

Ohio Bridge Inspection Summary Report

CUY-00006-1456 (1800930)

2: District 16000 - CLEVELAND (CUY county)
 ict
 12
 21: Major Maint A/B 01 - State Highway Agency /
 225 Routine Main A/B 04 - City or Municipal Highway /
 Agency
 221 Inspection A/B 01 - State Highway Agency /01
 220: Inv. Location DISTRICT 12

5A: Inventory Route 1 00006
 7: Facility On USR 6
 6: Feature Ints CUY. RIVER & RTA
 9: Location DETROIT/SUPERIOR BRIDGE
 Lat, Lon 41.49193438201303 , -81.70618648755347

Condition	Structure Type
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58: Deck 58.01 Wearing Surface 58.02 Joint 59: Superstructure 59.01 Paint & PCS 60: Substructure 61: Channel 61.01 Scour 62: Culverts 67.01 GA	6 - Satisfactory Condition 8 - Very Good (isolated or minor problems) 6- Satisfactory (isolated leaking) 5 - Fair Condition 6 - Satisfactory (5-10% corr.) 6 - Satisfactory Condition 6 7 - Good N - Not Applicable 5	43: Bridge Type 3 - Steel 12 - Arch - Thru N- Not Applicable 45: Spans Main / Approach 1 / 12 107: Deck Type 1 - Concrete Cast-in-Place 408: Composite Deck Y - Composite Construction 414A Joint Type 1 8 - Elastomeric Strip Seal 414B: Joint Type 2 3 - Compression Seal 108A: Wearing Surface 1 - Monolithic Concrete (concurrently placed with structural deck) N- Not Applicable
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Appraisal

Sufficiency Rating 65.6 SD/FO 2 - FO
 36: Rail, Tr, Gd, Term Std 1 N 1 0
 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 11/15/1996
 423: WS Thick (in) 1.0
 482: Protective Coating 5 - Paint System OZEU
 483: PCS Date 07/15/1997
 453: Bearing Type 1 8 - Fixed Arch-Rib
 455: Bearing Type 2 3 - Sliding (Bronze)
 528: Foundn: Abut Fwd 4 - Spread Footing (on soil)
 533: Foundn: Abut Rear 4 - Spread Footing (on Soil)
 536: Foundn: Pier 1 N - None (Such as most Culverts)
 539: Foundn: Pier 2 N - None (Such as most Culverts)

Geometric

48: Max Span Length (ft) 591.0
 49: Structure Length (ft) 2656.0
 52: Deck Width, Out-To-Out (ft) 85.2
 424: Deck Area (sf) 226291.2
 32: Appr Roadway Width (ft) 84.0
 51: Road Width, Curb-Curb (ft) 72.0
 50A: Curb/SW Width: Left (ft) 5
 50A: Curb/SW Width: Right (ft) 5
 34: Skew (deg) 0
 33: Bridge Median 3 - Closed median with non-mountable barriers
 54B: Min Vert Underclearance (ft) 30
 336A: Min Vert Clrnce IR Cardinal (ft) 14
 336B: Min V Clr IR Non-Cardinal (ft) 0
 578: Culvert Length (ft) 0

Age and Service

27: Year Built/ 106 Rehab 1917 / 1997
 42A: Service On 5 - Highway-pedestrian
 42B: Service Under 7 - Railroad - waterway
 28A: Lanes on 06
 28B: Lanes Under 00
 19: Bypass Length 2
 29: ADT 20094
 109: % Trucks (%) 1

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 (%) 110
 704: Analysis Date 12/09/2019
 63: Analysis Method 6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

Inspections

90: Routine Insp.	<i>Months</i>	12	10/29/2021
92A: FCM Insp.	Y	24	10/05/2020
92B: Dive Insp.	Y	60	07/08/2020
92C: Special Insp.	N	0	
92D: UBIT Insp.	N	0	12/23/2016
92E: Drone Insp.			
Inspector	Rufener,Justin		

Inspector: Justin Rufener
 Inspection Date: 10/29/2021

Structure Number: 1800930
 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.	306576	24024	2300	0
	CS2: Areas of minor cracking with efflorescence, patching, delamination and saturation						
	CS3: Areas of spalling with and without exposed reinforcing.						
510 - Wearing Surfaces		246755	sq. ft.	241280	5475	0	0
	CS2: Areas of map cracking. Moderate transverse cracks in asphalt wearing surface.						
110 - Reinforced Concrete Open Girder/Beam	3 - Mod.	7394	ft.	6244	1000	150	0
	CS2: Areas of delamination and efflorescence.						
	CS3: Areas of spalling with exposed reinforcement.						
113 - Steel Stringer	3 - Mod.	10638	ft.	10338	200	100	0
	CS2: Areas of active corrosion.						
	CS3: Areas of active and painted over minor pitting. Isolated moderate section loss with corrosion holes.						
515 - Steel Protective Coating		101200	sq. ft.	95640	5060	500	0
	CS2: Areas of surface dulling and loss of effectiveness (substantially effective)						
	CS3: Isolated areas of limited effectiveness						
120 - Steel Truss	3 - Mod.	1182	ft.	490	500	192	0
	CS2: Areas of active surface corrosion						
	CS3: Areas of active and painted over pitting, pack rust, and rivet head loss.						
515 - Steel Protective Coating		60700	sq. ft.	44930	6070	9100	600
	CS2: Areas of surface dulling, loss of effectiveness (substantially effective), and peeling topcoat						
	CS3: Areas of limited effectiveness and peeling paint.						
144 - Reinforced Concrete Arch	3 - Mod.	8040	ft.	6740	1200	100	0
	CS2: Areas of minor to moderate cracking, poor patching and delamination on Columns and Arch						
	CS3: Areas of spalling with and without exposed reinforcing on Columns and Arch						
152 - Steel Floor Beam	3 - Mod.	3925	ft.	3575	200	150	0
	CS2: Areas of active surface corrosion						
	CS3: Areas of active and painted over pitting, and painted over perforations at deck openings.						

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Element Inspection

515 - Steel Protective Coating		52950	sq. ft.	49770	2650	530	0
	CS2: Areas of surface dulling and loss of effectiveness (substantially effective) CS3: Isolated areas of limited effectiveness						
155 - Reinforced Concrete Floor Beam	3 - Mod.	33543	ft.	22543	10000	1000	0
	CS2: Areas of minor to moderate cracking, poor patching and delamination CS3: Areas of spalling with and without exposed reinforcing						
161 - Steel Pin and Pin & Hanger Assembly or both	3 - Mod.	30	each	27	3	0	0
	CS2: Minor painted over pitting on several eyebars below upper deck.						
162 - Steel Gusset Plate	3 - Mod.	100	each	20	47	33	0
	CS2: Areas of active surface corrosion CS3: Areas of active and painted over pitting and rivet head loss						
205 - Reinforced Concrete Column	3 - Mod.	513	each	340	100	73	0
	CS2: Locations of map cracking, failing patches and delaminations. CS3: Location of spalling with and without exposed reinforcing						
210 - Reinforced Concrete Pier Wall	3 - Mod.	200	ft.	100	50	50	0
	CS2: Areas of map cracking and delamination CS3: Deep spalls at base of Pier 3. Interior faces of Piers 3 & 4 have areas of spalling with exposed reinforcing.						
215 - Reinforced Concrete Abutment	3 - Mod.	3459	ft.	3159	200	100	0
	CS2: Areas of cracking with staining and delamination CS3: Areas of spalling						
300 - Strip Seal Expansion Joint	3 - Mod.	2579	ft.	1479	1000	100	0
	CS2: Areas of minor leakage and debris impaction. CS3: Areas of active leakage and broken welds in joint armor.						
313 - Fixed Bearing	3 - Mod.	4	each	0	4	0	0
	CS3: Pack rust around pins.						
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
	CS2: Areas of minor cracking with staining. CS3: Isolated spalling						
815 - Drainage	3 - Mod.	28	each	20	4	2	2
	CS2: Several partially plugged scuppers. CS3: Several plugged downspouts CS4: Several fully plugged scupper inlets						

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Bridge Inspection Report

Element Inspection

830 - Abutment Backwall	3 - Mod.	263	ft.	263	0	0	0
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ODOT District: District 12

CUY-00006-1456_(1800930)

Major Maint: 01 - State Highway Agency

Facility Carried: USR 6

Traffic On: 5 - Highway-pedestrian

Date Built: 07/01/1917

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: DISTRICT 12

DETROIT/SUPERIOR BRIDGE

Insp Resp B: 01 - State Highway Agency

Inspector

Rufener,Justin

Inspection Date 10/29/2021

Reviewer Rufener,Justin

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, West25th 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 and Pier 1 south downspout are 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. At Pier 5 on the North Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck, allowing roadway drainage onto the maintenance deck. 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.

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. Two 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 attached to the lower deck fascia are not functioning, and several are visually broken.

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 2020 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 under Span 1 and along the south sides of Spans 1A and 1B is accessible due to an unlocked gate on the southeast end of Pier 1, and two locations where holes have been cut into the fence on the south side of Spans 1A & 1B. Due to these openings, there are multiple homeless encampments within the fenced in area. Preventative access steel mesh installed outside Span 1A near Tower A to prevent access has failed. Security fencing installed around Piers 2 and 3 can easily be surpassed, 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. 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 in Spans 5 through 10, Span 13 and portions of Span 3 were patched, crack injected and then wrapped on the underside with FRP to prevent future spalling. Select columns were also

patched. The concrete arches and columns that were not repaired typically have areas of cracking, delamination, poor patching and spalling with and without exposed reinforcing. The concrete jack arches connecting the columns below the upper and maintenance decks have spalls with exposed reinforcing steel, cracks, and delaminated areas.

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. As part of the most recent rehabilitation, the undersides of lower deck floorbeams in Spans 5 through 10, 13 and portions of Span 3 were fiber wrapped after patching, to prevent future spalling.

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 E and N 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 D, E, I and J, which support only their own dead load, often have painted over advanced section loss and perforations at the floorbeams and saddle bearings. Stinger K, 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, 12 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 the 2020 Inspection. The cracks at Floorbeam 12 were not noted in previous inspections.

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 areas of fading and 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. At Pier 5 on the North Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck. A utility line mounted below the top deck in the south bay is sagging and making contact with the maintenance deck in several locations. There is a missing electric junction box cover on the south concrete rail in Span 7.

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 main span pier columns have areas of map cracking, failing patching, and delamination. There are also a few areas of minor spalling with exposed reinforcing. The decorative arches above these columns have areas of map cracking, failing patching, delamination and spalling with exposed reinforcing. The remaining columns have areas of failing patching, delamination, and spalling with and without exposed reinforcing.

The decorative towers on the north and south faces of the piers typically have widespread cracking, delamination and spalling with and without exposed reinforcing. The south towers at Piers 5 through 7 are leaning away from bridge, with gaps up to 2¼-in between the top of the tower and the outside face of the upper jack arches. Detailed measurements of the gaps between these towers and the adjacent bridge features are given Table 5 in Appendix B. No change was noted between the current measurements and those taken during the 2020 inspection.

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 some spalling. Some staining appears to be superficial due to leaking deck joints above. In the tunnels, the lower 1-ft to 2-ft of the walls have widespread shallow spalling with exposed reinforcing. The portions of the walls in the tunnels above these areas were repaired as part of the most recent 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 slope protection is in Satisfactory condition, with some areas of erosion and sliding material noted.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

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.

Hydraulic Openings

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

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