

Inspector: Shelman,Erin

Inspection Date: 03/31/2025

Structure Number: 1830473

Facility Carried: LAKEWOOD HTS C297

Ohio Bridge Inspection Summary Report**CUY-C0297-01.50 (1830473)**

B.L.04: District District 1216000 - CLEVELAND (CUY county)

B.CL.02: Major Maint 02 - County Highway Agency /

225 Routine Main A/B 02 - County Highway Agency /

221 Inspection A/B 02 - County Highway Agency /

5A: Inventory Route 1 07705

7: Facility On LAKEWOOD HTS C297

6: Feature Ints RTA AND N&S RR

9: Location EAST OF WEST 137 STREET

Lat, Lon 41.4702 ,-81.780661

Condition**B.C.01: Deck 7**

58.01: Wearing Surface 7

B.C.08: Joint 6**B.C.02: Superstructure 6**

59.01: Paint & PCS 6

B.C.03: Substructure 6**B.C.09: Channel N****B.C.11: Scour N****B.C.10: Channel Prot.****B.C.05: Bridge Railing****B.C.06: Transitions****B.C.07: Bearings****B.C.04: Culverts N****Ohio GA 6****Appraisal**

B.AP.03: Scour Vul. Not over Waterway

Geometric

48: Max Span Length (ft) 68.0

49: Structure Length (ft) 246.4

52: Deck Width, Out-To-Out (ft) 70.3

424: Deck Area (sf) 17321.92

32: Appr Roadway Width (ft) 86.0

51: Road Width, Curb-Curb (ft) 58.0

50A: Curb/SW Width: Left (ft) 5

50A: Curb/SW Width: Right (ft) 5

34: Skew (deg) 27

33: Bridge Median 2 - Closed median (no barrier)

54B: Min Vert Underclearance (ft) 21.08

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 Blank

734: Percent Legal (%) 150

704: Analysis Date 10/05/2009

63: Analysis Method 6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.

Structure Type43: Bridge Type 4 - Steel continuous
02 - Stringer/Multi-beam or Girder
N - Not Applicable

45: Spans Main / Approach 4 / 0

107: Deck Type 1 - Concrete Cast-in-Place

408: Composite Deck Y - Composite Construction

414A Joint Type 1 8 - Elastomeric Strip Seal

414B: Joint Type 2 N - None

108A: Wearing Surface 3 - Latex Concrete or similar additive
N - Not Applicable

422: WS Date 01/01/2002

423: WS Thick (in) 2.0

482: Protective Coating 4 - Paint System B

483: PCS Date 01/01/1980

453: Bearing Type 1 2 - Rockers & Bolsters

455: Bearing Type 2 N - None

528: Foundn: Abut Fwd 8 - Steel H Piles (HP 12 x 53)

533: Foundn: Abut Rear 8 - Steel H Piles (HP 12 x 53)

536: Foundn: Pier 1 4 - Spread Footing (on soil)

539: Foundn: Pier 2 N - None (Such as most Culverts)

Age and Service

27: Year Built/ 106 Rehab 1959 / 2002

42A: Service On 5 - Highway-pedestrian

42B: Service Under 2 - Railroad

28A: Lanes on 04

28B: Lanes Under 00

19: Bypass Length 2

29: ADT 7570

109: % Trucks (%) 5

Inspections90: Routine Insp. 12
Months

92A: FCM Insp. N 0

92B: Dive Insp. N 0

92C: Special Insp. N 0

92D: UBIT Insp. N 0

92E: Drone Insp. N 0

Inspector Shelman,Erin

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Bridge Inspection Report

Executive Summary

REAR = WEST

Zone = B

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Inspection Date:	03/31/2025	Facility Carried:	LAKEWOOD HTS C297
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ODOT District:	District 12	Date Built:	07/01/1959
Major Maint:	02 - County Highway Agency	Facility Carried:	LAKEWOOD HTS C297
Routine Maint:	02 - County Highway Agency	Traffic On:	5 - Highway-pedestrian
FIPS Code:	16000 - CLEVELAND (CUY county)	Feature Inters:	RTA AND N&S RR
		Traffic Under:	2 - Railroad
		Location:	CUY
			EAST OF WEST 137 STREET
	Inspector	Shelman,Erin	Inspection Date
			03/31/2025
		Reviewer	Hazimihalis, Demetrios
		Rehab Date:	01/01/2002
		Insp.	02 - County Highway
		Resp A:	Agency
		Insp	Blank
		Resp B:	

Inspector Comments - Deck and Approach

Deck

Floor/Slab

Bottom of deck has numerous hairline leach strained transverse cracks.

- **Span 3: Bay 5:** Full length leaching crack/CJ.

Edge of Floor/Slab

Numerous leach stained transverse cracks.

Bridge Wearing Surface

Scattered transverse hairline cracks. Over P2, DELAM along a transverse crack ~5 SF.

- **RIGHT:** Scattered LONGL cracks ~5' off median.

Curbs/Sidewalk

Curbs: Plates are corroded throughout.

Sidewalks: Transverse/LONGL cracked panels on both sides. Many bottoms have leached/leaking transverse cracks. Majority of cracks are on LEFT due to expansion of concrete from a curved structure.

- **LEFT:** All panels cracked. Along curb plate is spalled for ~60' up to 7" wide.
- **RIGHT:** Sixteen (16) panels cracked. Spall 1/2 SF near light pole.

Bridge Median

Curb plates are corroded. Hairline cracks.

Bridge Railing

Parapet:

- **BOTH:** Entire coating on top and outside faces is worn and flaking. Utility access panels are missing screws.
- **LEFT:** Scattered hairline leach stained vertical cracks.

Fencing: Scattered coating on fence fabric is chipped. Fence elements have scattered areas

Inspector: Shelman,Erin

Inspection Date: 03/31/2025

Structure Number:

1830473

Facility Carried:

LAKEWOOD HTS C297

of corrosion.

Expansion Joint

- **BOTH:** Filled with dirt and debris. Armor corroded.
- **REAR-LEFT:** Sliding plate is lifted 1/2".
- **FWD-LEFT:** Deck armor is 1/2" higher than APPR angle.
- **FWD-RIGHT:** Compression seal failed for 9 LF.

Approach

Approach Wearing Surface

FWD-LEFT:

- **LEFT Lane:** Shallow spalls along slab up to 3" wide.
- **CL:** CJ spalled 1 SF x 3" deep.

Sidewalks:

- **REAR-LEFT:** One (1) panel transversely cracked.

Approach Slab

- **REAR-LEFT:** LONGL/map cracked in each lane. Asphalt patched up to 15" wide along APPR WS for 16 LF. Asphalt patched up to 6" wide along BW for 30 LF.
- **REAR-RIGHT:** One (1) LONGL crack. Asphalt patched up to 15" wide for 12 LF along APPR WS.
- **FWD-LEFT:** Scattered transverse, LONGL and tight map cracks. Diagonal crack in median lane. Spalled up to 7" wide along BW for 9 LF.
- **FWD-RIGHT:** Spalled up to 14" wide for 7 LF along the BW. Some patched.

Sidewalks:

- **REAR-LEFT:** One (1) panel transversely cracked.
- **REAR-RIGHT:** One (1) SF spall along joint between two (2) panels.

Curbs: Plates have scattered corrosion.

Approach Relief Joint

REAR-LEFT: Diagonally cracked 1 LF off curb.

Inspector Comments - General Appraisal

Superstructure

Inspector: Shelman, Erin
Inspection Date: 03/31/2025

Structure Number: 1830473
Facility Carried: LAKEWOOD HTS C297

Beams/Girders

From measurements taken at midspan and at moment plates in 2017 most BMs in Span 3 had no section loss to minor section loss (~6%). BM 5 at midspan of span 3 had ~.241 (22%) x-loss at LEFT edge of lower flange – Average loss for lower flange was ~12%. Scattered areas of corrosion on BM 5, especially at piers and in Span 3. Percent of section loss in this section reflects section loss in specific area, not total beam loss.

Span 1:

- **BM 5:** Bottom flange behind BRG is corroded to a knife edge along RIGHT edge.
- **BM 5-9:** Bottom flanges, end face and top face's are corroded up to 6' in front of BRG. End face of BM webs at ABUTs corroded up to 6" width of the web.

Span 2:

- **BM 4: P1:** Bowed up near BRG 12" x 3/16"
- **BM 9: P1:** Bowed down from pack rust.

Span 3:

- **BM 5: P3:** East of BRG bowed down 10" x 1/2".
- **BM 9: P3:** Bowed down 12" x 3/8".

Diaphragm/X-Frames

Span 1:

- **ALL:** End XFRAMEs are corroded.
- **Bay 4-8:** End XFRAMEs are extremely corroded with up to 1/6" section loss.

Span 2:

- **Bay 4:** Connection plate to BM 5, at P1, has ~60% loss (0.20 measured x-section).

Span 3:

- **Bay 4:** Connection plate to BM 5, at P3, has ~50% loss (0.240 measured x-section).
- **Bay 4:** Lower lateral angle of XFRAME closest to P3 has 50% of lower angle missing/thru hole.
- **Bay 7:** Diagonal angle of XFRAME is bent/twisted at the top.

End XFRAMEs in all bays are heavily corroded.

Bearing Devices

Inspector: Shelman, Erin
Inspection Date: 03/31/2025

Structure Number: 1830473
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- **REAR ABUT:** BRG 1 neutral. BRGs 2-6 contracted. BRGs 7-9 are expanded. BRG 3 does not fully bear. BRGs 5-9 are heavily corroded. BRG 6 is extremely contracted, does not fully bear and is lifted 1/8" by pack rust.
- **P1:** BRGs 1-6 are expanded. BRGs 7-9 are contracted.
- **P2:** BRG 1 is vertical. BRGs 2-8 Fixed. BRG 9 is rocked to the East 5.9 degrees. BRG 1-4, 6 and 8 have multiple anchor bolt nuts not fully tightened or missing.
- **P3:** BRGs 3-4 are expanded. BRGs 1, 7-9 are neutral. BRGs 5, 8-9 are contracted.
- **FWD ABUT:** BRG 1 is contracted, and masonry PL shifted up to 3/4" East. BRGs 2 and 9 are expanded. BRGs 3-8 are contracted, and most are lifted ~1/4" by pack rust.

Protective Coating System

Scattered drips, runs, and mud cracking on flanges with rough/blistered areas of paint and corrosion underneath. End XFRAMES are heavily corroded with x-loss.

REAR ABUT:

- **BMs 5-9:** Various spots corroded up to ~60" on bottom flange and up to full height on web ends. Scattered freckled rust on bottom flanges.

Span 2:

- **BM 3:** Bottom flange has corrosion/flaking PCS ~20 LF.
- **BM 4:** Bottom flange has flaking PCS ~20 LF with ~5 SF corroded.
- **BM 5:** Bottom angle of multiple X-FRAME are corroded. LEFT side bottom flange has failed ~2 SF. Bottom face bubbled/corroded 40'.
- **BM 9:** Bottom face of flange failed ~3 SF.

Span 3:

- **BM 5:** Near P3 moment plate and near midpoint, bottom flange corrosion and flaking.
- **BM 7:** Near P3 on bottom flange, areas of flaking paint.
- **BM 9:** At P3 on bottom flange, flaking paint.

Span 4:

- **BM 8: FWD:** Bottom flange corrosion/flaking ~6 LF.
- **BM 9: BOTH Ends:** Bottom flange corrosion/flaking ~6 LF.

Utilities

- **Span 4:** UTIL support broken and hangs 4 LF off the ground.

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Abutment Walls

Rust stained cracks.

REAR:

- **BRG 3:** Epoxy patches are slightly cracked/DELAM/breaking up on seat 2 SF. Edge of seat is spalled/DELAM 2 SF x 2" deep up to edge of masonry plate.

FWD:

- **Bay 2:** Seat along BW has a DELAM 3 SF.
- **BRG 8: Front edge of seat:** Spall/DELAM 4 SF x 5" deep. **Back of seat:** Spalled 3 SF x 2" deep.
- **BRG 9:** Spalled 5 SF x 9" deep.
- **RIGHT Edge:** Spalled 1 SF.

Pier Walls

Each face has a full height vertical crack and/or scattered map cracking.

- **P1: REAR:** Scattered DELAMs ~8 SF.
- **P2: FWD:** CL has DELAM 8 SF adjacent to crack.
- **P3: REAR:** Spall/DELAM 12 SF exposing one (1) corroded REINF. **FWD:** Fire damage on the LEFT half of wall.

Pier Caps

P1:

- **REAR Face:** Under BRG 4-5, diagonally cracked. **RIGHT cantilever:** DELAM 4 SF. Bottom is edge-cracked/DELAM 6'.

P2:

- **REAR Face:** Under BRG 5, hairline HORZL crack/DELAM.
- **FWD Face:** Under BRG 5, DELAM ~7 SF. **RIGHT cantilever:** Spall at top 1 SF. Bottom face has a deep spall 5 SF x 1-1/2". Vertical crack at pier wall 4' long.

P3:

- **REAR Face: BRG 5:** DELAM 6 SF. **BRG 6:** DELAM 3 SF. Seat DELAM 1 SF.
- **FWD Face:** Near BRG 5, ~10 SF DELAM.

Backwalls

Top Face: Scattered LONGL cracks.

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- **REAR-RIGHT:** Spalled up to full length for 10 LF total.

Vertical Face: Scattered vertical cracks.

- **FWD: Bay 5:** Spall/DELAM 3 SF exposes REINF.

Slope Protection

Eroded from leakage through failed EXP JTs.

REAR: Scattered erosion in Bays 1 and 4-8.

- **Bay 6:** Eroded (LTV: 10' x 7' x 21").
- **Bay 8:** Eroded (LTV: 12' x 8' x 30").

FWD: Scattered erosion in Bays 4 and 7-8.

- **Bay 7-8:** Eroded (LTV: 20' x 1' x 1-1/2'). Some erosion corrected with rip rap.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Channel

Scour Critical