LF	4	0	0	4	0

Team Lead: Benjamin Smith, **Inspection Date:** August 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
2350	Debris Impaction	LF	4	0	0	4	0
<p>(302)</p> <p>Abutment #1 seal- the joint was previously filled with hot applied crack sealer and cold mix. The seal does not appear to be leaking in the driving lanes. The right and left curb section seal has loss of adhesion and is leaking for 4' each.</p> <p>Bent #1 seal- the joint was previously filled with hot applied crack sealer and cold mix. The seal does not appear to be leaking in the driving lanes. The right curb section seal has cracking for 4' the left seal has loss of adhesion for 4'.</p> <p>Bent #2 seal- the joint was previously filled with hot applied crack sealer and cold mix. 10' of the joint is missing and is allowing free flow of water. The seals in the curb sections have lost adhesion and are leaking for 8' total.</p> <p>Bent #3 seal-the joint was previously filled with hot applied crack sealer and cold mix. The seal does not appear to be leaking in the driving lanes. The right and left curb seals have lost adhesion and are leaking for 8' total.</p> <p>Bent #4 seal- the joint was previously filled with hot applied crack sealer and cold mix. The seal does not appear to be leaking in the driving lanes. The right curb seal has debris impaction for 4'. The left curb seal has lost adhesion for 4'.</p> <p>Bent #5 seal- the joint was previously filled with hot applied crack sealer and cold mix. 8' of the joint is missing and is allowing free flow of water. The seals in the curb sections have lost adhesion and are leaking for 8' total.</p> <p>Abutment #2 seal- the seal has been filled with hot applied crack sealer and does not appear to be leaking in the driving lane. The seal in the curb portion of the deck has lost adhesion and is leaking on both sides for 8' total.</p>							
311	Movable Bearing	EA	48	32	1	15	0
1000	Corrosion	EA	16	0	1	15	0
<p>(311)</p> <p>Bent #1 movable bearings- all 16 are movable. 15 of the bearings have pack rust in the rocker area. Bearing # 2 on the span #1 side has no deficiencies.</p> <p>Bent #2 movable bearings- all 8 have been repainted and have rust staining on the paint from leaking joint seals.</p> <p>Bent #3 movable bearings- all 8 have been repainted and have rust staining on the paint from leaking joint seals.</p> <p>Bent #4 movable bearings- Beam #1 bearing has corrosion around the rocker area. The remaining bearings have rust staining on the paint from leaking joint seals.</p> <p>Bent #5 movable bearings- all 8 have been repainted and have no deficiencies.</p>							
313	Fixed Bearing	EA	48	42	2	4	0
1000	Corrosion	EA	6	0	2	4	0
<p>(313)</p> <p>Abutment #1 fixed bearings-bearings #1,8 have pitting that has been repainted, bearing #8 has corrosion beginning to show through the paint. Bearings #2-7 have no deficiencies.</p> <p>Bent #2 fixed bearings- All 8 have been repainted and have no deficiencies. The paint is rust staining due to leaking joint seals.</p> <p>Bent #3 fixed bearings- all 8 have been repainted and have no deficiencies.</p> <p>Bent #4 fixed bearings- all 8 have been repainted and have no deficiencies.</p> <p>Bent #5 fixed bearings- all 8 have been repainted and have no deficiencies.</p>							

Team Lead: Benjamin Smith, **Inspection Date:** August 26, 2020

ELEM	DESCRIPTION	UNITS	TOTAL	CS1	CS2	CS3	CS4
Abutment #2 fixed bearings- bearings #1,8 have been repainted and have minor pitting from previous corrosion. Bearing 8 has cs2 corrosion beginning to show through the paint. Bearings #2-7 have been repainted and have no deficiencies.							
330	Metal Bridge Railing	LF	796	769	0	27	0
7000	Damage	LF	27	0	0	27	0
(330)							
Metal Bridge Railing- consists of 3 aluminum square tubes attached to aluminum posts. The protective coating is 4.5' per foot. No protective coating is needed.							
Left side- no deficiencies noted.							
Right side- The right side of span #6 has vehicle damage, the posts and railing are bent outward for 27'.							



Approach view in direction of log mile.



Beam 8 has 2' of cs3 corrosion on the lower web and bottom flange at the beginning of span 1 due to dirt build up.



Flaking rust that has been painted over on the beams. Typical of several locations.



Bay #4 of span #1 showing delamination and efflorescence cracking in the deck under surface.
Typical of other areas in the deck under surface.



Pack rust still exists in many of the rocker areas. Typical of several locations.



The bearings at beam #4 over pier #1 have rust staining on the paint from joint seal drainage. Typical of several locations.



Paint stencil in span 1.



Bearing #8 at abutment #1 is partially covered with dirt and has corrosion.



Typical view of the joint areas over the piers and abutments.



Typical view of driving surface.



Downstream channel view.



Upstream channel view.



Cs2 corrosion on the bottom flange of beam 1 at the beginning of span 4.



Corrosion beginning to show through the paint on beams 4,5 in span 6.



Typical view of the undersurface.



Typical new paint condition.



Bearing condition at the abutments.



Approach view in direction of log mile.



Elevation view. Log mile from left to right.



Bridge #05330(Routine)
US 65 Boone over CROOKED CREEK

Location: .48 MI E JCT SH 7

Team Lead: Benjamin Smith Inspection Date: August 26, 2020

Maintenance Needs

Date Reported: 08/02/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

The right side bridge rail at span #6 has vehicle damage for 27'.

Remarks



Date Reported: 08/02/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

Bent #1 cap- has delamination.
Bent #2 cap- has exposed rebar.
Bent #3 cap- has delamination.
Bent #4 cap- has delamination and a spall with exposed rebar.
Bent #5 cap has delamination.

Bent #1 column #2- has a spall with exposed rebar.
Bent #3 column #1 has a delamination.
Bent #4 column #1 has delamination, column #3 has 2 spalls with exposed rebar.
Bent #5 column #1 and #2 have delamination.

Remarks



Large delaminations on the span #5 side of the bent #4 cap. Typical of the left and right sides.

Date Reported: 08/02/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

Beam #8 and bearing #8 have 2' of corrosion over the abutment due to dirt build up. Bearing #8 and Beam #8 have corrosion with minor section loss for 1' over abutment #2.

Remarks

Maintenance need updated by BDSM 431 on 8-27-2020 after routine inspection.



Fixed bearing condition at bent #2. Typical of bearings # 4-6.



Beam #8 at abutment 2 has 1/8" of section loss on the bottom flange at the bearing area.

Date Reported: 08/02/2012

Priority: D- Routine

Type of Work: None

Status: Assigned

Component:

Deficiency Description

The drain areas and deck overhangs have several locations that are spalled with rebar exposed.

Remarks



Shallow rebar exposed on the underside on the right concrete bridge rail in spans #5,6.



Drain area condition. Showing spalling and delamination some with rebar exposed. Typical of many locations.

Date Reported: 08/13/2014
Priority: C - Important
Type of Work: None
Status: Assigned
Component:

Deficiency Description

The compression joints over bents #2 & #5 have areas of the seal missing, allowing free flow of water and debris.

Remarks



Areas of Missing joint seal over bent #5 allowing free flow of water.

Date Reported: 08/21/2018
Priority: D- Routine
Type of Work: None
Status: Repair Documented
Component:

Deficiency Description

The bent caps at bents #2,5 have heavy debris build up that is promoting corrosion on the bearings.

Remarks

It was noted during the routine inspection that the caps have been cleaned during the paint contract.



Heavy Debris build up on the bent #2 cap.



Heavy build up on the bent #5 cap.

Team Lead: Benjamin Smith **Inspection Date:** August 26, 2020

Date Reported: 08/26/2020
Priority: C - Important
Type of Work: Repair
Status: Open
Component:

Deficiency Description

A pot hole is forming in the right hand south bound driving lane of span 3.

Remarks



A pot hole is forming in the right south bound driving lane of span 3.



Bridge #05330(Routine)
US 65 Boone over CROOKED CREEK

Location: .48 MI E JCT SH 7

Team Lead: Benjamin Smith **Inspection Date:** August 26, 2020

Inspection Comments

Structure is logged from SW to NE and is accessible with a large extension ladder.

Bat guano was noted on the bent #4 cap.