2014 ROUTINE BRIDGE INSPECTION
BRIDGE INSPECTION FIELD REPORT

Structure File Number: 1812548 Inventory Bridge Number: CUY 00480 18.420 R Bridge Type: 3 - STEEL/6 - GIRDER (FLOOR SYSTEM)/3 - DECK

Sufficiency Rating: 84.0 Date Built: 7/1/1975

District: 12 Place Code (FIPS): INDEPENDENCE I-480 E.B. over CUYAHOGA RIVER-OHIO CANAL Type of Service on: HIGHWAY

APPROACH ITEMS

	QTY.	condition state 1	2	3	4	cr TR
c1. Approach Wearing Surface (EA)	2					2
c2. Approach Slabs (SF)	3994					1
c3. Relief Joint (LF)						
c4. Embankment (EA) d	4					1
c5. Guardrail (EA)	3					1

N36. Safety Features: Tr, Gr, Tm

36)B 1 36)C 1 36)D 1

c6. Approach Summary (9-0) 7

DECK ITEMS

	QTY.	condition state 1	2	3	4	cr TR
c7.1 Floor/Slab (SF)	292856					2
c7.2 Edge of Floor/Slab (LF)	8310					2
c8. Wearing Surface (SF)	294934					1
c9. Curb/Sidewalk/Walkway (LF)						
c10. Median (LF)						
c11. Railing (LF)	8310					2

N36. Safety Features: Rail

36)A 0

c12. Drainage (EA) d	56					2
c13. Expansion Joint (LF) d	432.5					3
N58. Deck Summary					(9-0)	5

SUPERSTRUCTURE ITEMS

	QTY.	condition state 1	2	3	4	cr TR
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)						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						1
c31. Pins/Hangers/Hinges (EA) d	16					1
c32. Fatigue (LF) d						2
N59. Superstructure Summary					(9-0)	6

SUBSTRUCTURE ITEMS

	QTY.	condition state 1	2	3	4	cr TR
c33. Abutment Walls (LF)	161.5					2
c34. Abutment Caps (LF)	161.5					1
c35. Abut. Columns/Bents (EA)						
c36. Pier Walls (LF)	420					2
c37. Pier Caps (LF)	1033.2					2
c38. Pier Columns/Bents (EA)						
c39. Backwalls (LF)	161.5					2
c40. Wingwalls (EA)	4					1
c42. Scour (EA) d	16					1
c43. Slope Protection (EA) d	2					1
N60. Substructure Summary					(9-0)	6

CULVERT ITEMS

	QTY.	condition state 1	2	3	4	cr TR
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

CHANNEL ITEMS

	QTY.	condition state 1	2	3	4	cr TR
c51. Alignment (LF) d	200					1
c52. Protection (LF) d						1
c53. Hydraulic Opening (EA) d	16					1
c54. Navigation Lights (EA) d						
N61. Channel Summary					(9-0)	7

SIGN/UTILITY ITEMS

	QTY.	condition state 1	2	3	4	cr TR
c55. Signs (EA) d	2					1
c56. Sign Supports (EA) d	3					2
c57. Utilities (LF) d	8310					1
General Appraisal					(9-0)	6
N41. Operating Status						A

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

Rear approach pavement has a few patches and potholes in lanes 1 and 2 south.

DECK

c7.1 Floor/Slab

Cracks with efflorescence throughout. Large spalls, scaling and exposed reinforcement on ~ 5% of deck underside. Sub-decking covers West Canal Road, Towpath Trail and Canal Road in spans 8 and 9.

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. Several raised pavement markers missing.

c11. Railing

Parapet faces were rehabbed in 2012 and 2013. Horizontal and vertical cracking as well as rust staining throughout both parapets.

c12. Drainage

Deck scuppers typically full of debris, but only 4 of 56 scupper downspouts plugged. Majority or 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 the piers. Ponding along south parapet at rear abutment extends to lane line due to approach pavement being higher than bridge deck. Underground drainage plugged. Downspouts cut off above ground and drain to base of piers. This has caused a large washout at pier 3.

c13. Expansion Joint

Both abutment joint headers are patched throughout and breaking up. Forward abutment joint is closing indicating movement of the forward abutment. Forward abutment joint seal failing and joint armor breaking up in lane 2. BANGING WITH TRAFFIC. Finger joints have minor misalignments, but are generally in good condition.

SUPERSTRUCTURE

c14. Alignment

Windlock on girder H bottom flange at span 3 floorbeam 11 has a cracked weld, but is still functioning. Several windlocks have slight misalignment and are wearing against the keeper plates.

c15.1 Beams/Girders

Active 2.25" long web crack at top of floorbeam 3 transverse stiffener on girder G in span 2 found in 2014. Active 1.5" crack at bottom of floorbeam 7 transverse stiffener on girder F in span 4 found in 2014. Active crack in girder G web at top of floorbeam 3 transverse stiffener in span 6 grew 1.5" from 2013 inspection to a total length of 3.25". Active 1.75" long web crack at top of floorbeam 9 transverse stiffener in span 7 found in 2014. 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 specific locations.

c16. Diaphragm/Cross Frames

Minor corrosion under leaking deck joints.

c17. Stringers

Cracks in connection welds to floorbeam top chords in Unit 1. Cracks do not extend into base metal.

c18. Floorbeams

Cracks in floorbeam lower chord copes; see physical conditions report appendix for locations.
Several floorbeam gusset/connection plates are bent; likely due to original construction. No additional distress was noted. Pack rust building between connections in several locations.

c24. Lateral Bracing

No change in 10" weld crack between south face of girder G in span 10 and floorbeam 7 lower lateral bracing connection plate.

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 deck joints. Isolated areas of top coat failure (peeling).

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. Four active cracks need to be drilled as described under Beams/Girders section.

SUBSTRUCTURE

c33. Abutment Walls

Closed abutment expansion joints indicate the abutments may be moving/rotating or the backwalls are failing. Spalls and deterioration at south end of forward abutment. All other deteriorated concrete was repaired by contractor in 2013 and is in good condition.

c34. Abutment Caps

Spalls and deterioration at south end of forward abutment. All other deteriorated concrete was repaired by contractor in 2013 and is in good condition.

c36. Pier Walls

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

c37. Pier Caps

Typical spalls and delaminations. More severe deterioration undermining bearing masonry plates up to 1" at pier 4 girder H, pier 5 girder E, and pier 11 girder H. Active peregrine falcon nest in deteriorated concrete on pier 9.

c39. Backwalls

The majority of deteriorated concrete was repaired by contractor in 2013. Large areas of concrete were removed from the backwall compression face and the reinforcement was observed bowing outward. Some wooden forms left in place on forward abutment backwall. Tops of backwalls unable to be patched below deck joints leaving the top 3 feet± in poor condition. Several of the repairs have already spalled off. There are chunks of concrete now wedged between the ends of the girders and crossfames and the backwall at the forward abutment blocking expansion of the bridge.

c40. Wingwalls

The forward abutment north wingwall has a few cracks with efflorescence and minor spalls.

c42. Scour

Cuyahoga River channel is away from all substructure units.

c43. Slope Protection

The rear abutment slope protection was repaired in 2013 where previously washed out and is now in good condition. Top of forward abutment slope protection was never restored after 2013 abutment patching.