

Ohio Bridge Inspection Summary Report

CUY-00480-0647 (1812831)

2: District 12 26446 - FAIRVIEW PARK (CUY county)
 21: Major Maint A/B 01 - State Highway Agency /
 225 Routine Main A/B 01 - State Highway Agency /
 221 Inspection A/B 01 - State Highway Agency /
 220: Inv. Location CUY

5A: Inventory Route 1 00480
 7: Facility On IR 480
 6: Feature Ints ROCKY RIVER
 9: Location 2.07 MI. W. OF JCT. I-71

Condition

58: Deck **6 - Satisfactory Condition**
 58.01 Wearing Surface 7 - Good (1% distress)
 58.02 Joint 6- Satisfactory (isolated leaking)
59: Superstructure **6 - Satisfactory Condition**
 59.01 Paint & PCS 9 - Excellent
60: Substructure **6 - Satisfactory Condition**
61: Channel **7**
61.01 Scour **7 - Good**
62: Culverts **N - Not Applicable**
67.01 GA **6**

Structure Type

43: Bridge Type 3 - Steel
 03 - Girder and Floorbeam System
 N- Not Applicable
 45: Spans Main / Approach 9 / 0
 107: Deck Type 1 - Concrete Cast-in-Place
 408: Composite Deck N - Non-composite Construction
 414A Joint Type 1 2 - Sliding Metal Plate Angle
 414B: Joint Type 2 N - None
 108A: Wearing Surface 3 - Latex Concrete or similar additive
 N- Not Applicable

Appraisal

36: Rail, Tr, Gd, Term Std 1 1 1 1
 72: Approach Alignment 8 - Equal to present desirable criteria
 113: Scour Critical 8 - Stable for scour conditions
 71: Waterway Adequacy 8 - Bridge Above Approaches

422: WS Date 09/30/2005
 423: WS Thick (in) 1.2
 482: Protective Coating 5 - Paint System OZEU
 483: PCS Date 01/01/1991
 453: Bearing Type 1 2 - Rockers & Bolsters
 455: Bearing Type 2 N - None
 528: Foundn: Abut Fwd 6 - Rock
 533: Foundn: Abut Rear 6 - Rock
 536: Foundn: Pier 1 6 - Rock
 539: Foundn: Pier 2 0 - Other

Geometric

48: Max Span Length (ft) 200.0
 49: Structure Length (ft) 1571.0
 52: Deck Width, Out-To-Out (ft) 144.0
 424: Deck Area (sf) 226224.0
 32: Appr Roadway Width (ft) 103.0
 51: Road Width, Curb-Curb (ft) 142.0
 50A: Curb/SW Width: Left (ft) 0
 50A: Curb/SW Width: Right (ft) 0
 34: Skew (deg) 0
 33: Bridge Median 0 - No median
 54B: Min Vert Underclearance (ft) 99
 336A: Min Vert Clrnce IR Cardinal (ft) 99
 336B: Min V Clr IR Non-Cardinal (ft) 0
 578: Culvert Length (ft) 0

Age and Service

27: Year Built/ 106 Rehab 1970 / 0000
 42A: Service On 1 - Highway
 42B: Service Under 6 - Highway - waterway
 28A: Lanes on 08
 28B: Lanes Under 02
 19: Bypass Length 1
 29: ADT 109150
 109: % Trucks (%) 5

Load Posting

41: Op/Post/Closed A - Open
 70: Posting 5 - Equal to or above legal loads
 70.01: Date
 70.02: Sign Type
 734: Percent Legal (%) 130
 704: Analysis Date 06/12/2019
 63: Analysis Method 6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

Inspections

		Months	
90: Routine Insp.		12	09/21/2020
92A: FCM Insp.	Y	24	09/21/2020
92B: Dive Insp.	N	0	
92C: Special Insp.	N	0	
92D: UBIT Insp.	Y	12	09/24/2018
92E: Drone Insp.			

Inspector Miller,Jeff

Inspector: Jeff Miller

Structure Number: 1812831

Inspection Date: 09/21/2020

Facility Carried: IR 480

Bridge Inspection Report

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12 - Reinforced Concrete Deck	3 - Mod.	216432	sq. ft.	212352	3411	669	0
510 - Wearing Surfaces		206663	sq. ft.	194253	11952	458	0
107 - Steel Open Girder/Beam	3 - Mod.	8944	ft.	8536	408	0	0
515 - Steel Protective Coating		36738	sq. ft.	36738	0	0	0
113 - Steel Stringer	3 - Mod.	17880	ft.	17880	0	0	0
152 - Steel Floor Beam	3 - Mod.	9918	ft.	9918	0	0	0
205 - Reinforced Concrete Column	3 - Mod.	32	each	17	7	8	0
215 - Reinforced Concrete Abutment	3 - Mod.	92	ft.	68	24	0	0
234 - Reinforced Concrete Pier Cap	3 - Mod.	963	ft.	943	7	13	0
305 - Assembly Joint without Seal	3 - Mod.	552	ft.	384	125	43	0
311 - Movable Bearing	3 - Mod.	60	each	60	0	0	0
321 - Reinforced Concrete Approach Slab	3 - Mod.	4842	sq. ft.	4472	76	294	0
331 - Reinforced Concrete Bridge Railing	3 - Mod.	6210	ft.	2149	1862	2199	0
815 - Drainage	3 - Mod.	24	each	0	24	0	0
820 - Steel Seated-Hinge Assembly	3 - Mod.	12	each	12	0	0	0
830 - Abutment Backwall	3 - Mod.	288	ft.	241	36	11	0

ODOT District: 12

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Date Built: 07/01/1970

Major Maint: 01 - State Highway Agency

Facility Carried: IR 480

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: ROCKY RIVER

Traffic Under: 6 - Highway - waterway

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 26446 - FAIRVIEW PARK (CUY county)

Location: CUY

2.07 MI. W. OF JCT. I-71

Insp

Inspector

Miller,Jeff

Inspection Date

09/21/2020 12:00:00 AM

Reviewer

Lawler,Matthew

Resp B:

Inspector Comments - Deck and Approach

Deck

Floor/Slab (SF)

The deck underside is in good condition with hairline transverse cracks and isolated locations of efflorescence. Isolated spalls were noted in the deck haunch along the edges of the top flange for the girders and stringers and more significant deterioration was noted under the deck joints. Stay-in-place deck forms were observed adjacent to deck joints at the girder hinges in Spans 4 and 6. Several stay-in-place forms have laminating corrosion and corrosion holes with the forms coming loose at a few locations. Several other stay-in-place forms have sections missing, and in some cases the concrete underneath is spalled with exposed rebar. The previously noted full-depth hole (27"L x 7"W x FD) with exposed corroded reinforcing steel along the east face of the cantilevered floorbeam 27 near Girder F grew to a full depth hole extending 7 feet from the toe of the north parapet. There is debris accumulating in the rebar between the expansion joint armor and the deck scupper. There is a 3' diameter x 3" deep spall with exposed rebar exhibiting section loss up to 50% next to floorbeam 42 on the south side of stringer 11. There is a full depth hole in the deck along stringer 2 on the west side of floorbeam 50 with additional deterioration to the exposed rebar and stay-in-place deck forms.

Edge of Floor/Slab (LF)

The deck edges are generally in fair condition with minor cracks and a few spalled areas (most spalls were at the joints). There is exposed rebar at joint in span 4 on south edge of right bridge.

Bridge Wearing Surface (SF)

The wearing surface is in good condition overall with the new overlay recently placed in lanes 2 and 3 of the eastbound and westbound bridges. Lanes 1 and 4 and the shoulders still exhibit shallow potholes and up to 1/16inch wide transverse cracks. The majority of the potholes in the travel lanes have been patched (some with asphalt), but there are still several potholes around the deck scuppers, next to the deck joints, and along the parapets. The Westbound outside shoulder has multiple areas where the wearing surface has spalled full depth for typically half the width of the shoulder at the base of the parapet. There is a section of the Westbound bridge between Pier 5 and the Unit 2/3 Expansion Joint that has six deteriorating wearing surface patches within a 30 foot length of the two south lanes.

Bridge Railing (LF)

Spalling with exposed, corroded, and debonded reinforcing steel, delaminations, vertical and horizontal cracks, and map cracks are typical along the parapets. Tops of exterior parapets are spalled off on approx. 25% of the length. Spalls were typical along the bottom edge of the interior face of the parapet at the deck joints. There is an 18" hole in the south parapet of the eastbound bridge at the deck joint in span 4. There is a 16" hole in the south parapet of the eastbound bridge at the deck joint in span 6. There is a 5' section of median wall broken between floorbeams 39 and 40 of the eastbound bridge. The top of the wall is pushed back 1.75" at this location. The rubber seal covering the open joint between the median barriers is missing for more than half of the bridge.

Deck Drainage (EA)

All scuppers are partially full of debris and vegetation growth and is inhibiting proper drain function.

Cracked and/or missing sections of the steel grate for the scupper drains were noted at the north and median scupper grates near Pier 4. The deck is still clearing drainage with only minor ponding noted (2018) along the parapets after a storm.

Leakage and surface corrosion was noted at or below several neoprene couplers due to loose steel bands attaching the coupler to the downspout. The downspout at the Westbound expansion joint 2 in Span 6 has a corrosion hole on both sides of the neoprene coupler.

The concrete paved gutters below Pier 6 at the West bank of the river are all undermined and washed out.

Expansion Joint (LF)

The expansion joints allow moisture and debris to reach the superstructure in a few locations. The top plate of the eastbound rear abutment backwall joint header is missing in lanes 2 and 3. At the eastbound rear abutment, there is a loud banging noise, near the second girder from the south side, when traffic drives over the expansion joint. At the westbound rear abutment, part of the metal backwall header in the south lane is sticking up ½” above the wearing surface.

At the eastbound forward abutment, 19 feet of the backwall joint armor is missing from lanes 1 and 2. There is also a small pothole in the lane 2 joint header in this same location. The westbound forward abutment joint has spalls and potholes on the joint header. The deck has deteriorated around the west side of the joint armor along the north curb at floorbeam 26/27 and no longer provides support to about 7 feet of the armor.

Areas where the parapet spalls noted above has heavy section loss to the joint armor turned up for the parapet.

Approach

Approach Wearing Surface (EA)

The approach roadway wearing surface is asphalt with regularly spaced full width transverse cracks that have generally been sealed and some locations of map cracks. There are small patched potholes.

Approach Slab (SF)

Sealed transverse cracks in the asphalt pavement wearing surface at the ends of the approach slabs. Minor patched pot holes in asphalt. Minor longitudinal sealed cracks on the Westbound Rear Approach Slab. Map cracks at multiple locations including along the expansion joints. 2018 -There is a low spot in westbound lane 1 that holds water next to the east abutment joint. 2019 and 2020 - no evidence.

Approach Embankment (EA)

Erosion channel is getting deeper along the WB Forward Abutment

Approach Guardrail (EA)

There is an area of minor impact damage on the Eastbound Forward trailing guardrail, two posts need replaces and 3 blocks. The approach guardrail is leaning towards the road at the Northwest corner. The median and exterior concrete railings on both approach slabs have vertical cracks, map cracks, and spalls with deteriorated rebar.

Signs (EA)

Signs are in good condition.

Sign Supports (EA)

The southwest Object Marker is set back 2' from the face of the rail. Bolts for the brackets holding the "corporation limit" signs on both bridges to the parapet are broken, but they are still attached to floorbeams at the base.

Inspector Comments - General Appraisal

Superstructure

Superstructure Alignment (EA)

The alignment of the structure is in good condition with no significant deficiencies noted.

Beams/Girders (LF)

Isolated locations of overcuts and incomplete saw cuts were noted at the "dog-bone" retrofits (see formal report for specific locations). No deterioration or other significant deficiencies were noted on the girders.

Diaphragm/X-Frames (EA)

No significant deficiencies were noted except minor section loss under the end and intermediate deck joints.

Stringers (LF)

No deterioration or other significant deficiencies were noted on the stringers.

Floorbeams (LF)

No deterioration or other significant deficiencies were noted on the floorbeams.

Lateral Bracing (EA)

A localized kink due to erection damage was previously noted on the strut bottom flange at floorbeams 29 and 30 between Girders B and C and remains unchanged. Some bolts are loose at the connection plates.

Bearing Devices (EA)

The Girder E bearing at the east abutment bottom plate does not fully sit on the bearing and deflects up to 1/2" under live load with heavy fretting corrosion (noted 2018, not noted 2019 and 2020). The Girder F bearing at the east abutment is undermined by a spall at the west edge of the bearing plate full width by up to 1/2" deep.

Protective Coating System (LF)

The steel superstructure members were in the process of being repainted during the time of inspection.

Pins/Hangers/Hinges (EA)

No deterioration or other significant deficiencies were noted on the hinge components.

Fatigue (LF)

Isolated locations of overcuts and incomplete saw cuts were noted at the "dog-bone" retrofits. Several triaxial welds were noted at the girder seated hinges, but no cracks were noted at these locations. Floorbeam 66's west weld to south face of Girder F has a couple of voids (look to be from original construction), but no cracks.

Utilities (LF)

Missing or loose covers for the utility access panels with exposed wiring inside and some with vegetation growth were observed at most light posts. There is impact damage to the south barrier at the light pole at Pier 7 and pole appears to lean to the east. Most light post bases are missing bolt caps at their bases.

Substructure

Abutment Walls (LF)

The girder seat pedestals at both abutments exhibit minor cracking (typically at the corners) and some minor delaminations and/or spalls. The east abutment has a spalled area at the west vertical face below the Girder F bearing that is full height x 2' wide x up to 1" deep. The spall undermines the masonry plate up to 1/2" deep.

Pier Caps (LF)

No significant deficiencies. Minor cracks, spalls, and delaminations on a few of the caps (behind drainage pipes mainly). Pier 2 for left bridge has biggest concentration of spalls with exposed rebar on the west face behind drain pipe at Girder F for the whole cantilever.

Pier Columns/Bents (EA)

Several pier columns exhibit delaminations and spalls, some with deteriorated rebar, over their full height on the relief detail on the corner of the column. Several of the piers exhibit cracking – usually, in the corners (Pier 8 of right bridge has full height crack on SE corner of south leg) – and some delaminations or spalls. The distressed areas typically add up to less than 5% of the pier surface area.

Backwalls (LF)

There were several delaminations and a few spalls noted on the abutment backwalls. A large, deep delamination 10' wide behind Girder E was noted at the forward abutment backwall.

Wingwalls (EA)

The wingwalls have small delaminated areas, patches, and graffiti. Interior wingwall at the rear abutment has multiple full height vertical and diagonal cracks, but is not quantified in the inventory.

Substructure Scour (EA)

The footings at all piers and abutments are covered and stable.

Slope Protection (EA)

The previously noted embankment erosion continues to progress at both abutments. The erosion channel cut in the east abutment slope extends from the abutment all the way to Pier 7, up to 10' wide and 15' deep. There is minor undermining and backfill behind the Forward Abutment backwall, losing fill in the median gap underneath the approach span. There is also an 8'-10' deep erosion channel cut through the slope protection on the north side of span 1. The erosion channel goes from the rear abutment to the east side of Pier 1 and then along Pier 1.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Channel Hydraulic Opening (EA)

More than adequate

Channel

Channel Alignment (LF)

The channel is perpendicular to the bridge and the waterway opening is adequate.

Channel Protection (LF)

The pier footings near the river are founded in rock and unexposed.

Scour Critical