

## Ohio Bridge Inventory

General	
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(203) Bridge Name (Dedicated Name)	GEORGE V. VOINOVICH BRIDGE
(204) Ohio Designated MPO	08 - NOACA (Cleveland)
(205) Route Number Extension	
(206) Inventory Preferred Route	NP - Non Preferred Route
(5.01) Priority System Code (Inventory Route)	P- Priority
(213) NLF_ID Inventory Route	SCUYIR00090**C
(218) Major Bridge	Y - Yes
(220) Inventory Location	CUY
(226) Seismic Susceptibility	N - not applicable
(227) GASB	Y - Yes
(236) Future Traffic Factor	1.388
(245) Aperture Cards Fabrication	2 - No
(246) Aperture Cards Original	2 - No
(247) Aperture Cards Repair	2 - No
(248) Original Construction Project Number	
(251) Standard Drawing Number	
(252) Microfilm Reel Number	
(261) Bridge Remarks	

CUY-00090-15320-L

(265) Electric Line Present	Y - Bridge carries this utility
(266) Gas Line Present	N - Bridge does not carry a utility
(269) Sanitary Sewer Present	N - Bridge does not carry a utility
(306) NBIS Bridge Length	4346.583
(207) Route Under the Bridge	41

Inventory Route Clearances			
<u>Inventory Route</u>	<u>Cardinal</u>	<u>Non-Cardinal</u>	

(336) Minimum Vertical Clearance	99	0	ft.
(335) Minimum Horizontal Clearance	84	0	ft.

**Load Rating**

(717) 2F1 Operating Rating Factor (GVW 15 T)

(720) 3F1 Operating Rating Factor (GVW 23 T)

(723.01) 4F1 Operating Factor (GVW 27 T)

(726.01) 5C1 Operating Rating Factor (GVW 40 T)

(723.02) SU4 Operating Rating Factor (GVW 27 T)

(726.02) SU5 Operating Rating Factor (GVW 31 T)

(732.01) SU6 Operating Rating Factor (GVW 34.75 T)

(732.02) SU7 Operating Rating Factor (GVW 38.75 T)

(735) EV2 Operating Rating Factor (GVW 28.75 T)

(738) EV3 Operating Rating Factor (GVW 43 T)

(734) Ohio Percent Legal 150

(705) Load Rater First Name HANS

(706) Load Rater Last Name HUTTON

(707) Load Rater PE Number 75782

(704) Load Rating Date 07/01/2011

(708) Load Rating Software 7 - Combination

(709) Rating Source 1 - Plan information available for load rating analysis (Default)

**Inspection Access**

(92.02) Snooper Inspection Traffic Control 5- Night or Weekend: Merge with Divided Highway

(92.03) Snooper Inspection Est. Crew Hours

(459) Inspection Access Y - The bridge includes this feature

<b>Deck &amp; Approach</b>
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(224) Temporary Subdecking	N - No		
(404) Approach Slab Type	1 - Reinforced Concrete		
(405) Approach Slab Length	50		
	1	2	3
(406) Bridge Median Type	N - None	N - Non Barrier	N - No Joint
(407) Bridge Railing Type	2 - Reinforced Concrete and Steel		
(408) Composite Deck Code	Y - Composite Construction		
(419) Expansion Joint with Trough Retrofit 2			
(421) Joint Trough (Y/N)			
(431) Fence	N - The bridge does not include this feature		
(432) Fence Height on Bridge	0		
(433) Glare Screen	N - The bridge does not include this feature		
(434) Noise Barrier Walls	N - The bridge does not have Noise Barrier Walls		
(424) Deck Area	608524		
(427) Left Sidewalk/Curb Material	N - None		
(428) Left Sidewalk/Curb Type	N - None or N/A (RR, Pedestrian, etc.)		
(429) Right Sidewalk/Curb Material	N - None		
(430) Right Sidewalk/Curb Type	N - None or N/A (RR, Pedestrian, etc.)		

<b>Substructure</b>
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(526) Abutment Forward Type	9 - Stub - Capped Pile (Multiple Row Piles)
(527) Abutment Forward Material Type	2 - Concrete
(528) Abutment Forward - Foundation Type	1 - Steel H Piles (Other size)
(531) Abutment Rear Type	9 - Stub - Capped Pile (Multiple Row Piles)
(532) Abutment Rear Material Type	2 - Concrete
(533) Abutment Rear - Foundation Type	1 - Steel H Piles (Other Size)
(534) Pier 1 (Predominate) Type	5 - Capped Column
(535) Pier 1 (Predominate) Material	2 - Concrete
(536) Pier 1 Type - Foundation Type	0 - Other
(537) Pier 2 Type	5 - Capped Column
(538) Pier 2 Material	2 - Concrete
(539) Pier 2 Type - Foundation Type	0 - Other
(547) Slope Protection Type	A - Reinforced Cast-In-Place Concrete Wall

<b>Superstructure</b>
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(711) Live Load Response	S - Satisfactory		
(468) Hinges/Pins/Hangers Type	N - Not Applicable (structures with no hinges)		
(409) Deck Drainage Type	3 - Scuppers and downspouts		
(411) Deck Concrete Type	B - QSC2-Superstructure concrete		
	A	B	C
(414) Expansion Joint Type	A - Modular	8 - Elastomeric Strip Seal	N - None
(301) Horizontal Curve Degree	1.62		
(453) Bearing Device 1, Type	7 - Disk		
(455) Bearing Device 2, Type	C - Elastomeric (laminated)		
(465) Framing Type	1 - Curved Beams/Girders		
(466) Haunched Girder	N - Bridge does not contain a haunched girder		
(467) Haunched Girder Depth	0		
(474) Main Structure System	3 - Four or More Girder Bridge		
(475) Main Member Type	3 - Welded Built-Up Steel		
(482) Protective Coating System Type	9 - Paint System IZEU		
(487) Structural Member Steel Type	C - Hybrid (A709 grade 70W flanges with 50W webs)		
(498) Protective Coating System Surface Area	999999		
(499) Structural Steel Paint	3 - Combination (Shop and Field)		
(478) Post Tensioned Main Member Code	N - Bridge is not Post Tensioned		

<b>Culvert and Waterway</b>
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(575) Culvert Type	N - Not a Culvert or Rigid Frame		
(578) Culvert Length Inlet_to_Outlet	0		
(580) Fill Depth Over Culvert	0		
(651) Scenic River	N - Waterway is not classified as Scenic River		
(587) Rise			
(588) Shape			
(655) Channel Protection Type	3 - Sheet Piling		
(663) Stream Velocity			
(672) pH			

**Inspector:** Mike Kronander  
**Inspection Date:** 12/11/2020

**Structure Number:** 1809431  
**Facility Carried:** IR 90 WB

## Bridge Inspection Report

### Executive Summary

The approaches are in good condition with cracking in the approach slabs and asphalt wearing surface at Ramp A. The northeast approach railing for Ramp A exhibits a crack in the underside of the steel rail near the termination above the wingwall. The crack appears to be the result of traffic impact or the weld cracking during fabrication. The bridge deck is in very good condition with moderate cracking to isolated areas in the wearing surface and floor. Expansion joints are typically packed with moderate debris. Slightly more significant issues exist in the edge of the floor including transverse cracking and honeycombing. The bridge rail exhibits hairline full height cracks with some of the cracks exhibiting moisture and leeching. A few areas exhibit impact scrapes and spalls. Surface corrosion exists along the steel railing in isolated locations and the connection of the posts to the concrete barrier. The Rear Abutment joint of Ramp A has failed and is torn. The modular joint at Pier 11 where Ramp A meets with the westbound structure has isolated damage in the joint armor with cracking in the joint header. The separation beams in the modular joint exhibit a few issues. The joint seals exhibit a few small isolated tears in the modular joints at Piers 2 and 11. The drainage downspout at Pier 3 is separated and missing its coupling. Inlet scupper grates on the shoulders of the deck remain clogged. The bridge superstructure is in very good condition with very random small areas of surface corrosion and isolated areas of paint failure to stringers and bearings. Surface corrosion and rust staining is most common along the exterior top flange edge of the exterior girders, and top of delta girder splice connections at the piers. A crack exists in the top of the Girder 2 web stiffener at Pier 4. The safety access components along the girders and floorbeams, including the catwalks, exhibit random areas of surface corrosion, minor problems and missing pieces of hardware at isolated locations. Multiple bearing anchor bolts at the Forward Abutment of the westbound structure were noted to be bent and it appears the bearing pads for Girders 2, 4, 5, 9 and 10 have rotated. Due to this movement, the ends of the girders are nearly in contact with the backwall and spalling has occurred under the elastomeric pads in the bearing seat. This condition most likely occurred during construction when the crews tried to move the anchor bolts into the correct position after installation. At Pier 3 for Ramp A, the bearings at Girders 1 and 2 each had one anchor bolt missing. Surface corrosion exists along the edges of masonry plates of the bearings. The north approach spans of the main westbound bridge and all spans in Ramp A contain category E' fatigue prone details. Cross frames are welded to gusset plates, and due to the curvature of the girders at these areas of the bridge, the cross frames serve as primary members for rotational stability. No significant issues were noted with the fatigue prone details. The bridge substructure units are in good condition with spalling around several forward abutment anchor bolts and minor cracking throughout. The Pier caps exhibit isolated cracks and scaling/honeycombing in several areas. A few small spalls were observed at ground level of the columns and in bearing pedestals. Electrical utility conduits run throughout the bridge and are supported by the girders. The conduit is separated exposing bare wires at multiple locations. Decorative lights exhibit surface corrosion on the hardware and several lights are not currently functioning.

ODOT District: 12

## CUY-00090-1532L\_(1809431)

Date Built: 12/01/2013

Major Maint: 01 - State Highway Agency

Facility Carried: IR 90 WB

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: CUY RIVER VALLEY

Traffic Under: 8 - Highway - waterway - railroad

Insp. 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: CUY

.65 MI. E. OF JCT IR-71

Resp A:

Insp

Resp B:

Inspector

Kronander, Mike

Inspection Date

12/11/2020

Reviewer

Kronander, Mike

### Inspector Comments - Deck and Approach

#### Deck

##### Floor/Slab (SF)

The following conditions exhibited no changes from the previous inspection:

The deck floor is typically covered by stay-in-place forms; however, isolated areas of the deck floor are exposed. No significant deficiencies were noted to the stay-in-place forms. The exposed portions of the deck floor exhibit some hairline cracks, minor delaminations, or minor spalls. These deficiencies are most common at the exposed haunches and were noted to be up to 0.013-inch-wide and spaced at least 3 feet apart in Spans 7 through 10. A sub-deck is present in the eastern bay at Pier 2 around the drainage system to prevent vandal access to the superstructure.

The following conditions were observed during the most recent inspection in 2020 - The underside of the floor in Spans 1 and 2 exhibits isolated transverse cracks with efflorescence.

##### Edge of Floor/Slab (LF)

The following conditions exhibited no changes from the previous inspection:

The edge of the floor exhibits random very low density transverse cracks. Isolated cracks exhibited some leeching. Cracking is observed in high moment regions of the deck floor over the delta frame portions of the superstructure.

The following conditions were observed during the most recent inspection in 2020 - The edge of the floor exhibits minor spalls, isolated locations of rust staining from corroding reinforcing steel, and isolated areas of 1-inch deep honeycombing. The underside of the floor overhangs exhibit isolated transverse cracks. Cracking is most prominent to the east deck overhang in Spans 9 and 10.

##### Bridge Wearing Surface (SF)

The following conditions exhibited no changes from the previous inspection:

The deck wearing surface in the main spans typically exhibits transverse 1/32-inch wide cracks initiating at the west fascia and extending for approximately half the deck width. Cracks are typically spaced greater than or equal to 2 feet apart and exist between the south deck cold joint and midspan point of most spans. Cracking is observed in high moment regions of the deck wearing surface over the delta frame portions of the superstructure. Cracking is most prominent in the west shoulder of Spans 9 through 11. Minor to moderate debris accumulation is typical in the shoulders of the mainline westbound bridge and Ramp A roadway. In Span 2 of Ramp A, eight deck cores were taken with minor spalling apparent around the patched core holes.

The following conditions were observed during the most recent inspection in 2020 - In the west most lane of the mainline roadway, minor spalls and wear exist east of the median barrier.

##### Bridge Median (LF)

Median rail exists between Ramp A and far end approach spans of the westbound structure. The median rail exhibits isolated hairline cracks.

## **Bridge Railing (LF)**

The following conditions exhibited no changes from the previous inspection:

The bridge rails exhibit full height vertical cracks with some light efflorescence. The worst condition was noted in Span 3 with cracks spaced between 1 to 3 feet. The concrete bridge rail exhibits random areas of small minor delaminations below the steel rail posts. Isolated steel rail posts exhibit minor surface corrosion at the interface with the concrete railing with the protective coating typically failing along the top of the concrete bridge railing. Isolated areas of the concrete bridge rail exhibit impact damage with up to 1/4-inch deep gouges and tire rub marks. The west bridge rail in Span 8 exhibits one post with three loose anchor bolt nuts near midspan. The east bridge rail of Ramp A exhibits four locations of post anchor bolts working up and out of the concrete railing.

The following conditions were observed during the most recent inspection in 2020 - The west concrete bridge railing exhibits an impact spall with cracking 3 feet horizontal by 1 foot vertical. Isolated areas of steel rail protective coating exhibit peeling paint. This condition is common in the north half of Span 2 along the east railing for Ramp A. Some locations exhibit additional surface corrosion.

During construction, the steel rail posts on the east railing did not line up with the anchor bolt insets cast into the top of the concrete railing. New inserts were drilled into the concrete railing; however, the original inserts were not sealed. Expansion from freezing of the water appears to have caused the cracking and spalling of the concrete. Cracks propagating from the original railing anchor bolt inserts formed into the top of the concrete railing exist at multiple locations.

The east bridge railing in Span 1 of Ramp A exhibits a 3-inch vertical by 7-inch horizontal by 1-inch deep spall below the railing post approximately 40 feet from Pier 1. Other isolated small spalls exist in the railing in Span 3 of Ramp A. The east bridge rail of Ramp A exhibits five locations of steel railing post anchor bolts working up and out of the concrete railing, one location in the east approach and four locations in Span 1. This is possibly due to water leaking into the anchor hole and pushing the anchor bolt up due to freezing. This condition occurs throughout the bridge railing at multiple locations for the mainline westbound bridge and Ramp A. The base plate for the steel rail posts are not fully seated on the concrete railing at a few locations with the gap filled with a caulk-like material. Anchor bolts connecting the steel rail to the concrete railing are typically bent at multiple locations. Reflectors attached to the concrete bridge railing along Ramp A are typically broken.

## **Deck Drainage (EA)**

The drainage system for the bridge consists of scuppers with covered grates transporting water to downspouts attached to the substructure units below. The following deficiencies were noted on the drainage system: Scupper inlet grates in the deck top are typically significantly clogged with vegetation and debris near the curbs. The downspout pipe is clear and functioning. The drain pipe between Girders 4 and 5 at Pier 3 is separated due to a missing coupling. The drain pipe on the east side of Pier 4 is leaking. This condition could not be verified during the 2020 inspection.

## **Expansion Joint (LF)**

The following deficiencies were noted in the expansion joints at the Rear Abutment (strip seal), Pier 2 (modular), Pier 11 (modular), the Forward Abutment (strip seal), and Ramp A Rear Abutment (strip seal):

The Rear Abutment joint seal for Ramp A is torn and missing for the full length of the joint. This joint is currently open 1-inch at the east curb, 7/8-inch at the centerline, and 1-inch at the west curb at 57°F.

The Rear and Forward Abutment joints were measured at 60 degrees F in 2020 and were measured at the west end of the joint:

Rear Abutment = 2 1/2 inches

Forward Abutment = 2 1/4 inches.

Joint armor exhibits isolated areas of impact damage and gouges. The worst location was noted to the south deck armor of the Pier 11 joint within the Ramp A lane. The joint seal at Pier 11 exhibits a cut allowing drainage to pass through the joint at this location. Transverse separation beam 9 of the Pier 11 joint is 3/4 inches lower for approximately half the ramp width. Isolated transverse separation beams (TSB) are not seated on the longitudinal support bar (LSB). This separation is causing a banging noise when live load traffic passes over top and could eventually cause the transverse separation beams, the joint, and longitudinal support bars distress. The TSBs are numbered from rear to forward (looking compass north) and the LSBs are numbered left to right (looking compass north). Affected locations are as follows: Pier 2 Joint, LSB 9, TSB 5 - Gap at bottom between bearing and beam. Pier 2 Joint, LSB 10, TSB 5 - Gap at bottom between bearing and beam. Pier 2 Joint, LSB 17, TSB 3 - Gap at bottom between bearing and beam. Pier 2 Joint, LSB 18, TSB 3 - Gap at bottom between bearing and beam. Pier 11 Joint, LSB , TSB 4 - Top bearing missing. Pier 11 Joint, LSB 8, TSB 9 - Top and bottom bearings missing. The previously noted missing bearings at the Pier 11 Joint have been replaced. This joint remains noisy indicating that the bearings may exhibit gaps and be sliding out of place. The Pier 2 and 11 joints typically exhibit missing bushings and/or guides between the sides of the LSBs / TSBs. These guides help stabilize the LSBs laterally. Joints typically exhibit minor to moderate debris accumulation throughout their length. Accumulation is most prominent in the shoulders. This accumulation is expected due to the crown of the roadway. Joint headers typically exhibit minor cracking.

## **Approach**

### **Approach Wearing Surface (EA)**



The following conditions exhibited no changes from the previous inspection:

The approach roadway for the Rear Approach of Ramp A exhibits minor wear.

The following conditions were observed during the most recent inspection in 2020 - The Rear Approach asphalt roadway for Ramp A exhibits transverse and longitudinal cracking. The transverse cracks exists along the joint between the approach slab and the abutment. Moderate debris accumulation exists along the shoulders for Ramp A.

### **Approach Slab (SF)**

The Rear Approach slab exhibits an isolated diagonal cracks in the west shoulder. The Rear Approach slab for Ramp A exhibits minor cracking with one longitudinal crack less than 1/32-inch wide along the roadway centerline. The Forward Approach slab in the median gore area exhibits two longitudinal/diagonal cracks of moderate width.

### **Relief Joint (LF)**

The asphalt relief joint for the off-ramp at the Rear Abutment exhibits a few moderate width cracks and some edge spalling.

### **Approach Embankment (EA)**

The embankment exhibits no significant deficiencies.

### **Approach Guardrail (EA)**

The approach guardrail exhibits no significant deficiencies.

### **Safety Features (EA)**

At the northeast corner of Ramp A, the approach railing steel tubular rail is cracked for approximately 50% of the circumference around the railing with bleeding corrosion through the crack. This condition is most likely due to collision damage or the weld cracking during fabrication. The concrete approach railing exhibits minor cracking.

### **Signs (EA)**

A vertical clearance sign is attached to the north face of Pier 3 for Ramp A. The sign reads 13FT 6IN and is a posting for the minimum measured clearance of 13FT 9IN in the parking lot under Ramp A. No end markers are present. The railing is continuous from the approach roadway through the structure. Navigation lights are functioning and exhibit no significant deficiencies.

### **Sign Supports (EA)**

Cantilevered sections of the floorbeams support overhead light structures. Connection bolts and hardware supporting the overhead sign structure on the cantilevered sections of floorbeams exhibit surface corrosion and failing paint.

## **Inspector Comments - General Appraisal**

### **Superstructure**

#### **Alignment (LF)**

The alignment of the superstructure exhibits no significant deficiencies.

#### **Beams/Girders (LF)**

The girders consist of continuous welded plates with bolted splices and integral steel delta frames at Piers 3 through 10. They are overall in good condition with few minor deficiencies. Typical conditions noted include:

**Girders:** The following conditions exhibited no changes from the previous inspection: The girders exhibit random locations of minor spot corrosion less than 12 inches in diameter. Isolated random locations on the girders exhibit minor scrapes.

The following conditions were observed during the most recent inspection in 2020 - Girder top flanges exhibit isolated areas of light surface corrosion forming at the interface with the deck. This issue was more common in Spans 1, 2, and 10. The exterior face of Girder 1 exhibits isolated areas of minor erection damage to the web. Random locations of girder webs exhibit mis-drilled holes. Along bottom flanges and stiffeners of the girders, there are multiple locations of moderate to heavy accumulations of pigeon debris. At the girder connections for beams supporting catwalk, loose or missing fit-up bolts are common throughout the bridge.

**Delta frame portions of the girder** exhibit the following deficiencies: At the top of the transverse web stiffener for Delta Girder 2 at Pier 4, a crack was discovered measuring 1 inch horizontally (full thickness of the stiffener) x 1/4-inch vertically down the south or rear face of the stiffener. The use of non-destructive magnetic particle testing was used in the field to confirm the crack in the stiffener. The exterior face of Delta Girder 5 frame exhibits several location of surface corrosion to the frame stiffeners in the main spans. On the top face of delta girder frame splice connections, bolts and areas of the plate typically exhibit surface corrosion. Rust pitting (no section loss) had a much higher volume on Delta Girder 5 at Pier 3, especially at the pier. This condition is most likely not due to the corrosion of the girder steel but from drainage from the edge of the roadway above. Peeling paint is common on connection and/or splice plates, and lateral bracing connections to web stiffeners. Handrails attached to the top of delta girders exhibit isolated areas of rust.

#### **Stringers (LF)**

Stringers run longitudinal in the main girder Spans 3 through 11 are supported by the floorbeams. Stringer E between Floorbeams 10 and 11 in Span 4 exhibits a 6 foot long area of cohesion failure of the

paint finish coat exposing the primer coat. The stringers typically exhibit no significant deficiencies.

### **Floorbeams (LF)**

Floorbeams exist between the main girders in Spans 3 through 11 and are considered fracture critical. The bottom flanges of floorbeams at the end connections to girders exhibit heavy accumulations of pigeon debris at several locations. Along the top flange of the end floorbeam at Pier 11 in Span 11, bleeding rust from the connection hardware to the deck is staining the paint. Connection bolts and hardware supporting the overhead sign structure on the cantilevered sections of floorbeams exhibit surface corrosion and failing paint. Safety access components on the floorbeams exhibit isolated areas of surface corrosion. Safety access connections and hardware are missing or loose at isolated locations of floorbeams. Floorbeams typically exhibit no significant deficiencies.

### **Diaphragm/Cross Frames (EA)**

Cross frames exist in the approach spans of the bridge which includes Spans 1, 2, and 12 through 15. The cross frames for the main westbound bridge in Spans 12 through 15 and in Span 1 of Ramp A are primary members supporting curved girder sections of the superstructure. The following deficiencies were noted on the cross frames. The cross frames between girders exhibit no significant deficiencies

### **Lateral Bracing (EA)**

Lateral struts support the delta girder frames at Piers 3 through 10. Drainage pipe support brackets on the lateral bracing of the delta girders exhibit surface corrosion and failing paint typically.

### **Bearing Devices (EA)**

Polytron disc bearings exist at the piers and support the main girders. Elastomeric bearings support the girders in the approach spans. The following deficiencies were noted in the bearings:

**Westbound Main Bridge** - The following conditions exhibited no changes from the previous inspection: Elastomeric bearings for Girders 9 through 12 at the rear abutment exhibit 1/2 inches of expansion to the south and 1/2 inch of translation to the west. This condition appears tolerable at the given temperature when the measurements were taken. Girder 2 and 4 bearings at Pier 3 have shifted to the east with a 1-inch gap on the west side of the bearing at the guide bar and no gap at the east side. No explanation for this condition was observed during the inspection. Girder 1 bearing at Pier 9 has a torn neoprene pad between the east guide bar and masonry plate. Girder 3 bearing pedestal at Pier 10 exhibits a 3-foot long x 9-inch tall x 3-inch wide spall in the northeast corner. The masonry plate of the Girder 3 bearing at Pier 11 has rotated causing the southwest corner of the plate to be in contact with the west guide bar. Girder 5 and 6 bearings at Pier 14 have additional anchor bolts installed.

The following conditions were observed during the most recent inspection in 2020: On the east face of Girders 2 and 3 at Pier 2, Span 2, the anchor bolt nut is wearing into the end cross frame connection plate. The bolt nut has yet to significantly

wear into the plate. A similar condition exists at Girder 1, Pier 11, Span 12. Girder 5 fixed bearing at Pier 6 exhibits one loose anchor bolt along the west face exposing one thread of the bolt. Girder 7 bearing pedestal at Pier 14 exhibits a 2-inch x 3-inch x 1/4-inch deep spall at southeast corner of bearing. The spall is currently minor, and not undermining the bearing. The west anchor bolt of the Girders 6 through 10 bearings at the Forward Abutment are tilted to the north causing spalling to the abutment seat. The anchor bolt nut is beginning to wear into the bearing masonry plate. The anchor bolts were most likely painted after installation. This condition is likely from construction and misalignment of the anchor bolt and bolt slot in the sole plate. These spalls created under the bent anchor bolts are most likely occurred during construction when the crew tried to move the anchor bolts in place after improperly positioning the bolts next to the bearing. This all occurred prior to the application of the concrete protective coating for the abutment. The bearing pad of Girder 10 bearing at the Forward Abutment has rotated with the southwest corner extending 1/2 inch to the south and the southeast corner extending 3 inches to the north of south end of sole plate. Similar conditions exist for the bearings at Girders 2, 4, 5, and 9. Main span disc bearings typically exhibit corrosion along the edges of the mirrored faces of the guide bars. All the fixed bearings at piers exhibit 14 blind holes on the west and east faces of the bearing.

**Ramp A** - The following conditions exhibited no changes from the previous inspection: Girder 1 bearing of Ramp A at Pier 3 exhibits one missing bolt at the southwest corner. Girder 3 bearing of Ramp A at Pier 3 exhibits one missing bolt at the northwest corner. The following conditions were observed during the most recent inspection in 2020: For Girders 3, 4, and 5 at Pier 1 of Ramp A, an extra plate has been welded to both the east and west faces of the masonry plate.

Isolated bearing exhibit surface corrosion to the masonry plate and peeling paint below the polytron disc. Isolated stainless-steel surfaces of bearings have been painted over.

### **Protective Coating System (LF)**

The following conditions exhibited no changes from the previous inspection:

\_ The protective coating system is generally in very good condition with isolated locations of paint failure allowing surface corrosion. Isolated bearings exhibit areas of peeling paint exposing the base metal.

The following conditions were observed during the most recent inspection in 2020 - Floorbeam 0 connection to the east face of Girder 4 at Pier 6 exhibits a 1-square-foot area of cohesion failure exposing the primer coat on the underside of the floorbeam bottom flange and knee brace. A similar area of cohesion failure exists at the same location on the bottom of

the top flange of Girder 4. Stringer E between Floorbeams 10 and 11 in Span 4 exhibits a 6-foot-long area of cohesion failure of the paint finish coat exposing the primer coat.

### **Fatigue (EA)**

Cross

frame members are welded to the gusset plates in Ramp A and Spans 12 through 15 of the westbound main bridge creating a category E' fatigue prone detail at the weld terminations. The girders in north approach spans and Ramp A are curved and rely on the cross frames for rotational stability. This classification changed with the AASHTO Bridge Design Specifications, Eighth Edition and were not category E' at the time the bridge was designed. Both these locations of the bridge have curved girder spans and the cross frames are instrumental in the stability of the girders. A representative photo for each fatigue prone detail for each location is listed below with a photo. Tri-axial welds typically exist at the intersecting welds of the girder web and flanges; however, the intersecting part of the stiffener is cutout preventing the ends of the welds from intersecting and creating a category E or E' fatigue prone detail.

### **Utilities (LF)**

Light and electrical utilities exist throughout the structure. The following deficiencies were noted to the utilities: The utility conduit at the following locations is disconnected exposing the contained wires: Conduit between Girders 4 and 5 in Span 1. Conduit between on Pier 2 near Girder 5. Conduits between Girders 4 and 5 in Span 3 between Floorbeams 2 and 3. Conduit between Girders 4 and 5 and Floorbeams 6 and 7 in Span 7. Conduit between Girders 4 and 5 in Span 9 is separated at two locations.

Decorative

lights exist along the exteriors of the girders and at the piers throughout the bridge. The following locations exhibit lights that are non-functional: Light on east face of Girder 5 at Pier 3 below deck. Light on west face of Girder 1 at Pier 4 below deck. Light on west face of Girder 1 at Pier 5 below deck. Light on east end of Pier 6. Three lights are out at west end of Pier 8. Light on east face of Girder 5 at Pier 8 below deck. Light at west end of Pier 11. The hardware and supporting components for the decorative lights typically exhibit surface corrosion and failing paint.

## **Substructure**

### **Abutment Walls (LF)**

Abutment breastwalls exhibit hairline map cracking throughout. Cracks are spaced at 1 to 3 feet apart. Isolated cracks exhibit minor moisture staining. The west anchor bolt of the Girders 6 through 10 bearings at the Forward Abutment are tilted to the north causing spalling to the abutment seat. The anchor bolt nut is beginning to wear into the bearing masonry plate. The anchor bolts were most likely painted after installation. This condition is likely from construction

and misalignment of the anchor bolt and bolt slot in the sole plate. These spalls created under the bent anchor bolts are most likely occurred during construction when the crew tried to move the anchor bolts in place after improperly positioning the bolts next to the bearing. This all occurred prior to the application of the concrete protective coating for the abutment. The Rear Abutment seat for Ramp A is covered in moderate debris due to the torn joint above

### **Pier Caps (LF)**

Both cantilevers of the Pier 1 cap exhibit hairline map cracking throughout the end face of the cap. Cracking is beginning to wrap around into the north and south faces of the cantilever. Both ends of the Pier 2 cap exhibits scaling up to 1/2-inch deep to the north, south, east, and top faces. The west cantilever section of Pier 2 for Ramp A exhibits dense hairline map cracking in the underside of the cap. The Pier 4 cap beneath the girder 1 bearing pedestal exhibits light pattern map cracking with two small spalls at the southeast corner. Similar cracking is present at the Girder 2 bearing pedestal. The Pier 10 cap beneath Girder 2 on the north face exhibits one moderate width x 5-foot long vertical crack. The Pier 11 cap beneath Girder 2 on the north face exhibits one moderate width x 5 foot long vertical crack. The Pier 12 cap underside between columns 2 and 3, exhibit cracking up to 0.032-inch-wide. Pier caps exhibit isolated cracks up to 0.032-inch-wide, typically under the cantilever portions of the cap. Pier caps exhibit isolated areas of light honeycombing and small spalled patches in the top face at ends of caps. Bearing pedestals exhibit minor spalls along their edges at multiple locations throughout the bridge. Isolated bearing pedestals exhibit cracking in the pedestal with minor moisture staining leeching from the cracks. Some of the cracks exhibit rust staining.

### **Pier Columns/Bents (EA)**

#### **Pier 4**

The base of the west column of Pier 4 exhibits a 12-inch wide x 20-inch tall x 1-inch deep spall at the north end and a 6 inch diameter x 1-inch deep spall at the northeast corner 10 feet above the groundline. The east column, four feet above the ground exhibits a 4 inch wide x 8 inch tall x 1/2-inch deep spall at the southeast corner. The west face of the west column exhibits isolated vertical hairline cracks with minor efflorescence near the base of the column.

#### **Pier 5**

At the base of the west column at Pier 5, vegetation and small trees are growing around the column.

#### **Pier 6**

The interior of the west column of Pier 6 exhibits minor cracking in isolated locations with no other significant deficiencies. The lower access door to the interior of Pier 6 is broken and the door cannot be shut properly. It is currently locked shut with a bar jammed into the gap to keep it closed.

#### **Pier 7**

The east column of Pier 7 exhibits minor 1-square-foot impact spalls near the base.

#### **Pier 11**

In the interior of the pier, the top and middle section of the access ladder exhibits loose bolts for the attachment to the concrete column. This is due to the bolts having insufficient lengths for the attachment. Additionally, gaps are present between the ladder clip angle and pier column. In the interior of the pier, the top section exhibits multiple locations of exposed reinforcing steel. The areas measure 5 inches x 5 inches typically, however these areas are not spalled and were left exposed during construction. In the interior of the pier, the bottom section exhibits hairline horizontal cracks around the full perimeter of the column. Additionally, isolated vertical cracks extend from the horizontal cracks.

### **Typical Pier Column Comments**

Isolated hairline cracks exist throughout the pier columns. The cracks appear more significant due to the deterioration of the skim coating on all faces of the pier columns; however, these cracks are minor in width. Some cracks exhibit minor efflorescence. Cracks are typically spaced 2 feet apart and 0.013-inch-wide where map cracking occurs. Shallow honeycombing is common in the pier columns.

### **Pier Walls (LF)**

Piers

1 through 3 of Ramp A have pier walls supporting the pier caps. The following deficiencies were noted on the pier walls: The Pier 2 wall just below the cantilevered sections of the cap exhibits hairline map cracking throughout the end faces of the wall.

### **Backwalls (LF)**

The east end of the Rear Abutment backwall exhibits multiple horizontal hairline cracks spaced 1 to 2 feet vertically. Cracks do not extend past the fascia beam. Abutment backwalls exhibit isolated full height x up to 0.015-inch-wide vertical hairline cracks. Isolated cracks exhibit minor moisture staining.

### **Wingwalls (EA)**

The east edge of the center-north MSE wingwall at the interface with the Forward Abutment end wall exhibits an 8-foot tall corner spall with no exposed reinforcement and a large spall in the top cover panel near the interface with Ramp A. Abutment wingwalls exhibit minor cracks.

### **Substructure Scour (EA)**

An underwater inspection was not required to be performed for this inspection as all the substructure elements are accessible by land. No scour was noted during the inspection.

### **Slope Protection (EA)**

The  
embankment at the Rear Abutment of Ramp A exhibits minor

erosion as evidenced  
by the paint line in the MSE Wall Erosion is likely due to  
excessive drainage  
through the torn expansion joint at the abutment.

### Culvert

#### Inspector Comments - Waterway

##### Waterway Adequacy

##### Channel Hydraulic Opening (EA)

The hydraulic opening is sufficient with no danger of overtopping.

##### Channel

##### Channel Alignment (LF)

The Cuyahoga River meanders through downtown and beneath this structure. The river alignment is engineered at this location.

##### Channel Protection (LF)

Steel retaining walls exist along the river banks throughout the channel. Large diameter concrete riprap covers the embankment under Span 3. The channel protection exhibits no significant deficiencies.

##### Scour Critical

An underwater inspection was not required to be performed for this inspection as all the substructure elements are accessible by land. No scour was noted during the inspection.



ODOT District: 12

## CUY-00090-1532L\_(1809431)

Date Built: 12/01/2013

Major Maint: 01 - State Highway Agency

Facility Carried: IR 90 WB

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: CUY RIVER VALLEY

Traffic Under: 8 - Highway - waterway - railroad

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: CUY

.65 MI. E. OF JCT IR-71

Insp

Resp B:

Inspector

Kronander, Mike

Inspection Date

12/11/2020

Reviewer

Kronander, Mike

### Summary Recommendations

## Urgent

1. Seal cracks in the driving surface of the bridge deck and approaches.
2. Re-embed steel post anchor bolts that are working up and out of the concrete bridge railing for the main bridge and Ramp A, and approach railing for Ramp A.
3. Replace broken reflectors along the concrete bridge railing for Ramp A.
4. Reattach separate drainpipe between Girders 4 and 5 at Pier 3.
5. Seal leaking drainpipe on the east side of Pier 4.
6. Periodically clear vegetation and debris from deck scupper grate.
7. Periodically remove debris from modular and sealed expansion joint.
8. Reseal the Rear Abutment joint of Ramp A.
9. Repair the modular joint at Pier 2 and 11. Shim/replace bearing pads at the transverse separation beams not seated on the longitudinal support bars at Pier 11. Replace missing guides for the transverse separation beams at Piers 2 and 11. Foregoing this immediate repair could cause distress to the joint seal, longitudinal support bars, and other transverse separation beams.
10. Remove accumulations of pigeon debris along the bottom flanges of girders and floorbeams. Debris can retain moisture and accelerate corrosion of the surrounding steel.
11. Abrasively clean corroded locations at the intersection of the girder/delta girder leg radial stiffener weld termination at the curved bottom flange. Place caulk in the gap between the stiffener weld termination and bottom flange.
12. Replace missing anchor bolts for bearings under Girders 1 and 3 at Pier 3 for Ramp A.
13. Clean debris from the Rear Abutment seat for Ramp A.
14. Repair the lower access door into the west column of Pier 6 so it can close properly.
15. Tighten loose bolts or install bolts of sufficient length for the interior access ladder for Pier 11.
16. Repair the disconnected utility conduits in Spans 1, 3, 7, 8, and 9 at Pier 2.
17. Paint the decorative lighting hardware at the piers and along the exterior girders of the bridge.
18. Repair non-functioning lights at Piers 3, 4, 5, 6, 8, and 11.

## Monitor

1. Monitor the cracked railing at the northeast corner of Ramp A.
2. Monitor the deck and railing for additional cracking or widening of current cracks.
3. Monitor the modular joint seals at Piers 2 and 11 for small tears. Consider replacing the seals if the problem

persists.

4. Monitor the modular joint at Pier 11 for misalignment in the transverse separation beams and issues with the bearings under the longitudinal support bars.
5. Monitor the exterior girders along the top flange and delta girders at splice connections for surface corrosion and section loss. Currently no measurable section loss exists.
6. Monitor the crack in the top of the web stiffener on the east face of Delta girder 2 at Pier 4, Span 5 for growth.
7. Monitor the movement of the bearings for Girders 2 and 3 at Pier 2, and Girder 1 at Pier 11, Span 12 where the anchor bolt nut is wearing into the end cross frame connection plate. The bolt nut has yet to significantly wear into the plate.
8. Monitor the movement of the bearings at the Forward Abutment of the westbound structure for further distress to the bearing pads, anchor bolts or spalls in the bearing seat.
9. Monitor bearing pedestals for spalls that may eventually encroach upon the masonry plate undermining the bearing.
10. Monitor the girders and bearings for additional paint loss and cohesion failures between finish coat and primer coat.
11. Monitor category E' fatigue prone details at welded cross frame connections to the girders at the north approach spans (Spans 12 through 15) of the main westbound bridge and all spans (Spans 1 through 4) of Ramp for cracks or other deficiencies.
12. Monitor cracks in the pier caps, columns and walls for signs of moisture and/or efflorescence.

ODOT District: 12

### CUY-00090-1532L\_(1809431)

Date Built: 12/01/2013

Major Maint: 01 - State Highway Agency

Facility Carried: IR 90 WB

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: CUY RIVER VALLEY

Traffic Under: 8 - Highway - waterway - railroad

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: CUY

.65 MI. E. OF JCT IR-71

Insp Resp B:

Inspector Kronander, Mike

Inspection Date 12/11/2020

Reviewer Kronander, Mike

## National Bridge Inventory

Status 2 - FO

Sufficiency Rating

83.4

Identification	Inspections
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(1) State Code 395 - Ohio

(8) Structure File Number (SFN) 1809431

(7) Facility Carried IR 90 WB

(208) Route on the Bridge 10 - State (ODOT) (Toll Free)

(2) Highway Agency District 12

(3) County Code 18 - Cuyahoga

(209) Interstate Mile Marker 171.13

(201) Special Designation L

(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) 1 - INTERSTATE HIGHWAY

(C) Designated Level of Service (Highway Designation) 1 - MAINLINE

(D) Route Number 00090

(E) Directional Suffix 0 - NOT APPLICABLE

(6) Features Intersected CUY RIVER VALLEY

(9) Location .65 MI. E. OF JCT IR-71

(11) Milepoint 15.320

(12) Base Highway Network Inventory Route is on the Base Network

(13A) LRS Inventory Route 90

(13B) Subroute Number 0

(16) Latitude 41.48316 Degrees

(17) Longitude -81.69233 Degrees

(16.01) Latitude - Ohio 41.4831581688162

(17.01) Longitude - Ohio -81.6923299239426

(98A) Border Bridge State Code

(98B) Border Bridge State Percent Responsibility

(99) Border Bridge Struct No.

(90) Inspection Date 12/11/2020

(91) Designated Inspection Frequency 12

(92) Critical Feature Inspection

(93) CFI Date

A. Fracture Critical Detail Y 24 11/10/2020

B. Underwater Inspection N 0

C. Other Special Inspection N 0

D.01 Snooper Inspection Y 24 12/11/2020

E.01 Drone Inspection

### Condition

(58) Deck 8 - Very Good Condition

(58.01) Wearing Surface 7 - Good (1% distress)

(58.02) Expansion Joint 4- Poor (heavy leaking, offset)

(59) Superstructure 8 - Very Good Condition

(59.01) Protective Coating System (PCS) 7 - Good (1-5% corr.)

(60) Substructure 8 - Very Good Condition

(61) Channel & Channel Protection 9 - No noticeable deficiencies

(61.01) Scour 7 - Good

(62) Culvert N - Not Applicable

(67.01) General Appraisal 8 - Very Good Condition (no problems noted)

ODOT District: 12

### CUY-00090-1532L\_(1809431)

Date Built: 12/01/2013

Major Maint: 01 - State Highway Agency

Facility Carried: IR 90 WB

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: CUY RIVER VALLEY

Traffic Under: 8 - Highway - waterway - railroad

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: CUY

.65 MI. E. OF JCT IR-71

Insp Resp B:

Inspector Kronander, Mike

Inspection Date 12/11/2020

Reviewer Kronander, Mike

#### Structure Type and Material

#### Load Rating and Posting

(43) Main Structure Type

A. 3 - Steel

B. 03 - Girder and Floorbeam System

C. N- Not Applicable

(31) Design Load A - HL 93

(63) Operating Rating Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

(64) Operating Rating Factor 1.4

(44) Approach Type

A. 4 - Steel continuous

B. 02 - Stringer/Multi-beam or Girder

C. N- Not Applicable

(65) Inventory Rating Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

(66) Inventory Rating Factor 1

(41) Structure Open, Posted, or Closed to Traffic A - Open

(45) Number of Spans in Main Unit 9

(70) Bridge Posting 5 - Equal to or above legal loads

(46) Number of Approach Spans 6

(70.01) Date Posted

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

(70.02) Posted Sign Type

(107.01)

(70.03) Posted Weight

(108B) External Deck Protection 3 - Epoxy

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

(422) Wearing Surface Date 12/01/2013

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

#### Appraisal

(108A.01) N- Not Applicable

(67) Structural Evaluation 8 - Equal to present desirable criteria

(423) Wearing Surface Thickness 0.0 in

(68) Deck Geometry 5 - Somewhat better than minimum adequacy

(483) Protective Coating System Date 12/04/2013

(69) Underclearances, Horizontal and Vertical 3 - Intolerable - high priority of corrective action

#### Age of Service

(27) Year Built 2013

(71) Waterway Adequacy 9 - Bridge Above Flood Water Elevations

(263) Date Built 12/01/2013

(72) Approach Roadway Alignment 7 - Better than present minimum criteria

(106) Year Reconstructed 0000

(36) Traffic Safety Feature

(264) Major Reconstruction Date

(42) Type of Service  
On 1 - Highway

A. Bridge Railings: 1 - Meets acceptable standards

B. Transitions: 1 - Meets acceptable standards

C. Approach Guardrail 1 - Meets acceptable standards

D. Approach Guardrail Ends 1 - Meets acceptable standards

Under 8 - Highway - waterway - railroad

(28) Lanes On 06 Under 10

(113) Scour Critical 8 - Stable for scour conditions

(29) Average Daily Traffic 64518 (30) ADT Yr. 2015

(109) Truck Percentage 4 % Truck

(114) Future Avg Daily Traffic 89551 (115) Future ADT Yr. 2038

(19) Bypass Detour Length 2 mi.

ODOT District: 12

### CUY-00090-1532L\_(1809431)

Date Built: 12/01/2013

Major Maint: 01 - State Highway Agency

Facility Carried: IR 90 WB

Traffic On: 1 - Highway

Rehab Date:

Routine Maint: 01 - State Highway Agency

Feature Inters: CUY RIVER VALLEY

Traffic Under: 8 - Highway - waterway - railroad

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: CUY

.65 MI. E. OF JCT IR-71

Insp  
Resp B:

Inspector Kronander, Mike

Inspection Date 12/11/2020

Reviewer Kronander, Mike

Classification		Geometric Data	
(112) NBIS Bridge	Yes	(48) Longest Span	380.0 Ft.
(104) Highway System of the Inventory Route	1 - Structure/Route is on NHS	(49) Structure Length	4346.6 Ft.
(26) Functional Classification of Inventory Route	11 - Urban - Principal Arterial - Interstate	(50A) Curb/Sidewalk Left Side - Width	0 Ft.
		(50B) Curb/Sidewalk Right Side - Width	0 Ft.
(100) Strahnet Highway Designation	Is on an Interstate STRAHNET route	(51) Brdg Roadway Width Curb-to-Curb	88.0 Ft.
(101) Parallel Structure Designation	L - Left structure (South or West)	(52) Deck Width, Out-to-Out	140.0 Ft.
(102) Direction of Traffic	2-way traffic	(32) Approach Roadway Width	84.0 Ft.
(103) Temporary Structure Design		(33) Bridge Median	3 - Closed median with non-mountable barriers
(105) Federal Lands Highways	Not Applicable	(34) Skew	9 Deg.
(110) Designated National Network	Inventory route on National Truck Network	(35) Structure Flared	1 - Yes, flared
(20) Toll	3 - On Free Road	<b>Clearances</b>	
(225) Routine Maintenance Responsibility	A. 01 - State Highway Agency	(10) Practical Maximum Vertical Clearance	99 Ft.
	B.	(53) Minimum Vertical Clearance Over Bridge Roadway	99 Ft.
(21) Maintenance Responsibility	01 - State Highway Agency	(47) Total Horizontal Clearance (Inventory Route)	84 Ft.
(21B) Major Maint. Responsibility B			
(221) Inspection Program Responsibility	A. 01 - State Highway Agency	(54) Minimum Vertical Under Clearance	B. 15.83 Ft.
	B.	A. H - Highway beneath structure	
(22) Owner	01 - State Highway Agency	(56) Minimum Lateral Under Clearance on Left	0 Ft.
(37) Historical Significance	5 - Not eligible	(55) Minimum Lateral Under Clearance on Right	B. 0 Ft.
		A. H - Highway beneath structure	

Navigation Data	
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(38) Navigation Control	1 - Navigation control on waterway (bridge permit required)
(39) Nav Vert Clearance	110.0 Ft.
(40) Nav Horizontal Clearance	48.3 Ft.
(111) Pier or Abutment Protection	1 - Navigation protection not required
(116) Minimum Navigation Vertical Clearance, Vertical Lift Bridge	0.0 Ft.

#### Inventory Route Clearances

NBI 005A: On/Under                      1: Route carried "on" the structure  
 NBI 005D: Route No.                      00090

	<u>Cardinal Direction</u>	<u>Non-Cardinal Direction</u>
(336) Minimum Vertical Clearance on IR	99 Ft.	0 Ft.
(335) Minimum Horizontal Clearance on IR	84 Ft.	0 Ft.

Inspector: Mike Kronander  
 Inspection Date: 12/11/2020

Structure Number: 1809431  
 Facility Carried: IR 90 WB

Bridge Inspection Report

Element Inspection

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
<b>12 - Reinforced Concrete Deck</b>	3 - Mod.	608522	sq. ft.	607465	1000	41	16
805 - Wearing Surface - Monolithic Concrete		382500	sq. ft.	382200	300	0	0
<b>107 - Steel Open Girder/Beam</b>	3 - Mod.	27532	ft.	27282	250	0	0
515 - Steel Protective Coating		999999	sq. ft.	989999	10000	0	0
<b>113 - Steel Stringer</b>	3 - Mod.	13592	ft.	13592	0	0	0
<b>152 - Steel Floor Beam</b>	3 - Mod.	12682	ft.	12582	100	0	0
<b>205 - Reinforced Concrete Column</b>	3 - Mod.	39	each	34	4	1	0
<b>210 - Reinforced Concrete Pier Wall</b>	3 - Mod.	112	ft.	112	0	0	0
<b>215 - Reinforced Concrete Abutment</b>	3 - Mod.	301	ft.	280	18	3	0
<b>234 - Reinforced Concrete Pier Cap</b>	3 - Mod.	1465	ft.	1415	50	0	0
<b>300 - Strip Seal Expansion Joint</b>	3 - Mod.	230	ft.	0	180	0	50
<b>303 - Assembly Joint with Seal</b>	3 - Mod.	230	ft.	0	230	0	0
<b>310 - Elastomeric Bearing</b>	3 - Mod.	86	each	86	0	0	0
<b>315 - Disk Bearing</b>	3 - Mod.	79	each	57	20	2	0
<b>321 - Reinforced Concrete Approach Slab</b>	3 - Mod.	11900	sq. ft.	11750	100	50	0
<b>333 - Other Bridge Railing</b>	3 - Mod.	8694	ft.	8030	650	14	0
515 - Steel Protective Coating		8694	sq. ft.	8694	0	0	0
<b>815 - Drainage</b>	3 - Mod.	22	each	12	8	2	0
<b>830 - Abutment Backwall</b>	3 - Mod.	295	ft.	275	20	0	0
<b>840 - Approach Slab: Termination or Joint</b>	3 - Mod.	84	ft.	74	10	0	0
<b>901 - Vertical Clearance Sign</b>	3 - Mod.	1	each	1	0	0	0

# Ohio Bridge Inspection Summary Report

CUY-00090-1532L (1809431)

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

5A: Inventory Route 1 00090  
 7: Facility On IR 90 WB  
 6: Feature Ints CUY RIVER VALLEY  
 9: Location .65 MI. E. OF JCT IR-71

## Condition

**58: Deck** **8 - Very Good Condition**  
 58.01 Wearing Surface 7 - Good (1% distress)  
 58.02 Joint 4- Poor (heavy leaking, offset)  
**59: Superstructure** **8 - Very Good Condition**  
 59.01 Paint & PCS 7 - Good (1-5% corr.)  
**60: Substructure** **8 - Very Good Condition**  
**61: Channel** **9**  
 61.01 Scour **7 - Good**  
**62: Culverts** **N - Not Applicable**

67.01 GA 8

## Appraisal

Sufficiency Rating 83.4 SD/FO 2 - FO  
 36: Rail, Tr, Gd, Term Std 1 1 1 1  
 72: Approach Alignment 7 - Better than present minimum criteria  
 113: Scour Critical 8 - Stable for scour conditions  
 71: Waterway Adequacy 9 - Bridge Above Flood Water Elevations

## Geometric

48: Max Span Length (ft) 380.0  
 49: Structure Length (ft) 4346.6  
 52: Deck Width, Out-To-Out (ft) 140.0  
 424: Deck Area (sf) 608524  
 32: Appr Roadway Width (ft) 84.0  
 51: Road Width, Curb-Curb (ft) 88.0  
 50A: Curb/SW Width: Left (ft) 0  
 50A: Curb/SW Width: Right (ft) 0  
 34: Skew (deg) 9  
 33: Bridge Median 3 - Closed median with non-mountable barriers  
 54B: Min Vert Underclearance (ft) 15.83  
 336A: Min Vert Clrnce IR Cardinal (ft) 99  
 336B: Min V Clr IR Non-Cardinal (ft) 0  
 578: Culvert Length (ft) 0

## 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 07/01/2011  
 63: Analysis Method 8 - Load and Resistance Factor Rating (LRFR) rating report by rating factor (RF) method using HL-93 loadings.

## Structure Type

43: Bridge Type 3 - Steel  
 03 - Girder and Floorbeam System  
 N- Not Applicable  
 45: Spans Main / Approach 9 / 6  
 107: Deck Type 1 - Concrete Cast-in-Place  
 408: Composite Deck Y - Composite Construction  
 414A Joint Type 1 A - Modular  
 414B: Joint Type 2 8 - Elastomeric Strip Seal  
 108A: Wearing Surface 1 - Monolithic Concrete (concurrently placed with structural deck)  
 N- Not Applicable

422: WS Date 12/01/2013  
 423: WS Thick (in) 0.0  
 482: Protective Coating 9 - Paint System IZEU  
 483: PCS Date 12/04/2013  
 453: Bearing Type 1 7 - Disk  
 455: Bearing Type 2 C - Elastomeric (laminated)  
 528: Foundn: Abut Fwd 1 - Steel H Piles (Other size)  
 533: Foundn: Abut Rear 1 - Steel H Piles (Other Size)  
 536: Foundn: Pier 1 0 - Other  
 539: Foundn: Pier 2 0 - Other

## Age and Service

27: Year Built/ 106 Rehab 2013 / 0000  
 42A: Service On 1 - Highway  
 42B: Service Under 8 - Highway - waterway - railroad  
 28A: Lanes on 06  
 28B: Lanes Under 10  
 19: Bypass Length 2  
 29: ADT 64518  
 109: % Trucks (%) 4

## Inspections

		Months	
90: Routine Insp.		12	12/11/2020
92A: FCM Insp.	Y	24	11/10/2020
92B: Dive Insp.	N	0	
92C: Special Insp.	N	0	
92D: UBIT Insp.	Y	24	12/11/2020
92E: Drone Insp.			

Inspector Kronander, Mike