

2014 ROUTINE BRIDGE INSPECTION BRIDGE INSPECTION FIELD REPORT

Structure File Number: 1812521

Inventory Bridge Number: CUY 00480 18.420 L

Bridge Type: 3 - STEEL/6 - GIRDER (FLOOR SYSTEM)/3 - DECK

Sufficiency Rating: 83.7

Date Built: 7/1/1975

District: 12 Place Code (FIPS): INDEPENDENCE

I-480 W.B. over CUYAHOGA RIVER-OHIO CANAL

Type of Service on: HIGHWAY

APPROACH ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c1. Approach Wearing Surface (EA)	2					2
c2. Approach Slabs (SF)	3550					1
c3. Relief Joint (LF)						
c4. Embankment (EA) d	4					1
c5. Guardrail (EA)	2					1
N36. Safety Features: Tr, Gr, Tm						
c6. Approach Summary						

condition state						cr
QTY.	1	2	3	4	TR	
36)B	1					
36)C		1				
36)D				1		
						(9-0) 7

DECK ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c7.1 Floor/Slab (SF)	286695					2
c7.2 Edge of Floor/Slab (LF)	8310					2
c8. Wearing Surface (SF)	288772.5					1
c9. Curb/Sidewalk/Walkway (LF)						
c10. Median (LF)						
c11. Railing (LF)	8310					2
N36. Safety Features: Rail						
c12. Drainage (EA) d	56					2
c13. Expansion Joint (LF) d	417					3
N58. Deck Summary						(9-0) 5

condition state						cr
QTY.	1	2	3	4	TR	
36)A	0					

SUPERSTRUCTURE ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c14. Alignment (EA) d	15					1
c15.1 Beams/Girders (LF)	16612					2
c15.2 Slab (SF)						
c16. Diaphragm/X-Frames (EA)	516					1
c17. Stringers (LF)	24918					1
c18. Floorbeams (LF)	11524					1
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)	334					1
c25. Sway Bracing (EA)						
c26. Bearing Devices (EA) d	64					2
c27. Arch (LF)						
c28. Arch Column/Hanger (EA)						
c29. Arch Spandrel Walls (LF)						
c30. Prot. Coating System (LF) d	53054					1
c31. Pins/Hangers/Hinges (EA) d	16					1
c32. Fatigue (LF) d	53054					2
N59. Superstructure Summary						(9-0) 6

condition state						cr
QTY.	1	2	3	4	TR	

SUBSTRUCTURE ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c33. Abutment Walls (LF)	146					2
c34. Abutment Caps (LF)	146					1
c35. Abut. Columns/Bents (EA)						
c36. Pier Walls (LF)	420					2
c37. Pier Caps (LF)	1022					2
c38. Pier Columns/Bents (EA)						
c39. Backwalls (LF)	146					3
c40. Wingwalls (EA)	4					1
c42. Scour (EA) d	16					1
c43. Slope Protection (EA) d	2					3
N60. Substructure Summary						(9-0) 6

condition state						cr
QTY.	1	2	3	4	TR	

CULVERT ITEMS

	condition state				cr	
	QTY.	1	2	3		4
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						(9-0) N

condition state						cr
QTY.	1	2	3	4	TR	

CHANNEL ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c51. Alignment (LF) d	200.0					1
c52. Protection (LF) d						1
c53. Hydraulic Opening (EA) d	16					1
c54. Navigation Lights (EA) d						
N61. Channel Summary						(9-0) 7

condition state						cr
QTY.	1	2	3	4	TR	

SIGN/UTILITY ITEMS

	condition state				cr	
	QTY.	1	2	3		4
c55. Signs (EA) d	2					1
c56. Sign Supports (EA) d	4					2
c57. Utilities (LF) d	8310					2

condition state						cr
QTY.	1	2	3	4	TR	
						(9-0) 6
						A

General Appraisal

N41. Operating Status

Inspector Name	Burgholder, Jason
Inspection Date/Type	08/29/2014 Routine
PE Number	69829
Reviewer Name	Rinehart, David
Review Date	11/25/2014
PE Number	55967

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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

Next Insp Cycle is in 2015 and Est. Hours is and TTC is MT-95.30 and other TT notes include. . .
VERIFY_PLCVERIFY_PLC . . . with 2014 lead insp. EF and truck req'd . . . 62

Comments

APPROACH

c1. Approach Wearing Surface

Approach pavement has a few minor cracks, patches and potholes. Minor rutting in forward approach pavement.

c5. Guardrail

Good condition.

DECK

c7.1 Floor/Slab

Cracks with efflorescence throughout. Large spalls, scaling and exposed reinforcement on ~ 5% of deck underside. Subdecking covers West Canal Road, Towpath Trail and Canal Road in spans 8 and 9. 10 holes were previously drilled through center bay of deck in span 2 over floorbeam 3 allowing drainage onto steelwork below. The deck in this area is now cracked with rust stains and appears to be getting punky.

c7.2 Edge of Floor/Slab

Inspected from snooper in 2013 inspection and found to be in fair condition. Only accessed in end spans in 2014 inspection, but no significant changes noted.

c8. Wearing Surface

Random cracks throughout deck. Minor spalls around deck joints. Asphalt patches at expansion joints beginning to deteriorate.

c11. Railing

Both parapet faces were rehabbed in 2012 (north) and 2013 (south). Horizontal and vertical cracking throughout both parapets. Rust staining is already prevalent on both parapets. Epoxy urethane sealant blistered and peeling throughout south railing in spans 11-15.

c12. Drainage

Deck scuppers typically full of debris, but only 1 of 56 scupper downspouts plugged. Several anchors are sheared off on pier 12 downspout support brackets allowing the downspout to move down 1" and 1/2" to the north. Majority of the transverse drainage troughs below the deck are plugged with dirt and debris. Drainage is spilling onto steelwork at hinges. Several downspout connections leak going down piers. Underground drainage is plugged. Downspouts cut off above ground and drain to base of piers. Large washout at pier 3.

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c13. Expansion Joint

Rear abutment joint header appears to have been repaired in lanes 3 and 4 since 2013 inspection. Joint header in lane 2 is filled with asphalt and breaking up. Expansion joints 2 and 3 fingers are misaligned horizontally and rubbing against each other.

Strip seal joint at the forward abutment closed tight and smashing out of the joint indicating movement of the forward abutment. Joint armor is broken in lane 2. Joint header is breaking up in all 4 lanes.

SUPERSTRUCTURE

c14. Alignment

Several windlocks have slight misalignment and are wearing against keeper plates.

c15.1 Beams/Girders

Minor corrosion near deck joints. Minor pack rust between fascia girder splice plates. Holes drilled in girder webs throughout structure to arrest cracks. Majority of cracks due to transport of girders to site during original construction. Several "dogbone" retrofits have overcuts beyond drill holes. See Physical Conditions Report for locations.

There is a 1" bow at the top of girder B web (south face) located in the 1st stiffener space west of floorbeam 1 in span 14. This is not a new condition.

Safety cables under deck joints are severely deteriorated and dangerous. The safety cable on the south face of girder B in span 9 snapped while an inspector was using it to get around the drainage system during the 2014 inspection. Future inspectors should use extreme caution.

c16. Diaphragm/Cross Frames

Minor corrosion under leaking deck joints.

c17. Stringers

Stringers are in good condition.

c18. Floorbeams

Cracks in floorbeam lower chord copes (1 new crack found in 2014 bringing total to 35 crack locations); see Physical Conditions Report appendix for locations. Minor corrosion under leaking deck joints. Several floorbeam gusset/connection plates are bent. No additional distress was noted. Likely due to original construction. Pack rust building between connections in several locations.

c24. Lateral Bracing

Lower lateral braces are in good condition.

c26. Bearing Devices

Debris and rust around roller bearings at piers. None of the expansion pier bearings show signs of movement; likely due to flexibility of piers. Bearings in fair condition with minor surface rust. Isolated anchor bolts not tightened down.

c30. Protective Coating System

Active pack rust and corrosion at several fascia girder splices. Paint beginning to fail under leaking deck joints. Isolated areas of top coat failure (peeling).

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c31. Pins/Hangers/Hinges

Rollers at seated hinges operating normally.

c32. Fatigue

Lower lateral bracing connections previously retrofit with "dogbones" have several overcuts, but no active cracks in girder webs. Existing cracks have not extended past crack arrest holes.

SUBSTRUCTURE

c33. Abutment Walls

Closed abutment expansion joints indicate the abutments may be moving/rotating or the backwalls are failing. Deteriorated concrete was repaired by contractor in 2013 and is generally in good condition. Top 6" of forward abutment footing is exposed.

c34. Abutment Caps

Deteriorated concrete was repaired by contractor in 2013 and is in good condition.

c36. Pier Walls

Spalls and delaminations with exposed reinforcing steel. Piers under deck joints in worse condition due to clogged and leaking drainage.

c37. Pier Caps

Typical spalls and delaminations.

c39. Backwalls

Majority of deteriorated concrete was repaired by contractor in 2013 and is in good condition. Large areas of concrete were removed from the backwall compression face and the reinforcement was observed bowing outward. Tops of backwalls unable to be patched below deck joints. A few of the patches are already beginning to fail.

c42. Scour

Cuyahoga River channel is away from all substructure units.

c43. Slope Protection

Rear abutment slope protection repaired in 2013 where washed out. Downspout drainage has cut a deep channel between the base of pier 3 and the river. Top of pier 3 footing has not been exposed. Crushed aggregate slope protection at forward abutment has slid down hill leaving top 6" of footing exposed.