

STATE OF OHIO DEPARTMENT OF TRANSPORTATION BRIDGE INSPECTION FIELD REPORT

Structure File Number: 1800035

Inventory Bridge Number: CUY 00002 14.410

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

Sufficiency Rating: 42.0

Date Built: 7/1/1939

District: 12 Place Code (FIPS): CLEVELAND

SR 2 over CUY RIVER,RTA,FLATS

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				cr
	1	2	3	4	TR
6	0	6			2.00
6788	6788				1.00
272	272				1.00
1	1				1.00
13	13				1.00
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				cr
	1	2	3	4	TR
562590.0	4987	6384			1.16
13160	49	1			1.14
539560	1190	1258			1.04
	2	1385			
	05	5			
6580	6380	100	100		1.26
13160	1256	400	200		1.28
	0				
36)A <u>1</u>					(9-0) <u>7</u>
268	250	14	4		1.30
3548	0	3209	237	102	2.66

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

QTY.	condition state				cr
	1	2	3	4	TR
40	40				1.00
7394	4742	2642	10		1.47
1203	1003	200			1.23
71947	6417	7776			1.15
27168	1	8604			1.41
	1856				
	4				
272	240	32			1.17
268	227	30	9	2	1.81
268	238	30			1.16
268	169	30	59	10	2.78
1088	965	72	51		1.67
370	370				1.00
364	364				1.00
364	349	15			1.06
122240	8034	4184	50		1.44
	2	8			
	11	3			
14					1.29
122240	1222				1.00
	40				
N59. Superstructure Summary					(9-0) <u>5</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				cr
	1	2	3	4	TR
263	263				1.00
	0				
	0				1.00
55	55				1.00
6698	6636	60	2		1.02
374	341	31	2		1.20
263	208	55			1.28
12	12				1.00
2	2				1.00
40	40				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				cr
	1	2	3	4	TR
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				cr
	1	2	3	4	TR
200.0	200.0				1.00
200.0	200.0				1.00
2	2				1.00
0.0				0.0	
N61. Channel Summary					(9-0) <u>8</u>

SIGN/UTILITY ITEMS

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

QTY.	condition state				cr
	1	2	3	4	TR
6.0	6				1.00
6.0	6				1.00
General Appraisal					(9-0) <u>5</u>
N41. Operating Status					<u>A</u>

General Appraisal

N41. Operating Status

Inspector Name	Noel, Dustin	
Inspection Date/Type	07/24/2018	Routine
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

Coordinate with Cuyahoga County Department of Public Works for access to fenced portions below the bridge and keys to approach span enclosures.

Comments

APPROACH

c1. Approach Wearing Surface

Isolated spalls in the West Approach pavement. Moderate transverse and map cracking throughout the East and West Approaches.

East approach, EB lanes: Concrete slab has settled 3" over 200 feet.

c2. Approach Slabs

Minor spalling and separation at the relief joints.

DECK

c7.1 Floor/Slab

Isolated minor spalls at stringer haunches. The haunches in the deck above the stringers exhibit areas of minor spalling and the stay-in-place forms exhibit moderate corrosion below the expansion joints within the Main Truss Spans.

c7.2 Edge of Floor/Slab

Isolated spalls along entire main span and approaches. Minor spalls were noted along the gutterline on the eastbound main truss spans.

c8. Wearing Surface

Isolated surface scaling and minor hairline cracking.

c10. Median

The median has numerous large spalls with exposed reinforcing bars along the top half. Existing spalls have increased in size and exposed additional reinforcing bars since the previous inspection. Isolated areas of delaminations that pose a hazard to public below. The impact attenuators on the Lakeside Avenue and West 28th Street exit ramps have had various levels of collision damage.

c11. Railing

The median has numerous large spalls with exposed reinforcing bars along the top half. Existing spalls have increased in size and exposed additional reinforcing bars since the previous inspection. Isolated areas of delaminations that pose a hazard to public below.

Historic remarks:

Spalls on top of railing appear to be due to material or design failure, not corrosion of top longitudinal rebar. During the 1991-92 rehab, the railing was slipformed, and exhibited deterioration soon after the bridge resumed service.

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c12. Drainage

The drainage troughs and hoppers within the Main Truss Spans typically exhibit advanced section loss with areas of holes causing water to drain onto the superstructure components below. Torn rubber splices between drain pipe sections were also observed. Some gutterline scuppers and catch basins were also partially clogged with debris. All above scuppers of the Forward Approach (Bent 0 to Bent 10) were clogged. Portions of the drainage system had been repaired while others were temporarily removed as part of the ongoing painting and concrete rehabilitation at the time of inspection.

c13. Expansion Joint

All expansion joints and headers throughout the structure have either been replaced or, are in the process of being replaced

SUPERSTRUCTURE

c14. Alignment

In Unit III, between Bent 11 and Bent 12, the southern fascia beam was misaligned due to numerous hits from vehicles travelling northbound on West 9th Street. Beam FSS was previously heat straightened and nearly returned to its original alignment. Measured minimum clearance at this beam is 13.60 feet along the Right curb.

In Unit III, between Bent 8 and 9, the south diagonal is bent upward and to the south due to vehicular impact. The member had not been braced nor straightened.

See report for detailed locations and descriptions of deficiencies.

Historic remarks:

Isolated stringer sliding bearings exhibit minor vertical misalignment at the bearing interface in the East Approach Trestle Section.

c15.1 Beams/Girders

The West Approach, Unit I superstructure consists of rolled beams, welded plate girders and riveted built-up plate girders. These members exhibited areas of minor corrosion and broken rivets. The South girder in Section M at the South column of Frame 3 has one sheared rivet from the south connection angle.

The East Approach, Unit IV Lakefront Trestle consists of riveted built-up girders. These girders have isolated deep pockets of pack rust along the bottom flange. Recent painting has cleaned and sealed these girders.

The East Approach, Unit V Lakefront Ramp superstructure consists of three riveted built-up plate girders. This section was rigged for painting during the inspection.

See report for detailed locations and descriptions of deficiencies.

c16. Diaphragm/Cross Frames

Minor section loss to steel crossframes and isolated spalls and cracks in concrete diaphragms.

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c17. Stringers

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The stringers are in Good condition with little to no section loss and areas of isolated freckled corrosion.

See report for detailed locations and descriptions of deficiencies.

Historic remarks:

The fascia stringers in Sections C and K (over W. 28th St.) exhibit localized web distortion adjacent to the top flange. Retrofit angles have been installed. Previously noted cracks in the fascia stringers show no propagation since the previous inspection.

c18. Floorbeams

Areas of painted over section loss and pitting ranging from 1/16" to 1/4" D were noted throughout the floorbeams. Reactivated areas of pack rust and surface corrosion was noted on the floor beams, especially in the form of freckled corrosion. Additional active corrosion and staining is most likely due to leaking joints above which are currently under construction. There are also unnecessary welds and attachments on the floorbeams from previous drainage assemblies. In the main truss spans, areas of painted over pitting was noted along the bottom of top flange tension tie plates connecting the center floor beam section and the floor beam cantilever brackets.

See report for detailed locations and descriptions of deficiencies.

c19. Truss Verticals

The truss verticals exhibit areas of minor section loss with pitting and reactivated pack rust. Section loss is present on the truss verticals in the form of pack rust between the gusset plates, fill plates and vertical flanges.

Span 11 was rigged for painting during the inspection.

See report for detailed locations and descriptions of deficiencies.

c20. Truss Diagonals

The truss verticals exhibit areas of minor section loss with pitting and reactivated pack rust. Section loss is present on the truss verticals in the form of pack rust between the gusset plates, fill plates and vertical flanges.

Span 11 was rigged for painting during the inspection.

See report for detailed locations and descriptions of deficiencies.

c21. Truss Upper Chord

The truss diagonals exhibit areas of section loss with pitting on the top face of the web plates and pack rust along the flanges and connection fill plates.

Span 11 was rigged for painting during the inspection.

See report for detailed locations and descriptions of deficiencies.

c22. Truss Lower Chord

Various deficiencies were noted throughout the lower chord. Areas of section loss are estimated up to 25%. These areas include section loss due to previously noted and reactivated areas of pack rust and pitting.

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Various degrees of pack rust, both sealed and reactivated, located between the flange angles and the web plates are prevalent throughout the exterior lower chords. Isolated perforations were also noted along the top plates.

See report for detailed locations and descriptions of deficiencies.

c23. Truss Gusset Plate

There is corrosion present in the form of pack rust and pitting. Some existing through holes in gussets have been painted as evidenced at in the north truss, unit 4, lower panel point 8. See report for detailed locations and descriptions of deficiencies. 12 gusset plates have been retrofitted as part of the 2012 project that was completed in 2015.

See report for detailed locations and descriptions of deficiencies.

c24. Lateral Bracing

The lateral bracing is in good condition with isolated areas of pack rust and pitting.

See report for detailed locations and descriptions of deficiencies.

c25. Sway Bracing

The sway bracing is in good condition with isolated areas of pack rust and pitting.

See report for detailed locations and descriptions of deficiencies.

c26. Bearing Devices

Standing water was noted in a number of bearings above the truss connections due to blocked drain holes within the bearing assembly. Unit II exhibited moderate surface corrosion and laminated edge corrosion along the vertical steel box sides and edges located at the bottoms of some bearings.

In Unit III (Forward Section), the anchor bolts at the base of the pier bents from Bent 1 through 10 exhibit moderate section loss due to pack rust and debris accumulation between the bearing stiffeners and bent columns.

See report for detailed locations and descriptions of deficiencies.

c30. Protective Coating System

The protective coating system (PCS) is in Fair condition. The PCS of the Main Truss Spans was applied in 2007. Portions of the PCS for the West Approach, Forward Section and the Lakefront Ramp date back to 1984. The PCS for Span 11 within the Forward Section and the Lakefront Trestle were painted prior to the inspection.

During the inspection the following locations were rigged for painting:

Unit I: West Approach; steel portions K and M

Unit III: East Approach; Frame and Braced Section, Bents 1-11

Unit IV: Lake Front Ramp

See report for detailed locations and descriptions of deficiencies.

c31. Pins/Hangers/Hinges

The pins, hangers and hinges are in Good condition. Some rivet heads interfere with several

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hangers in the Lakefront Trestle. Due to recent painting, evidence of movement of the pin and hanger was noted due to cracked paint between the hangers and the beam webs.

See report for detailed locations and descriptions of deficiencies.

c32. Fatigue

No fatigue distress was noted at locations of tack welds and welded cover plates in the West Approach and Trestle Sections. Previous cracks (not necessarily fatigue related) have been drilled and do not exhibit additional growth.

Unit II, Lakefront Trestle, Bents 14 and 15, Section A, an obsolete utility bracket is welded to the south twin girder. The top flange weld on the field splice of Girder GF2 has a deep crevice between adjacent weld passes. Both of these welded connections represent stress risers and potential fatigue prone details.

See report for detailed locations and descriptions of deficiencies.

SUBSTRUCTURE

c33. Abutment Walls

No significant deficiencies were noted along the abutments. A portion of the east abutment of the lakefront ramp was covered due to ongoing painting.

c38. Pier Columns/Bents

The steel bents exhibit isolated cleaned and painted over areas of pitting. The steel piers in the Lakefront Ramp Section were either being painted or still rigged from recent painting.

c36. Pier Walls

No significant deficiencies were noted.

c37. Pier Caps

Multiple pier caps have spalls and delaminations throughout. Other areas are also marked for rehabilitation.

c39. Backwalls

A portion of the east abutment of the lakefront ramp was covered due to ongoing painting.

Minor vertical cracking and delaminated concrete at the East Abutment.

c40. Wingwalls

Non-structural mask walls exist beneath the superstructure along West 28th Street, West 25th Street and West 9th Street. Ongoing rehabilitation was noted during the inspection.

c43. Slope Protection

Historic remarks:

Slope protection on east side of Pier 37 has been repaired.

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CHANNEL

c52. Protection

Isolated erosion holes exist in the area between Pier 9 and the river wall.

c53. Hydraulic Opening

c54. Navigation lights non-operational on both the east fender system and the west bank dolphins. (Note- can not get navigation lights item c54 to show up in sms)