STATE OF OHIO
BRIDGE INSPECTION REPORT

Structure File Number: 1811991

Inventory Bridge Number: CUY-00490-0100 _(1811991)

IR 490 over CUYAHOGA RIVER

Inspection Type: Routine and Fracture Critical

Inspection Date: 07/27/2020

District: 12

County: 18 - Cuyahoga

Place Code (FIPS): 16000

Bridge Type:

3 - Steel

03 - Girder and Floorbeam System

N- Not Applicable

Type of Service:

1 - Highway

Maintenance Responsibility:

01 - State Highway Agency

Inspection Responsibility:

01 - State Highway Agency

Routine Maintenance Responsibility:

01 - State Highway Agency

Lead Inspector: Hammerschmidt,Steven

Reviewed by: Hammerschmidt,Steven

Ohio Bridge Inspection Summary Report

CUY-00490-0100 (1811991)

2: District	12 16000 - CLEVELAND (CUY county)	5A: Inventory Route	1 00490
21: Major Maint A/B	01 - State Highway Agency /	7: Facility On	IR 490
225 Routine Main A/B	01 - State Highway Agency /	6: Feature Ints	CUYAHOGA RIVER
221 Inspection A/B	01 - State Highway Agency /	9: Location	0.8 MI. EAST OF JCT I-71
220: Inv. Location	CUY		

Condition

58: Deck	**7 - Good 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	6 - Satisfactory (5-10% corr.)
60: Substructure	**7 - Good Condition**
61: Channel	**7**
61.01 Scour	**7 - Good**
62: Culverts	**N - Not Applicable**
67.01 GA	**6**

Appraisal

Sufficiency Rating	86.7 SD/FO 0 - ND
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	9 - Bridge Above Flood Water Elevations

Geometric

48: Max Span Length (ft)	340.0
49: Structure Length (ft)	3462.0
52: Deck Width, Out-To-Out (ft)	138.3
424: Deck Area (sf)	478632.0
32: Appr Roadway Width (ft)	105.0
51: Road Width, Curb-Curb (ft)	134.8
50A: Curb/SW Width: Left (ft)	0
50A: Curb/SW Width: Right (ft)	0
34: Skew (deg)	99
33: Bridge Median	3 - Closed median with non-mountable barriers
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)	

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 (%)	150
704: Analysis Date	07/01/2013
63: Analysis Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

Structure Type

43: Bridge Type	3 - Steel 03 - Girder and Floorbeam System N- Not Applicable
45: Spans Main / Approach	28 / 00
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	N - Non-composite Construction
414A Joint Type 1	1 - Metal Finger
414B: Joint Type 2	N - None
108A: Wearing Surface	3 - Latex Concrete or similar additive N- Not Applicable
422: WS Date	
423: WS Thick (in)	1.25
482: Protective Coating	3 - Paint System A
483: PCS Date	01/01/1990
453: Bearing Type 1	2 - Rockers & Bolsters
455: Bearing Type 2	1 - Rollers
528: Foundn: Abut Fwd	2 - Cast-in-Place Reinforced Concrete Piles (Other diameter)
533: Foundn: Abut Rear	2 - Cast-in-Place reinforced Concrete Piles (Other diameter)
536: Foundn: Pier 1	B - Cast-in-Place Reinforced Concrete Piles (14" diameter)
539: Foundn: Pier 2	B - Cast-in-Place Reinforced Concrete Piles (14" diameter)

Age and Service

27: Year Built/ 106 Rehab	1990 / 0000
42A: Service On	1 - Highway
42B: Service Under	8 - Highway - waterway - railroad
28A: Lanes on	08
28B: Lanes Under	04
19: Bypass Length	2
29: ADT	72091
109: % Trucks (%)	5

Inspections

		Months	
90: Routine Insp.		12	08/25/2020
92A: FCM Insp.	Y	24	07/27/2020
92B: Dive Insp.	N	0	
92C: Special Insp.	N	0	
92D: UBIT Insp.	Y	24	08/25/2020
92E: Drone Insp.			

Inspector Hammerschmidt,Steven

Inspector: Steven Hammerschmidt **Structure Number:** 1811991

Inpsection Date: 07/27/2020 **Facility Carried:** IR 490

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.	547060	sq. ft.	525321	14291	7448	0
	2020: CS2 - Areas typically located at the 1/3 points in Units 2-4 surrounding transverse construction joints with minor efflorescence. Locations of hairline transverse cracks on the deck soffit. CS3 - Areas where the haunch has spalled and spalls or rust staining at the transverse construction joints. Underside of deck spalls with exposed reinforcement in Unit 5 of the left and right structures under the center median barrier. There is a 6" diameter open hole in the deck, from a previous deck core, just west of Pier 10 between Girder 3-F and Stringer 3-5 which is allowing water to leak onto the superstructure below. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
510 - Wearing Surfaces		524351	sq. ft.	521264	2238	849	0
	2020: CS2 - Areas of transverse cracks up to 1/16" wide typically in negative moment regions spaced 4' to 10' apart. Isolated longitudinal cracks typically located in Units 4-6. Areas of asphalt patches with map cracking and moderate deterioration. CS3 - Areas where asphalt patches have failed with loose material, map cracking, and isolated exposed reinforcement. Locations of up to 1" deep depressions where the raised pavement markers are missing. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Element Inspection

107 - Steel Open Girder/Beam	3 - Mod.	55594	ft.	49933	4243	1418	0
	2020: CS2 - Areas with open drilled holes and isolated loose bolts. Areas where paint is failing with up to 2% section loss. Minor section loss is typical below abutment deck joints and in haunched girders near finger joints. Areas at the wind shear guides which have bent down up to 1 3/4" or are in contact with the guide plates and create a 1/8" deep groove in the guide plate. CS3 - Areas below finger joints with less than 10% section loss, laminar rust, and isolated corrosion holes in transverse stiffeners. Areas of missing bolts. Areas surrounding deck manholes with corrosion at areas of paint failure. Fascia girders typically exhibit laminar rust along the bottom flange and web with isolated areas of up to 5/16" deep pitting. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
515 - Steel Protective Coating		918968	sq. ft.	392153	471161	41052	14602
	2020: CS2 - Areas with paint top coat flaking in the girder bottom flanges. Areas in the fascia girders with loss of pigment in the top coat. CS3 - Areas of paint top coat failure at transverse construction joints in the deck. Failing paint in the fascia girders below transverse stiffeners on the exterior face. CS4 - Areas of paint failure are typical at deck manholes and below finger joints with bare steel exposed surrounding the steel seated-hinge assemblies. The ends of the girders at the abutments typically have paint failures with corrosion present. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
113 - Steel Stringer	3 - Mod.	16943	ft.	16743	200	0	0
	2020: CS2 - Areas at transverse construction joints in the deck with less than 2% section loss. Similar areas near finger joints and deck manholes where paint has failed. Isolated loose bolts at stringer splices. Stringer 2-5 in Span 7L floating above a floorbeam with missing fill plate (1 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Element Inspection

515 - Steel Protective Coating		84910	sq. ft.	54442	25746	3789	933
	2020: CS2 - Areas with paint top coat flaking below transverse construction joints in the deck. CS3 - Areas of paint top coat failure surrounding deck manholes and at transverse construction joints in the deck. CS4 - Areas of paint failure are typical at deck manholes and below finger joints with bare steel exposed. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
152 - Steel Floor Beam	3 - Mod.	18637	ft.	18136	500	1	0
	2020: CS2 - Areas below abutment joints, finger joints, deck manholes, and transverse construction joints in the deck with less than 2% section loss and surface corrosion. CS3 - Newly found crack 5/8" long at fifth floorbeam east of Pier 7R in the weld between the diagonal floorbeam member and the connection plate on the north face of Girder 2-L (1 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
515 - Steel Protective Coating		140639	sq. ft.	87936	44417	5986	2300
	2020: CS2 - Areas with paint top coat flaking below transverse construction joints in the deck. CS3 - Areas of paint top coat failure surrounding deck manholes and at transverse construction joints in the deck. CS4 - Areas of paint failure are typical below finger joints and deck manholes with bare steel exposed. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Bridge Inspection Report

Element Inspection

205 - Reinforced Concrete Column	3 - Mod.	132	each	120	11	1	0
	2020: CS2 - Vertical cracks up to 1/16" wide in all four faces of isolated columns, particularly near the west end of the bridge. Isolated delaminations and hairline cracking at drainage pipes. CS3 - The south column of Pier 9R has delaminations throughout surrounding the leaking drainage pipe, and there are two corner spalls in the west face up to 3" deep with exposed reinforcement. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
210 - Reinforced Concrete Pier Wall	3 - Mod.	25	ft.	20	5	0	0
	2020: CS2 - Vertical hairline cracks with minor rust staining at the northwest corner of the Pier 9L wall (5 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
215 - Reinforced Concrete Abutment	3 - Mod.	525	ft.	502	23	0	0
	2020: CS2 - Isolated vertical cracks up to 1/16" wide at steps in the abutment wall below bearings. Minor rust staining below corroding bearings at the East Abutment mainline and Ramp C-B walls. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
234 - Reinforced Concrete Pier Cap	3 - Mod.	3821	ft.	3789	28	4	0
	2020: CS2 - Delaminations with rust staining below deck manholes and near leaking drainage pipes. Isolated full height vertical crack extending from north column of Pier 19L (1 LF). CS3 - Sealed spall 1" deep at the north end of the west face of the Pier 10L cap (2 LF). Spall 1" deep in the west face of the south end of the Pier 7R cap below the deck manhole (2 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Element Inspection

300 - Strip Seal Expansion Joint	3 - Mod.	251	ft.	194	26	31	0
	2020: CS2 - Surface corrosion and minor debris impaction at the West Abutment strip seal expansion joint (26 LF). CS3 - Damaged West Abutment joint armor of the right bridge with missing sections and sections with asphalt patches in holes (16 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
305 - Assembly Joint without Seal	3 - Mod.	1028	ft.	801	181	46	0
	2020: CS2: Finger Joints - Areas of minor surface corrosion in the shoulders and horizontal and vertical misalignments. Areas where the drainage trough attachment plates are loose. Sliding Plates - Debris buildup in the joint at the north end of Expansion Joint 6 at Ramp C-B (5 LF). Surface corrosion and minor debris impaction in the East Abutment expansion joint of the right bridge (10 LF). CS3: Finger Joints - Missing fingers at Expansion Joint 2L, 3L, and 3R, typically in the right center lane (7 LF). Sliding Plates - Missing joint armor at Ramp B-C (15 LF). Spalling joint header at the East Abutment of the right bridge (15 LF). Debris impaction and spalling joint header at the Ramp C-B East Abutment (9 LF). Debris impaction, spalling joint header, and damage to the joint armor throughout the East Abutment joint of the left structure with a 5' length of the seal missing between the left and right structures (111 LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Bridge Inspection Report

Element Inspection

311 - Movable Bearing	3 - Mod.	342	each	286	52	4	0
	2020: CS2 - Areas where the movable bearings exhibit minor laminar corrosion up to 1/4" thick. Bearings where rotation is inconsistent with adjacent bearings. The Beam 1-B and 1-F bearings at the West Abutment are rotated to the east 20 degrees. Bearings at the West Abutment which are slightly floating and exhibit abrasion dust at the pin. CS3 - Heavy laminate corrosion on the Girder 2-M and 2-K bearings at the East Abutment of the right structure. Heavy debris from the spalling and delaminated backwall at the East Abutment of Ramp C-B restricting movement of Girder CB-C and CB-E. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
313 - Fixed Bearing	3 - Mod.	123	each	121	2	0	0
	2020: CS2 - Isolated fixed bearings with up to 1/8" deep section loss in the fascia girder masonry plate at Girder 4-K at Pier 14R and Girder 2-M at Pier 6R. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
321 - Reinforced Concrete Approach Slab	3 - Mod.	11867	sq. ft.	11027	501	339	0
	2020: CS2 - Transverse and longitudinal cracks in all of the approach slabs with failing asphalt patches at the mainline approach slabs. CS3 - Spalls in the mainline approach slabs. Locations include the left structure at the West Approach and the East Approach. Transverse cracking up to 1/8" wide in the Ramp C-B approach slab. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

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Element Inspection

331 - Reinforced Concrete Bridge Railing	3 - Mod.	15106	ft.	14144	812	150	0
	2020: CS2 - Full height vertical cracks up to 1/16" wide and horizontal cracks up to 1/16" wide. Locations at the median railing where the neoprene cover is loose or bunched up with missing and loose fasteners. Areas where the fence is damaged and the parapet exhibits impact damage. CS3 - Spalls with exposed reinforcement at the finger joints. Imminent spall in the south railing of Span 24R (8LF). For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
815 - Drainage	3 - Mod.	35	each	4	18	7	6
	2020: CS2 - Scuppers which are 50% blocked by debris. CS3 - Scuppers which are 75% blocked by debris. CS4 - Scuppers and downspouts which are filled with debris, particularly at Piers 4R, 9R, 15L, 15R, and 25CB. The scupper east of Pier 4R at the median on the right structure has been paved over. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
820 - Steel Seated-Hinge Assembly	3 - Mod.	65	each	0	65	0	0
	2020: CS2 - All of the steel seated-hinge assemblies exhibit paint failure with laminar corrosion and up to 1" thick debris on the bearing plates restricting movement of the hinges. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						
830 - Abutment Backwall	3 - Mod.	525	ft.	465	49	11	0
	2020: CS2 - Isolated delamination at the south end of the West Abutment backwall (2 LF). Delaminations, vertical cracks up to 1/16" wide, and rust staining in the mainline East Abutment backwall. CS3 - Isolated spall at the south end of the West Abutment backwall (3 LF). Spalls with exposed reinforcement behind Girders CB-C and CB-E at the Ramp C-B East Abutment (12 LF). Spalls in the East Abutment backwall. For additional information regarding condition states and tables of conditions states per span, refer to the 2020 Fracture Critical and Routine Element Level Inspection Report, attached in AssetWise.						

ODOT District:	12	**CUY-00490-0100 _(1811991)**				Date Built:	07/01/1990
Major Maint:	01 - State Highway Agency	Facility Carried:	IR 490	Traffic On:	1 - Highway	Rehab Date:	
Routine Maint:	01 - State Highway Agency	Feature Inters:	CUYAHOGA RIVER	Traffic Under:	8 - Highway - waterway - railroad	Insp. Resp A:	01 - State Highway Agency
FIPS Code:	16000 - CLEVELAND (CUY county)	Location:	CUY	0.8 MI. EAST OF JCT I-71		Insp Resp B:	
Inspector	Hammerschmidt,Steven	Inspection Date	07/27/2020	Reviewer	Hammerschmidt,Steven		

Inspector Comments - Deck and Approach

Deck

2020: The deck overall exhibits minor spalls, delaminations, and isolated cracks. Spalls and delaminations are typically isolated to the negative moment regions of the deck on the wearing surface and at the construction joints on the underside of the deck. Isolated finger joints have a minor horizontal misalignment and missing fingers. The drainage troughs below the finger joints are typically torn or filled debris. The reinforced concrete railings have minor vertical cracks, typically at the fence base plates, and isolated spalls at the deck expansion joints.

Additional comments for each element are included under the Element Inspection Tab.

Reinforced Concrete Deck

The deck has isolated areas of map cracks, transverse and longitudinal cracks with efflorescence, minor spalls with exposed reinforcement, and delaminations located throughout. The concrete adjacent to construction joints typically exhibits map cracks, delaminations, minor efflorescence, and isolated spalls. There is a 6" diameter open hole in the deck, from a previous deck core, just west of Pier 10 between Girder 3-F and Stringer 3-5 which is allowing water to leak onto the superstructure below. The edge of the slab exhibits hairline vertical cracks and rust staining from the railing. Moderate cracks and spalls were noted near the expansion joints. Several minor spalls exist on the underside of the interior median joint in Units 5 and 6.

Wearing Surface

The wearing surface has transverse cracks spaced every 4' to 10' and isolated longitudinal cracks. Over the piers, the transverse cracks are up to 1/16" wide with isolated spalls up to 3" deep. The raised pavement markers are typically missing, leaving 6" wide by 6" long by 1" deep crevices in the deck.There are concrete and asphalt patches throughout which are cracked, depressed, and failing. There is longitudinal cracking in the wearing surface from Span 11 to the East Abutment. Debris is typically littered along the full length of the bridge in the right shoulders.

Reinforced Concrete Railing

The median barrier typically has hairline vertical cracks, loose or missing fasteners for the neoprene top cover, and areas where the cover is missing. Throughout the median barrier, the concrete exhibits minor honeycombing, shallow pop-outs, and scaling near light poles and sign supports. There are isolated horizontal cracks and scrapes. At Expansion Joint 2R, there is moderate spalling with exposed reinforcement. The junction box covers at light poles have surface corrosion. Both the north and south parapets typically exhibit moderate rust staining, missing reflectors, and fence post base plates with missing caulk and pack rust. Locations of hairline vertical cracks occur every 6' over the full length of the bridge, and horizontal cracks are isolated. There are isolated spalls with exposed reinforcement. There are several locations with collision damage to the fence causing deformation to the post and rails and holes through the fence material. There is a missing fence post on the south parapet near the West Abutment. Many of the fence gates are unlocked. At Expansion Joint 3L, the north parapet top face is spalled up to 16" deep over a 14' length with three exposed fence post anchors and exposed reinforcement.

Drainage

The scuppers are typically at least 50% full of debris with two scuppers along the east side of Expansion Joint 4 100% full of debris on the westbound structure. The scupper at Expansion Joint 1 of the eastbound typically overflowing with debris. Several drainage troughs are tom for up to 25' lengths in multiple locations. Many of the couplers and connections to the hoppers are misaligned and filled with debris. A minor erosion channel has formed at the base of Pier 4R and extends to Pier 7R on the west side of Quigley Road.

Strip Seal Expansion Joint

At the West Abutment, the expansion joint concrete header exhibits multiple spalls along the full length. On the eastbound structure, the West Abutment strip seal expansion joint has several locations in which the joint material is torn or bulging.

Assembly Joint without Seal

Sliding Plate Joints: At the East Abutment, the expansion joint concrete header exhibits multiple spalls along the full length. At the East Abutment of the westbound structure, the east side of the joint exhibits laminate rust and minor section loss on the top edge of the joint armor. Joint material at the East Abutment has failed in isolated locations and is allowing water to drain onto the superstructure and abutment below.

Finger Joints: At the finger joints, patched spalls are present and starting to fail, and there is minor surface corrosion on the metal fingers outside of the traffic lanes. The expansion joint at 2L exhibits two missing fingers in the center of the right lane, 1/4" vertical misalignment, and minor horizontal misalignment. Expansion Joint 3L is misaligned horizontally, and there is a missing finger on the west side of the joint in the right center lane. The fingers are almost touching horizontally at Expansion Joint 3R.

Approach

2020: The approaches overall exhibit spalls, cracks, and areas where previous patches are failing. The approach slabs exhibit isolated spalls that have been filled in with asphalt material. Previously patched areas were noted throughout the wearing surface, and the pavement construction joints typically exhibited minor spalls. The relief joints have heaved and settled in several locations causing vehicles to visibly bounce when entering or exiting the bridge.

Approach Slab

The West Approach slabs have failing patches throughout all of the travel lanes and in the shoulders. The westbound slab exhibits exposed reinforcement in a 2' diameter spall in the right shoulder. The East Approach slabs typically have transverse cracks. The westbound bridge has several patches that are failing throughout the East Approach. The eastbound bridge has longitudinal cracks and spalls in the joint header. 10% of the mainline approach slabs have been patched with the edges of the patching beginning to fail. Several spalled areas have been filled with asphalt with the worst conditions being at the West Approach. The ramp approach slabs are in good condition.

Approach Wearing Surface

The West Approach wearing surfaces have transverse cracks throughout, several patched areas, and spalls along the westbound and eastbound left shoulders. The East Approach wearing surfaces exhibit transverse cracks, several patched areas, and several failing patches on the westbound side

throughout.

Approach Relief Joint

The West Approach relief joints for both the eastbound and westbound bridges exhibit heavy transverse and longitudinal cracking and are heaved up approximately 2". Traffic noticeably bounces in all lanes. The Ramp C-B relief joint is heavily cracked and is settling throughout. At Ramp C-7, the relief joint is depressed up to 2" in the wheel lines and exhibits map cracking throughout. The East Approach and Ramp B-C relief joints are in good condition with isolated hairline transverse cracks.

Approach Guardrail

Two locations have sustained collision damage and are in poor condition. The guardrail on the north side of Ramp C-B is severely damaged with damage to the full length of the guardrail and four posts that are bent and misaligned. On the south side of the mainline east approach, the guardrail has collision damage with four broken posts. The concrete parapets on all of the approach slabs are in good condition with hairline vertical cracks, minor spalls, minor rust staining at the guardrail connections.

Sign Supports

The sign supports have isolated locations of paint failure with minor surface corrosion.

Inspector Comments - General Appraisal

Superstructure

2020: The superstructure exhibits an isolated crack, isolated areas of minor section loss, and loose or missing fasteners. Surface corrosion and section loss up to 5/16" deep was typically noted at the expansion joint locations and on the exterior face of the fascia girders. Several bolts were noted as missing, loose, or installed adjacent to misdrilled holes. At isolated locations of loose bolts, abrasion dust was noted around the bolt.

Additional comments for each element are included under the Element Inspection Tab.

Steel Open Girder/Beam

The beams and girders are in good condition overall. On the fascia girders, laminar rust is typical along the bottom of the exterior face of the web and the bottom flange with isolated areas of section loss up to 5/16" deep. Corrosion is typically active 20' to 30' long on either side of the expansion joints and at splice plate locations. There are multiple locations where longitudinal stiffeners have minor deformation along the outside edge. The wind shear guides at the expansion joints exhibit surface corrosion, abrasion dust between the keeper plates and guides, and minor downward deflection away from the girder. Isolated splice plate locations are missing bolts. The cross frames in Units 1, 5, and 6 are typically in good condition. At the East Abutment, moderate to heavy laminate rust is typical on the cross frames. In isolated locations, there are loose bolts, missing bolts, or misdrilled holes.

Steel Stringer

The stringers are in good condition with minor areas of surface corrosion near the expansion joints. The stringers have minor active surface corrosion on the top flange at locations of delaminations in the deck. At isolated splice locations and stringer connections, there are missing bolts.

Steel Floorbeam

Near the expansion joints, the diagonal members and lower chord of the floorbeams have minor surface corrosion. At splice locations, the upper chord of the floorbeam is coped, and isolated copes were overcut leaving a minor gouge in the web and flange.

Movable Bearing

The movable bearings are in good condition overall. There is heavy debris around the East Abutment rocker bearings with minor laminate rust to the masonry plate and both faces of the rocker. The bearings on the piers near the expansion joints typically have laminate rust on the bearings and masonry plates up to 1/8" thick. At Girder 1-X at the West Abutment, there is abrasion dust between the rocker and restraining plates. Beam 1-B, Beam 1-F and Girder 4-H were rotated to nearly their limit at the time of the inspection.

Fixed Bearing

The fixed bearings are in good condition overall with isolated locations of up to 1/8" deep section loss in the fascia girder masonry plates.

Steel Protective Coating

The protective coating system is in fair condition. Areas around the drainage system have the most extensive paint failures on the girders and floorbeams. The paint on the expansion roller bearing seats has typically failed, and water pools along the bearing plates. Locations near manhole access hatches exhibit widespread paint failure and surface corrosion. A layer of dirt debris up to 1/8" thick typically covers the protective coating system at the east end of the bridge.

Steel Seated-Hinge Assembly

The hinges are in fair condition overall with debris piled on top of the girder flange and surrounding the rockers. Laminar corrosion is active where the teeth of the rollers fit into the grooves of the sole and masonry plates. At Expansion Joint 3L, there are two missing bolts in the keeper plates of Girder 4-D. The notched keeper plates for Girder 4-G at Expansion Joint 4R are missing, and the bolts in the bottom bearing plate are heavily corroded with 100% section loss to the bolt heads.

Utilities

The light poles and junction boxes on the bridge typically exhibit minor surface corrosion, and junction box covers are missing in isolated locations. There is a missing utility cover plate in the median at Pier 2R.

Substructure

2020: The substructure exhibits isolated spalls, minor cracks, and isolated failing sealant. Locations of spalls are typically located on the abutment backwalls under the sliding plate expansion joints and on the pier caps and columns adjacent to drainage downspouts and deck manholes. Vertical hairline cracks were typically noted in the pier columns and in the abutment backwalls

Additional comments for each element are included under the Element Inspection Tab.

Reinforced Concrete Abutment

The West Abutment wall is generally in good condition with minor vertical hairline cracks. The East Abutment wall exhibits vertical cracks at pedestal steps and isolated locations of rust staining beneath bearing masonry plates.

Reinforced Concrete Pier Wall

Pier 9L is the only hammerhead pier. It is in good condition overall with minor voids, hairline cracking, and isolated minor rust staining.

Reinforced Concrete Pier Cap

The pier caps are generally in good condition. The south end of the west face of the Pier 7R cap is in poor condition, exhibiting a large spall with exposed reinforcement.

Reinforced Concrete Column

There are minor vertical hairline cracks in isolated pier columns. Most of the vertical cracks extend half of the column height or longer. The piers with the drainage system attached are typically in worse condition than the other piers, exhibiting delaminations and rust staining at the downspout anchors. The majority of the west face of the Pier 9R south column is delaminated with the north edge spalled over a 10' height.

Abutment Backwall

The backwall of the West Abutment exhibits hairline vertical cracks, water and rust staining throughout, and isolated delaminations. The East Abutment backwall typically exhibits rust staining behind the beam ends, full height vertical cracks between the girders, and isolated spalls and delaminations. The Ramp C- B backwall is delaminated throughout with a large spalled area between Girders CB-C and CB-D.

Wingwalls

There are minor areas of cracking and spalling near the ground lines of the wingwalls. The Ramp B-C south wingwall has failed joint material over the full height of the south face 5' east of the bearing seat.

Slope Protection

The West Abutment slope protection exhibits minor cracking at the south end but is in good condition overall with 1" typical separation from the abutment wall. The slope protection is failing around the base of the south column of Pier 14R where a tree has grown along the east face, and the slab at the west face has settled 2". There is moderate vegetation growth around the north column base.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Waterway adequacy is sufficient and no deficiencies were noted.

Channel

The channel is in good condition overall with no major deficiencies noted at the time of the inspection.

Scour

Erosion channels are present under the bridge due to clogged or broken downspouts and catch basins,

particularly under Spans 4, 15, and 24.

Channel Protection

The banks of the Cuyahoga River are well vegetated upstream and downstream. On the west bank adjacent to the north end of Pier 1OL, there is a downed tree which has fallen perpendicular to the bank into the channel and caused minor erosion of the embankment. All of the six navigation lights were operational at the time of the inspection.

Channel Navigation Lights

New solar powered navigation lights were recently installed and operating normally.

Scour Critical

Inspector: Steven Hammerschmidt **Structure Number:** 1811991

Inpsection Date: 07/27/2020 **Facility Carried:** IR 490

Bridge Inspection Report

Pictures

PHOTO 1

Description South elevation (looking north).