Bridge Inspection Report

056B00205N
Inspector: Marcella Kennedy
Entered by: MKENNEDY
12/04/2024
Standard (24 months)

IDENTIFICATION

Structure Num (8):	056B00205N
NBI Number	056B00205N
Structure Name:	
Location (9):	500 FT N OF CRITTENDEN DR
Carries (7):	I-65
Type of Service (42A):	1 Highway
Feature Crossed (6):	NS RAILROAD
Type of Service (42B):	2 Railroad
Placecode (4):	Not Applicable
County (3):	Jefferson (056)
State (1):	21 Kentucky
Admin Area:	Inventory
District:	District 5
Latitude (16):	38° 12' 31"
Longitude (17):	85° 45' 8"
Owner (22):	State Highway Agency
Maint. Resp. (21):	State Highway Agency
Year Built (27):	1957
Year Recon (106):	1982
Border State (98A):	Not Applicable (P)
Border Number (99):	
% Responsibility (98B):	

Fair **Heath Index:** 88.25

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

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	12/4/2024	12/4/2026
Element	24	12/4/2024	12/4/2026
Fracture Critical (A)		1/1/1901	1/1/1901
Underwater (B)		1/1/1901	1/1/1901
Special Insp (C)		1/1/1901	1/1/1901

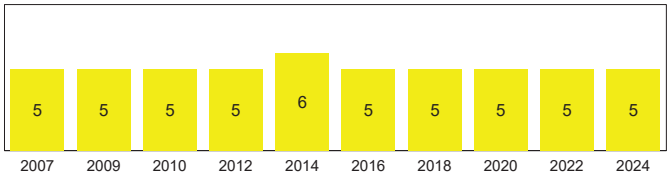
LOAD RATING AND POSTING

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):	9 Above Desirable Crit
Deck Area:	41,029.65 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):	103.30 ft.
Width Curb to Curb (51):	103.30 ft.
O. to O. Width (52):	109.50 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

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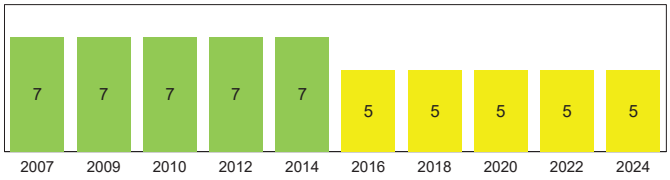
SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	4
# of Approach Spans (46):	0
Main Material (43 A):	4 Steel Continuous
Main Design (43 B):	02 Stringer/Girder
Max Span Length (48):	105.20 ft.
Structure Length (49):	374.70 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	48°
Structure Flared (35):	1 Yes, flared
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	8 Equal Desirable Crit

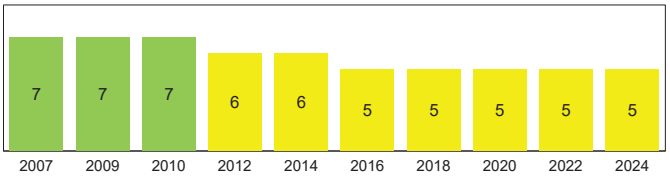


SUPERSTRUCTURE CONDITION

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):	132.64 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	6
Detour Length (19):	

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):	129,829 Cars/Day
Pct Trucks (109):	12.00%
ADT Year (30):	2022

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	R Railroad beneath struc
Undrclearnce (54B):	22.42 ft.
Horizontal (47):	55.70 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	16.00 ft.
Horiz Ref (55A):	R Railroad beneath struc
Underclearance (69):	6 Equal Minimum

2ND NON-CARD ROUTE ON: I-65 RAMP to KY 1631

ROADWAY LOCATION

Pos Prefix (5A):	2nd Non-Card Route
Kind of Hwy (5B):	1 Interstate Hwy
Route Num (5D):	00065
LRS Route (13A/B):	
Milepost (11):	0.02 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	1
Detour Length (19):	

ROADWAY CLASSIFICATION

Funct Class (26):	11 Urban Interstate
Level Service (5C):	7 Ramp
NHS (104):	1 On the NHS
Defense Hwy (100):	1 On Interstate STRAHNET
Toll Facility (20):	3 On free road
ADT (29):	5,795 Cars/Day
Pct Trucks (109):	0.00%
ADT Year (30):	2024

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	R Railroad beneath struc
Undrclearnce (54B):	22.42 ft.
Horizontal (47):	55.70 ft.
Min Lat Left (56):	0.00 ft.
Min Lat Right (55B):	16.00 ft.
Horiz Ref (55A):	R Railroad beneath struc
Underclearance (69):	6 Equal Minimum

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):	132.65 mi
Suffix (5E):	0 N/A (NBI)
Lanes On (28A):	6
Detour Length (19):	16.00 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):	129,829 Cars/Day
Pct Trucks (109):	12.00%
ADT Year (30):	2022

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	R Railroad beneath struc
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Min Lat Right (55B):	16.00 ft.
Horiz Ref (55A):	R Railroad beneath struc
Underclearance (69):	6 Equal Minimum

STRUCTURE NOTES

-ACCESS: Park off Crittenden Drive for easy access to the bridge for inspection.
-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, and 3. asphalt plug joints were installed over the existing joints.
-Structure has been widened twice. Plans are numbered as follows:
-DN 17948: 1955 original plans
-DN 17826: 1969 widening to centerline
-DN 18930: 1979 widening

INSPECTION NOTES

-Routine inspection performed by Marcella Kennedy and Stephanie Stoops.
-Due to an encampment at Abutment 5, the ends of Beams 1-4 and Abutment 5 below Bays 1 and 2 were not visible for inspection. Emailed Natalie House-Lewis on 12/13/24.
-Follow-up inspection performed on 01/27/25. Updated Elements 215 and 311.
-Element 215 quantity was updated to include wingwalls paralleling the roadway at all four corners (70 feet total).

SCOUR NOTES

LOAD RATING NOTES

6/24/22 Controlling member is a beam in the Northbound side, with 2.25 inch rosphalt asphalt, provision for FWS, and the larger median barrier. DGA

COMPLIANCE NOTES

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
12	**Re Concrete Deck**	**3**	**12/04/2024**	**40,950.00**	**sq.ft**	**36,430.00**	**4,100.00**	**420.00**	**0.00**

The top of deck cannot be visually inspected due to "Road Science" asphalt waterproofing mix overlay. Soffit has transverse cracking with efflorescence and moderate pattern cracking is visible where close inspection is possible near the abutments. Transverse cracking is densest in Span 2, with an approximate spacing of 4'. There are cracks with rust staining in Span 1 near Pier 2 at the longitudinal joint (4 SF CS3). Soffit has a few scattered spalls with exposed rebar (16 SF CS3) typically near the longitudinal joint, and some spalling along the haunches (400 SF CS3).

813	AC Wearing Surf w/ Membrane	3	12/04/2024	38,593.00	sq.ft	0.00	38,493.00	100.00	0.00

The bridge was overlaid with an asphalt waterproofing mix (a product by "Road Science") as part of the 2012 rehab project. Overlay has minor wearing in the traffic lanes. There is also intermittent unsealed longitudinal cracking along the right NB edge line, the right NB lane in Span 3, and the right SB lane in Spans 1 and 2. There is transverse cracking in the right SB lane north of Pier 2 in Span 2. The shoulders are lined with dirt and debris.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
107	**Steel Opn Girder/Beam**	**3**	**12/04/2024**	**7,224.00**	**ft**	**6,724.00**	**375.00**	**125.00**	**0.00**

The beams have surface rust scattered throughout the flanges. Some beam ends have flaking corrosion on the flanges, especially near the substructure units, longitudinal joint, and splices (125' CS3). Previous in-depth inspections noted cracks in the stiffener to top flange tack welds; some are visible from the abutments.

515	Steel Protective Coating	3	12/04/2024	72,240.00	sq.ft	0.00	71,440.00	400.00	400.00

Steel protective coating is substantially effective and dulling throughout, with areas of limited to no effectiveness near the substructure units, longitudinal joint, and splices. Span 2 beams over the railroad have soot nearly throughout.

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**	**12/04/2024**	**25.00**	**each**	**16.00**	**8.00**	**1.00**	**0.00**

Pier 2-Columns 2 and 4 and Pier 4-Column 4 have shallow spalls with exposed tie wire. Pier 4-Column 5 has a few spalls with exposed rebar and greater than 6" diameter (1 CS3). Some columns have moderate vertical and/or horizontal cracking, delaminations, and small spalls.

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	12/04/2024	391.00	ft	182.00	100.00	109.00	0.00

At the failed sections of concrete slope between Beams 15-17, the Abutment 1 cap is undermined 22' L x 6' D x 1' T with at least three exposed piles. One of the exposed piles has flaking corrosion with section loss. Abutment 1 backwall has 1/4" wide diagonal cracking at both ends (4' CS3). Abutment 5 cap has two wide diagonal cracks below Beam 16 (4' CS3). Abutment 5 backwall has a 1" wide diagonal crack/fracture at the east end with map cracking, and the northeast wing is tilting out by 1.5" as measured at the top of the deck (18' CS3). The northwest wingwall has a 3' diameter by 8" deep spall with exposed rebar (3' CS3). The backwalls have vertical cracks spaced at less than 3 feet in some areas, plus intermittent horizontal cracking and patching. Some patches are unsound or spalled (80' CS3). There is up to 1' of debris piled on the abutment seats.

Element 215 quantity includes the wingwalls paralleling the roadway at all four corners (70 feet total).

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
225	Steel Pile	1	12/04/2024	3.00	each	0.00	2.00	1.00	0.00

At the failed sections of concrete slope between Beams 15-17, the Abutment 1 cap is undermined 22' L x 6' D x 1' T with at least three exposed piles. One of the exposed piles has flaking corrosion with section loss.

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	12/04/2024	480.00	ft	455.00	25.00	0.00	0.00

Pier caps have scattered moderate cracks, delaminations, and small spalls.

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	12/04/2024	316.00	ft	0.00	0.00	0.00	316.00

Asphalt plug joints over the abutments have failed and leak throughout, exposing portions of the original joints in the traffic lanes. The joints are heaving in some areas in the shoulders.

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	12/04/2024	84.00	each	0.00	55.00	24.00	5.00

The moveable bearings are located at the abutments and Piers 2 and 4. Most abutment bearings have flaking corrosion and pack rust between the rocker and bearing plates; corrosion is heavier at exterior bearings and near the longitudinal joint. Remaining abutment bearings have surface rust. Abutment bearings are expanded at 40° F (tolerable alignment, inconsistent with temperature) and some are slightly twisted. At Abutment 1-Beams 18 and 20 and Abutment 5-Beams 4, 7, and 8, the sole plates are not in contact with the rocker bearings and can be moved by hand, except under live load (5 CS4). Bearings at Piers 2 and 4 have surface rust, mostly on the masonry plates.

515	Steel Protective Coating	3	12/04/2024	420.00	sq.ft	0.00	220.00	100.00	100.00

Steel protective coating is dulling throughout. The abutment bearings have areas with limited to no effectiveness. The bearings at Piers 2 and 4 have some areas of limited effectiveness.

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**	**12/04/2024**	**20.00**	**each**	**20.00**	**0.00**	**0.00**	**0.00**

No significant deficiencies noted on the Pier 3 bearings.

515	Steel Protective Coating	3	12/04/2024	100.00	sq.ft	100.00	0.00	0.00	0.00

No deficiencies noted.

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**	**12/04/2024**	**1,101.00**	**ft**	**864.00**	**210.00**	**21.00**	**6.00**

The railings have scattered vertical cracks, scrapes, and small spalls. The SB median barrier has a 6' L x full depth spall with exposed rebar in Span 3 (6' CS4) and large areas of shallow spalling near the top (20' CS3). The section of the east railing above the Abutment 4 expansion plate is fractured (1' CS3).

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**	**12/04/2024**	**1.00**	**each**	**0.00**	**0.00**	**1.00**	**0.00**

Some diaphragms have flaking corrosion near the abutments and longitudinal joints.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
853	**Utilities**	**3**	**12/04/2024**	**1.00**	**each**	**0.00**	**0.00**	**1.00**	**0.00**

Utility covers are missing in the west railing near the bridge ends.

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	12/04/2024	1.00	each	0.00	0.00	0.00	1.00

Abutment 1 concrete slope has two fractured panels between Beams 15-17; the broken sections have fallen into the 5' deep void in the underlying embankment. At the failed sections of concrete slope, the Abutment 1 cap is undermined 22' L x 6' D x 1' T with at least three exposed piles. Erosion and/or settlement appears to extend from Beams 13-17 (judging from the gap between the top of the slope and the abutment cap).

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
859	Vegetation	3	12/04/2024	1.00	each	0.00	0.00	1.00	0.00

Vegetation is beginning to overhang the bridge railings. Trees are growing against the superstructure in a few areas, especially Span 3.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
860	Erosion Ctrl/Prt	3	12/04/2024	1.00	each	0.00	0.00	0.00	1.00

Abutment 1 concrete slope has two fractured panels between Beams 15-17; the broken sections have fallen into the 5' deep void in the underlying embankment. At the failed sections of concrete slope, the Abutment 1 cap is undermined 22' L x 6' D x 1' T with at least three exposed piles. Abutment 5 slope protection is cracked and spalled at the top between Beams 1-5.

Looking north along I-65 NB towards Eastern Parkway (US 60A)

Asphalt plug joint over Abutment 1 (NB)

Asphalt plug joint over Abutment 5 (NB)

Looking south along I-65 NB towards I-264

Dirt and debris are piling in the gutter lines. Vegetation is beginning to overhang the bridge railings (east side shown).

The section of the east railing above the Abutment 4 expansion plate is fractured (exterior face shown).

Looking north along I-65 SB

Asphalt plug joint over Abutment 1 (SB)

Overlay has minor wearing throughout, and intermittent longitudinal cracking in the right SB lane in Spans 1 and 2.

Overlay has transverse cracking in the right SB lane north of Pier 2 in Span 2.

The SB median barrier has a 6' L x full depth spall with exposed rebar in Span 3.

Asphalt plug joint over Abutment 5 (SB)

Looking south along I-65 SB

Abutment 1

Abutment 1 backwall has 1/4" wide diagonal cracking at both ends (west end shown).

Close up

Abutment 1 concrete slope has two fractured panels between Beams 15 and 17; the broken sections have fallen into the 5' deep void in the underlying embankment.

Closer view of previous photo

At the failed sections of concrete slope, the Abutment 1 cap is undermined 22' L x 6' D x 1' T with at least three exposed piles.

One of the exposed piles has flaking corrosion with section loss.

There is up to 1 foot of debris piled on the abutment seats (east end of Abutment 1 shown).

Abutment 1 backwall has 1/4" wide diagonal cracking at both ends (east end shown).

The backwalls have vertical cracks spaced at less than 3 feet in some areas (west end of Abutment 1 shown).

Span 1

South face of Pier 2

North face of Pier 2

Pier 2-Columns 2 and 4 and Pier 4-Column 4 have shallow spalls with exposed tie wire (Pier 2-Column 2 shown).

Span 2

South face of Pier 3

North face of Pier 3

Pier caps have scattered moderate cracks, delaminations, and small spalls (north face of Pier 3 shown).

Span 3

Soffit has a few scattered spalls with exposed rebar (Span 3-Bay 13 shown).

Trees are growing against the superstructure in a few areas (east side of Span 3 shown).

South face of Pier 4

North face of Pier 4

Typical rocker bearings at Pier 4

Span 4

Beams and diaphragms have flaking corrosion scattered throughout the top flanges, especially near the longitudinal joints (Span 4 shown).

Abutment 5

Northwest wingwall has a 3-foot-diameter spall with exposed rebar.

Due to an encampment at Abutment 5, the ends of Beams 1 and 2 and Abutment 5 below Bays 1 and 2 were not visible for inspection.

At Abutment 5-Beams 7 and 8, the sole plates are not in contact with the rocker bearings and can be moved by hand, except under live load (Beam 8 shown). Note fretting rust.

Soffit and backwalls have spalls at the longitudinal joint (Abutment 5 shown, see next photo).

Spalling in Abutment 5 backwall and soffit at longitudinal joint

Abutment bearings are expanded at 40° F (tolerable alignment, inconsistent with temperature; typical Abutment 5 NB beams shown). Note debris and moisture on seat.

Abutment 5 cap has two wide diagonal cracks below Beam 16.

Abutment 5 backwall has a 1" wide diagonal crack/fracture at the east end with map cracking. The northeast wing is tilting out by 1.5" as measured at the top of the deck.

Some beam ends have flaking corrosion on the flanges (Beam 19 at Abutment 5 shown).

The northeast wing is tilting out by 1.5" as measured at the top of the deck (close up).

East profile

West profile

056B00205N Follow-up Inspection 2025-01-27

West end of Abutment 5
Follow-up inspection performed on 01/27/25.

Typical rocker bearing expanded at 40° F (Girder 3 at Abutment 5 shown)

3' diameter by 8" deep spall with exposed rebar in northwest wingwall

Additional view of previous photo