

# Bridge Inspection Report

**A2771**  
**US 412 Carroll**  
**over**  
**OSAGE CREEK**



**Inspection Date:**

**Inspected By:**

**Inspection Type(s):**

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Inspector:

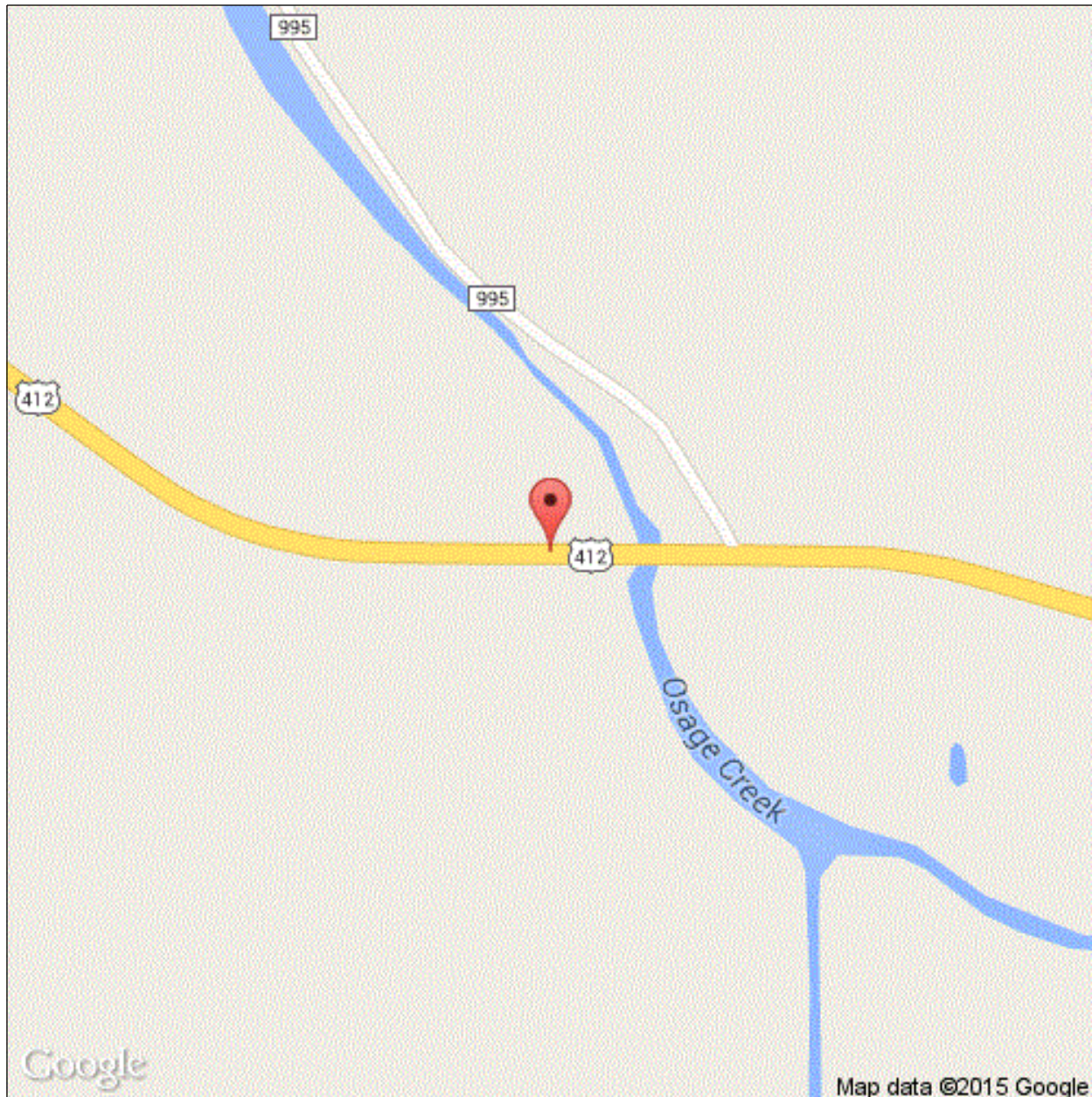
Inspection Date:

Structure Number: A2771

Facility Carried: US 412 Carroll

## Bridge Inspection Report

### Location Map



Latitude: 36.18863

Longitude: -93.41554



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### Location Map



Latitude: 36.18863

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Inspector:

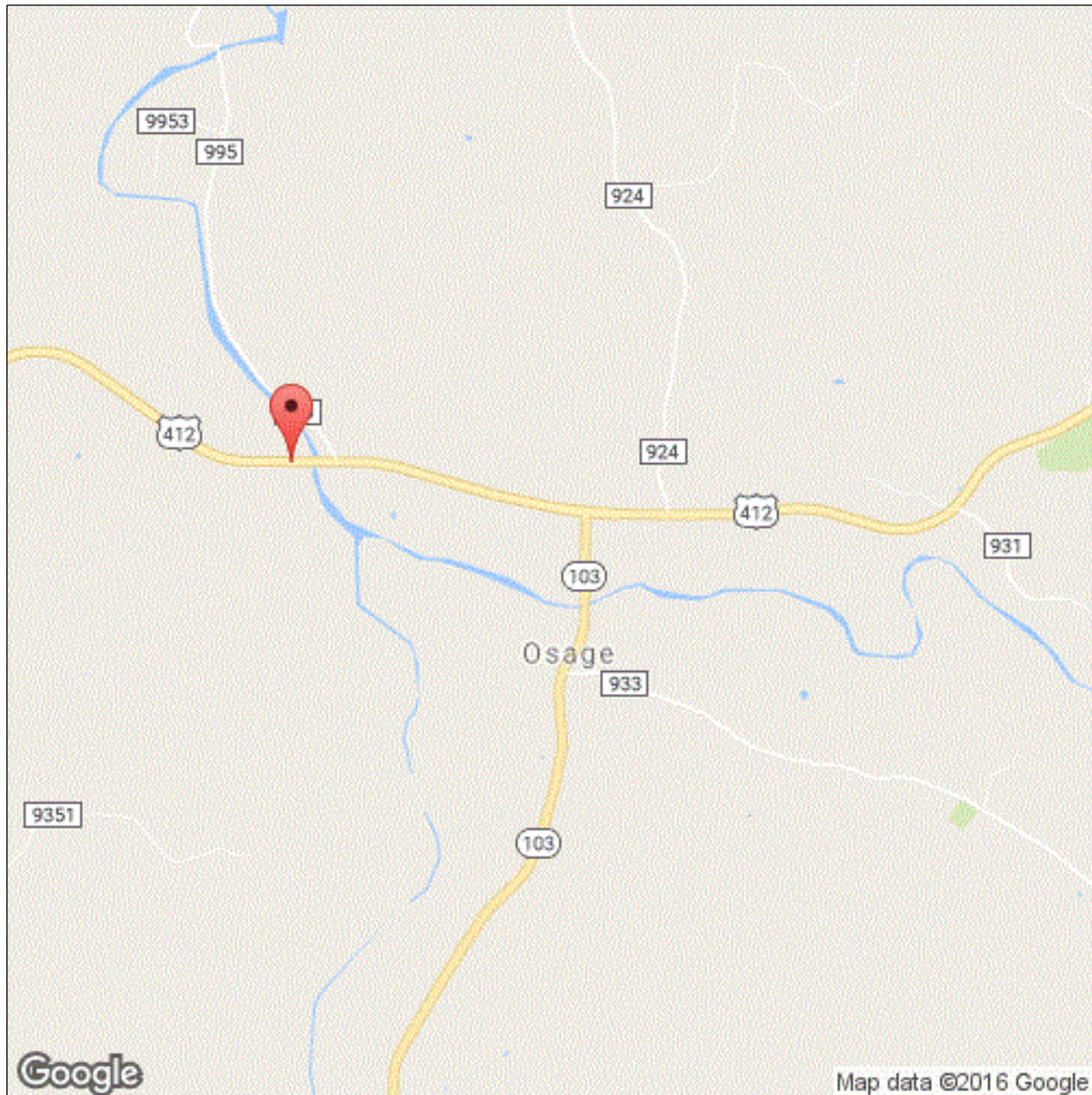
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## Bridge Inspection Report

### Location Map



Latitude: 36.18863

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**Executive Summary**

Structure is logged from West to East. A small extension ladder is needed to access the pier caps. Bat activity was noted at the joint area over piers #1,5.

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## National Bridge Inventory

IDENTIFICATION		INSPECTIONS	
(1) STATE CODE	056 - Arkansas	(90) INSPECTION DATE	05/16/2018
(8) STRUCTURE NUMBER	A2771	(91) DESIGNATED INSPECTION FREQUENCY	24
(5) INV. ROUTE (ON/UNDER)	1 2 1 412 0	(92) CRITICAL FEATURE INSPECTION	(93) CFI DATE
(2) HIGHWAY AGENCY	09 (3) COUNTY CODE 015	A. FRACTURE CRITICAL DETAIL	N
(4) PLACE CODE	00000	B. UNDERWATER INSPECTION	N
(6) FEATURES INTERSECTED	OSAGE CREEK	C. OTHER SPECIAL	N
(7) FACILITY CARRIED	US 412 Carroll		
(9) LOCATION	.60 MI W JCT SH 103		
(11) MILEPOINT 9.760	(12) BASE HIGHWAY NETWORK 1		
(13A) LRS INVENTORY ROUTE	0000412050 (13B) SUBROUTE NUMBER 00		
(16) LATITUDE 36.18863	(17) LONGITUDE -93.41554		
(98A) BORDER BRIDGE CODE			
PERCENT RESPONSIBILITY	(99) BORDER BRIDGE STRUCT		
STRUCTURE TYPE AND MATERIAL		CONDITION	
(43) STRUCTURE TYPE, MAIN		(58) DECK	5
A) KIND OF MATERIAL/DESIGN: 3 - Steel		(59) SUPERSTRUCTURE 7	(60) SUBSTRUCTURE 6
B) TYPE OF DESIGN/CONSTR: 02 - Stringer/Multi-beam or Girder		(61) CHANNEL & CHANNEL PROTECTION 6	(62) CULVERT N
(44) STRUCTURE TYPE, APPROACH SPANS			
A) KIND OF MATERIAL/DESIGN: 0 - Other			
B) TYPE OF DESIGN/CONSTR: 00 - Other			
(45) NUMBER OF SPANS IN MAIN 6	(46) NUMBER OF APPROACH 0		
(107) DECK STRUCTURE TYPE 1	(108A) WEARING SURFACE 1		
(108B) DECK MEMBRANE 0	(108C) DECK PROTECTION 0		
AGE OF SERVICE		LOAD RATING AND POSTING	
(27) YEAR BUILT 1969	(106) YEAR RECONSTRUCTED 0000	(31) DESIGN LOAD	4
(42) TYPE OF SERVICE ON 1 UNDER 5		(63) METHOD USED TO DETERMINE OPERATING RATING	1
(28) LANES ON 02 UNDER 00		(64) OPERATING RATING	60.0
(29) AVERAGE DAILY TRAFFIC 4200	(19) BYPASS DETOUR LENGTH 20	(65) METHOD USED TO DETERMINE INVENTORY RATING	1
(30) YEAR OF AVERAGE DAILY TRAFFIC 2014		(66) INVENTORY RATING	36.0
(109) AVERAGE DAILY TRUCK TRAFFIC 1		(70) BRIDGE POSTING	5
		(41) STRUCTURE OPEN/POSTED/CLOSED	A
GEOMETRIC DATA		APPRAISAL	
(48) LENGTH OF MAX SPAN (ft.) 82	(49) STRUCTURE LENGTH (ft.) 441	(67) STRUCTURAL EVALUATION	6
(50) CURB/SIDEWALK WIDTHS (ft.) LEFT 0.4 RIGHT 0.4		(68) DECK GEOMETRY	5
(51) BRDG RDWY WIDTH CURB-TO-CURB (ft.) 34.1		(69) UNDERCLEARANCES, VERTICAL & HORIZONTAL	N
(52) DECK WIDTH, OUT-TO-OUT (ft.) 38		(71) WATERWAY ADEQUACY	8
(32) APPROACH ROADWAY WIDTH (ft.) 30		(72) APPROACH ROADWAY ALIGNMENT	8
(33) BRIDGE MEDIAN 0	(34) SKEW (DEG.) 0	(36) TRAFFIC SAFETY FEATURE	
(35) STRUCTURE FLARED 0	(10) INV RTE, MIN VERT CLEAR (ft.) 99.99	36A) BRIDGE RAILINGS:	1
(47) TOTAL HORIZONTAL CLEARANCE (ft.) 34.8		36B) TRANSITIONS:	0
(53) VERTICAL CLEARANCE OVER BRIDGE ROADWAY (ft.) 99.99		36C) APPROACH GUARDRAIL:	0
(54) VERTICAL UNDER CLEARANCE (ft.) N 0		36D) APPROACH GUARDRAIL ENDS:	0
(55) LATERAL UNDER CLEARANCE RIGHT (ft.) N 99.9		(113) SCOUR CRITICAL BRIDGES	8
(56) MIN LATERAL UNDER CLEARANCE (ft.) 0		SUFFICIENCY RATING 89.5	STATUS 0
PROPOSED IMPROVEMENTS		CLASSIFICATION	
(75A) TYPE OF WORK PROPOSED 35	(75B) WORK DONE BY 1	(112) NBIS BRIDGE LENGTH	Y
(76) LENGTH OF STRUCTURE IMPROVEMENT (ft.) 441.0		(104) HIGHWAY SYSTEM OF THE INVENTORY ROUTE	1
(94) BRIDGE IMPROVEMENT COST (\$)	0	(26) FUNCTIONAL CLASSIFICATION OF INVENTORY ROUTE	02
(95) ROADWAY IMPROVEMENT COST (\$)	0	(100) STRAHNET HIGHWAY DESIGNATION	0
(96) TOTAL PROJECT COST	752	(101) PARALLEL STRUCTURE DESIGNATION	N
(97) YEAR OF IMPROVEMENT COST ESTIMATE	2003	(102) DIRECTION OF TRAFFIC	2
(114) FUTURE ADT 3929	(115) YEAR OF FUTURE ADT 2028	(103) TEMP STRUCTURE	
		(105) FEDERAL LANDS HIGHWAYS	0
		(110) DESIGNATED NATIONAL NETWORK	1
		(20) TOLL	3
		(21) MAINTENANCE RESPONSIBILITY	01
		(22) OWNER	01
		(37) HISTORICAL	5
		NAVIGATION DATA	
		(38) NAVIGATION CONTROL	0
		(111) PIER OR ABUTMENT PROTECTION	1
		(39) NAV VERT CLEARANCE (ft.)	0
		(116) MIN NAVIGATION VERT CLEARANCE, VERT LIFT BRIDGE (ft.)	0
		(40) NAV HORIZONTAL CLEARANCE (ft.)	0

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## Bridge Inspection Report

## Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12 - Reinforced Concrete Deck</b>	1- Ben.	16758	sq. ft.	0	10824	5934	0
<p>Driving surface- has a chip and seal overlay with numerous patched areas. The deck driving surface has deep delaminations in all spans with a few potholes.</p> <p>Undersurface - The left and right deck overhangs have delaminations and spalls with exposed rebar at many drain locations totaling 28' of exposed rebar. Span #1- the undersurface of the deck is heavily hairline map cracked with larger transverse cracks present in all bays.</p> <p>Span #2- Full depth contamination was noted in the undersurface in bay #5 in spans 2 and bay #1 at the end of the span. The undersurface of the deck has a heavy concentration of hairline map cracking through out with intermittent transverse cracking.</p> <p>Span #3- has a large area of full depth contamination in bay #1 at the beginning of the span with smaller areas throughout the span. Bays #4,5 at the end of the span have minor efflorescence in some of the cracks. The undersurface of the deck has a heavy concentration of hairline map cracking through out with intermittent transverse cracking.</p> <p>Span #4- bay #5 for the length of the span has full depth contamination with efflorescence. Bays 3,4 have areas of cracking with efflorescence. Bay #3 also has a patched area due to punching through with a pavement breaker. The undersurface of the deck has a heavy concentration of hairline map cracking through out with intermittent transverse cracking.</p> <p>Span #5- bay #1 has full depth contamination with efflorescence for the length of the span. Bay #5 has full depth contamination with efflorescence from mid span to the end of the span. The undersurface of the deck has a heavy concentration of hairline map cracking through out with intermittent transverse cracking.</p> <p>Span #6- bay #1 has numerous small areas of full depth contamination. Bay #3 has a full depth patched area due to a punch through. Bay #5 has large areas of full depth contamination with efflorescence at the beginning, mid section and end of the span. The undersurface of the deck has a heavy concentration of hairline map cracking through out with intermittent transverse cracking.</p>							
1080 - Delamination/Spall/Patched Area		5906		0	0	5906	0
1090 - Exposed Rebar		28		0	0	28	0
1130 - Cracking (RC and Other)		10824		0	10824	0	0



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107 - Steel Open Girder/Beam	1- Ben.	2634	ft.	2634	0	0	0
<p>The Super structure was painted on 5-2016 under contract. Paintable beam surface is 29" tall x 10.5 flange x 6 beams.(7.46' per foot protective coating). All beams have tapered cover plates on the bottom flanges that are not welded at the extreme ends.</p> <p>Span #1- beams #4,5 have flaking paint for 1' at the lower web at the end of the span, the beam is not yet corroded. The diaphragms at the end of span #1 have pitting, some have rust holes that the corrosion has been arrested.</p> <p>Span #2- beams #1, 4 ,5 have flaking paint for 1' on the web at the end of the span, the beams are not yet corroded.</p> <p>Span #3- beams #2,4,5,6 have flaking paint for 1' on the web ends of the span, the beams are not yet corroded. Beam #3 has a 1" by 1" hole near the top. Diaphragms #2,3,4 have rust holes.</p> <p>Span #4- the diaphragms have pitting diaphragms 1,3 have rust holes at the end of the span. No flaking paint was noted.</p> <p>Span #5- the end of beam #2 has flaking paint for 2' on both sides at the end of the span the beams are not yet corroded. Beams 3,4,6 have 1' of flaking paint at the end of the span. Diaphragm #3 has rust holes with pitting. Diaphragm #2 has 2' of flaking paint.</p> <p>Span #6- beam #2 has flaking paint for 2' at the beginning of the span, the beams are not yet corroded. diaphragms 2,4 have rust holes at the beginning of the span. The beam ends at abutment #2 have no deficiencies.</p>							
515 - Steel Protective Coating		22345	sq. ft.	22211	0	0	134
3440 - Effectiveness (Steel Protective Coatings)		134		0	0	0	134
210 - Reinforced Concrete Pier Wall	1- Ben.	125	ft.	51	58	16	0
<p>Pier wall #5- has 1' of horizontal hairline cracking at the right edge.</p> <p>Pier wall #4- has 5' of horizontal and vertical hairline cracking.</p> <p>Pier wall #3 -has 18' of horizontal hairline cracking. The right end has cs2 abrasion that is not quantified due to cracking in the same location.</p> <p>Pier wall #2- has 5' of CS 3 patched area on span #3 side, with 20' of horizontal hairline cracking. The pier wall has abrasion for its width, but is not quantified.</p> <p>Pier wall #1- has abrasion for its full width with heavier abrasion on the last 10' of the left side with loss of coarse aggregate. The right side of the pier wall has a small shallow rebar exposed near the top. All pier walls have insignificant pop outs at the form tie locations.</p>							
1080 - Delamination/Spall/Patched Area		5		0	0	5	0
1090 - Exposed Rebar		1		0	0	1	0
1130 - Cracking (RC and Other)		44		0	44	0	0
1190 - Abrasion/Wear (PSC/RC)		24		0	14	10	0

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## Element Inspection

<b>215 - Reinforced Concrete Abutment</b>	1- Ben.	92	ft.	67	25	0	0
	<p>Abutment # 2 - has 9' of vertical hairline cracking in the back wall and bridge seat. The rip rap is in place and functioning as intended.</p> <p>Abutment #1- has 12 vertical hairline vertical cracks in the back wall and 8 vertical hairline cracks in bridge seat. Only 16' of cracking is quantified due to cracking occupying the same footage. The rip rap is in place and functioning as intended.</p>						
1130 - Cracking (RC and Other)		25		0	25	0	0
<b>234 - Reinforced Concrete Pier Cap</b>	1- Ben.	177	ft.	90	62	25	0
	<p>Pier cap #5- has a 2' area of CS 3 spalling at the top edge beneath bay #4 on the span #6 side and 8' vertical hairline cracks. The right cap face has a shallow exposed rebar on the span #5 side. Bats are audible at the left side of pier #5.</p> <p>Pier #4 cap has 3' of cs3 patched area beneath beam #3 on the span 4 side, and 12' of horizontal hairline cracks beneath beams 2-5. The right cap end of pier #4 has 1' of cs3 delamination.</p> <p>Pier #3 cap -has a horizontal hairline crack for 30 feet near the top, and 1' of cs3 spall with no rebar exposed on the original section of the cap.</p> <p>Pier #2 cap- has a spall in the original cap on the span #3 side. The left side of the cap has patched areas on the span #2 side. The cap also has 8' of vertical hairline cracks in the new and old portion of the cap.</p> <p>Pier #1 cap- has 3 vertical hairline cracks beneath bays 3,4,5 on the span #1 side. The cap under bay #2 has a 2' horizontal CS 3 delamination. The right side of the cap has a small shallow delamination on the span #1 side. Bat Guano was noted on the top of cap on the left side.</p>						
1080 - Delamination/Spall/Patched Area		25		0	1	24	0
1090 - Exposed Rebar		1		0	0	1	0
1130 - Cracking (RC and Other)		61		0	61	0	0
<b>302 - Compression Joint Seal</b>	1- Ben.	266	ft.	28	0	127	111
	<p>Abutment #1 compression joint seal- has cracking for its full width, leaking is minimal. The armoring plates have pack rust.</p> <p>Pier #1 joint seal- has lost adhesion with pack rust and has 34' CS 3 leakage. Bat activity was noted.</p> <p>Pier #2 joint seal- has 9' completely missing and 25' of CS3 leakage.</p> <p>Pier #3 joint seal-has 34' of CS4 leakage due to the seal is mostly missing.</p> <p>Pier #4 joint seal- has 34' of CS4 leakage due to the seal is mostly missing.</p> <p>Pier #5 joint seal- has 34' of CS4 leakage due to the seal is mostly missing. Bat activity was noted.</p> <p>Abutment #2 joint seal- has cracking for its full width, leaking is minimal. The armoring plates have pack rust.</p>						
2310 - Leakage		170		0	0	59	111
2340 - Seal Cracking		68		0	0	68	0

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311 - Movable Bearing	1- Ben.	42	each	4	38	0	0
<p>Abutment #1 moveable bearings- bearings 5,6 have minor pitting, but corrosion has been arrested due to paint system. Bearings 1-4 have no deficiencies.</p> <p>Pier #1 movable bearings- all 6 have minor corrosion beginning to show through the new paint system. Beam #4 bearing has the right anchor bolt stud corroded away. Beam #5 has the left anchor bolt nut missing.</p> <p>Pier #2 moveable bearings- all 6 have minor corrosion with pitting. Bearing #2 has the anchor bolt stud corroded away.</p> <p>Pier #3 moveable bearings- all 12 have minor corrosion beginning to show through the new paint system.</p> <p>Pier #4 moveable bearings- all 6 have minor corrosion beginning to show through the new paint system.</p> <p>Pier #5 moveable bearings- all 6 have minor corrosion beginning to show through the new paint system.</p> <p>The bearings at the piers have been painted and corrosion has been arrested, but the rust color is beginning to bleed back through. Minor section loss exists at the rocker area of some of the bearings.</p> <p>Bearings under beams # 3,4,5 over pier #4 have spacer plates under the rocker to level the deck surface.</p>							
1000 - Corrosion		38		0	38	0	0
515 - Steel Protective Coating		42	sq. ft.	4	38	0	0
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		38		0	38	0	0
313 - Fixed Bearing	1- Ben.	30	each	0	30	0	0
<p>Pier #1 fixed bearings- all 6 have minor corrosion at the top with rust staining beginning to show through the paint system.</p> <p>Pier #2 fixed bearings- all 6 have minor corrosion at the top with rust staining beginning to show through the paint system.</p> <p>Pier #4 fixed bearings- all 6 have minor corrosion at the top with rust staining beginning to show through the paint system.</p> <p>Pier #5 fixed bearings- all 6 have minor corrosion at the top with rust staining beginning to show through the paint system.</p> <p>Abutment #2 fixed bearings-all 6 have minor corrosion with rust staining beginning to show back through the paint system.</p> <p>Fixed bearings over the piers have been painted and the corrosion has been arrested. Minor section loss exists at the bases of the bearing pedestal. Rust coloring is beginning to show back through the paint system.</p>							
1000 - Corrosion		30		0	30	0	0
515 - Steel Protective Coating		30	sq. ft.	0	30	0	0
3420 - Peeling/Bubbling/Cracking (Steel Protective Coatings)		30		0	30	0	0



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#### Element Inspection

330 - Metal Bridge Railing	1- Ben.	882	ft.	875	7	0	0
<p>The metal bridge railing consists of 2 sections of metal tubing on concrete posts.</p> <p>Right railing-The lower metal bridge railing on the right side of span #3 has 7' of vehicle damage. The tops of the concrete bridge posts have been spalled in many locations due to vehicle damage.</p> <p>Left railing- The tops of the concrete posts have been spalled due to vehicle damage in many locations.</p>							
7000 - Damage		7		0	7	0	0

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**Bridge Inspection Report**

**Pictures**

PHOTO 1

Description

PHOTO 1

Description

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**Bridge Inspection Report**

**Pictures**

PHOTO 2

Description



**Inspector:**

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**Bridge Inspection Report**

**Sketches**

Inspector:

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### Bridge Inspection Report

#### Maintenance Needs

Date Reported: 05/04/2015

Priority: C - Important

Work Code:

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#### Deficiency Description:

All deck joints are torn or dislodged with large sections missing, allowing water and debris onto pier caps.

#### Work Description:

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Date Repairs Completed:

Maintenance Comments:

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Stage: Assigned



PHOTO 1      Description      Dislodged joint seal typical of all locations.

Stage: Assigned



PHOTO 2      Description      18" of cs4 joint seal leakage in bay 3 over pier #5.

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### Bridge Inspection Report

## Maintenance Needs

Date Reported: 05/04/2015

Priority: D - Routine

Work Code:

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### Deficiency Description:

All deck spans have deep delaminations with areas of pot holes in the driving surface.  
The undersurface of the deck has areas of full depth contamination.

### Work Description:

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Date Repairs Completed:

Maintenance Comments:

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Stage: Monitor



PHOTO 1 Description

Stage: Monitor



PHOTO 2 Description



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### Bridge Inspection Report

## Maintenance Needs

Date Reported: 05/04/2015

Priority: D - Routine

Work Code:

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### Deficiency Description:

Numerous deck drain areas along the left and right side overhangs have spalling with rebar exposed

### Work Description:

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Date Repairs Completed:

Maintenance Comments:

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Stage: Assigned



PHOTO 1      Description      Typical drain spalled area

Stage: Assigned



PHOTO 2      Description      Typical of several locations along the left and right side of structure.

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### Bridge Inspection Report

## Maintenance Needs

Date Reported: 05/16/2018

Priority: D - Routine

Work Code:

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### Deficiency Description:

Anchor bolt studs and or nuts are corroded away at-  
Pier #1- Beam #4 has the right anchor bolt stud corroded away, Beam #5 has the left anchor bolt nut missing.  
Pier #2- beam #2 has the anchor bolt stud corroded away.

### Work Description:

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Date Repairs Completed:

Maintenance Comments:

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