Bridge Inspection Report

056B00192N
Inspector: Marcella Kennedy
Entered by: MKENNEDY
12/09/2024
Standard (24 months)

IDENTIFICATION

Structure Num (8):	056B00192N
NBI Number	056B00192N
Structure Name:	
Location (9):	0.18 MI N OF US 150
Carries (7):	I-65
Type of Service (42A):	1 Highway
Feature Crossed (6):	E CHESTNUT ST
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° 14' 54"
Longitude (17):	85° 45' 8"
Owner (22):	State Highway Agency
Maint. Resp. (21):	State Highway Agency
Year Built (27):	1963
Year Recon (106):	1980
Border State (98A):	Not Applicable (P)
Border Number (99):	
% Responsibility (98B):	

Fair **Heath Index:** 92.10

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

Inspection Type	Freq (92)	Last Insp (93)	Next Insp
Routine	24	12/9/2024	12/9/2026
Element	24	12/9/2024	12/9/2026
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

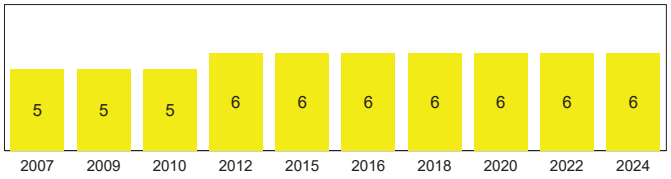
LOAD RATING AND POSTING

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):	7 Above Min Criteria
Deck Area:	43,878.00 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):	100.80 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):	6 Satisfactory
Bridge Rail (36A):	0 Substandard
Transition (36B):	0 Substandard
Approach Rail (36C):	0 Substandard
Approach Rail Ends (36D):	0 Substandard

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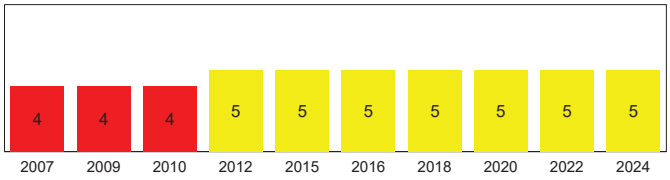
SUPERSTRUCTURE GEOMETRY

# of Main Spans (45):	9
# of Approach Spans (46):	0
Main Material (43 A):	6 P/S Conc Continuous
Main Design (43 B):	02 Stringer/Girder
Max Span Length (48):	62.10 ft.
Structure Length (49):	435.30 ft.
NBIS Length (37):	Long Enough
Temp Structure (103):	Not Applicable (P)
Skew (34):	8°
Structure Flared (35):	1 Yes, flared
Parallel Structure (101):	No || bridge exists
Approach Alignment (72):	8 Equal Desirable Crit

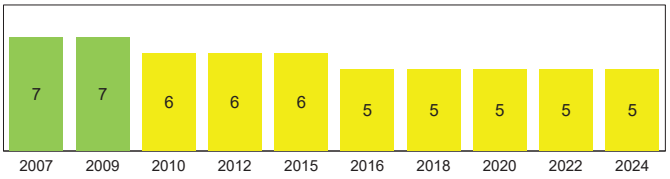


SUPERSTRUCTURE CONDITION

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):	135.44 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	6
Detour Length (19):	8.00 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):	84,001 Cars/Day
Pct Trucks (109):	16.00%
ADT Year (30):	2012

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	15.50 ft.
Horizontal (47):	50.00 ft.
Min Lat Left (56):	9.00 ft.
Min Lat Right (55B):	9.00 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	2 Intolerable - Replace

ROUTE UNDER STRUCTURE: E CHESTNUT ST

ROADWAY LOCATION

Pos Prefix (5A):	One Route Under
Kind of Hwy (5B):	5 City Street
Route Num (5D):	01071
LRS Route (13A/B):	
Milepost (11):	0.04 mi
Suffix (5E):	0 N/A (NBI)
Lanes Under (28B):	3
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):	6,315 Cars/Day
Pct Trucks (109):	0.00%
ADT Year (30):	2023

CLEARANCES

Vertical (10):	15.75 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	15.50 ft.
Horizontal (47):	41.50 ft.
Min Lat Left (56):	9.00 ft.
Min Lat Right (55B):	9.00 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	2 Intolerable - Replace

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):	135.44 mi
Suffix (5E):	0 N/A (NBI)
Lanes On (28A):	6
Detour Length (19):	8.00 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):	84,001 Cars/Day
Pct Trucks (109):	16.00%
ADT Year (30):	2012

CLEARANCES

Vertical (10):	99.99 ft.
Min Vert Over (53):	99.99 ft.
Vert Ref (54A):	H Hwy beneath struct
Undrclearnce (54B):	15.50 ft.
Horizontal (47):	44.80 ft.
Min Lat Left (56):	9.00 ft.
Min Lat Right (55B):	9.00 ft.
Horiz Ref (55A):	H Hwy beneath struct
Underclearance (69):	2 Intolerable - Replace

STRUCTURE NOTES

-Bridge component numbering per original plans (beginning with the 2010 inspection). Beams and columns are numbered left to right looking north.
-Pier 103 and associated quantities are inventoried with 056B00191N (per plans) and excluded from 056B00192N. Span 1A elastomeric bearings at Pier 103 are inventoried with 056B00192N.
-In 2022, 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 replacement of asphalt plug joints.
-2012 project (CID 121305) included: 1. The deck was overlaid with a 2.25 inch asphalt waterproofing mix (low temp., a product of "Road Science" - not Rosphalt), and 2. Asphalt plug joints were installed over existing joints.
-In 2006, ends of some PCI beams were repaired with CFRP fabric by a contract though the Kentucky Transportation Center. (Project No. I-65-PCG05)
-In 1980, the RCDG superstructure was replaced with PCI beams, the existing substructure units were widened, and risers were constructed.
-The City of Louisville has attached conduit to the east side the bridge by placing anchors in the beams.

INSPECTION NOTES

-Routine inspection performed by Marcella Kennedy and Natalie House-Lewis. Due to narrow shoulder, the NB side of the deck was not accessed. Johnny Micka followed up with UAS access on 12/17/24.
-Natalie House-Lewis contacted I-65 Central Corridor project team to discuss parking lot access, so inspectors can remove numerous delaminations in the superstructure and substructure.

SCOUR NOTES

LOAD RATING NOTES

10/01/2021. Controlling member is an interior beam (spans5-8 continuous, NB), with 2.25" asphalt overlay and barriers changed. JCG
8/15/24 Controlling member is a interior beam in Northbound span 9, for shear. With 2.25" asphalt overlay and barriers changed. Considered LRFR for EVs. 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	12/09/2024	45,707.00	sq.ft	45,365.00	228.00	114.00	0.00

Top of the deck cannot be inspected due to 2012 asphalt overlay. Soffit has very few transverse and diagonal cracks with light efflorescence, typically near substructure units. There is roughly 14 feet of longitudinal cracking with light efflorescence in Span 4-Bay 3, as well as an area of full depth deterioration in Span 4-Bay 1 at Pier 3W (10 SF CS3). At each deck joint, the soffit has deep spalls with exposed rebar and section loss in the overhangs and below the longitudinal joint (104 SF CS3), including spalling at least 6 inches deep in the west overhang at Pier 3W. Water ponds at the southeast corner.

813	AC Wearing Surf w/ Membrane	3	12/09/2024	43,186.00	sq.ft	38,867.00	4,319.00	0.00	0.00

2012 asphalt waterproofing overlay has minor wearing scattered throughout.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
109	Pre Opn Conc Girder/Beam	3	12/09/2024	6,006.00	ft	5,905.00	77.00	24.00	0.00

PCI beams have moderate to wide longitudinal cracks and/or rust staining, delaminations, and spalls, some greater than 6" diameter and some with exposed rebar; most defects are at the beam ends and below the deck joints at Piers 3 and 7. In Span 1A, east exterior Beam 14 at Pier 103 (S1A-B14 at P103) has diagonal cracking with efflorescence and rust staining in the web and a wide horizontal crack in the bottom flange (2' CS3).

There are bottom flange spalls with exposed strands at the following locations (exposing one prestressed strand along 1' unless otherwise noted):

- **S3-B1 & B14 at P3**
- **S4-B13 & B14 at P3**
- **S7-B1 & B7 at P7 (3 exposed strands at B7)**
- **S8-B1, B13, & B14 at P7**

There is wide cracking (typically longitudinal cracking in the bottom flanges) at the following locations:

- **S1A-B14 at P103 (2' CS3)**
- **S1A-B14 at P102 (2' CS3)**
- **S3-B8 & B14 at P3 (3' CS3)**
- **S4-B1 & B14 at P3 (3' CS3)**

Beam ends have CFRP patches to repair cracking (2007 KTC project) in Spans 1A, 1, 2, and 4 through 7 (2 to 5' long each, totaling approximately 60' CS2 with 3 locations in the NB superstructure and 21 locations in the SB superstructure). Patches are in good condition, although Span 2-Beam 1 at Pier 1W appears to have some insignificant shrinkage cracking.

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	12/09/2024	40.00	each	18.00	7.00	15.00	0.00

Columns have moderate to wide vertical cracking (up to 1/2" width), delaminated areas, and spalling. All five columns at Pier 3 have wide cracking. Deterioration is heaviest at Pier 7, where Column 5 has a 3' H x 1' W x 3" D spall with exposed rebar and section loss.

Wide vertical cracks and/or large spalls with exposed rebar are noted at the following columns:

- **Pier 102-Column 5 (P102-C5)**
- **P1-C5**
- **P2-C1**
- **P3 all columns**
- **P4-C2 & C5**
- **P5-C2 & C5**
- **P7-C1, C4, & C5**

Small spalls and/or moderate vertical cracks are noted at the following columns:

- **P102-C2 & C3**
- **P1-C4**
- **P2-C2**
- **P5-C3**
- **P7-C2 & C3**

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	12/09/2024	129.00	ft	105.00	10.00	14.00	0.00

North abutment has a few full height cracks and small spalls, plus diagonal cracking and staining in the backwall at each end. The northeast wingwall has heavy pattern cracking with efflorescence along the top (14' CS3).

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	12/09/2024	796.00	ft	489.00	112.00	195.00	0.00

Pier caps have moderate to wide cracking with efflorescence and/or rust staining, many delaminated areas, and some spalling with exposed rebar and section loss. Deterioration is widespread on Piers 3 and 7 below the joints (88' and 56' CS3, respectively), with spalling up to 4" deep and fully exposed rebar in the bottom face at the east ends. Joint construction material is piled on top of pier caps in a few locations.

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	12/09/2024	302.00	ft	0.00	40.00	64.00	198.00

Asphalt plug joints were installed over the existing joints in 2012 and plug joints were redone in 2017. Asphalt plug joints have cracking, rutting, and spalling, some spalls exposing the original joints and allowing moderate leakage. Over Piers 3 and 7, the joints have failed in the traffic lanes and allow free flow of water. There are also a few asphalt patches on the joints in the NB lanes.

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	12/09/2024	154.00	each	154.00	0.00	0.00	0.00

No deficiencies noted, although bearings are difficult to inspect from the ground. Pier 7 cap spalling is encroaching on the Span 8-Beam 14 bearing area.

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	12/09/2024	1,741.00	ft	1,653.00	70.00	12.00	6.00

Barriers have moderate cracking and several scrapes and spalls, most from impact and some deeper than 1 inch. There are patches with cracking at the deck joints. The SB median barrier has a 6-foot-long full depth spall with exposed rebar just north of Pier 3W joint.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
802	Drainage Sys	3	12/09/2024	1.00	each	0.00	0.00	0.00	1.00

Drainage system is not functioning as intended. Deck drains and scuppers are disconnected at most locations, allowing water to drain onto elements below.

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	12/09/2024	1.00	each	0.00	0.00	1.00	0.00

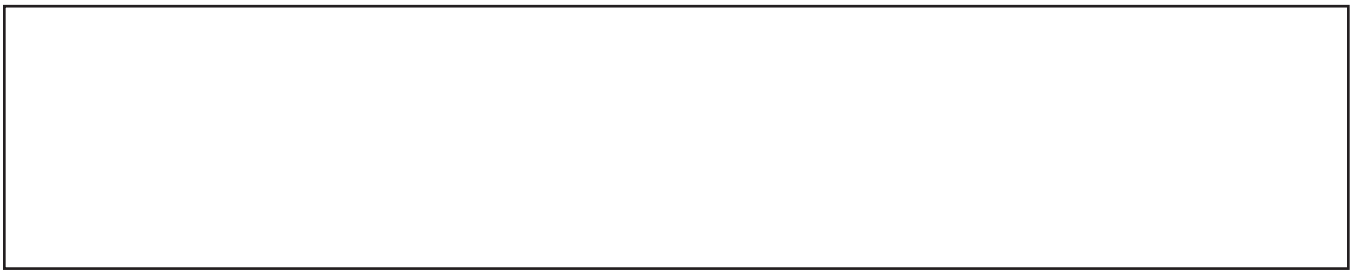
Pier diaphragms have delaminations and large spalls, some with exposed rebar.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
852	Drains	3	12/09/2024	1.00	each	0.00	0.00	0.00	1.00

Deck drains are completely clogged.

ELEM NBR	ELEMENT NAME	ENV	INSP. DATE	QUANTITY	UNITS	QTY CS 1	QTY CS 2	QTY CS 3	QTY CS 4
853	Utilities	3	12/09/2024	1.00	each	0.00	1.00	0.00	0.00

There is a section of unsupported conduit below the longitudinal joint at Pier 3. Parking lot camera and lighting conduits are also anchored to the beams.



South bridge end over Pier 103 (joint is inventoried with 056B00191N)

Asphalt plug joint over Pier 3

Asphalt plug joint over Pier 7

Asphalt plug joint over north abutment

Asphalt plug joint over Pier 3W

Asphalt plug joints have failed in the traffic lanes, with some spalling and rutting (close up).

Asphalt plug joint over Pier 7W

Asphalt plug joint over the north abutment (SB)

The SB median barrier has a 6-foot-long full depth spall with exposed rebar just north of Pier 3W joint.

Deck drains are clogged (SB shoulder near south bridge end shown).

North face of Pier 103 (inventoried with 056B00191N)

Span 1A-Beam 14 at Pier 103 (S1A-B14 at P103) has diagonal cracking with efflorescence and rust staining in the web and a wide horizontal crack in the bottom flange. Note spall in overhang, numerous utilities anchored to beam, and daylight through failed joint.

South face of P102

North face of P102

Some beam ends have CFRP patches (S1-B5 and B7 at P102 shown).

Some columns have wide vertical cracks (P102-C5 shown).

Pier caps have several delaminated areas (south face of P102 shown).

South face of P1

North face of P1

CFRP patch on S2-B1 at P1 has insignificant shrinkage cracking.

Pier caps have moderate to wide cracking, delaminated areas, and spalling with exposed rebar (P1 shown).

South face of P2

North face of P2

P2-C1 has several 1 SF spalls with exposed rebar in the west face.

Pier caps have moderate to wide cracking, delaminated areas, and spalling with exposed rebar (south face of P2W shown).

Pier caps have moderate to wide cracking, delaminated areas, and spalling with exposed rebar (north face of P2E shown).

South face of P3
Note staining along the full length of the pier.

At each deck joint, the soffit has spalls with exposed rebar in the overhangs and below the longitudinal joint. Spalling above the west end of P3W is at least 6 inches deep and leaking.

S3-B1 has a deep end spall with at least one exposed prestressed strand at P3W. Note staining on beams and pier.

S3-B8 at P3 has a wide longitudinal crack. Note delamination in Beam 9 and deterioration of soffit below longitudinal joint.

P3 and P7 caps have spalling up to 4 inches deep with fully exposed rebar in the bottom face at the east end (P3 shown).

Additional view of east end of P3, north face. Note diaphragm spall with exposed rebar.

At P3, B14 has wide cracking and spalling, roughly 3 feet long at both beam ends. Note typical overhang spalling below joint.

Column cracking is up to 1/2 inch wide (P3-C5 shown).

North face of P3

Soffit has a 10 SF area of full depth deterioration in S4-Bay 1 at P3W.

South face of P4

Deck drains and scuppers are disconnected at most locations, allowing water to drain onto elements below (southeast corner of P4 shown).

S4-Bay 3 soffit has 14 feet of longitudinal cracking with light efflorescence.

North face of P4

Some beam ends have CFRP patches (S4-B1 and B2 at P4 shown).

South face of P5

North face of P5

Pier caps have moderate to wide cracking, delaminated areas, and spalling with exposed rebar (north face of P5 shown).

P5-C5 has a 2 SF spall and wide vertical cracking.

South face of P6

North face of P6

Pier caps have moderate to wide cracking, delaminated areas, and spalling with exposed rebar (north face of P6 between B3 and B4 shown).

Large delaminated area with map cracking on the north face of P6 at the east end

South face of P7

P3 and P7 caps have spalling up to 4 inches deep with fully exposed rebar in the bottom face at the east end (P7 shown). Note typical overhang spall at joint.

Deterioration is widespread on P3 and P7 (east end shown) below the joints. Note spall in B13 bottom flange.

P7 cap spalling is encroaching on S8-B14 bearing area. B14 has a spall with one exposed strand.

Delamination in S8-B1 top flange, and staining on overhang and pier

Deterioration is widespread on P3 and P7 (between C1 and C2 shown) below the joints.

S7-B7 at P7 has a spall with three exposed prestressed strands (difficult to see due to spalled concrete sitting on cap).

North face of P7

North abutment

The north abutment has full height vertical cracks, some with efflorescence.

The northeast wingwall has heavy pattern cracking with efflorescence along the top for the full length, plus some spalling along the end joint.

East profile (from 12/2022 drone photos)

West profile (from 12/2022 drone photos)