Bridge Inspection Report

056B00181N
Inspector: Stephanie Stoops
Entered by: SSTOOPS
12/11/2024
Standard (24 months)

IDENTIFICATION

Structure Num (8):	056B00181N
NBI Number	056B00181N
Structure Name:	
Location (9):	0.15 MI N OF US 60A
Carries (7):	I-65
Type of Service (42A):	1 Highway
Feature Crossed (6):	UNIVERSITY BLVD
Type of Service (42B):	1 Highway
Placecode (4):	Not Applicable
County (3):	Jefferson (056)
State (1):	21 Kentucky
Admin Area:	Inventory
District:	District 5
Latitude (16):	38° 12' 52"
Longitude (17):	85° 45' 9"
Owner (22):	State Highway Agency
Maint. Resp. (21):	State Highway Agency

Year Built (27):	1957	**Border State (98A):**	Not Applicable (P)
Year Recon (106):	1982	**Border Number (99):**	
		% Responsibility (98B):	

Fair **Heath Index:** 79.50

SubStd: No **SubStd Reason:** Not Sub-Standa

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	12/11/2024	12/11/2026
Element	24	12/11/2024	12/11/2026
Fracture Critical (A)		1/1/1901	1/1/1901
Underwater (B)		1/1/1901	1/1/1901
Special Insp (C)		1/24/2011	1/1/1901

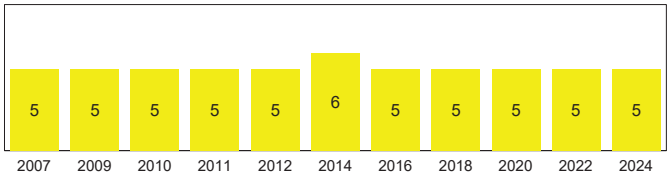
LOAD RATING AND POSTING

Posting Status(41):	A Open, no restriction
Posting (70):	5 At/Above Legal Loads
Signs Posted Cardinal:	No
Signs Posted Non-Cardinal:	No
Recmd Date:	**Posted Date:**

Required Postings (Tons.)		Field Postings (Tons.)	
Gross:		**Gross:**	
Truck Type 1:		**Truck Type 1:**	
Truck Type 2:		**Truck Type 2:**	
Truck Type 3:		**Truck Type 3:**	
Truck Type 4:		**Truck Type 4:**	
SUV 5:		**SUV 5:**	
SUV 6:		**SUV 6:**	
SUV 7:		**SUV 7:**	
EV Single Axle:		**EV Single Axle:**	
EV Tadem Axle:		**EV Tadem Axle:**	
EV Gross:		**EV Gross:**	

DECK GEOMETRY

Deck Geometry (68):	7 Above Min Criteria
Deck Area:	13,159.00 ft²
Deck Type (107):	1 Concrete-Cast-in-Place
Wearing Surface (108A):	6 Bituminous
Membrane (108B):	0 None
Deck Protection (108C):	1 Epoxy Coated Reinforci
Approach Roadway width (32):	95.00 ft.
Width Curb to Curb (51):	95.00 ft.
O. to O. Width (52):	101.30 ft.
Curb / Sidewalk Width L (50A):	0.00 ft.
Curb / Sidewalk Width R (50B):	0.00 ft.
Median (33):	3 Closed Med w/Barriers

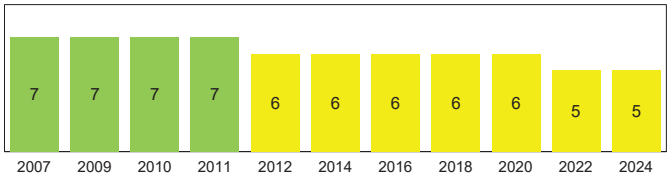


DECK CONDITION

Deck Rating (58):	5 Fair
Bridge Rail (36A):	0 Substandard
Transition (36B):	0 Substandard
Approach Rail (36C):	0 Substandard
Approach Rail Ends (36D):	0 Substandard

SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	3
# of Approach Spans (46):	0
Main Material (43 A):	2 Concrete Continuous
Main Design (43 B):	04 Tee Beam
Max Span Length (48):	58.00 ft.
Structure Length (49):	129.90 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	0°
Structure Flared (35):	0 No flare
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	8 Equal Desirable Crit

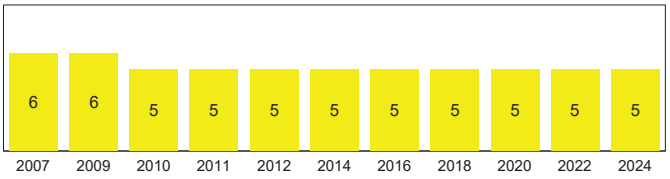


SUPERSTRUCTURE CONDITION

Superstructure Rating (59):	5 Fair
Structure Evaluation (67):	5 Above Min Tolerable

SUBSTRUCTURE GEOMETRY

Navigation Control (38):	NA-no waterway
Nav Vert Clearance (39):	0.00 ft.
Nav Horiz Clearance (40):	0.00 ft.
Pier Protection (111):	Not Applicable (P)
Lift Bridge Vertical Clearance (116):	
Scour Rating (113):	N Not Over Waterway
Waterway Adequacy (71):	N Not applicable



SUBSTRUCTURE CONDITION

Substructure Rating (60):	5 Fair
Channel Rating (61):	N N/A (NBI)

KYTC FIELDS

Overlay:	Yes	**Scour Observed:**	N/A
Overlay Type:	L T Polymer Asph	**Scour Risk :**	N/A
Overylay Thickness:	2.25 in.	**Scour Analysis/Assessment :**	Not Required
Overlay Year:	2012	**Scour POA :**	Not Required
Cross Section:	Not Required	**Scour POA Date :**	
Cross Section Date:		**Next Cross Section Due Date :**	

1ST NON-CARD ROUTE ON: I-65 NC

ROADWAY LOCATION

Pos Prefix (5A):	1st Non-Card Route
Kind of Hwy (5B):	1 Interstate Hwy
Route Num (5D):	00065
LRS Route (13A/B):	IO0065_000/00
Milepost (11):	133.06 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	6
Detour Length (19):	9.00 mi

ROADWAY CLASSIFICATION

Funct Class (26):	11 Urban Interstate
Level Service (5C):	1 Mainline
NHS (104):	1 On the NHS
Defense Hwy (100):	1 On Interstate STRAHNET
Toll Facility (20):	3 On free road
ADT (29):	122,958 Cars/Day
Pct Trucks (109):	16.00%
ADT Year (30):	2024

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	13.60 ft.
Horizontal (47):	47.50 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	8.00 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	3 Intolerable - Correct

ROUTE UNDER STRUCTURE: UNIVERSITY BLVD

ROADWAY LOCATION

Pos Prefix (5A):	One Route Under
Kind of Hwy (5B):	5 City Street
Route Num (5D):	01233
LRS Route (13A/B):	
Milepost (11):	0.08 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	2
Detour Length (19):	1.00 mi

ROADWAY CLASSIFICATION

Funct Class (26):	16 Urban Minor Arterial
Level Service (5C):	0 None of the below
NHS (104):	0 Not on NHS
Defense Hwy (100):	0 Not a STRAHNET hwy
Toll Facility (20):	3 On free road
ADT (29):	10,439 Cars/Day
Pct Trucks (109):	0.00%
ADT Year (30):	2024

CLEARANCES

Vertical (10):	14.10 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	13.60 ft.
Horizontal (47):	38.00 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	8.00 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	3 Intolerable - Correct

ROUTE ON STRUCTURE: I-65

ROADWAY LOCATION

Pos Prefix (5A):	Route On Structure
Kind of Hwy (5B):	1 Interstate Hwy
Route Num (5D):	00065
LRS Route (13A/B):	IO0065_000/00
Milepost (11):	133.06 mi
Suffix (5E):	0 N/A (NBI)
Lanes On (28A):	6
Detour Length (19):	9.00 mi

ROADWAY CLASSIFICATION

Funct Class (26):	11 Urban Interstate
Level Service (5C):	1 Mainline
NHS (104):	1 On the NHS
Defense Hwy (100):	1 On Interstate STRAHNET
Toll Facility (20):	3 On free road
ADT (29):	122,958 Cars/Day
Pct Trucks (109):	16.00%
ADT Year (30):	2024

CLEARANCES

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Underclearance (69):	3 Intolerable - Correct

STRUCTURE NOTES

-MINIMUM VERTICAL UNDER-CLEARANCE MEASURED AT 13'-8". SHOULD BE POSTED AT 13'-5".

-Warnock was previously widened to three lanes. The new driving lanes are now partially under the coped areas of the RCDG beams, and this has caused the minimum vertical clearance to be reduced to 13'-8" in WB direction (NE corner of structure) and 14'-2" in EB direction (SE corner of structure).

-In 2023, AECOM used infrared thermography to identify and locate areas of concrete delamination and overlay debonding in the deck, plus they obtained core samples for testing to determine chloride ion levels in the concrete. See Media tab for results.

-2017 project (CID 174301) included asphalt plug joints.

-2012 project (CID 121305) included the following: 1. 2.25" asphalt waterproofing mix overlay (low temp. product by "Road Science" - not Rosphalt), 2. median barriers were replaced with single taller barrier, 3. asphalt plug joints were installed over the existing joints, 4. abutments were concrete patched in places, 5. masonry plates were replaced at the abutments, and 6. roller bearings at the abutments (36 total) were replaced with elastomeric bearing pads.

-Removed 1/4" of overlay as part of the 2012 repair contract, according to the plans. TK 10/26/2012

-Latex overlay in 1981.

-Original structure built in 1957 (DN 12489) consisted of two bridges with 5 beam lines each. Structure was widened around 1969 (DN 17828) to the inside of both by adding 2 beam lines to each NB and SB directions creating a single structure. Bridge was widened again in 1982 (DN 18926) by adding 2 beam lines to each side of the bridge for a total of 18 beam lines.

INSPECTION NOTES

-BRIDGE IS POSTED AT 13'-5" AT BOTH APPROACHES. SAS 12/11/2024

-Additional signs are in place at I-65 NB off-ramp and on Arthur St just north of University Blvd.

-There is vegetation growth restricting visibility of the minimum vertical clearance sign on Arthur Street.

-Routine inspection performed by Stephanie Stoops and Marcella Kennedy.

SCOUR NOTES

LOAD RATING NOTES

07/02/2021. Controlling member is an interior beam with asphalt overlay, barriers changed and with provision for FWS.JCG

COMPLIANCE NOTES

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
16	Re Conc Top Flange	3	12/11/2024	13,160.00	sq.ft	7,781.00	5,369.00	10.00	0.00

The top surface is not visible for inspection due to asphalt overlay. However, an infrared thermographic deck scan was completed by AECOM. Scan indicated small areas of delamination scattered in Span 2 and in the SB right lane in Span 1. The soffit has transverse cracking with efflorescence (Span 2 being the worst case with cracks spaced less than 3 feet apart for much of the span) and sound patching in Span 3 Bays 6 and 7. There are cracks with heavy efflorescence, spalls with exposed reinforcement, and unsound patching near the abutments at the longitudinal joint between Beams 9 and 10.

813	AC Wearing Surf w/ Membrane	3	12/11/2024	12,343.00	sq.ft	12,309.00	0.00	34.00	0.00

No significant deficiencies visually noted in 2012 asphalt overlay. However a 2023 infrared thermographic deck scan completed by AECOM noted 34 SF of debonded overlay along the Abutment 1 joint in the center and left SB lane and the right NB lane, and along Abutment 4 joint in the center and right NB and SB lanes.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
110	Re Conc Opn Girder/Beam	3	12/11/2024	2,339.00	ft	1,225.00	1,100.00	14.00	0.00

Several beams have sound patching along the top of the webs in all spans, with a 3-foot long unsound area in Beam 12 near Abutment 4. Beams in Span 2 have scattered transverse cracks with some efflorescence. At Abutment 1, Beam 10 has a 12 inch (L) x 4-inch (H) x 1.75-inch (D) spall above the bearing; there are similar spalls at Abutment 4 at Beams 5, 12, 13, and 15. In Span 2, Beam 18 has scrapes and spalls from impact damage, six are greater than 6-inch diameter or 1 inch deep. Beam 16 at Abutment 4 has moderate cracking. Exterior beams have been painted by the University of Louisville.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
205	Re Conc Column	3	12/11/2024	16.00	each	10.00	6.00	0.00	0.00

The pier columns have been painted by the University of Louisville, somewhat restricting visual inspection. There are moderate vertical cracks in Pier 2-Columns 3, 6, and 7 and Pier 3-Columns 3 and 7. Pier 3-Column 5 has a small spall on the SW corner. Some locations of paint cracking do not have significant cracks in the concrete.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
215	Re Conc Abutment	3	12/11/2024	254.00	ft	39.00	127.00	88.00	0.00

Quantity includes parallel wingwalls at the abutments. The abutments have moderate width horizontal cracking below the beam seats and the backwalls have widespread patching and cracking. Abutments have deep spalls with exposed rebar at the ends of the original abutments (west side of Beam 7 and east side of Beam 12). Abutment 1 also has a wide horizontal crack with a delamination in the cap between Beams 15 and 16. Abutment 4 has more widespread spalling with exposed rebar in the beam seat and the backwall, especially in the east half. There is a wide crack and spall in the Abutment 4 backwall at the west end, and the NW wingwall it tilted out, measuring 1.5 inch lateral offset at the top of the railing.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
234	Re Conc Pier Cap	3	12/11/2024	204.00	ft	204.00	0.00	0.00	0.00

The pier caps have been painted by the University of Louisville, somewhat restricting visual inspection. While paint is cracking in places, no significant concrete deficiencies were observed.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
306	Other Joint	3	12/11/2024	200.00	ft	0.00	26.00	30.00	144.00

The asphalt plug joints are located at the abutments and were installed over the existing joints in 2012, and redone in 2017. Plug joints have failed nearly throughout the traffic lanes, exposing portions of the original joints and allowing free flow of water through the joints. Deterioration is less in the shoulders, with a few areas of moderate to wide cracking.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
310	Elastomeric Bearing	3	12/11/2024	36.00	each	36.00	0.00	0.00	0.00

The elastomeric bearings are located at Abutments 1 and 4. No deficiencies noted with pads, though several of the bearing plates have surface corrosion.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
311	Moveable Bearing	3	12/11/2024	18.00	each	0.00	18.00	0.00	0.00

The rocker bearings at Pier 3 have surface corrosion scattered throughout. The bearings within original bridge section are in expansion inconsistent with temperature around 32-degrees F and the other bearings are nearly vertical at the median and exterior widened portions. Pier 3 Bearing 1 has a loose anchor bolt nut.

515	Steel Protective Coating	3	12/11/2024	126.00	sq.ft	0.00	64.00	30.00	32.00

Steel protective coating has dulling and has limited no effectiveness at areas of corrosion.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
313	Fixed Bearing	3	12/11/2024	18.00	each	0.00	18.00	0.00	0.00

The fixed bearings at Pier 2 have surface corrosion scattered throughout.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
515	Steel Protective Coating	3	12/11/2024	126.00	sq.ft	0.00	76.00	32.00	18.00

Steel protective coating has dulling, with areas of limited to no effectiveness at areas of corrosion.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
331	Re Conc Bridge Railing	3	12/11/2024	390.00	ft	325.00	65.00	0.00	0.00

Barriers have moderate width vertical cracking spaced at approximately 6 feet apart throughout.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
850	2nd Elem	3	12/11/2024	1.00	each	0.00	0.00	1.00	0.00

The diaphragms have moderate width to wide cracks and spalls at the abutments; most have been patched but many patches are unsound. The worst deterioration is below the longitudinal joint.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
853	Utilities	3	12/11/2024	1.00	each	0.00	1.00	0.00	0.00

There is a damaged utility access cover in the east railing near Abutment 1.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
857	Embankment Erosion	3	12/11/2024	1.00	each	0.00	1.00	0.00	0.00

The Abutment 4 slope protection is cracking and spalled at the between Beams 12 and 14. There is also minor undermining at the ends of the slope protection.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
859	Vegetation	3	12/11/2024	1.00	each	0.00	1.00	0.00	0.00

Vegetation growth is restricting visibility of vertical clearance sign on Arthur St.

Looking north along I-65 NB

Asphalt plug joint over Abutment 1 NB

Joint and pavement over the Abutment 1 backwall in the center NB lane is breaking up.

Asphalt plug joint over Abutment 4 NB

Debris accumulating in the NE shoulder.

Looking south along I-65 NB

Looking north along I-65 SB

Asphalt plug joint over Abutment 1 SB

Asphalt plug joint over Abutment 4 SB

Looking south along I-65 SB

West Profile

East Profile

Abutment 1

Abutments have spalling along the beam seats and backwalls. Abutment 1 at Girder 7 shown.

Close-up of deep spalling in Abutment 1 west of Girder 7 at end of original abutment.

Failing patching in the backwall of Abutment 1 at the I-65 centerline.

Girder 10 has a spall at the bearing at Abutment 1 end.

End diaphragms have numerous spalls and cracks. Abutment 1 end diaphragm between Girders 15 and 16 shown.

Span 1 SB

Span 1 NB

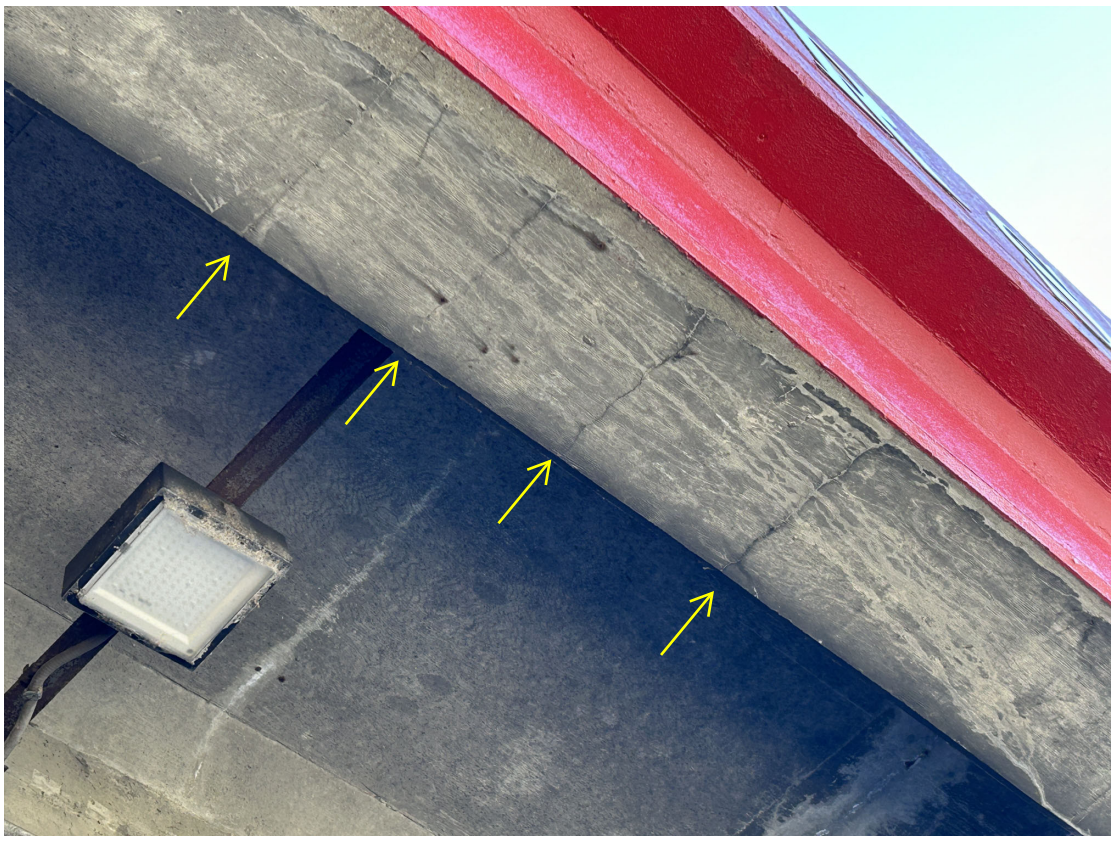
Several girders have sound concrete patching along the top of the webs in all three spans. Example along Girder 7 in Span 1.

Pier 2 south face

Typical fixed bearing at Pier 2 with some surface corrosion.

Pier 2 north face

Dirt accumulating along the sidewalk at Pier 2.



Girder 1 in Span 2 has traverse cracks in the bottom flange spaced just over 1 foot apart.

Sound concrete patches along the tops of the girder webs in Span 2, plus transverse cracking in the deck soffit.

East end of Span 2 soffit showing transverse cracks with efflorescence spaced less than 3 feet apart.

Girder 18 in Span 2 has impact spalls and scrapes.

Another view of Girder 18 in Span 2.

Pier 3 south face

Pier 3-Column 7 has a small spall near the bottom.

Pier 3 north face

Pier 3 bearings are expanded towards Abutment 4, inconsistent with ~32 degree weather.

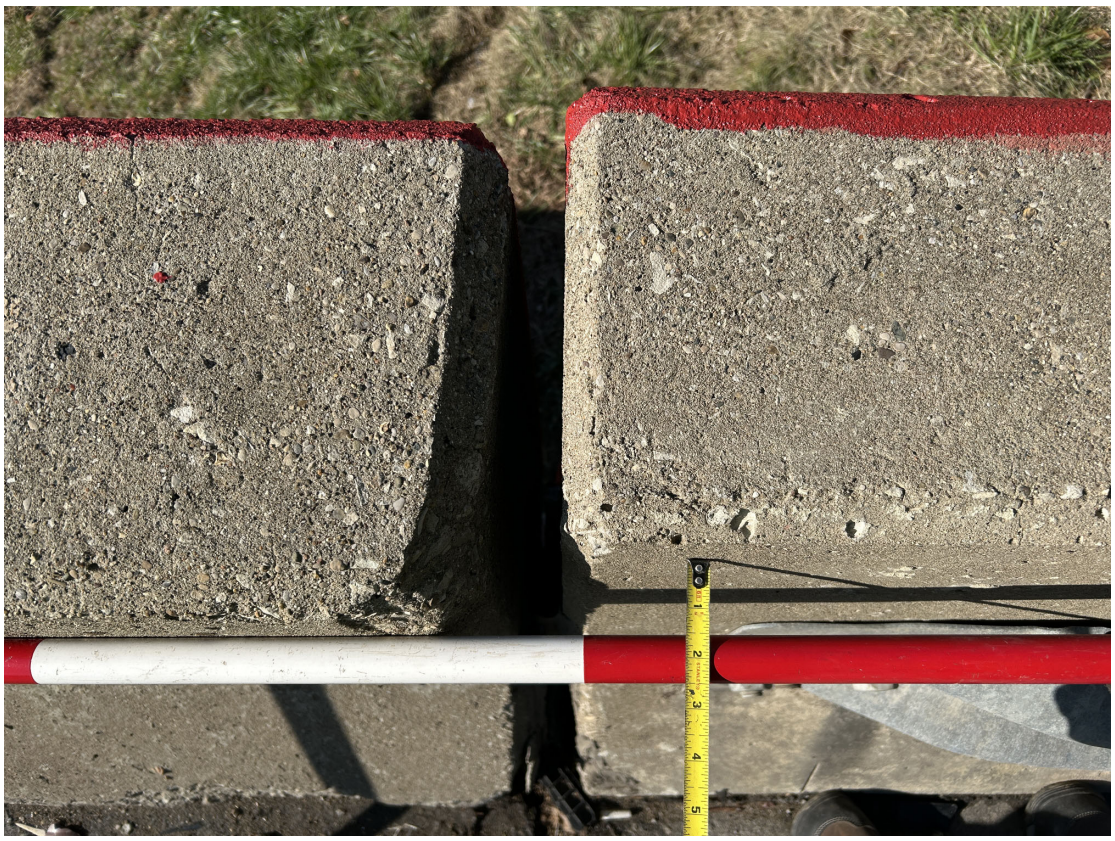
Pier 3-Girder 1 bearing has a loose nut on the NW anchor bolt.

Span 3

Abutment 4

NW wingwall is tilted out and there is spalling at the abutment backwall.

Spalling and cracking at the west end of the Abutment 4 backwall.



NW wingwall is tilted out 1.5 inches at the top of the rail.

Girder 5 has a spall at the Abutment 4 bearing.

Abutment 4 is spalling at the ends of the original length. Spall between Girders 6 and 7 shown.

Spalling and failing patch in the Abutment 4 backwall at the I-65 centerline.

Close-up

Girder 9 has a longitudinal crack in the east face near Abutment 4.

close-up

Wide cracking in Abutment 4 seat between Girders 12 and 13.

Vertical clearance sign along the I-65 NB off-ramp.

Vertical clearance sign along Arthur St is in place, though is partailly obstructed by vegetation.

Arthur St posting sign.

Vertical clearance sign in place for EB traffic.

Vertical clearance sign in place for WB traffic.