CUY-00006-1456 _(1800930)

ODOT District:	12			Date Built:	07/01/1917
Major Maint:	01 - State Highway Agency	Facility Carried:	USR 6	Traffic On:	5 - Highway-pedestrian
				Rehab Date:	01/01/1997
Routine Maint:	04 - City or Municipal Highway Agency	Feature Inters:	CUY. RIVER & RTA	Traffic Under:	7 - Railroad - waterway
				Insp. Resp A:	01 - State Highway Agency
FIPS Code:	16000 - CLEVELAND (CUY county)	Location:	CUY DETROIT/SUPERIOR BRIDGE	Insp Resp B:	01 - State Highway Agency

Inspector Rufener,Justin Inspection Date 10/30/2020 Reviewer Johnson,Matthew

National Bridge Inventory

Status 2 - FO

Sufficiency Rating 65.6

Identification

(1) State Code	395 - Ohio
(8) Structure File Number (SFN)	1800930
(7) Facility Carried	USR 6
(208) Route on the Bridge	10 - State (ODOT) (Toll Free)
(2) Highway Agency District	12
(3) County Code	18 - Cuyahoga
(209) Interstate Mile Marker	
(201) Special Designation	
(4) Place Code (FIPS)	16000 - CLEVELAND (CUY county)
(5) Inventory Route	
(A) Record Type On/Under Always "On"	1: Route carried "on" the structure
(B) Route Signing Prefix (Highway System)	2 - U.S. NUMBERED HIGHWAY
(C) Designated Level of Service (Highway Designation)	1 - MAINLINE
(D) Route Number	00006
(E) Directional Suffix	0 - NOT APPLICABLE
(6) Features Intersected	CUY. RIVER & RTA
(9) Location	DETROIT/SUPERIOR BRIDGE
(11) Milepoint	14.560
(12) Base Highway Network	Inventory Route is on the Base Network
(13A) LRS Inventory Route	6
(13B) Subroute Number	0
(16) Latitude	41.49193 Degrees
(17) Longitude	-81.70619 Degrees
(16.01) Latitude - Ohio	41.49193438201303
(17.01) Longitude - Ohio	-81.70618648755347
(98A) Border Bridge State Code	
(98B) Border Bridge State Percent Responsibility	
(99) Border Bridge Struct No.	

Inspections

(90) Inspection Date			10/30/2020
(91) Designated Inspection Frequency			12
(92) Critical Feature Inspection			(93) CFI Date
A. Fracture Critical Detail	Y	24	10/05/2020
B. Underwater Inspection	Y	60	07/08/2020
C. Other Special Inspection	N	0	
D.01 Snooper Inspection	N	0	12/23/2016
E.01 Drone Inspection			

Condition

(58) Deck	6 - Satisfactory Condition
(58.01) Wearing Surface	8 - Very Good (isolated or minor problems)
(58.02) Expansion Joint	6- Satisfactory (isolated leaking)
(59) Superstructure	5 - Fair Condition
(59.01) Protective Coating System (PCS)	6 - Satisfactory (5-10% corr.)
(60) Substructure	6 - Satisfactory Condition
(61) Channel & Channel Protection	6 - Bank slump. widespread minor damage
(61.01) Scour	7 - Good
(62) Culvert	N - Not Applicable
(67.01) General Appraisal	5 - Fair Condition (minor section loss)

CUY-00006-1456 _(1800930)

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Routine Maint:	04 - City or Municipal Highway Agency	Feature Inters:	CUY. RIVER & RTA	Traffic Under: 7 - Railroad - waterway	Insp. Resp A: 01 - State Highway Agency
FIPS Code:	16000 - CLEVELAND (CUY county)	Location:	CUY	DETROIT/SUPERIOR BRIDGE	Insp Resp B: 01 - State Highway Agency

Inspector Rufener,Justin Inspection Date 10/30/2020 Reviewer Johnson,Matthew

Structure Type and Material

(43) Main Structure Type	A.	3 - Steel
	B.	12 - Arch - Thru
	C.	N- Not Applicable
(44) Approach Type	A.	1 - Concrete
	B.	11 - Arch - Deck
	C.	N- Not Applicable

(45) Number of Spans in Main Unit 1

(46) Number of Approach Spans 12

(107) Deck Structure Type 1 - Concrete Cast-in-Place

(107.01)

(108B) External Deck Protection 8 - Unknown

(108C) Internal Deck Protection 1 - Epoxy Coated Reinforcing

(422) Wearing Surface Date 11/15/1996

(108A) Wearing Surface Type 1 - Monolithic Concrete (concurrently placed with structural deck)

(108A.01) N- Not Applicable

(423) Wearing Surface Thickness 1.0 in

(483) Protective Coating System Date 07/15/1997

Age of Service

(27) Year Built 1917

(263) Date Built 07/01/1917

(106) Year Reconstructed 1997

(264) Major Reconstruction Date 01/01/1997

(42) Type of Service

On 5 - Highway-pedestrian

Under 7 - Railroad - waterway

(28) Lanes On 06 Under 00

(29) Average Daily Traffic 20094 (30) ADT Yr. 2015

(109) Truck Percentage 1 % Truck

(114) Future Avg Daily Traffic 27890 (115) Future ADT Yr. 2038

(19) Bypass Detour Length 2 mi.

Load Rating and Posting

(31) Design Load	C - Other
(63) Operating Rating Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.
(64) Operating Rating Factor	1.3
(65) Inventory Rating Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.
(66) Inventory Rating Factor	0.8
(41) Structure Open, Posted, or Closed to Traffic	A - Open
(70) Bridge Posting	5 - Equal to or above legal loads
(70.01) Date Posted	
(70.02) Posted Sign Type	
(70.03) Posted Weight	

Appraisal

(67) Structural Evaluation	5 - Somewhat better than minimum adequacy
(68) Deck Geometry	3 - Intolerable - high priority of corrective action
(69) Underclearances, Horizontal and Vertical	9 - Superior to present desirable criteria
(71) Waterway Adequacy	8 - Bridge Above Approaches
(72) Approach Roadway Alignment	8 - Equal to present desirable criteria

(36) Traffic Safety Feature

A. Bridge Railings:	1 - Meets acceptable standards
B. Transitions:	N - NA/Safety feature not required
C. Approach Guardrail	1 - Meets acceptable standards
D. Approach Guardrail Ends	0 - Does not meet acceptable standards/safety feature is required

(113) Scour Critical 8 - Stable for scour conditions

CUY-00006-1456 _(1800930)

ODOT District:	12					Date Built:	07/01/1917
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FIPS Code:	16000 - CLEVELAND (CUY county)	Location:	CUY		DETROIT/SUPERIOR BRIDGE	Insp Resp B:	01 - State Highway Agency

Inspector Rufener,Justin Inspection Date 10/30/2020 Reviewer Johnson,Matthew

Classification

(112) NBIS Bridge		Yes
(104) Highway System of the Inventory Route		1 - Structure/Route is on NHS
(26) Functional Classification of Inventory Route		14 - Urban - Other Principal Arterial
(100) Strahnet Highway Designation		Not a STRAHNET route
(101) Parallel Structure Designation		N - No parallel structure
(102) Direction of Traffic		2-way traffic
(103) Temporary Structure Design		
(105) Federal Lands Highways		Not Applicable
(110) Designated National Network		Inventory route not on network
(20) Toll		3 - On Free Road
(225) Routine Maintenance Responsibility	A.	04 - City or Municipal Highway Agency
	B.	
(21) Maintenance Responsibility		01 - State Highway Agency
(21B) Major Maint. Responsibility B		
(221) Inspection Program Responsibility	A.	01 - State Highway Agency
	B.	01 - State Highway Agency
(22) Owner		01 - State Highway Agency
(37) Historical Significance		1 - On National Register

Navigation Data

(38) Navigation Control			1 - Navigation control on waterway (bridge permit required)
(39) Nav Vert Clearance		99.0	Ft.
(40) Nav Horizontal Clearance		142.0	Ft.
(111) Pier or Abutment Protection			3 - In place but in a deteriorated condition
(116) Minimum Navigation Vertical Clearance, Vertical Lift Bridge		0.0	Ft.

Geometric Data

(48) Longest Span		591.0	Ft.
(49) Structure Length		2656.0	Ft.
(50A) Curb/Sidewalk Left Side - Width		5	Ft.
(50B) Curb/Sidewalk Right Side - Width		5	Ft.
(51) Brdg Roadway Width Curb-to-Curb		72.0	Ft.
(52) Deck Width, Out-to-Out		85.2	Ft.
(32) Approach Roadway Width		84.0	Ft.
(33) Bridge Median			3 - Closed median with non-mountable barriers
(34) Skew		0	Deg.
(35) Structure Flared			1 - Yes, flared

Clearances

(10) Practical Maximum Vertical Clearance		14	Ft.
(53) Minimum Vertical Clearance Over Bridge Roadway		14	Ft.
(47) Total Horizontal Clearance (Inventory Route)		72	Ft.
(54) Minimum Vertical Under Clearance	B.	30	Ft.
	A.	R - Railroad beneath structure	
(56) Minimum Lateral Under Clearance on Left		99	Ft.
(55) Minimum Lateral Under Clearance on Right	B.	99	Ft.
	A.	R - Railroad beneath structure	

Inventory Route Clearances

NBI 005A: On/Under 1: Route carried "on" the structure

NBI 005D: Route No. 00006

	Cardinal Direction		Non-Cardinal Direction	
(336) Minimum Vertical Clearance on IR	14	Ft.	0	Ft.
(335) Minimum Horizontal Clearance on IR	72	Ft.	0	Ft.

Inspector: Justin Rufener **Structure Number:** 1800930

Inpsection Date: 10/30/2020 **Facility Carried:** USR 6

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.	332900	sq. ft.	307726	23274	1900	0
510 - Wearing Surfaces		246755	sq. ft.	238805	7950	0	0
110 - Reinforced Concrete Open Girder/Beam	3 - Mod.	7394	ft.	6194	1000	200	0
113 - Steel Stringer	3 - Mod.	10638	ft.	10338	200	100	0
515 - Steel Protective Coating		101200	sq. ft.	95640	5060	500	0
120 - Steel Truss	3 - Mod.	1182	ft.	500	490	192	0
515 - Steel Protective Coating		60700	sq. ft.	44930	6070	9100	600
144 - Reinforced Concrete Arch	3 - Mod.	8040	ft.	6490	1400	150	0
152 - Steel Floor Beam	3 - Mod.	3925	ft.	3575	200	150	0
515 - Steel Protective Coating		52950	sq. ft.	49770	2650	530	0
155 - Reinforced Concrete Floor Beam	3 - Mod.	33543	ft.	22543	10000	1000	0
161 - Steel Pin and Pin & Hanger Assembly or both	3 - Mod.	30	each	27	3	0	0
162 - Steel Gusset Plate	3 - Mod.	100	each	20	47	33	0
205 - Reinforced Concrete Column	3 - Mod.	513	each	323	88	102	0
210 - Reinforced Concrete Pier Wall	3 - Mod.	200	ft.	100	50	50	0
215 - Reinforced Concrete Abutment	3 - Mod.	3459	ft.	3159	200	100	0
300 - Strip Seal Expansion Joint	3 - Mod.	2579	ft.	1479	1000	100	0
313 - Fixed Bearing	3 - Mod.	4	each	0	4	0	0
330 - Metal Bridge Railing	3 - Mod.	1366	ft.	1366	0	0	0
331 - Reinforced Concrete Bridge Railing	3 - Mod.	5312	ft.	5208	100	4	0
815 - Drainage	3 - Mod.	28	each	23	2	2	1
830 - Abutment Backwall	3 - Mod.	263	ft.	263	0	0	0

Inspector Comments - Deck and Approach

Deck

Element
12 – Reinforced Concrete Deck (SF)

The reinforced concrete deck is in Satisfactory condition.
The deck is divided into several sections as detailed below:

Detroit Avenue Tunnel: During the 1995-1997
rehabilitation a new reinforced concrete slab was placed on top of the original slab. The new slab was designed to support live and dead loads, with the original slab offering no structural support. The top and bottom surfaces for the new slab is not visible and assumed to be in good condition despite the poor and critical conditions of the original tunnel slab beneath.

West 25th Street Tunnel: The West 25th Street tunnel ceiling is in satisfactory condition, with areas of saturation, isolated delaminated areas and some shallow spalling with exposed reinforcing.

West Station: The West Station ceiling is in fair condition
and has areas of spalling, cracking and efflorescence, active water infiltration, and exposed reinforcing steel.

Spans
1A, 1B, and 1 through 13: The upper deck floor in the main spans is in satisfactory condition. There are isolated cracks with some efflorescence, sound and unsound patches and spalls, some with exposed reinforcing. There are numerous areas of moisture staining, some of which have mottling.

East
Station: The East Station ceiling is overall in good condition with scattered cracking with efflorescence.

Lower Deck: The lower deck floor is not open to vehicular or pedestrian traffic is therefore not included as part of the element quantities. The lower deck floor is in good condition and consists of reinforced concrete with metal stay-in-place forms in Spans 1 through 3, and Spans 5 through 13. In isolated locations, the stay-in-place forms have active corrosion. In Span 4, the lower deck is an open steel grid type in middle section, and fiberglass grid in the exterior sections.

See the inspection report for additional details.

Element 300 – Strip Seal Expansion Joint (LF)

The
expansion joints are overall in Satisfactory condition. Joints typically have sections with loose debris and edge spalls along the joint armor. There are some areas of tearing in the joint seals accompanied by active leakage, and minor damage to joint armor. See the inspection report for additional details.

Element 330 – Metal Bridge Railing (LF)

The median railings
are in **Good** condition. The median railings
are located along the edges of the roadway in Span 4 to protect the truss and hangers from vehicle impact.

Element 331 –
Reinforced Concrete Bridge Railing (LF)

The concrete railings are in Good condition. The railings on
the north and south side of the bridge consist of a reinforced concrete railing with an aluminum fence on top. All concrete railing is in good condition with minor cracking, staining, and isolated spalling. The fence has isolated areas of minor damage. See the
inspection report for additional details.

Element 510 – Wearing
Surface (SF)

The wearing
surface is in Good condition. In Spans 1A – 13 and the East Station the wearing surface is a micro silica modified concrete, which was placed in 2019. There are isolated locations of map cracking in the concrete wearing surface. Above the Detroit Avenue Tunnel, West 25th Street Tunnel and West Station, the wearing surface is asphalt. The asphalt has areas of transverse and map cracking. See the inspection report
for additional details.

Element 815 –
Drainage (EA)

The deck drainage is in Fair
condition. The West Abutment south downspout is completely clogged at the base of the catch basin. At Pier 3 the downspout is disconnected at the base of the pier, allowing drainage on the pier face. The Pier 9, South Catch Basin concrete frame has shifted and the north catch basin cover has shifted and rotated. The north sidewalk longitudinal trench drains are filled with debris and not functioning. Some of the scupper inlets are fully or partially clogged. See the inspection report for
additional details.

Curb/Sidewalk

The concrete curb
and sidewalk are in Satisfactory condition. The curbs and sidewalks have areas of cracking, delamination, and spalling. The steel curb plates have widespread surface corrosion. See the inspection report for additional details.

Signs

The signs on the
structure are in Good condition.

Approach

Approach Wearing Surface

The approach wearing surfaces are in Satisfactory condition. There are some areas of transverse and map cracking.

Embankment

The approach
embankments are in Fair condition. The embankment under Spans 1 through 3 has several slope depressions. This embankment was primarily loose soil placed over demolition debris. Beneath this fill is are two concrete struts between Pier 2 and 3 used to maintain stability during construction. The south strut is preventing portions of the fill from sliding into the Cuyahoga River. This embankment is being monitored with slope inclinometers maintained by ODOT District 12. See the
inspection report for additional details.

The embankment
along the south side of Spans 1A and 1B has significant erosion for the full length. At the west end of the erosion, there is a 15' diameter x 4' deep erosion ditch around a manhole. An erosion ditch extends from the manhole towards the east typically 3' W x 2' D. This erosion is relatively unchanged from the 2019 inspection. Tower B South, which is in this area, is leaning due to slope instability, as previously discussed. See the inspection report for additional details.

Guardrail

The approach
guardrails are in Good condition with some minor impact scrapes in the concrete rail.

Security Items

There are
locations where the structure and structure right of way can be accessed by non-bridge personnel. The fence which encloses the area between Span 1 and along Spans 1A and 1B is accessible due to an unlocked gate on the southeast end of Pier 1. Due to the unlocked gate there are multiple homeless encampments within the fenced in area. Preventative access steel mesh installed outside Span 1A near Tower A to prevent access appears formidable, however, plastic steps located adjacent to this area indicate opportunities have been taken to gain access. Security fencing installed
around Piers 2 and 3 can easily be surpassed by vagrants, and there is evidence of a homeless encampment inside of Pier 3.

A chain link
enclosure for the Center Street Bridge operator's vehicle on the west side of Pier 4 allows vandals to climb the fencing cover to access the Span 4 truss. From here the vandals have vandalized Pier 4 and have access to the truss lower chord and potentially the lower deck.

Inspector Comments - General Appraisal

Superstructure

Element 110 - Reinforced Concrete Beam (LF)

The beams are in overall Fair condition. This element consists of the longitudinal beams in the Detroit Avenue Tunnel, West 25th Street Tunnel, and West Station. The concrete beams have delaminations, efflorescence, and some areas of spalling with exposed reinforcing. Rehabilitation of many of the beams was completed or underway at the time of inspection. See the inspection report for additional details.

Element 144 – Reinforced Concrete Arch (LF)

The concrete arches are in **Fair** condition. This element encompasses the concrete arches and arch columns. The concrete arches and columns typically have cracking, delamination, poor patching and spalling with and without exposed reinforcing throughout. The concrete jack arches connecting the columns
below the upper and maintenance decks have spalls with exposed reinforcing steel,

cracks, and delaminated areas.

The arch ribs and columns are currently undergoing a rehabilitation that includes patching, crack injection and fiber wrapping. Many of the repair locations included in this rehabilitation were under construction or completed at the time of inspection. The longitudinal cracks in North Exterior Arch Rib in Span 5, which were previously noted and monitored, have been repaired.

See the inspection report for additional details.

Element 155 – Reinforced Concrete Floor Beam (LF)

The concrete floorbeams in Spans 1A, 1B, 1 through 3, and Spans 5 through 13 are in **Satisfactory condition. The floorbeams have isolated spalls with and without exposed reinforcing, cracking, delaminations, and areas of poor patching. The lower deck floorbeams tend to be in worse condition than the upper deck floorbeams. The structural corbels are included in the rating of this element exhibit similar defects as the rest of the floorbeams. The lower deck floorbeams in the East Station have the bottom mat of reinforcing steel exposed. This deterioration has changed little since the 1980s, but they carry no substantial live load.**

The lower deck concrete floorbeams and corbels are currently undergoing a rehabilitation that includes patching, crack injection and fiber wrapping. Many of the repair locations included in this rehabilitation were under construction or completed at the time of inspection.

See the inspection report for additional details.

Element 113 – Steel Stringer (LF)

The stringers are in **Satisfactory condition. There are 18 lines of stringers in the upper deck and 12 in the lower deck. The upper deck stringers have shear studs welded to the top flange providing composite action with the deck. The upper and lower deck stringers in Panels 4, 5, 5', and 4' were replaced in 1995. The upper deck stringers are in good condition. The original curb stringers of Lines 5 and 14 have areas of painted over pitting, with some active corrosion.**

The lower deck is not open to vehicular or pedestrian traffic the stringers are therefore not included as part of the element quantities. The stringers supporting the steel grid deck are in good condition. Stringers 4, 5, 9 and 10, which support only their own dead load, often have painted over advanced section loss and perforations at the floorbeams and saddle bearings. Stinger 11, which supports the south fiberglass pedestrian deck has a similar locations of advanced section loss. The rest of the stringers supporting the outer pedestrian fiberglass grid deck are in good condition.

See the inspection report for additional details.

Element 120 – Steel Truss (LF)

The steel truss is overall in **Satisfactory** condition. There are areas of pack rust, pitting and surface corrosion, mainly at and below the upper deck. Perforations, many of which have been cleaned and painted over are present in the diaphragm plates and lacing bars. At the eyebar connections there are areas of painted over pitting in the web plates.

See the
inspection report for additional details.

Element 152 – Steel Floor Beam (LF)

The steel floorbeams are in **Satisfactory** condition. The floorbeams typically have painted over perforations near the deck openings at the truss lines, with repair plates welded in place at some of these locations. Active surface corrosion is present at due to ongoing water infiltration at the deck openings.

On lower deck floorbeams 10 and 11' through 6' there are cracks along the weld of the stiffening plates to the top flange at the north truss line. Some of the crack lengths have changed in length from or were not noted in the 2019 Inspection.

See the
inspection report for additional details.

Element 161 – Steel Pin & Hanger Assembly (EA)

The pins, hangers and hinges are in **Good** condition with no significant deficiencies noted. Minor painted over pitting was noted on some eye-bars below the upper deck. There is active corrosion on some of the hangers above the previous zonal painting. See the inspection report for additional details.

Element 162 – Steel Gusset Plates (EA)

The truss gusset plates are in **Fair** condition. The gusset plates typically have areas of active surface corrosion. The lower chord gusset plates below the upper deck typically have painted over pitting and reactivating corrosion along the top of the lower chord. At North Truss L2, the north gusset plate has 2' L x 3" H x up to 1/8" D reactivating pitting at the lower chord interface on the south face and 2' L x up to 3" H x up to 5/16" D pitting on the north face. The south gusset plate has 30" L x up to 4" H x up to 3/8" D pitting on the south face with reactivating corrosion and 2' L x up to 3" H x up to 1/16" D pitting on the north face. At the North Truss L3, the gusset plates have pitting up to 3/16" D. In other scattered locations, the gusset plates have areas of pitting. See the inspection report for additional details.

Lateral Bracing & Sway Bracing

The lateral bracing and sway bracing is in **Satisfactory** condition with isolated areas of active surface corrosion, pack rust, and advanced section loss including perforations. See the inspection report for additional details.

Element 313 – Fixed Bearing (EA)

The bearings are in
Fair condition with some pack rust around the pins, and surface corrosion noted on the interior faces of all four bearing castings. The non-structural bearing pin cover plates have cracks up to 7 inches long at L0 and L0' on both trusses. The north pin cover at L0 on the north truss has fallen off. There is advanced section loss of some of the anchor bolt and nuts

Between the deck underside and the top of the transverse floorbeams over Piers 11 & 12, there are 3" H concrete pedestals with galvanized steel plates sitting on top and between each pedestal. In several locations these plates have moved and in some cases are no longer support the deck underside. See the inspection report for additional details.

Item 515 – Steel Protective Coating (SF)

The protective coating system (PCS) is in **Satisfactory** condition. Areas of corrosion, peeling and failed paint are present on the main truss members below the lower deck. The structural steel between the upper and lower decks was repainted in 2014-2015 and is in good condition. The protective coating system above the upper deck has surface corrosion with minor rust staining.

Fatigue Prone Details

The fatigue prone details are in **Fair** condition. Stiffening retrofit plates welded to the top flange of the lower deck floorbeams at the truss lines are classified as Category E fatigue details. Cracks in the fillet welds are present at several locations. Refer to *Element 152 – Steel Floor Beam* above for additional details on crack locations and growth.

Utilities

The utilities are in **Satisfactory** condition. The lower deck telephone junction chambers and supports are corroded due to saltwater infiltration through the manhole above. The storm sewer lid of the manhole on the south side of Span 1A has been blown off and is sitting on the ground. At pier 5, at the North Side, there is active leakage coming through the utility entrance.

Lighting

The lighting on the bridge is in **Fair** condition. Architectural light pole bases on the north sidewalk in Spans 5, 8 and 11 have cracked and are broken. One of the architectural lights on the north sidewalk, and numerous of the taller, cobra style roadway lights are not functioning. All of the exterior pier shaft light brackets have paint failure and corrosion with minor section loss present. Many of the architectural lights on the piers have been covered with sheeting to project against damage during the on-going rehabilitation work.

Substructure

Element 205 – Reinforced Concrete Column (EA)

The pier columns are in Satisfactory condition. This item includes the main span pier columns, columns in Spans 1A and 1B, and the columns in the subway tunnels and stations. The columns have areas of map cracking, failing patching, delamination, and spalling with or without exposed reinforcing. Many of columns are currently undergoing a rehabilitation that includes patching and crack injection. See the inspection report for additional details.

Element 210 – Reinforced Concrete Pier Wall (LF)

The pier walls at Piers 1, 3 and 4 are in Satisfactory condition. The west face of Pier 1 is primarily covered by fill. The exposed portions of the pier walls have areas of map cracking and delamination. Piers 3 and 4 are located adjacent to the Cuyahoga River. The portion of Pier 3 that is exposed to the channel has widespread areas of deep abrasion and numerous spalls. Piers 3 and 4 are cellular type structures, which are open on their Span 3 and 5 faces, respectively. The interiors faces of the walls have areas of delamination and spalling with exposed reinforcing.See the inspection report for additional details.

Element 215 – Reinforced Concrete Abutment (LF)

The abutment walls are in Satisfactory condition. The abutment walls consist of the West and East Abutments and the walls of the Detroit Avenue and West 25th Street Tunnels. The abutments have areas of cracking with minor moisture staining, delamination and spalling. Some staining appears to be superficial due to leaking deck joints above. The walls in the tunnels were being repaired as part of the current rehabilitation. See the inspection report for additional details.

Element 830 – Abutment Backwall (LF)

The backwalls are in Good condition. The backwalls consist of the closure panels at the ends of the West 25th Street Tunnel, Detroit Avenue Tunnel, and East Station.

Wingwalls

The wingwalls are in Poor condition. The wingwalls along Spans 1A and 1B and the East Station have cracking and spalling with exposed reinforcement throughout. See the inspection report for additional details.

Tower B South

A section of the rear abutment, south wall at Tower B has through cracks in the wall and associated footing, and is leaning to the south. It has continued to show incremental movement over the past 10+ years. On the interior, the top of the tower is spalled and cracked due to contact with the soffit of the upper level sidewalk. Crack gages have been placed at several locations to monitor the movement of the section. Crack gauges located at the base of Tower B are cracked and slightly displaced. New gauges should be installed to ensure an accurate record of the tower rotation is maintained. See the inspection report for additional details.

West and East Abutment Chambers

The chambers below Spans 1A and 1B on the west approach and below the East Station were inspected, however, they are not included in any of the quantities within this report. There are large spalls and delaminations throughout the chambers with exposed and corroded reinforcing on the walls and ceilings of most of the cells. Horizontal, vertical, diagonal and map cracking with efflorescence and moisture staining are also present throughout all cells. The floors are typically covered in dirt and construction debris. In the west chamber this is heavy cracking around south Tower B (see discussion above for more details).

Water Infiltration

Standing water was noted in the pedestrian tunnel under the West Station. In the east abutment chamber, most of the lower cells are filled with standing water. The pedestrian tunnel under the East Station is also filled with standing water. Holes drilled in the east abutment to drain some of the standing water had a steady

flow of water at the time of inspection.

Slope Protection

The concrete slope protection is in Good condition.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Hydraulic Openings

The hydraulic opening is in Good condition with no major constrictions associated with the bridge.

Channel

Alignment

The alignment is in Good condition. The channel is skewed with respect to the piers, but this is an as-built condition.

Protection

The channel protection is in Satisfactory condition with only minor deficiencies. The west bank is vegetated with some dumped rock channel protection. The west bank is protected by a sheet pile wall.

Navigation Lights

The navigation lights are in Poor condition. None of the six lights were functioning at the time of inspection. No damage was noted to the light fixtures.

Scour

The scour is in Good condition. An underwater bridge inspection was performed on July 8, 2020. No areas of exposed foundation or significant scour holes were found in the inspection. See the underwater inspection report for additional details.

Scour Critical