Oklahoma Dept. of Transportation - Bridge Inspection Report

NBI No.:	Structure No.:	Local ID:	Suff. Rating:	
13688	6602 0368EX	-1	49.40	SD

IDENTIFICATION

Bridge Description:
100ft.-140ft.-210ft.-160ft.-100ft.-100ft. HI. TRUSS SPANS

1. State: Oklahoma
2. Division: Division 8
3. County: ROGERS
4. City: Unknown
Admin Area: Unknown
5a. On/Under: Route On Structure
5b. Kind of Hwy: State Hwy
5c. Lvl of Srvc: Mainline
5d. Route No.: 00066
5e. Dir. Sufx: N/A (NBI)

7. Facility Carried : S.H. 66 NB
6. Feat. Intersect: BIRD CREEK & RD. UNDER
9. Location: 3.3 MI N JCT I-44
11. Mile Post: 3.679 mi
13. LRS Inv. / Sub Rte: -1 / -1
16. Latitude: 36° 12' 29.18"
17. Longitude: 095° 43' 29.72"
98. Border Brdg: Unknown (P)
% Responsible: 0.00
99. Border Brdg #: Unknown

INSPECTION

Type	Insp. Req.	Insp. Done	Freq.	Insp. Date	Next Insp.
NBI:		0	24 months	11/9/2017	11/09/2019
FC:	Y	0	24 months	11/9/2017	11/9/2019
UW:	N	0		NA	NA
OS:	Y	1	24 months	11/6/2018	11/9/2020

CLASSIFICATION

12.Base Hwy Net.: Not on Base Network
20. Toll Facility: On free road
21. Custodian: State
22. Owner: State
26. Function Class: 17 Urban Collector
37. Historical Sig.: Br eligible for NRHP
100. Def. Hwy: Not a STRAHNET hwy

101. Parallel Str.: Right of || bridge
102. Traffic Dir.: 1-way traffic
103. Temp. Str.: Not Applicable (P)
104. Hwy System: Not on NHS
105. Fed Land Hwy: N/A (NBI)
110. Defense Hwy: Not a STRAHNET hwy
112. NBIS Length: Long Enough

STRUCTURE TYPE AND MATERIALS

43a/b. Main Span: Steel / Truss-Thru
44a/b. Appr. Span: Unknown / Unknown (P)
45. # of Main Spans: 6
46. # of Appr. Spans: 0
107. Deck Type: Concrete-Cast-in-Place
108a. Wearing Surface: Monolithic Concrete
108b. Membrane: Unknown
108c. Deck protection: Unknown

CONDITION

58.Deck: 5 Fair
62.Culvert: N/A (NBI)
59.Sup.: 4 Poor
61.Chan./Chan. Prot.: 6 Bank Slumping
60.Sub: 6 Satisfactory

Flowline Notes

[11/2017] FL to TOC = 57.2' in span 3, L3, east truss
[11/19/2015] FL=59' to top of curb in span 3, panel point L3, east truss

AGE AND SERVICE

19. Detour Length: 0.1 mi
27. Year Built: 1956
28a/b. Lanes on/und: 2 / 2
29. ADT: 6,750
30. Year of ADT: 2016
42a/b. Type of Svc on/und: Highway / Hwy-waterway

106. Year Reconst.: 1979
109. Truck ADT: 7%

LOAD RATING AND POSTING

31. Design Load: M 18 (H 20)
41. Post. Status: A Open, no restriction
70. Posting: 5 At/Above Legal Loads
Date Rated: 03/20/2014
63.Op / 65.Inv. Rating Meth.: 1 LF Load Factor / 1 LF Load Factor

	H	HS	3-3	EV3	SHV
64. Operating Rating (tons):	30.40	47.50	72.60	-1.00	0.00
66. Inventory Rating (tons):	16.80	28.50	41.40	-1.00	

GEOMETRIC DATA

10. Vert. Clearance: 15.75 ft
32. Appr Rwy Width: 37.07 ft
33. Median: No median
34. Skew: 0.00°
35. Struct. Flared: No flare
47Horizontal Clr: 29.80 ft
48. Length Max Span: 210.00 ft
49. Struct. Length: 824.66 ft

50a. Curb/Sdwlk Width L: 0.75 ft
50b. Curb/Sdwlk Width R: 0.75 ft
51. Width Curb to Curb: 29.80 ft
52. Width Out to Out: 31.00 ft
Deck Area: 25,564.97 sq. ft
53. Min.Vert.Cl.Ovr Brg: 15.75 ft
54a.Min.Vt.Undclr.Ref.: H Hwy beneath stru
54b. Min. Vert. Undclr.: 14.50 ft
55a. Min.Lat.Undclr.Ref: H Hwy beneath str
55. Min.Lat.Underclr. R: 15.09 ft
56. Min.Lat.Underclr. L: 99.90 ft

APPRAISAL

36a. Brdg Rail: 0 Substandard
36b. Transition: 1 Meets Standards
36c. Appr. Rail: 1 Meets Standards
36d. Appr.Rail Ends: 1 Meets Standarc
67. Str Evaluation: 4 Minimum Tolerab

68. Deck Geom.: 4 Tolerable
69. Vert./Horiz. Undclr: 6 Equal Minimum
71. Waterway Adeq: 7 Above Minimum
72. Appr. Alignment: 8 Equal Desirable Crit
113. Scour Critical: 8 Stable Above Footin

PROPOSED IMPROVEMENTS

94. Bridge Cost: $3,226,224
95. Roadway Cost: $4,500,000
96. Total Cost: $8,163,557
97. Yr.of Cost Est.: 2015

75. Type of Work: 31 Repl-Load Capacity
76. Lngth of Improvement: 825.1 ft
114. Future ADT: 10,800
115. Yr.of Future ADT: 2036

NAVIGATION DATA

38. Nav. Control: Permit Not Required
39. Vert. Clearance: 0.0 ft
40. Horiz. Clearance: 0.0 ft

111. Pier Protect.: Not Applicable (P)
116. Lift Bridge Vert. Clr.: 0.0 ft

OKLAHOMA ITEMS

200c. Temperature: 50
200d. Weather: Clear
201. Struc.Stl. ASTM Desig.: -1 / -1
202. Waterprf.Membrane: -1
Date Installed: 01/01/1901
203. Type Exp. Device: Modular
Pourable _
204. Type of Railing: Metal Railing (other)
205. Material Quantity: -1.00
208a. Type of Abutment: Cantilever
b. Type of Found.: Bears on Natural Found.
209. Type of Pier/Found.: 2 / No
Concrete Piling
210. Foundation Elev.: -1.00 -1.00 -1.00 -1.00 -1.00
211. Wear.Surf.Prot.Sys: None
Date Installed: 01/01/1901
213. Utilities Attached: Communication

214a. Posted Weight Limit: NR
b. Posted Speed Limit: 45
c. Narrow/1way Brdg Sign: No
d. Vertical Clr. Sign: Yes
Adv. Warning Sign: No
e. Navigation Lights?: No
Working/Not Working: No
215. Overpass: STATE HIGHWAY
221. Substr.Cond.(U/W): _
222. Fill Over RCB:
223. Appr.Slab/Rwy Cond.: 2
225. Paint Type/Ovrct: _ N/A
226. Date Painted:
227. Paint Color: -1
233. Deck Forming: Conventional Forming
238. School Bus Rte.: Current & Desired route
240. Appr. Rwy Type.: Asphalt/Bituminous
243. Grdr Spacing/No.: /

244. Span Lengths: 100 140 210 160 100 100
245. Girder Depth:
246a. Type of Ovelay: NA
b. Overlay Thickness:
c. Overlay Date: 01/01/1901
d. Ovly Depth Changed >1": N
247. Protective Systems: _
248. # Field Splices w/ Corrosion:
249. Scour Crit. POA Exists?: No
250. Headwall:
254. Thru Truss Type:
257a. OkiePROS Truck Routing: Yes
258. Plans w/Found.in ODOT File:
259. Scour Eval. in ODOT File:
263. Interchange at Intersection: No
264. Interstate Milepoint: -1.00

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Inspection Date: 11/6/18 Dale Poorman

Invoice No.: -1 Inspected With:

BRIDGE NOTES:

140-foot thru-truss (span 2), 210-foot thru-truss (span 3), 160-foot thru-truss (span 4) and three 100-foot pony trusses (Spans 1,5&6)
Clearance under span 5 was measured at 16ft 6in (incorrectly noted as 14ft 6in in 2017 FC report (posted for 14ft 11in). Posting sign on south portal of bridge has faded and is difficult to read (15ft 6in posting).

O/S Inspection Items Include: Cracks and overcuts in stringer copes; Section loss/welded repairs to stringer and floor beam ends; Section loss to lower chord truss gusset plates; Sweep in floor beams over piers; Bearing rotations; Pack rust distressing floor beam and truss connections areas; Impact damage or bowing of gusset plates;

INSPECTION NOTES: **11/6/18**

PX–Replace or repaint numbers on vertical clearance sign at the south portal of span 2; Replace the damaged portion of the SE approach rail; Seal cracks in the deck; Unclog the deck drains; Replace patches and fill in spalls in the deck; Replace the joint header at the south abutment; Replace the joint material at piers 1 and 3; Repair delaminations and spalls, and seal cracks along joint headers; Install stiff-leg repairs to the end FBs with sweep (Span 2 FB 7=3/8 in. south; Span 3 FB 0=1/4 in. south; Span 3 FB 10=3/8 in. north; Span 4 FB 0=1/4 in. south; Span 5 FB 5=1/4 in. north); Repair areas of significant section loss to the FBs; Replace/repair floor system gusset plates, angles, and hanger rods with section loss or are broken; Reconnect conduit where supports have failed in spans 1 and 4 and is hanging from cables inside conduit; Remove vegetation from the interiors of the end posts and near the truss in spans 1 and 6; Remove construction debris from on top of end stay plate for W U4L5 span 6 and W truss bearing at south abutment; Remove loose concrete and patch spall in capitol of W column of pier 1; Reset the bearings at pier 3 (pier is leaning 1 in. south).
FX-Monitor: Spalling in the deck soffit for additional growth; Cracking with efflorescence in the deck soffit; Repairs to the stringers and floor beams; Cracks and overcuts in the stringer copes; Reactivating pack rust between the stringer web and FB connection angles; Sheared rivet head on the west face of stringer 6, S face of FB 1, span 6; 1 in. long layer of steel which has peeled away at the top cope of stringer 6, south face of FB 2, span 3; Areas of section loss to the FBs; Pack rust at the FB to truss connection; Gap between FB 5 of span 5 and FB 0 of span 6; 2 in. vertical crack and corrosion hole in top of connection of floor beam 5 to east truss in span 1; Pack rust between lower lateral bracing gusset plates and FB bottom flange; Impact damage to inboard gusset plate at E U1, span 4 for cracks; Inboard gusset plates for additional section loss; Truss web members for additional section loss and pack rust around FB and railing connections; Floor system deflection; Exposed pile at north abutment; Truss bearings for movement.

ELEMENT CONDITION STATE DATA

Elem. / Env	Description	Unit	Total Qty	% 1	Qty. 1	% 2	Qty. 2	% 3	Qty. 3	% 4	Qty. 4
12 / 4	Re Concrete Deck	sq.ft	24,576.00	87%	21,470.70	12%	3,054.40	0%	50.90	0%	0.00
	PX – Isolated areas of the deck exhibit spalls or delaminations up to 4 square feet. Some of the spalls have been filled in with asphalt.FX – Isolated longitudinal cracking up to 1/16-inch wide was noted in spans 2 through 6. .Low density map cracking less than 1/64-inch wide is typical to isolated locations throughout the deck. The worst location of map cracking was noted to be a 5 square-foot area of 1/16-inch wide cracking with efflorescence in the west shoulder at pier 2..										
113 / 4	Steel Stringer	ft	206,400.00	100%	206,400.00	0%	0.00	0%	0.00	0%	0.00
	Most of the deficiencies are for element 877-stringer ends.										
120 / 1	Steel Truss	ft	600.00	71%	425.00	17%	100.00	13%	75.00	0%	0.00
	Upper Chord - Reactivating surface corrosion with minor section loss is present to the lacing bars on the underside of the upper chord members in spans 1, 5, and 6. Lower Chord - FX – Isolated gusset plates exhibited section loss 1/8-inch deep along the interface with the top flange of lower chord channels. Isolated batten plates throughout the lower chord exhibit multiple corrosion holes up to 1-inch long by 1/2-inch wide.Isolated gusset plates exhibited pack rust up to 1/8-inch wide and a maximum of 3/8-inch between the gusset plate and lower chord channels. Isolated gusset plates exhibited minor bowing due to the painted over pack rust.The outboard channel bottom flange of L4L5 of the east truss in span 3 is bent downward 1 1/2-inch with a 3/16-inch deep gouge. Web Members - FX – The vertical connection plates above the floor beam flanges typically exhibit section loss up to 1/8-inch deep due to deck drainage from the associated joints.Pack rust up to 1/4-inch thick occurs between e bridge rail and truss web members. Section loss up to 1/8-inch deep is present at several of these locations. Additional areas of minor 1/8-inch thick pack rust was noted at several mid-height member connections. End Posts - Minor pack rust is typical between the top cover plates of the end posts and channel top flanges and between the various members and gusset plates.The end stay plate for U4L5 of the west truss in span 1 exhibits several corrosion holes up to 1-inch in diameter with active corrosion.										
515 / 1	Steel Protective Coating	sq.ft	145,456.00	100%	0.00	0%	145,456.00	0%	0.00	0%	0.00
	The bridge was painted in January 2014. Isolated areas exhibit reactivating corrosion typically at leaking deck joints and interfaces between various connection plates. Most of paint throughout truss above the deck has no deficiencies										
152 / 4	Steel Floor Beam	ft	1,426.00	58%	826.00	14%	200.00	28%	400.00	0%	0.00

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PX – Member Alignment - Multiple floor beams were noted to exhibit sweep; however, an analysis performed by the OKDOT on November 20, 2015 determined that a load restriction was not necessary. Floor beam sweep measurements for the end floor beams are as follows (see 13688(2017-11-09)FC for locations). Multiple floor beams exhibit areas of significant section loss and corrosion holes. Many of these locations have been repaired with a welded plate repair. The locations of significant section loss and repairs are documented in the following table (see 13688(2017-11-09)FC for locations).End floor beams typically exhibit heavy section loss of 1/4-inch deep throughout all the faces with additional corrosion holes due to the leaking joints above. FX – The underside of the floor beam bottom flange exhibits up to 3/16-inch section loss at the interface with the floor bracing connection plate.Floor beam top flanges exhibits typically full width by 1/8-inch deep section and a maximum of 1/4-inc section loss to the exterior bays and in multiple locations extending into the first interior bay.Multiple floor beam to truss connections exhibit reactivating pack rust up to 3/8-inch thick between the floor beam web plate and truss connection plates and angles at the top of the connection. A 3/8-inch gap is present between the bottom flanges of floor beam 5 of span 5 and floor beam 0 of span 6 at 55°F. Additional expansion of the truss could be restricted at this location under high temperature conditions.A previously noted 2-inch long vertical crack exists in the top of the floor beam 5 to east truss connection in span 1. This deficiency has been cleaned and painted, however, is still visible. A 5/8-inch diameter corrosion hole exists adjacent to the cracks. No changes were observed since the last inspection with these conditions.

162 / 4	Stl Gus Plate	each	396.00	0%	0.00	87%	346.00	13%	50.00	0%	0.00

FX – Isolated gusset plates exhibited section loss 1/8-inch deep along the interface with the top flange of lower chord channels.Inboard gusset plate of U1 of the east truss in span 4 exhibits a 3-inch high by 1/8-inch deep gouge in the edge of the gusset plate on the north side. Member Alignment - Inboard gusset plates throughout the upper chord typically exhibit minor 1/8-inch bowing due to construction. No signs of distress were noted at any locations. Member Alignment - The gusset plates at L7 of the west truss in span 2 are both bowed 1/8-inch towards each other.

205 / 4	Re Conc Column	each	10.00	30%	3.00	70%	7.00	0%	0.00	0%	0.00

PX – A spall 12 inches long by 5 inches high by 2 inches deep with no exposed reinforcing steel exists in the capitol of the west column of pier 1 on the south face. Spall is currently not undermining bearing.A horizontal crack is emanating from a patch on the north face of pier 1 at the east end of the patch^ however^ patch appears sound.Hairline circumferential and vertical hairline cracks exist in several of the pier columns.Many of the previously noted spalls in the web walls have been patched.

215 / 4	Re Conc Abutment	ft	76.00	34%	26.00	66%	50.00	0%	0.00	0%	0.00

FX – One concrete pile is partially exposed up to 6-inches vertically at the north abutment beneath the west truss bearing. The previously noted spalls and cracks at the south abutment have been repaired. .

227 / 1	Re Conc Pile	(EA)	1.00	100%	1.00	0%	0.00	0%	0.00	0%	0.00

FX – One concrete pile is partially exposed up to 6-inches vertically at the north abutment beneath the west truss bearing. No significant deficiencies.

301 / 4	Pourable Joint Seal	ft	90.00	0%	0.00	0%	0.00	100%	90.00	0%	0.00

PX – The expansion joints at piers 1 and 3 exhibit isolated locations of adhesion failure totaling approximately 5 feet at each joint Isolated asphalt and concrete patches adjacent to the joints exhibit cracking and spalling. Additional joints exhibited spalls up to 2 square feet by 2 inches deep to the joint headers.Several joints exhibited full width transverse hairline cracks up to 1/8-inch wide adjacent to the floor beams .

304 / 4	Open Expansion Joint	ft	60.00	0%	0.00	100%	60.00	0%	0.00	0%	0.00

PX – At the south abutment open joint^ the approach slab is offset approximately 2 inches vertically in the left travel lane near the centerline

311 / 4	Moveable Bearing	each	12.00	42%	5.00	42%	5.00	17%	2.00	0%	0.00

PX – Excessive bearing rotations were noted to the span 3^ pier 3 bearings for both truss lines. The most significant bearing rotation was noted to be 14° to the west truss. Bearing measurements were taken at all the bearings at 50°F. Measurements are documented below (see 13688(2017-11-09)FC for bearing measurements).The east anchor bolt at the east truss bearing for span 5 and pier 5 is backed off nearly 2-inches. The truss bearings at pier typically exhibit minor surface corrosion on the rockers and masonry plates.

313 / 4	Fixed Bearing	each	12.00	67%	8.00	33%	4.00	0%	0.00	0%	0.00

The truss bearings at pier typically exhibit minor surface corrosion on the rockers and masonry plates.

321 / 4	Re Conc Approach Slab	sq.ft	2.00	100%	2.00	0%	0.00	0%	0.00	0%	0.00

No significant deficiencies were noted at the time of inspection. The approaches have been repaired since the last inspection.

330 / 4	Metal Bridge Railing	ft	1,620.00	38%	620.00	12%	200.00	49%	800.00	0%	0.00

The bridge railing exhibits 1/8-inch deep painted over section loss throughout the interior face of the railing.Isolated locations of peeling paint with minor corrosion and minor impact damage were noted to the bridge rail. ..

919 / 4	St.(Rail) Prot. Coat	(SF)	7,128.00	100%	0.00	0%	7,128.00	0%	0.00	0%	0.00

solated locations of peeling paint with minor corrosion and minor impact damage were noted to the bridge rail.

821 / 4	Steel Truss (Ovhd)	(LF)	1,020.00	85%	870.00	10%	100.00	5%	50.00	0%	0.00

Upper Chord - FX Inboard gusset plate of U1 of the east truss in span 4 exhibits a 3-inch high by 1/8-inch deep gouge in the edge of the gusset plate on the north side. Lower Chord - Member Alignment - Isolated gusset plates exhibited pack rust up to 1/8-inch wide and a maximum of 3/8-inch between the gusset plate and lower chord channels. Isolated gusset plates exhibited minor bowing due to the painted over pack rust. The outboard channel bottom flange of L4L5 of the east truss in span 3 is bent downward 1 1/2-inch with a 3/16-inch deep gouge. ..

859 / 4	Soffit	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00

FX – Isolated areas of the deck soffit exhibit spalling with exposed reinforcing steel typically adjacent to the floor beams. Some of these spalls have been patched or the exposed reinforcing steel has been painted.The deck soffit exhibits isolated locations of cracks with efflorescence which is allowing water to leak through the cracks onto the floor beams. .

877 / 4	St. Stringer End(5Ft)	(LF)	2,580.00	83%	2,130.00	4%	100.00	14%	350.00	0%	0.00

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FX – Heavy section loss to the stringers near the top of the floor beam connections with repairs or repair recommendations are as follows (see 13688(2017-11-08)FC for locations). Stringers exhibited cope cracks and overcuts throughout the structure. Locations and measurements are as follows (see 13688(2017-11-08)FC for locations). Pack rust up to 1 5/8 inch thick between the stringer/floor beam webs and connection angles has begun to reactivate in isolated locations. One sheared rivet head is present on the west face of the stringer 6 connection to the south face of floor beam 1 in span 6. Rivet shank is not in shear plane. A 1-inch long layer of steel has peeled away at the top cope on the west face of stringer 6 at the connection to the south face of floor beam 2 in span 3 with an adjacent pin hole to the stringer web.

909 / 4	Pourable Fix Jt.Seal	(LF)	246.00	0%	0.00	100%	246.00	0%	0.00	0%	0.00

PX – Isolated asphalt and concrete patches adjacent to the joints exhibit cracking and spalling. Additional joints exhibited spalls up to 2 square feet by 2 inches deep to the joint headers. Several joints exhibited full width transverse hairline cracks up to 1/8-inch wide adjacent to the floor beams

956 / 4	St. Cracking/Fatigue	(SF)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00

See element 877.

957 / 4	Pack Rust Smart Flag	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00

Pack rust between truss web and railing^ floor beam and llb gusset plates^ connection angles of floor beams and stringers.

958 / 4	Concrete Cracking SF	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00

FX – Isolated longitudinal cracking up to 1/16-inch wide was noted in spans 2 through 6. Low density map cracking less than 1/64-inch wide is typical to isolated locations throughout the deck. The worst location of map cracking was noted to be a 5 square-foot area of 1/16-inch wide cracking with efflorescence in the west shoulder at pier 2.

963 / 4	Steel Section Loss SF	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00

Stringer copes at floor beams and throughout floor beams under leaking joints.

968 / 4	Erosion SF	(EA)	1.00	0%	0.00	100%	1.00	0%	0.00	0%	0.00

FX – One concrete pile is partially exposed up to 6-inches vertically at the north abutment beneath the west truss bearing. A 2-foot deep erosion ditch extending from panel point 3 of the east truss into span 2 to the channel was noted. The ditch has been partially lined with dump rock.

969 / 4	OutOfPlane Dist./Load	(EA)	1.00	0%	0.00	0%	0.00	100%	1.00	0%	0.00

PX – Member Alignment - Multiple floor beams were noted to exhibit sweep; however^ an analysis performed by the OKDOT on November 20^ 2015 determined that a load restriction was not necessary. Floor beam sweep measurements for the end floor beams are as follows (see table in 13688(2017-11-09)FC for locations).