OKLAHOMA DEPARTMENT OF TRANSPORTATION - Bridge Inspection Report

NBI No.: **04085** Structure No.: 0902 0000 X Local ID:-1 Suff. Rating: 21.1 SD Health Index : 53.8

IDENTIFICATION

Description:
38-100' PONY TRUSS & 2-36' I-BM. SPANS(BRIDGEPORT BR.)

1. State: Oklahoma
2. SHD District: Division 4
3. County Code: CANADIAN
4. Place Code: Unknown

Admin. Area: LT Snooper Truss

5. Inventory Route (Route On Structure) : 1 - 2 - 1 - 00281 - 0
6. Feature Intersected: S. CANADIAN RIVER
7. Facility Carried: U.S. 281 U.S. 281
9. Location: CADDO CANADIAN CL
11. Mile Post: 0.000 mi
13. LRS Inv. Route./ Subroute.: 0902 0000 01
16. Latitude: 35 32 25.00
17. Longitude: 098 19 22.00
98. Border Br. Code: Unknown (P) % Resp. : 0
99. Border Br. #: Unknown

INSPECTION

Type	Insp Req.	Insp Done	Freq:	Insp. Date:	Next Insp.:
NBI:		Y	12	10/5/2017	10/5/2018
FC Freq.:	Y	Y	12	**10/5/2017**	**10/5/2018**
UW Freq.:	N	N	NA	**NA**	**NA**
OS Freq.:	Y	N	12	**4/14/2017**	**4/5/2018**

CLASSIFICATION

12. Base Hwy Network : On Base Network
20. Toll Facility: 3 On free road
21. Custodian: 01 State Highway Agency
22. Owner: 01 State Highway Agency
26. Functional Class: 06 Rural Minor Arteri
37. Historical Sig.: 2 Br eligible for NRHP
100. Defense Highway: 0 Not a STRAHNET h
101. Parallel Structure: N No || bridge exists
102. Dir. of Traffic: 2 2-way traffic
103. Temp. Structure: Not Applicable (P)
104. Highway System: 0 Not on NHS
105. Fed. Land Hwy 0 N/A (NBI)
110. National Truck Network: 0 Not part of na
112. NBIS Length: Long Enough

STRUCTURE TYPE AND MATERIALS

43. Main Span Material and Design Type
Steel Truss-Thru
44. Approach Span Material and Design Type
Steel Stringer/Girder
45. No. of Spans Main Unit: 38
46. No. of Approach Spans: 2
107. Deck Type: 1 Concrete-Cast-in-Place
108A. Wearing Surface: 6 Bituminous
108B. Membrane: 8 Unknown
108C. Deck Protection: 8 Unknown

CONDITION

58. Deck: 5 Fair
59. Super.: 4 Poor
60. Sub.: 5 Fair
62. Culvert: N N/A (NBI)
61. Channel/Channel Protection: 5 Bank Prot Eroded

Flowline Notes:

OCT-2017: 29.7' TOC at L4, west truss, span 10
OCT-2016: 27.3 'TOC at L3, west truss, span 6
[2016] FL to top of curb = 27.3' measured at E L5, span 6

AGE AND SERVICE

27. Year Built: 1933
106. Year Reconstructed: Unknown
28A. Lanes on: 2
28B. Lanes Under: 0
19. Detour Length: 11.8 mi
29. ADT: 1100
30. Year of ADT: 2015
109. Truck ADT %: 16
42A. Type of Service on: 1 Highway
42B. Type of Service under: 5 Waterway

LOAD RATING AND POSTING

31. Design Load: 2 M 13.5 (H 15)
41. Posting status: P Posted for load
63. Op. Rating Method: 1 LF Load Factor-Ton
Alt. Op. Rating Meth.: 1 LF Load Factor-To

64. Operating Rating (H / HS / 3-3):	16.5	16.5	16.5
66. Inventory Rating (H / HS / 3-3) :	15.0	15.1	37.7

65. Inv. Rating Method: 1 LF Load Factor-Ton
Alt. Inv. Rating Meth.: 1 LF Load Factor-To
70. Posting: 2 20.0-29.9%below
Date Rated : 3/25/2014

GEOMETRIC DATA

10. Inv. Rte. Min. Vert. Clr.: 328.1 ft
32. Approach Roadway Width (W/ Shoulders): 30.0 ft
Deck Area: 102,364.8 sq. ft
33. Median: 0 No median
34. Skew: 0
35. Structure Flared: 0 No flare
47. Inv. Rte. Total Horiz. Clr.: 24.0 ft
48. Length Maximum Span: 100.1 ft
49. Structure Length: 3,937.0 ft
50A. Curb/Sdwlk Wdth L: 1.0 ft
50B. Curb/Sidewalk Width R: 1.0 ft
51. Width Curb to Curb: 24.0 ft
52. Width Out to Out: 26.0 ft
53. Minimum Vertical Clearance Over Bridge: 328.1 ft
54A/54B. Min. Vert. Underclearance : N Feature not hwy or RR 0.0 ft

	N/E			S/W		
Meas.	-1	-1	-1	-1	-1	-1
Post.	DO NOT U	DO NOT U	DO NOT U	DO NOT U	B&N	-1

55A/55B. Minimum Lateral Undrclearance R: N Feature not hwy or RR 327.8 ft
56. Minimum Lateral Undrclearance L: 327.8 ft

PROPOSED IMPROVEMENTS

94. Bridge Cost: $6,781,689
75. Type of Work: 31 Repl-Load Capacity
95. Roadway Cost: $4,500,000
76. Lgth. of Improvment: 3,937.0 ft
96. Total Cost: $11,920,275
114. Future ADT: 1760
97. Year of Cost Est.: 2015
115. Year of Future ADT: 2035

NAVIGATION DATA

38. Navigation Control: Permit Not Required
39. Vertical Clearance: 0.0 ft
40. Horizontal Clearance: 0.0 ft
111. Pier Protection: 1 Not Required
116. Lift Bridge Vert. Clear.: 0.0 ft

APPRAISAL

36A. Bridge Rail: 0 Substandard
36C. Approach Rail: 0 Substandard
36B. Transition: 0 Substandard
36D. Approach Rail Ends: 0 Substandard
67. Str. Evaluation: 4 Minimum Tolerable
68. Deck Geometry: 4 Tolerable
69. Underclearance, Vertical and Horizontal: N Not applicable (NBI)
71. Waterway Adequacy: 5 Above Tolerable
72. Approach Alignment: 6 Equal Min Criteria
113. Scour Critical: 7 Countermeasures

200c. Temperature: 70
200d. Weather: CLOUDY
201. Structural Steel ASTM Desig.: -1 -1
202. Waterproof Membrane : -1
Date Installed : 1/1/1901
203. Type Exp. Dev. : Pourable
-
204. Type of Handrail: Metal Railing (other)
205. Material and Quantity : 10.0
208. Type of Abutment : Pedestal
Type of Foundation : Natural Foundation Matl.
209. Type of Pier / Found.: 2 Piers Yes
No Piling or Drilled Shaft
210. Foundation Elev. -1.0 -1.0
-1.0 -1.0 -1.0
211. Wear. Surf. Prot. System : None
Date Installed : 1/1/1901
213. Utilities Attached : -1
-1 -1 -1
-1 -1 -1

214a. Posted Weight Limit: 151515
b. Posted Speed Limit : -1
c. Narrow/One Lane Bridge sign : -1
d. Vertical Clearance Sign: NO
Advanced Warning Sign : NO
e. Navigation Lights : NO
Working/Not Working : NO
215. Overpass : C - US Highway
221. Substructure Cond. (U/W) : -
222. Fill over RCB: -1
223. Appr. Slab/Rdwy Cond.: Satisfactory
225. Paint Type : Red Lead Ready
Overcoat : Not Applicable
226. Date Painted: 3301
227. Paint Coloring: Silver
233. Deck Forming: -
238. School Bus Rte: Current and Desired Route
240. Appr. Roadway Type: Concrete

243. Girder Spacing/Number : -1.0 / -1
244. Span Lengths :
-1 -1 -1
-1 -1 -1
-1 -1
245. Girder Depth : 48.000
246. Type of Overlay : AC Overlay
246. Overlay Thickness : 3.0
246. Overlay Date : 12/4/2003
246. Overlay Depth Changed > 1"? _
247. Protective Systems : 1: _
2: _ 3: _
4: _ 5: _
248. No. of Field Splices w/ Corrosion : -1
249. Scour Crit. POA exists?: _
250. Culvert Headwall Dist.: -1.0
256. Chan. Profile Up/Down Stream?: _
257a. OkiePROS Auto. Truck Routing Yes
258. Plans w/ found. are in file at ODOT:
259. Scour Eval. is in file at ODOT:
263. Interchange at Intersection: No Interchange
264. Interstate Milepoint: -1.00

OKLAHOMA DEPARTMENT OF TRANSPORTATION - Bridge Inspection Report

Suff. Rating: 21.1 SD | Health Index : 53.8

NBI No.: **04085** Structure No.: 0902 0000 X Local ID:-1

Inspection Date: 10/5/2017 Reported By: MKRONANDER

Invoice No.: -1 Inspected With: -1

Agency :

Structure / Inspection Notes

(38) 100-foot long riveted pony trusses with (2) 36-foot long steel beam approach spans.
OS Inspection Items: See tables in 2017-10-05 FC report appendix for list of the following: Inspect cracks in stringer web copes, stringer connection angles, floor beams web copes, lower chord gusset plates above bearings for growth, stringer connections at end floor beams for additional loss or broken rivets; pier beams and supplemental pier beams at piers 1 and 39 for distress; misalignment of WU1U2 sp 37; floor beam section loss; scour from stream in spans 10 and 11; areas of collision damage on deck to steel trusses; east bearing at pier 3 for any undermining.
Posted 15 tons due to extensive deterioration to bridge.

PX – Strengthn stringer webs in several spans; Reinforce/replace the damaged concrete bridge railing in spans 1 and 40; Seal cracks in wearing surface and approach pavement; Remove debris from along the curbs; Remove loose concrete and patch the joint headers; Reseal the expansion joints; Install elastomeric pads or steel shims at missing locations on the supplemental pier beams over piers 1 and 39; Monitor cracks in stringer and floor beam webs. Drill crack tips that grow significantly; Repair cracks in stringer connection angles; Repair section loss in stringer and floor beam webs where corrosion holes and/or heavy section loss exists; Replace sheared rivets in the vertical connection, upper chord, and end post with bolts near west U1 in spans 31 and 37; Remove pack rust and apply caulking and paint along vertical edges of end gusset plates to arrest/mitigate ongoing edge bowing; Clean and paint steel below deck within 5 feet of the joints; Add rip rap around the piers in spans 10 and 11 in the main channel to arrest/mitigate the ongoing scour; Install full depth pressure relief joints on both approaches to mitigate ongoing effects of pavement pressure.
FX – Monitor: the beam connections to the original pier beams at piers 1 and 39 for further cracking; notches and cuts in inboard flange; notches and cuts in inboard flange and gusset plate at west U1L2, span 31; packrust and section loss in truss members; spalls and corroding rebar in soffit; lower chord gusset plates over bearings for development of horizontal cracks; cracks at FB copes and stringer connections; fatigue prone strich welds of angle strengthening at FB 0, span 2; corrosion holes in floor bracing system; bowed members near locations of collision damage; bowed gusset plates near bearings; bullet strike damage to east truss, span 4; cracking/ spall at east column capiital, pier 3 for condition which would undermine bearing; expansion bearing pins for signs of additional wear or distress.

Elm.	Env.	Description	Un.	Qty.	Qty.St. 1	% 1	Qty.St. 2	% 2	Qty.St. 3	% 3	Qty.St. 4	% 4	Qty.St. 5	% 5
12	1	Reinforced Concrete Deck	(SF)	94,488	0	0 %	0	0 %	94,488	100 %	0	0 %	0	0 %
107	1	Steel Open Girder Beam	(LF)	259	174	67 %	85	33 %	0	0 %	0	0 %	0	0 %
113	1	Steel Stringer/Floorbeam	(LF)	9,501	0	0 %	6,176	65 %	3,325	35 %	0	0 %	0	0 %
120	1	Steel Truss (Pony)	(LF)	7,600	0	0 %	4,940	65 %	2,660	35 %	0	0 %	0	0 %
152	1	Steel Floor Beam	(LF)	6,155	0	0 %	3,816	62 %	2,339	38 %	0	0 %	0	0 %
162	1	Steel Gusset Plate	(EA)	1,672	0	0 %	760	45 %	912	55 %	0	0 %	0	0 %
205	1	Reinforced Conc Column or Pile Extension	(EA)	78	0	0 %	77	99 %	1	1 %	0	0 %	0	0 %
215	1	Reinforced Conc Abutment	(LF)	49	25	50 %	25	50 %	0	0 %	0	0 %	0	0 %
301	1	Pourable Joint Seal	(LF)	495	0	0 %	0	0 %	248	50 %	248	50 %	0	0 %
310	1	Elastomeric Bearing	(EA)	4	2	50 %	0	0 %	2	50 %	0	0 %	0	0 %
311	1	Moveable Bearing (roller, sliding, etc.)	(EA)	86	0	0 %	61	71 %	25	29 %	0	0 %	0	0 %
313	1	Fixed Bearing	(EA)	84	0	0 %	84	100 %	0	0 %	0	0 %	0	0 %
330	1	Metal Bridge Railing	(LF)	7,600	0	0 %	7,220	95 %	380	5 %	0	0 %	0	0 %
510	1	Wearing Surfaces	(SF)	94,488	75,488	80 %	9,500	10 %	9,500	10 %	0	0 %	0	0 %
515	1	Steel (Superstructure) Protective Coating	(SF)	406,533	0	0 %	0	0 %	406,533	100 %	0	0 %	0	0 %
859	1	Soffit of Concrete Decks and Slabs	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
877	1	Steel Stringer End (5 Ft.)	(LF)	9,501	0	0 %	4,751	50 %	4,751	50 %	0	0 %	0	0 %
909	1	Pourable Fixed Joint Seal	(LF)	495	0	0 %	0	0 %	248	50 %	248	50 %	0	0 %
956	1	Steel Cracking/Fatigue	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
957	1	Pack Rust	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
961	1	Scour	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
962	1	Superstructure Traffic Impact	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
963	1	Steel Section Loss	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %
965	1	Debris	(EA)	1	0	0 %	1	100 %	0	0 %	0	0 %	0	0 %
969	1	Out-Of-Plane Distortion/Loading	(EA)	1	0	0 %	1	100 %	0	0 %	0	0 %	0	0 %
973	1	Horizontal Force	(EA)	1	0	0 %	0	0 %	1	100 %	0	0 %	0	0 %

Additional Elements

Elem.	Element Notes (Include Size and Location of Deterioration
12	Many portions of the curbs exhibit spalls and/or cracking with corroding reinforcing steel, especially over the ends of the intermediate floor beams. Some spalls have been patched in isolated areas throughout the deck.
107	FX – The connection angles for the beams to pier beam 39 are deformed due to the apparent approach pavement growth and pier beam sweep. The beams are still supported by the original pier beams at piers 1 and 39; however, the added pier beam will support the beams should the connection angles fail.
113	PX – Cracks were observed in the web of numerous stringers at the top flange cope and stringer connection angles. Numerous broken rivets wre observed at the connection angles. Section loss exists through the exterior stringers at the end floor beams at numerous locations.
120	PX – Impact damage at west U1U2, span 31 and west U1L1 span 37. FX– Span 37, west U1 gusset plate – A 5/16-inch long crack in the bottom edge of the inboard gusset plate; Impact damage exists to the truss web members at multiple locations; West U1U2 in span 37 is bowed globally to the east 1/4"; Impact damage exists on the inboard flanges of the upper chord. Pack rust is common at the end post connection to the inboard gusset plate at the lower chord connection; Horizontal cracks were observed in the inboard truss gusset plate between the bearing pin and the end floor beam. All eight locations noted during the previous Fracture Critical inspection have been strengthened with the addition of a welded steel angle on the inboard face. Vehicular collision damage exists at numerous locations of the truss end posts. See FC Report.
152	PX – Active section loss with corrosion holes is common on the floor beams under the expansion joints; FX – Cracks were observed in the web of the end floor beams and intermediate floor beams in many locations.
162	PX- Numerous horizontal cracks were observed in the inboard truss gusset plates above the bearings, see report for locations and crack lengths; FX-LC inboard gusset plates typically bowed at L0 and L5 due to pack rust.
205	FX – A 7/8-inch maximum wide crack exists in the capital of the east column of pier 3 which is emanating from the span 2 bearing anchor bolt.

Elem.	Element Notes (Include Size and Location of Deterioration
215	No significant deficiencies were noted in the abutments, except for moderate debris on the bearing seats of both abutments and map cracking exposing a few reinforcing bars at the ends of the south abutment.
301	PX – Spalling of the headers was observed along the joints at piers 7, 9, 15, 25, 27, and 31; The poured joint seals typically are deteriorated and show evidence of leaking. Many of the poured seals were never installed at many of the hrepaired header locations, leaving only the form board to fill the joint.
310	PX – Elastomeric pads are missing at the supplemental pier beams under beams 1 through 4 at pier 1 and at beams 2 and 3 at pier 39 with heavy pack rust forming at beam 5, pier 1. The pads appear to be walking at pier 39 under beams 4 and 5.
311	FX – Wear causing grooving in the expansion bearing pins and enlarging of the pin hole in the connecting gusset plates are common throughout the spans. The wear is a result of bearing rotation under live loads. This condition is most severe at L0 span 38 over pier 37, which has 3/16-inch total wear to the pin and gusset plate. Heavy pack rust with minor associated pitting is widespread on and between the bearing components.
313	Surface corrosion exists the the fixed bearings.
330	FX- Pack rust is typical between the metal bridge railing, truss end posts and web members. Small cracks were observed in the railing where the flange and web have been coped.
510	PX – The asphalt wearing surface has unsealed longitudinal and transverse cracks throughout the spans. The deck growing in each span causing rotation/sweep in floor beams.
515	PX – Corrosion and significant section loss are occurring at many locations on the lower chord, floor beams and stringers due to deck drainage passing through joints. Widespread section loss and corrosion holes exist in the exterior stringers and end floor beams.
859	FX- Spalls exposing corroded rebar are common in the underside of the deck at the expansion joints due to leakage thru joints. The underside of the deck exhibits transverse cracks with light efflorescence. Spalls and deteriorated concrete exist in exterior stringer bays at isolated locations.
877	PX- Cracks were observed in the web of numerous stringers at the top flange cope, see FC report for locations; Cracks in the stringer connection angles were observed at numerous locaations at the end floor beams, see FC report for locations; Severe section loss with corrosion holes exists through exterior stringer webs.
909	The poured seal joints typically are deteriorated and show evidence of leaking.
956	PX- Numerous cracks exist in the stringer copes, stringer connection angles, end floor beams, and interior floor beams. See FC report.
957	PX – Pack rust is common at the end post connection to the inboard gusset plate at the lower chord connection; FX – Pack rust is forming at many of the bridge railing to inboard end post channel connections.
961	PX –Local scour exists around the columns at piers 5 through 9 and pier 23. The top of the column foundation is exposed up to 4 1/2 feet at these locations. Local scour was also observed at the columns in the flood plain north of the river.
962	PX-Collision damage to end posts, upper chord, verticals and diagonals at numerous locations.
963	PX- Corrosion holes through stringer webs, floor beam webs at numerous locations; FX- Corrosion of the lower chord has caused section loss on inboard top flange.
965	Accumulations of drift exists under spans 5 through 10. Heaviest accumulations at piers 7 and 10.
969	PX – Pier beams 1 and 39 have severe sweep and have been sistered.
973	PX-Significant approach pavement pressure occurs at both abutments pushing inward from both ends as evidenced by the movement of the deck, sheared rivets on stringers and anchor bolts missing for bearings.