

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

BRIDGE INSPECTION FIELD REPORT

Structure File Number: 1801503

Inventory Bridge Number: CUY 00010 16.130

Bridge Type: 3 - STEEL/4 - TRUSS/3 - DECK

Sufficiency Rating: 64.9

Date Built: 7/1/1932

District: 12 Place Code (FIPS): CLEVELAND

SR 10 over CUY RIVER VALLEY & FI RR

Type of Service on: HIGHWAY-PEDESTRIAN

APPROACH ITEMS

- c1. Approach Wearing Surface (EA)
- c2. Approach Slabs (SF)
- c3. Relief Joint (LF)
- c4. Embankment (EA) d
- c5. Guardrail (EA)
- N36. Safety Features:
Tr, Gr, Tm
- c6. Approach Summary

QTY.	condition state				TR
	1	2	3	4	
2	1	1	0	0	1.60
2075	1971	104	0	0	1.07
4	4	0	0	0	1.00
4.0	0	4.0	0	0	2.00
36)B <u>1</u> 36)C <u>1</u> 36)D <u>1</u>					(9-0) <u>6</u>

DECK ITEMS

- c7.1 Floor/Slab (SF)
- c7.2 Edge of Floor/Slab (LF)
- c8. Wearing Surface (SF)
- c9. Curb/Sidewalk/Walkway (LF)
- c10. Median (LF)
- c11. Railing (LF)
- N36. Safety Features: Rail
- c12. Drainage (EA) d
- c13. Expansion Joint (LF) d
- N58. Deck Summary

QTY.	condition state				TR
	1	2	3	4	
263774	2397	1200	1200	0	1.64
6415	74 6415	0 321	0 0	0	1.07
178959	1789	0	0	0	1.00
7018	59 6948	70	0	0	1.01
0	0				
7018	1404	5614	0	0	1.86
36)A <u>1</u>					
28	27	0	1	0	1.50
1494	1419	75	0	0	1.07
N58. Deck Summary					(9-0) <u>7</u>

SUPERSTRUCTURE ITEMS

- c14. Alignment (EA) d
- c15.1 Beams/Girders (LF)
- c15.2 Slab (SF)
- c16. Diaphragm/X-Frames (EA)
- c17. Stringers (LF)
- c18. Floorbeams (LF)
- c19. Truss Verticals (EA)
- c20. Truss Diagonals (EA)
- c21. Truss Upper Chord (EA)
- c22. Truss Lower Chord (EA)
- c23. Truss Gusset Plate (EA) d
- c24. Lateral Bracing (EA)
- c25. Sway Bracing (EA)
- c26. Bearing Devices (EA) d
- c27. Arch (LF)
- c28. Arch Column/Hanger (EA)
- c29. Arch Spandrel Walls (LF)
- c30. Prot. Coating System (LF) d
- c31. Pins/Hangers/Hinges (EA) d
- c32. Fatigue (LF) d
- N59. Superstructure Summary

QTY.	condition state				TR
	1	2	3	4	
17	17	0	0	0	1.00
1207.0	1207.	0	0	0	1.00
	<u>0</u>				
55	55	0	0	0	1.00
36709	3303	3671	0	0	1.14
11218	1031 8	900	0	0	1.12
529	8 472	28	29	0	1.73
506.00	451	25	30		1.76
522	512	10	0	0	1.03
522	343	52	126	1	2.53
2116	1656	199	260	1	2.17
240	228	12			1.07
202.0	202.0	2	0	0	1.01
164	0	164	0	0	2.00
60961	3657	6096	1219	0	2.31
	7 0	1 190	2 2	0	2.06
60691.0	6069	0	0	0	1.00
	<u>1.0</u>				
N59. Superstructure Summary					(9-0) <u>4</u>

SUBSTRUCTURE ITEMS

- c33. Abutment Walls (LF)
- c34. Abutment Caps (LF)
- c35. Abut. Columns/Bents (EA)
- c36. Pier Walls (LF)
- c37. Pier Caps (LF)
- c38. Pier Columns/Bents (EA)
- c39. Backwalls (LF)
- c40. Wingwalls (EA)
- c42. Scour (EA) d
- c43. Slope Protection (EA) d
- N60. Substructure Summary

QTY.	condition state				TR
	1	2	3	4	
171	151	20	0	0	1.17
0	0	0	0	0	
0.00	0	0	0	0	
166	124	42	0	0	1.34
1079	439	540	100	0	2.21
70.0	65	5	0	0	1.10
171	120	34	17	0	2.10
4.0	4.0	0	0	0	1.00
2	2	0	.0	0	1.00
1	1	0	0	0	1.00
N60. Substructure Summary					(9-0) <u>6</u>

CULVERT ITEMS

- c44. General (LF)
- c45. Alignment (LF) d
- c46. Shape (LF) d
- c47. Seams (LF) d
- c48. Headwall/Endwall (LF)
- c49. Scour (LF) d
- c50. Abutments (LF)
- N62. Culvert Summary

QTY.	condition state				TR
	1	2	3	4	
N62. Culvert Summary					(9-0) <u>N</u>

CHANNEL ITEMS

- c51. Alignment (LF) d
- c52. Protection (LF) d
- c53. Hydraulic Opening (EA) d
- c54. Navigation Lights (EA) d
- N61. Channel Summary

QTY.	condition state				TR
	1	2	3	4	
200.00	0	200.	0	0	3.00
200.00	100	00 0	100	0	3.00
2	2	0	0	0	1.00
6	0	0	0	6	3.00
N61. Channel Summary					(9-0) <u>4</u>

SIGN/UTILITY ITEMS

- c55. Signs (EA) d
- c56. Sign Supports (EA) d
- c57. Utilities (LF) d

QTY.	condition state				TR
	1	2	3	4	
15	15				1.00
15	15				1.00
9054.0	6036	3018	0	0	1.43
General Appraisal					(9-0) <u>4</u>
N41. Operating Status					<u>A</u>

General Appraisal

N41. Operating Status

Inspector Name	Noel, Dustin	
Inspection Date/Type	07/24/2018	Routine and Fracture Critical
PE Number	78296	
Reviewer Name	Noel, Dustin	
Review Date	01/24/2019	
PE Number	78296	

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Key: "Qty" = Quantity for Element Level inspection; "(LF)" = Linear Feet; "(SF)" = Square Feet; "(EA)" = Each or count; "CR" = 1-4 Condition Rating or average of worst span unless Summary item 9-0, then the average of entire bridge influenced by the bold boxes; "TR" = Transition Rating or weighted average of condition states; "d" = dedicated or specific chart and guidance, all others use Material specific chart/guidance; "c" = condition prefix; "N" = NBIS rating

Inspection Procedures

The fracture critical inspection was completed 4.5 weeks after 24-month compliance deadline (August 1st) due coordination with inspection team members work and vacation schedules. Also teh initial planned inspection for July 2016 became inefficient with Central Office scheduling two QA/QC meetings with each day on separate work weeks, resulting in three inspection team members, Bill Vermes, Beth Trapp and Christian Lunt, unavailable to inspect on CUY-10-1613 those weeks.

Comments

APPROACH

c1. Approach Wearing Surface

The approach wearing surfaces are in Satisfactory condition. The east approach pavement is in Good condition and the west approach pavement is in satisfactory condition with about 20% spalls, patches, or cracks. See inspection report for additional details.

c2. Approach Slabs

The approach slabs are in Good condition. The approach slabs are in Good condition with no signs of settlement or shifting. Due to surface deficiencies within the West approach, 5% of the total 2075 square feet of approach slab was rated a 2. See inspection report for additional details.

c4. Embankment

The approach embankments are in Good condition. Embankments are starting to show signs of erosion. See inspection report for additional details.

c5. Guardrail

The approach guardrails are in Satisfactory condition. The concrete guardrail that extends off all four corners of the bridge exhibits minor surface spalling and staining particularly concentrated in the lower third of the interior faces. See inspection report for additional details.

DECK

c7.1 Floor/Slab

The deck floor is in overall Fair condition. The underside of the deck has random spalling with exposed rebar, areas of delaminations, and cracking with efflorescence noted throughout (Photos 1 and 2). Heavier concrete deterioration is noted near the joints and scuppers. Many of the previous spalls appear to have been coated with rust inhibitor but areas still exhibit active corrosion. Netting and/or wood form boards are in place over the roadways and parking lots to prevent loose concrete from falling into traffic. The underside of the East approach tunnel deck has large spalled areas in all bays with several consecutive transverse bars exposed and broken. See inspection report for additional details.

c7.2 Edge of Floor/Slab

The edge of floor is in overall Good condition. The edge of the deck has a few isolated spalls throughout with minor cracking adjacent to expansion joints and floorbeam extensions. See inspection report for additional details.

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c8. Wearing Surface

The lower deck wearing surface is not considered in this quantity. Random areas of delaminated concrete with a few areas of spalling were noted throughout (Photo 4). Since the lower deck is not open to the public and does not present a public safety concern, it is not considered with the rating. See inspection report for additional details.

c9. Curb/Sidewalk/Walkway

The concrete curb and sidewalk are in Satisfactory condition. The North walk has been previously repaired at the expansion joints. Both walks have minimal areas of delamination or light cracking with moisture. The South walk shows more deterioration and has vegetation growing in many of the cracked areas adjacent to the curb. See inspection report for additional details.

c11. Railing

The concrete median and railings are in Fair condition. The lower 2/3 of the concrete railing exhibits cracking, a few random small delaminations and corrosion staining throughout. The bikeway railing is in good condition with a few minor deteriorated areas throughout. See inspection report for additional details.

c12. Drainage

The deck drainage is in Good condition. There is minor debris in the deck scuppers and some isolated surface corrosion below the deck in the drainage downspouts. See inspection report for additional details.

c13. Expansion Joint

The expansion joints are in Satisfactory condition. The majority of the joint armor is in good condition and level with the wearing surface, but there is evidence of leakage through the joint membranes. Minor debris accumulation was also noted throughout the joints but does not appear to be affecting the serviceability. See inspection report for additional details.

SUPERSTRUCTURE

c14. Alignment

The alignment of the primary superstructure members is Good. See inspection report for additional details.

c15.1 Beams/Girders

The beams that are part of the West approach superstructure are in overall Good. No significant defects were noted. See inspection report for additional details.

c16. Diaphragm/Cross Frames

The cross frames that are part of the West approach superstructure are in Good condition. No significant defects were noted. See inspection report for additional details.

c17. Stringers

The stringers are in Fair condition. There are isolated areas of corrosion at the floorbeam connections. Some of these locations have minor web loss in areas and isolated through holes. See inspection report for additional details.

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c18. Floorbeams

The floorbeams and floorbeam connections are in overall Satisfactory condition. There is minor section loss and surface corrosion along the floorbeams below the deck joint locations. See inspection report for additional details.

c19. Truss Verticals

The truss verticals are in Satisfactory condition. The verticals are generally in good condition, with the verticals below the deck joint locations having moderate painted over pitting and reactivating corrosion throughout the full height. See inspection report for additional details.

c20. Truss Diagonals

The truss diagonals are in Satisfactory condition. The diagonals are generally in good condition. Areas of active pack rust along the exterior angles of the North Exterior Truss and South Exterior Truss diagonal members. Exterior diagonals, adjacent to abandoned utility supports, have remnants of a brackets welded to the web plates. Elsewhere, several diagonals have lower stay plates with deep section losses or perforations. See inspection report for additional details.

c21. Truss Upper Chord

The truss upper chords are in overall Good condition. Junction box drains drip onto the upper chord members and are causing light corrosion to several exterior upper chord members. Below the expansion joints there is dirt and construction debris present inside some upper chord connections with the verticals. See inspection report for additional details.

c22. Truss Lower Chord

The truss lower chords are in Poor condition. Various degrees of sections loss and pack rust are located between the flange angles and the web plates. Portions of the flange angles and webs of the exterior lower chords have pockets of deep pitting or perforations. The greatest section loss generally is located in Spans 11 and 13. In these spans, twelve (12) lower chord members have between 5% and 22% net section loss as previously reported by the 2014 inspection report. The lower chord in Spans 12 and 13 have members that are also cracked in the flange angles. See inspection report for additional details.

c23. Truss Gusset Plate

The truss gusset plates are in Poor condition. The truss gusset plates below the deck joints exhibit the most distress. Section loss is most prevalent at these locations. A previously documented laminar tear in the South gusset at Span 7 lower chord Panel Point 7 of the South Interior Truss shows no growth. Advanced section loss commonly occurs just above the lower chord and along the edges and ends of the diagonal connections. Also, minor bows are noted along the free edges of the gussets due to pack rust. The upper chord gusset plates are in good condition with little corrosion observed. Areas of heavy corrosion occur below the deck expansion joints. The gussets at the upper chord floorbeam connections below the junction box drains are also pitted. See inspection report for additional details.

c24. Lateral Bracing

The lateral bracing is in Satisfactory condition. Many of the lateral bracing gussets have minor section loss and pack rust causing their corners to peel away from the

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lateral bracing members. This was most prevalent below the deck joints. The members themselves are in Good condition. See inspection report for additional details.

c25. Sway Bracing

The sway bracing is in Good condition. Minor pack rust and corrosion is noted at the connections to the verticals below the deck joints. See inspection report for additional details.

c26. Bearing Devices

The bearings are in Fair condition. Moderate surface corrosion with areas of section loss is noted around the pins. There is debris and water accumulation in some of the truss bearings.

During the 1980-83 rehabilitation, the grease boxes at L0, Span 13 and L6, Wheeling & Lake Erie Span were replaced. These grease boxes are in good condition, however some paint failure with corrosion is present. Leaking grease is present at the North L6 bearing.

The bearings for the lower deck are not considered in this quantity. The majority of these bearings are out of alignment and have notable section loss. The bearings appear to be frozen at some location, causing some of the bearings to be in contraction and some to be in expansion at the same panel point. A few of the bearings are extended past their limits. All lower deck bearings at expansion joints should be reset or repaired. Since the lower deck is not open to the public and does not present a public safety concern, these bearing were not considered with the rating. See inspection report for additional details.

c30. Protective Coating System

The protective coating system (PCS) is in Fair condition. An estimated 60% of the PCS quantity is in Good condition. 20% is in Fair, and the remainder is in Poor condition. There are scattered areas of peeling and bubbling, especially at expansion joints where water infiltration and active corrosion is occurring. There are several areas on the superstructure with active pack rust between gussets, web plates, angles, and lacing, with the worst areas noted below or downstream of the deck joints. See inspection report for additional details.

c31. Pins/Hangers/Hinges

The pins, hangers and hinges are in Fair condition. Minor to moderate section loss and pack rust were noted to the pins and the adjacent plates. The South Interior Truss line pin to zero-force member is dislodged at Unit 13, lower chord, Panel Point 12. This is connected to a zero-force member and is not considered with the rating of the pin, however, it should be monitored, and repaired. See inspection report for additional details.

c32. Fatigue

Fatigue prone details are present on the welded repairs placed on the tension members of the NE and SE lower chord, and also on the welded stiffeners of the West Approach spans. The fatigue prone details are in Good condition. No fatigue distress was noted at any of the field tack welded utility or drainage attachments. See inspection report for additional details.

SUBSTRUCTURE

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c33. Abutment Walls

The abutment walls are in overall Good condition. There is minimal staining and hairline cracks in the abutment faces. See inspection report for additional details.

c38. Pier Columns/Bents

The pier columns are in Good condition with minor areas of staining, cracking, or delaminations concentrated around previously patched areas. See inspection report for additional details.

c36. Pier Walls

The Pier walls are in Satisfactory condition. Minor cracking, staining, and previously patched areas are noted throughout. See inspection report for additional details.

c37. Pier Caps

The Pier caps are in Fair condition. The nonstructural portions of the pier towers were not considered in the rating but are in poor condition and pose a risk to public safety as they continue to deteriorate. Many of the pier tower roofs have been removed, but those that remain show active degradation with debris accumulating on the pier cap below. The inspection manholes in the pier caps are in poor condition. There is little remaining lip to support the lid and care should be taken when walking around or opening them. See inspection report for additional details.

c39. Backwalls

The backwalls are in Fair condition. Cracking and spalling is noted in some of the backwalls.
See inspection report for additional details.

c40. Wingwalls

The wingwalls are in Good condition with scattered areas of light efflorescence staining. See inspection report for additional details.

c42. Scour

The scour is in Good condition. The bridge had an underwater bridge inspection on July 14, 2015 by GPI. They found a change in the exposure of the footing at Pier 10 (West Pier), Column D, where the exposure of the footing has advanced since the 2010 underwater inspection. "The maximum vertical exposure was measured to be 3.7 feet. 9.5 horizontal feet of footing are exposed along the South side and 18 horizontal feet are exposed on the East face of the footer." No change significant change was noted at other locations. Pier 9 (East Pier), Column A exhibited less exposure to the footing. Timber debris is still lodged at the Northeast corner of Pier 10. See inspection report for additional details.

c43. Slope Protection

The concrete slope protection is in Good condition. See inspection report for additional details.

CHANNEL

c51. Alignment

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The alignment is in Fair condition. Water is flowing along the Southern most three columns of Pier 10 and the Northern most column of Pier 9. The channel meanders sharply. See inspection report for additional details.

c52. Protection

The channel protection is in Poor condition. The West bank channel protection is in Good condition and the East bank channel protection is in Poor condition. See inspection report for additional details.

c53. Hydraulic Opening

The hydraulic opening is in Very Good condition. The hydraulic opening is sufficient. See inspection report for additional details.

Unable to get SMS to open the Navigation Lights text field/rating section. The navigation lights are in Poor condition. One of the navigation lights appears to be operating. See inspection report for additional details.

The remainder appear to be without power or the bulbs are burned out.