



2025 PHYSICAL CONDITION ROUTINE ELEMENT LEVEL INSPECTION REPORT

Bridge CUY-10-1613

SFN 1801503

Hope Memorial/Lorain Carnegie over Cuyahoga River

Dates of Inspection: June 9-12, 2025

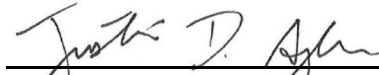
**ODOT DISTRICT 12
5500 TRANSPORTATION BOULEVARD
GARFIELD HEIGHTS, OHIO 44125
SEPTEMBER 18, 2025**

2025 PHYSICAL CONDITION ROUTINE ELEMENT LEVEL INSPECTION REPORT

ODOT BRIDGE NO. CUY-10-1613 Hope Memorial/Lorain Carnegie over Cuyahoga River SFN 1801503

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EXECUTIVE SUMMARY

The Hope Memorial/Lorain Carnegie bridge (CUY-10-1613, SFN 1801503) carries State Route 10 over the Cuyahoga River Valley, local streets, parking lots, Flat Industrial Railroad, and a Norfolk Southern Railroad spur line and is located in the city of Cleveland. The bridge is situated immediately southwest of Progressive Field. The Ohio Department of Transportation (ODOT) has the responsibility to inspect and perform major maintenance that impacts the structural integrity of the bridge and the city of Cleveland has the responsibility to perform routine maintenance. ODOT has the responsibility of performing the annual bridge inspection to confirm the condition state of the bridge. DLZ Ohio, Inc. (DLZ) was contracted by ODOT to perform routine element level inspection services on this bridge for the year 2025.

The overall condition of the Hope Memorial/Lorain Carnegie bridge is rated a **4**, meaning that it is in **Poor** condition. **Items highlighted in red in this inspection report are new findings that were not noted during previous inspections.** Significant findings justifying the general appraisal rating include the following results:

1. The edge of the deck has areas of delamination and cracking scattered throughout, with isolated areas of spalling. Some of the delaminated and cracking deck edges have the potential to spall off onto roadways, parking lots, or trails underneath the bridge.
2. The exterior railings have widespread cracking with rust staining and some areas of delamination and spalls with exposed reinforcing.
3. The drainage recesses covered by grates in the north sidewalk are clogged with significant debris.
4. The lower chords of the truss have varying degrees of section loss and pack rust causing significant distortion of the web plates and flange angles. The lower chords of the truss, mainly in Span 12, have some longitudinal cracks in the bottom flange angles.
5. The lower chord gusset plates have areas of heavy corrosion below the deck expansion joints, section loss and pitting around the pins, and advanced section loss just above the lower chord and along the edges and at the ends of the diagonal connections.
6. Many of the lateral and sway bracing members and gusset plates have section loss, pack rust, corrosion holes, and distortion due to pack rust.
7. The non-structural pier towers located above the pier caps of Piers 1-12 are in Poor condition with active degradation with debris accumulating on the pier cap below.
8. On the north side of the bridge, the middle and west navigation lights are not functioning.
9. At the West Pylon, the barbed wire on the top of the vandal protection fence at the south end has been damaged, and there is evidence of access to the bridge at this location by vandals.
10. The truss that supports the PVC telecom conduits above the maintenance deck have widespread significant deterioration of the truss supports, sheds, and corrugated roofs/walls.
11. Street light poles on the north side are **removed** in Span 3 and missing in Span 6.

Inspection findings were documented with field notes, photos, sketches, and measurements. Detailed discussion of all related issues can be found in the pertinent sections of this inspection report.

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APPENDIX A – AssetWise Bridge Inspection Field Report

APPENDIX B – Existing General Plan, Elevation, & Transverse Section

APPENDIX C – Inspection Findings, Tables, & Figures

APPENDIX D – Nonredundant Steel Tension Member (Fracture Critical Member) Plan

1.0 Bridge Description

CUY-10-1613 (SFN 1801503), commonly known as the Lorain Carnegie Bridge and later renamed the Hope Memorial Bridge, carries four lanes of vehicular traffic and two pedestrian walkways over the Cuyahoga River Valley, local streets, parking lots, Flat Industrial Railroad, and a Norfolk Southern Railroad spur line. The bridge is approximately 3,515 feet long, which includes 230 feet of subway tunnel on the east end leading up to Bridge No. CUY-10-1685. The Lorain Carnegie Bridge was opened to traffic in 1932 and is now included in the National Register of Historic Places.

The bridge is comprised of three sections referred to as Main Spans, West Approach, and East Approach:

Main Spans: Thirteen (13) spans of four (4) lines of cantilever Pratt deck style trusses totaling 2,916'-1". Truss spans vary from 161'-2" to 299'-0". A maintenance deck is in place in the center bay, below the vehicular upper deck. Vehicles can access the maintenance deck for inspections, but there is a 6'-5" clearance between the maintenance deck and the floorbeams.

West Approach: Five (5) multi-beam spans bearing on concrete piers and steel bents. Total length of the approach spans total length 157'-8".

East Approach: Concrete cellular construction approximately 307'-0" long with one 131'-0" long span, consisting of three lines of Pratt deck trusses.

The span units are numbered per the original shop drawings and the 2021 Inspection, beginning at Span 13 at the West Pylon and decrementing to Span 1 at the East Pylon. The easternmost span from the East Pylon to the East Abutment is denoted as W & LE Span. Gusset plates are numbered increasing from west to east within each span unit. The General Plan, Elevation, and Transverse Section are shown in Appendix B.

Following FHWA definitions, all tension members of the trusses are classified as being fracture critical (NSTM = Non redundant Steel Tension Member). Furthermore, the truss floorbeams and west approach floorbeams are fracture critical (NSTM) because their spacing is greater than 14 feet.

2.0 Bridge History

The following is a summary of significant events in the history of the Lorain-Carnegie Bridge:

- 1930-32: Construction by Lowensohn Construction Company with steel superstructure fabricated by the Mount Vernon Bridge Company. Project is referred to as the Lorain-Central Bridge, but is later changed to the Lorain-Carnegie Bridge with the realignment of the Ontario Street, Carnegie Avenue, and Central Avenue intersection east of the bridge.
 - December 2, 1932: Bridge opened to traffic.
 - 1950s: Spot painting to corroding structural steel.
 - October 1980 to September 1983: Bridge closed for major rehabilitation, including replacement of upper and maintenance decks, replacement of deteriorated stringers and wind shear blocks, and replacement of drainage system. Rededicated as the Hope Memorial Bridge.
 - July 2000 to Fall 2002: Bridge received minor rehabilitation, consisting of the following activities:
 - Replacement of the asphalt concrete wearing surface with microsilica concrete wearing surface.
 - Plugging upper deck sub drains.
 - Removal of delaminations from underside of upper deck and application of a sprayed-on cathodic protection anode to all exposed steel reinforcement.
 - Replacement of all expansion joints and drainage system components.
 - Replacement of upper chord bearing assemblies.
 - Repairs to lower lateral bracing and repairs to lower chord members.
 - Patching deteriorated concrete substructure.
 - Complete removal of the original and zone protective coating system with an OZEU protective coating system.
 - Application of pack rust caulk sealant along open structural steel seams.
 - 2012: The north sidewalk was widened to promote pedestrian crossings. A precast concrete vehicular railing was installed along the new north curb. Additional architectural sidewalk lighting on metal light standards was installed along the north and south sidewalks between the existing prestressed concrete light standards.
 - 2015: All prestressed concrete light poles were replaced with metal light standards.
 - 2015-16: Over public areas, nets were installed beneath the upper deck south and north bays as well as beneath the maintenance deck.
 - 2019-2020: Bridge received minor rehabilitation consisting of the following activities:
 - Repairs to deteriorated areas of the trusses:
 - Gusset plate, lower chord, upper chord, diagonal, and bearing repairs
 - Replacement of select pins
 - Addition of edge stiffeners to select gusset plates.
 - Repairs to deteriorated areas of the floor system (stringers and floorbeams).
 - Zonal painting with an OZEU protective coating system.
-

- Replacement of the deck in the east abutment spans.
- Repairs to the maintenance deck:
 - Partial deck replacement
 - Railing and joint repairs
- West Pylon floorbeam repairs.
- Removal of deteriorated concrete from the pier towers.
- Drainage system repairs and cleaning.
- Replacement of the Navigation Channel Fenders.

3.0 General

The data for this Physical Condition Routine Element Level Inspection Report was obtained on **June 9-12, 2025**. The bridge inspection was performed by inspectors from **DLZ and AECOM**.

The Scope of Services directed DLZ and AECOM to perform a routine element level inspection and report the findings in a formal report. The inspectors used several different access methods for the superstructure, including walking the deck, climbing the trusses, using snoopers, and accessing the bridge from the maintenance and inspection deck. Sofis Company, Inc. provided a snoopers truck and traffic control on **June 9 and 10, 2025**. The substructure was visually inspected from the ground and from the snoopers. DLZ collected field notes, photos, sketches, and measurements while performing the bridge inspection. No destructive testing was performed.

Items highlighted in red in this inspection report are new findings that were not noted during previous inspections.

The bridge inspection was performed in accordance with the following documents:

- Manual of Bridge Inspection, Ohio Department of Transportation (ODOT), 2014 (with 2017 & 2021 Addendums)
 - National Bridge Inspection Standards, U.S. Department of Transportation, 2022
 - Manual for Bridge Element Inspection, 2nd Edition, American Association of State Highway and Transportation Officials (AASHTO), 2019 with 2022 and 2024 Interim Revisions
 - Bridge Inspector's Reference Manual (BIRM), Federal Highway Administration (FHWA), 2022 with 2023 revisions
 - Inspection of Fracture Critical Bridge Members, U.S. Department of Transportation and Federal Highway Administration (FHWA), 1986
-

The Condition Ratings used in this report are based on the 2014 ODOT Manual of Bridge Inspection Condition Rating Guidelines.

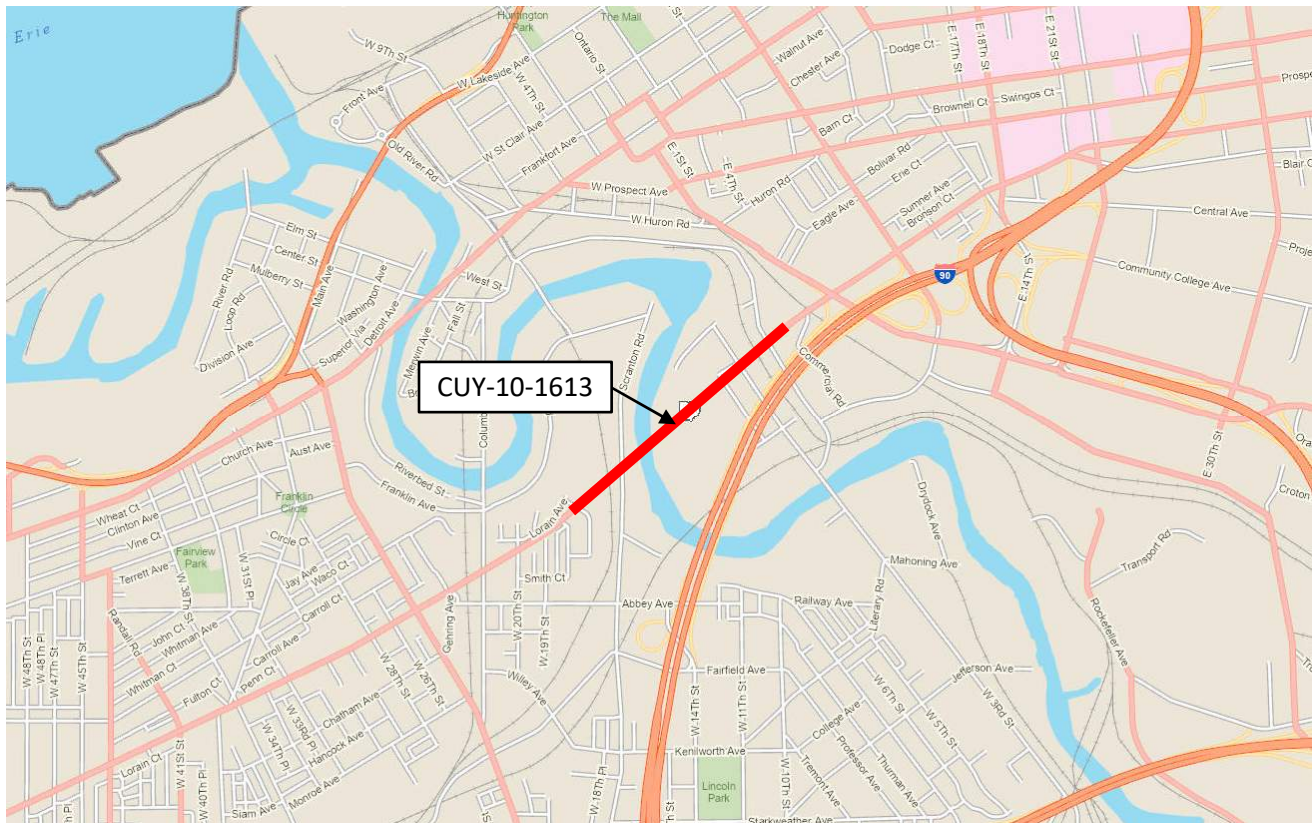
Condition Rating Guide				
1-4 Individual Component	9-0 NBIS Summary		Inspector Guidelines (Quantitative comments include the Location, Extent & Severity of the deficiency)	
1-GOOD	9 - Excellent	No problems noted: no section loss, general deterioration.	Make brief comments as necessary. Communicate the predominant deficiency.	
	8 - Very Good			
	7 - Good	Some minor problems (ex. extent of concrete deterioration is up to 1% spalling or up to 5% saturation)		
2-FAIR	6 – Satisfactory	Structural elements show some minor deterioration (ex. extent of concrete deterioration is up to 5% spalling or up to 10% saturation)	Document deficiencies quantitatively. Consider taking photos or making sketches.	
	5 -Fair	Structural elements show deterioration but are sound (ex. extent of concrete deterioration is up to 10% spalling or up to 20% saturation)		
3-POOR	4 - Poor	Advanced* (ex. extent of concrete deterioration is more than 10% spalling or more than 20% saturation). Usually the load path appears to be affected for primary members or there are obvious structural changes since the as-built condition that are advanced.	Candidate to establish monitoring benchmarks to track the rate-of - change. Take photos, make sketches and document quantitatively in order to determine if a re-load rating is possible. Include in-service conditions to verify capacity	Poor Structurally Deficient***
	3 - Serious	4-Poor. . . And local failures possible.	Above. . . And discuss the deficiency immediately with Control Authority.	
4-CRITICAL	2 - Critical	3-Serious. . . And Unless closely monitored it may be necessary to close the bridge until corrective action is taken.	Above. . . And the bridge is a candidate to dispatch road closure and/or immediate repairs and/or increased monitoring (Interim Inspections). Confirm in writing, critical finding.	
	1 -Imminent Failure	2-Critical. . . And Major deterioration is affecting stability. Bridge or lane(s) shall be closed to traffic but corrective action may put bridge back into light service.	Above. . . And Dispatch immediate lane or bridge closure. Contact the Control Authority. Stay at the bridge until the safety of the traveling public is achieved. Confirm in writing.	
	0 - Failed	1-Imm Failure. . . And Out of service - beyond corrective action.		

* **Advanced** –widespread deficiencies or a likely reduction to capacity (more examples on following page).

** **Structurally Deficient (SD)** –Bridge Deck, Superstructure, or Substructure Summary rated 4-Poor or below.

A bridge can also be classified as structurally deficient if its load carrying capacity is significantly below current design standards or if a waterway below frequently overtops the bridge during floods.

4.0 Location Map



Structure: CUY-10-1613
Hope Memorial/Lorain Carnegie over the Cuyahoga River Valley
Cleveland, OH

5.0 Inspection Findings

Inspection findings from the field inspection performed on **June 9-12, 2025** are presented below.

5.1 SNBI Item B.C.01 – Deck

The overall deck rating is a **6**, indicating that it is in **Satisfactory** condition. Condition findings of individual deck items are as follows:

5.1.1 ELEMENT 12 – REINFORCED CONCRETE DECK

Total Quantity	Units	CS1	CS2	CS3	CS4
263,774	sq. ft.	237,674	13,200	13,300	100

The deck is in **Satisfactory** condition. The underside of the deck has areas of spalling with exposed rebar, delaminations, cracking with efflorescence, and failing patches noted throughout (Photos 1 & 2). Heavier concrete deterioration is noted near the joints and scuppers. Many of the previous spalls have been coated with a spray-on cathodic protection, but corrosion is reactivating at some of these locations. The newer spalls that do not have the cathodic protection applied exhibit minor section loss on the reinforcing. Netting and/or wood falsework are in place over the roadways and parking lots to prevent loose concrete from falling into traffic (Photo 3). There was spalled concrete caught in the netting, and it should be removed before more spalls fall off and overload the netting. There is a paved parking lot between Pier 3 and 4, and there is no netting on the underside of the maintenance deck in this area.

The edge of the deck has areas of delamination and cracking scattered throughout with isolated areas of spalling. Some of the delaminated and cracking deck edge has the potential to spall off onto roadways, parking lots, or trails underneath the bridge. The condition is present on the south deck overhang above Canal Road, W. 3rd Street, Scranton Road, and the Lake Link Trail, and on the north deck overhang above W. 3rd Street, the parking lot between Piers 3 and 4, Scranton Road, and the Lake Link Trail.

The deck in east approach spans between Column 6A and the east end exhibits areas of cracking, saturation, delamination, and spalling with exposed reinforcing, with section loss ranging from minor to complete (Photo 4). The deck in the west approach unit has areas of spalling with exposed rebar, delamination, and cracking with efflorescence. For specific deck deficiencies and locations, see Table 1 and Approach Span Drawings in Appendix C.



Photo 1: Typical Spalls with Exposed Rebar, Delaminations, Cracks with Efflorescence, and Failing Patches on the Deck



Photo 2: Large Spall with Deteriorated Rebar on the Deck in Span 12



Photo 3: Typical Netting and Falsework Below the Deck



**Photo 4: Typical Spalls with Deteriorated Rebar on the Deck in the East Approach Spans
(2024 Inspection Photo)**

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantities or considered with the rating of Item 58 Deck or Item 58.01 Wearing Surface. On the top side, there are some areas of shallow spalling and delamination, with isolated areas of heavy spalling with exposed, corroded reinforcing. There is also some corrosion and bent edges on the maintenance deck joints. There are areas of cracking, delamination, and spalling on the underside of the deck.

5.1.2 ELEMENT 815 – DRAINAGE

Total Quantity	Units	CS1	CS2	CS3	CS4
32	each	8	8	16	0

The deck drainage is in **Poor** condition. The drainage recesses covered by grates in the north sidewalk are clogged with significant debris (Photo 5). Otherwise, there is minor debris in the deck scuppers and recesses, and some isolated surface corrosion below the deck in the drainage downspouts. At Pier 6, two of the manhole covers at the base of the pier are missing.



Photo 5: Typical Clogged Drainage Recesses Covered by Grates in the North Sidewalk

5.1.3 CURB/SIDEWALK

The concrete and steel plate curbs and concrete sidewalk are in **Fair** condition. The steel plate curb on the south sidewalk exhibits rust (Photo 6). Both sidewalks have isolated areas of delamination and light cracking with efflorescence (Photo 7). The south sidewalk shows more deterioration with some areas of spalling and the seal between the top of the steel curb plate and the concrete is deteriorating with vegetation growing in many of the cracked areas adjacent to the curb. On the south sidewalk in Span 7, there is a 9'x4'x1" spall with deteriorated reinforcing on the sidewalk (Photo 8). For specific sidewalk deficiencies and locations, see Table 1 in Appendix C.



Photo 6: Typical Rusting Steel Curb Plate on South Sidewalk



Photo 7: Typical Cracks on Sidewalks



Photo 8: Spall with Deteriorated Reinforcing in Span 7 of South Sidewalk

5.2 SNBI Item B.C.01.01 & Element 510 – Wearing Surface

Total Quantity	Units	CS1	CS2	CS3	CS4
178,959	sq. ft.	168,939	10,000	20	0

The microsilica concrete wearing surface rating is a **7**, indicating that it is in **Good** condition. There are isolated longitudinal, transverse, and map cracks up to 1/16" wide throughout the deck (Photo 9), and several areas with shallow potholes, some of which have been patched with asphalt. For specific wearing surface deficiencies and locations, see Table 1 in Appendix C.



Photo 9: Typical Minor Cracks in Wearing Surface

5.3 SNBI Item B.C.02 – Superstructure

The overall superstructure rating is a **4**, indicating that it is in **Poor** condition. Condition findings of individual superstructure items are as follows:

5.3.1 ELEMENT 107 – STEEL OPEN GIRDER/BEAM

Total Quantity	Units	CS1	CS2	CS3	CS4
1,207	ft.	1,195	12	0	0

The beams that are part of the west approach superstructure are in overall **Good** condition. There is some minor layered surface corrosion at the west abutment.

5.3.2 ELEMENT 113 – STEEL STRINGER

Total Quantity	Units	CS1	CS2	CS3	CS4
36,709	ft.	32,238	3,671	800	0

The stringers are in **Satisfactory** condition. There are isolated areas of active corrosion at the floorbeam connections and fascia stringers, with some minor section loss. There are isolated locations of corrosion holes which were previously cleaned and painted, and in some locations, repaired (Photo 10). For specific stringer deficiencies and locations, see Truss Drawings in Appendix C.



Photo 10: Stringer-Floorbeam Connection Repair

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of Steel Stringers or considered with the rating of Item 59 Superstructure. There are areas of section loss and active corrosion of the stringers, especially near the joints.

5.3.3 ELEMENT 120 – STEEL TRUSS

Total Quantity	Units	CS1	CS2	CS3	CS4
11,830	ft.	8,810	1,600	1,420	0

The truss is in **Poor** condition. The rating is primarily controlled by section loss in the lower chord of the exterior trusses and section loss of members at the deck joints. Areas of corrosion, pitting, and pack rust were cleaned, sealed, and painted during the 2002 Rehabilitation. Select areas, where corrosion had reinitiated most heavily since 2002, were cleaned, sealed, and painted as part of the rehabilitation completed in 2020. At numerous locations, corrosion, and pack rust are reactivating. For specific truss deficiencies and locations, see Truss Drawings in Appendix C. For truss member crack locations and descriptions, see Table 4 in Appendix C.

The lower chords have varying degrees of section loss and pack rust located between the flange angles and the web plates. This pack rust measures up to 2" thick, causing significant distortion of the web plates and flange angles. Portions of the flange angles and webs of the lower chords have pockets of deep pitting or corrosion holes. The greatest section loss is typically located in Spans 11 and 13. In these spans, twelve (12) lower chord members had section loss measurements between 5% and 22%, as previously reported by the 2014 Inspection Report with no notable progression since that inspection. Bolted plates have been placed in some areas to repair areas with corrosion holes and advanced section loss. The lower chords, mainly in Span 12, have some cracks in the flange angles. The cracks typically run longitudinally along the fillet welds between the legs of the flange angle. Crack arrest holes have been drilled at some of the crack locations (Photo 11).



Photo 11: Crack Arrest Hole at Bottom Flange L3-L4 5" West of the West end of the Crack in the South Lower Flange angle at L4 of North Interior Truss

The verticals are generally in good condition. The verticals below some of the deck joint locations exhibit moderate painted over pitting and pack rust throughout the full height, some of which is reactivating. There is localized moderate section loss of the web plates at some of the gusset plates, lateral bracing, and unused floorbeam connections.

The diagonals are generally in satisfactory condition. Areas of section loss or active pack rust are present, mainly near the lower gusset plates and near the deck joints. Exterior diagonals, adjacent to abandoned utility supports, have remnants of brackets welded to the web plates. Several diagonals have lower stay plates with deep section loss or corrosion holes.

The upper chords are in overall good condition, with some areas of painted over pitting and minor section loss. There are a couple locations with active pack rust between the upper chord member and gusset plate. At deck joints and junction box drains, leakage is causing active corrosion to upper chord members. There is dirt and construction debris present below the expansion joints inside some upper chord connections with the verticals. At several locations, abandoned drainage or utility brackets are welded to the webs. At U0-U1 of the Span 8-9-10 South Exterior Truss, the welds to one of these brackets is cracked. At U4-U5 of the Span 6-7-8 South Exterior Truss, there are five (5) cracked welds at the inboard web and at the U4 inboard gusset plate (Photo 12). At U6-U7 of the Span 2-3-4 South Exterior Truss, there are several cracked welds around the abandoned utility support.



Photo 12: Cracked Weld of the Abandoned Utility Attachment at U4-U5 of the Span 6-7-8 South Exterior Truss

The lateral and sway bracing members are in fair condition with section loss and some corrosion holes near the connections. Many of the lateral bracing gusset plates have section loss, pack rust, and corrosion holes. Pack rust at the lateral bracing members is causing distortion of the gusset plates. Minor pack rust and active corrosion was noted at the connections of the sway bracing to the verticals below the deck joints.

5.3.4 ELEMENT 152 – STEEL FLOORBEAM

Total Quantity	Units	CS1	CS2	CS3	CS4
11,218	ft.	10,118	1,000	100	0

The floorbeams are in overall **Satisfactory** condition. There is minor section loss and surface corrosion along the floorbeams, mainly below deck joint locations. For specific floorbeam deficiencies and locations, see Truss Drawings in Appendix C.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Steel Floorbeams or considered with the rating of Item 59 Superstructure. There are areas of section loss and active corrosion of the floorbeams, especially near the joints. At many locations, the floorbeam webs have arrested or retrofit cracks at the truss connections. For maintenance deck floorbeam crack locations and descriptions, see Table 5 in Appendix C.

5.3.5 ELEMENT 161 – STEEL PIN AND PIN & HANGER ASSEMBLY

Total Quantity	Units	CS1	CS2	CS3	CS4
192	each	7	185	0	0

The pins, hangers, and hinges are in **Fair** condition. Minor to moderate section loss and pack rust were noted on the pins and the adjacent plates. At some locations, minor misalignments of the pins were noted (Photo 13). More severe defects of pins and adjacent plates noted previously were repaired as part of the most recent rehabilitation. For specific pin, hanger, and hinge deficiencies and locations, see Truss Drawings in Appendix C.



Photo 13: Recessed Pin at L17 in **Span 9** of North Interior Truss

5.3.6 ELEMENT 162 – STEEL GUSSET PLATE

Total Quantity	Units	CS1	CS2	CS3	CS4
1,058	each	318	351	389	0

The truss gusset plates are in **Poor** condition. Areas of corrosion, pitting, and pack rust were cleaned, sealed, and painted during the 2002 Rehabilitation. A limited number of gusset plates had a similar rehabilitation in 2020. At numerous locations, corrosion and pack rust are reactivating. Areas of heavy corrosion occur below the deck expansion joints. Advanced section loss commonly occurs just above the lower chord, and along the

edges and at ends of the diagonal connections. Rivet head loss is also common at these locations. At pin locations, the gusset plates typically have section loss and pitting around the pins (Photo 14). Minor bows were noted along the free edges of the gusset plates due to pack rust buildup. The upper chord gusset plates are in good condition with little corrosion and pitting observed, except at locations of deck joint leakage where some section loss and pack rust are present. The free edges of many of the gusset plates have been stiffened during the most recent rehabilitation. For specific gusset plate deficiencies and locations, see Truss Drawings in Appendix C.



Photo 14: Gusset Plate at L0 in Span 4 of South Interior Truss

5.3.7 FATIGUE PRONE DETAILS

The Fatigue Prone Details are in **Satisfactory** condition. Fatigue prone details are present on the abandoned drainage and utility brackets, which are welded to the upper chords and diagonals. At U0-U1 in Span 10 of the Span 8-9-10 South Exterior Truss, the welds to one of these brackets is cracked, but the crack does not propagate into the base metal (Photo 15).



Photo 15: Weld Crack at U0-U1 in Span 10 of South Exterior Truss (2024 Inspection Photo)

5.4 SNBI Item B.C.02.01 – Protective Coating System & Element 515 – Steel Protective Coating

Total Quantity	Units	CS1	CS2	CS3	CS4
927,750	sq. ft.	833,070	79,180	14,400	0

The protective coating system (PCS) rating is a **6**, indicating that it is in **Satisfactory** condition. There are areas of peeling and bubbling paint and surface corrosion, especially at expansion joints where water infiltration and active corrosion is occurring. At some locations, corrosion is reinitiating where pack rust was previously cleaned and sealed. There is widespread fading and loss of pigment (Photo 16), particularly on the portions of the truss where sun exposure is the highest. At scattered locations the top coat of paint is peeling, revealing the epoxy intermediate coat.



Photo 16: Typical Fading and Loss of Pigment of Paint

5.5 SNBI Item B.C.03 – Substructure

The overall substructure rating is a **6**, indicating that it is in **Satisfactory** condition. Condition findings of individual substructure items are as follows:

5.5.1 ELEMENT 202 – STEEL COLUMN

Total Quantity	Units	CS1	CS2	CS3	CS4
16	each	16	0	0	0

The steel pier columns in the West Approach Spans are in **Good** condition. **There is minor spalling of the concrete at the column base plates, typical.**

5.5.2 ELEMENT 205 – REINFORCED CONCRETE COLUMN

Total Quantity	Units	CS1	CS2	CS3	CS4
54	each	12	36	6	0

The reinforced concrete pier columns are in **Satisfactory** condition. Pier columns have areas of cracking, staining, delamination, or spalling concentrated around previously patched areas. On Pier 7, there is damage where the south and east faces of the southern columns were scraped by vehicle/equipment (Photo 17). For specific pier column deficiencies and locations, see Pier and West Approach Drawings in Appendix C.



Photo 17: Scraping Damage of **East Faces of Columns** of Pier 7

5.5.3 ELEMENT 210 – REINFORCED CONCRETE PIER WALL

Total Quantity	Units	CS1	CS2	CS3	CS4
166	ft.	102	62	2	0

The pier walls are in **Satisfactory** condition. Pier walls are present at the East and West Pylons. Minor cracking, staining, patched areas, and some minor spalling were noted throughout (Photo 18). For specific pier wall deficiencies and locations, see Pier Drawings in Appendix C.



Photo 18: East Pylon

5.5.4 ELEMENT 215 – REINFORCED CONCRETE ABUTMENT

Total Quantity	Units	CS1	CS2	CS3	CS4
171	ft.	126	45	0	0

The abutment walls are in **Satisfactory** condition. There are cracks, areas of patching, rust staining, and some delaminations (Photo 19). For specific abutment deficiencies and locations, see Abutment Drawings in Appendix C.



Photo 19: South Half of West Abutment

5.5.5 ELEMENT 234 – REINFORCED CONCRETE PIER CAP

Total Quantity	Units	CS1	CS2	CS3	CS4
1,079	ft.	439	540	100	0

The pier caps are in **Satisfactory** condition. There are areas of cracking, delamination, and patching on the caps. The inspection manholes in the pier caps are in poor condition. There is insufficient surface bearing area to support the covers and care should be taken when walking near them or opening them (Photo 20). There is standing water at several places on top of the pier caps, including around some bearings (Photo 21).



Photo 20: Top of Pier Cap Around Manhole (2024 Inspection Photo)



Photo 21: Standing Water Around Bearing at L14 North Exterior Truss

The non-structural pier towers located above the pier caps of Piers 1-12 are not considered in the rating but are in poor condition. Many portions of the pier towers have been removed, but those that remain show active degradation with debris accumulating on the pier cap below.

For specific pier cap deficiencies and locations, see Pier and West Approach Drawings in Appendix C.

5.5.6 ELEMENT 830 – ABUTMENT BACKWALL

Total Quantity	Units	CS1	CS2	CS3	CS4
171	ft.	130	40	1	0

The backwalls are in **Satisfactory** condition. Cracking and delamination were noted in some of the backwalls. For specific backwall deficiencies and locations, see Abutment Drawings in Appendix C.

5.5.7 WINGWALLS

The wingwalls are in **Satisfactory** condition with scattered areas of cracking, delamination, and minor spalling. For specific wingwall deficiencies and locations, see Abutment Drawings in Appendix C.

5.5.8 DECORATIVE PYLONS

The decorative sandstone pylons are in **Satisfactory** condition. The sandstone units exhibit some areas of spalling and deterioration (Photo 22). For specific pylon deficiencies and locations, see Table 1 and Pier Drawings in Appendix C.



Photo 22: Typical Spalls on Northeast Decorative Pylon

5.6 SNBI Item B.C.05 & Element 331 – Reinforced Concrete Bridge Railing

Total Quantity	Units	CS1	CS2	CS3	CS4
10,527	ft.	5,627	2,700	2,200	0

The reinforced concrete bridge railings rating is a **5**, indicating that they are in **Fair** condition. The exterior railings have widespread cracking with rust staining and some areas of delamination and spalls with exposed reinforcing (Photo 23). The bikeway railing, located between the roadway and north sidewalk, is in good condition with a few minor deteriorated areas. For specific railing deficiencies and locations, see Table 1 in Appendix C.



Photo 23: Typical Deteriorated Exterior Railing

5.7 SNBI Item B.C.07 – Bridge Bearings

5.7.1 ELEMENT 311 – MOVABLE BEARING

Total Quantity	Units	CS1	CS2	CS3	CS4
62	each	0	62	0	0

The moveable bearings are in **Satisfactory** condition. Moderate surface corrosion with areas of section loss was noted on the pins and adjacent plates. There is debris and water accumulation in several of the truss bearings. At the west abutment, the bearings all have light surface corrosion. The stringer saddle bearings exhibit minor corrosion and some pack rust. For specific moveable bearing deficiencies and locations, see Truss Drawings in Appendix C. A summary of the expansion bearing alignment is included in Table 3 in Appendix C.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Moveable Bearings. There is active corrosion and section loss of the rocker bearings.

5.7.2 ELEMENT 313 – FIXED BEARING

Total Quantity	Units	CS1	CS2	CS3	CS4
102	each	0	102	0	0

The fixed bearings are in **Satisfactory** condition. Moderate surface corrosion with areas of section loss was noted on the pins and adjacent plates (Photo 24). There is debris and water accumulation in several of the truss bearings. For specific fixed bearing deficiencies and locations, see Truss Drawings in Appendix C.



Photo 24: Typical Section Loss on Pin and Surface Corrosion on Bearing

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Fixed Bearings. There is active corrosion on many of the fixed bearings.

5.8 SNBI Item B.C.08 – Bridge Joints

5.8.1 ELEMENT 300 – STRIP SEAL EXPANSION JOINT

Total Quantity	Units	CS1	CS2	CS3	CS4
503	ft.	85	400	18	0

Strip seal expansion joints are present at Joints 1, 2, and 15 through 18. The strip seal expansion joints rating is a **6**, indicating that it is in **Satisfactory** condition. There is evidence of leakage through the joint seals. There

is debris accumulation through most of the length of the joints. At Joint 17, there is a 6' long missing length of joint material in the westbound lanes (Photo 25). At Joint 18, there are two areas where the seal is tearing or has come out of the retainer (Photo 26). The Strip Seal in Joint 2 at the north railing has a hole which is leaking onto the end vertical of Truss A and the West Face of the East Pylon.



Photo 25: Missing Length of Joint Material in Expansion Joint 17



Photo 26: Damaged Seal and Debris in Expansion Joint 18

For specific expansion joint deficiencies and locations, see Table 1 in Appendix C. For joint opening measurements, see Table 2 in Appendix C.

5.8.2 ELEMENT 302 – COMPRESSION JOINT SEAL

Total Quantity	Units	CS1	CS2	CS3	CS4
498	ft.	398	100	0	0

Compression seal expansion joints are present at Joints 3, 5, 7, 9, 11, and 13. The compression joints are in **Satisfactory** condition. There is evidence of leakage through the joint seals. There is some minor debris accumulation in the joints and some gouges in the joint armor.

For specific expansion joint deficiencies and locations, see Table 1 in Appendix C. For joint opening measurements, see Table 2 in Appendix C.

5.8.3 ELEMENT 303 – ASSEMBLY JOINT WITH SEAL

Total Quantity	Units	CS1	CS2	CS3	CS4
498	ft.	98	400	0	0

Modular joints with seals are present at Joints 4, 6, 8, 10, 12, and 14. The modular joints are in **Satisfactory** condition. There is evidence of leakage through the joint seals. There is debris accumulation through most of the length of the joints.

For specific expansion joint deficiencies and locations, see Table 1 in Appendix C. For joint opening measurements, see Table 2 in Appendix C.

5.9 SNBI Item B.C.09 – Channel

The overall channel rating is a **6**, indicating that it is in **Satisfactory** condition. Condition findings of individual channel items are as follows:

5.9.1 ALIGNMENT

The alignment is in **Satisfactory** condition. The channel is skewed with respect to the piers, but this is an as-built condition (Photos 27 & 28).

5.9.2 HYDRAULIC OPENING

The hydraulic opening is in **Very Good** condition. There is no indication of the bridge restricting high flow in the river.

5.9.3 NAVIGATION LIGHTS

The navigation lights are in **Poor** condition. On the north side of the bridge, the middle and west navigation lights are not functioning. Damage at these locations was not noted.



Photo 27: Bridge Channel, Looking North (Downstream)



Photo 28: Bridge Channel, Looking South (Upstream)

5.10 SNBI Item B.C.10 – Channel Protection

The channel protection is in **Satisfactory** condition. There are some minor deficiencies to the protection on both banks.

5.10.1 FENDERS

The concrete fenders are in **Very Good** condition.

5.11 SNBI Item B.C.11 – Scour

The scour rating is a **6**, indicating that it is in **Satisfactory** condition. An underwater inspection was performed on July 8, 2020. The underwater inspection found the following deficiencies contributing to the scour rating:

- Pier 10 (West Pier), Column D: Scour has exposed a maximum height of 3.0 feet of the vertical face of the footing at the southeast corner. This represents a decrease from the 3.7 feet noted in the 2015 underwater inspection. The horizontal footing exposure extends 18 feet on the east face and 11 feet on the south face from the southeast corner.

5.12 Approaches

The approaches are in **Satisfactory** condition. Condition findings of individual approach items are as follows:

5.12.1 ELEMENT 321 – REINFORCED CONCRETE APPROACH SLAB

Total Quantity	Units	CS1	CS2	CS3	CS4
2,075	sq. ft.	2,075	0	0	0

An approach slab is located on the west approach and has been paved over. The approach slab is in **Good** condition with no signs of settlement or shifting. The west approach was repaved in 2022.

5.12.2 APPROACH WEARING SURFACE

The approach wearing surfaces are in overall **Good** condition. The west approach was repaved in 2022 (Photo 29). **There is a 3'Lx9"Wx3½"D pothole in the outside eastbound lane along the joint between the east approach slab and approach pavement (Photo 30).**

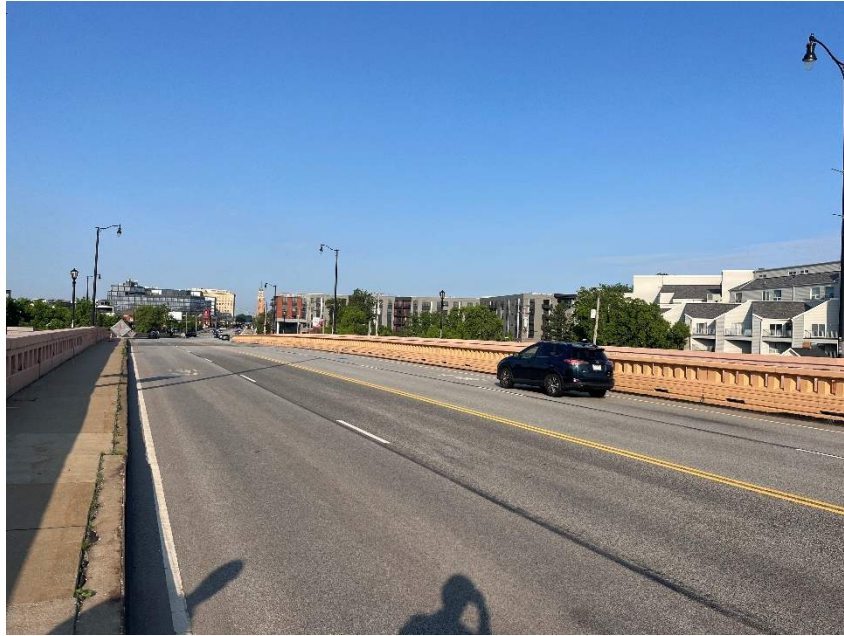


Photo 29: Repaved West Approach Wearing Surface



Photo 30: Large Pothole at Joint Between East Approach Slab and Approach Pavement

Approach sidewalks typically have minor delamination and cracking, similar to the deck sidewalk.

5.12.3 EMBANKMENT

The approach embankments are in **Good** condition. There are some locations of minor erosion present on the approaches.

5.12.4 GUARDRAIL

The approach guardrails are in **Fair** condition. The approach guardrail is an extension of the concrete rail on the bridge. It exhibits cracking, minor surface spalling, and rust staining (Photo 31).



Photo 31: Typical Cracks, Spalls, and Rusting Staining on Approach Railing

5.12.5 SECURITY ITEMS

At the West Pylon, the barbed wire on the top of the vandal protection fence at the south end has been damaged, and there is evidence of access to the bridge at this location by vandals.

5.13 Signs & Utilities

Condition findings of individual sign and utility items are as follows:

5.13.1 SIGNS

The signs on the structure are in **Good** condition. No issues were noted.

5.13.2 UTILITIES

The utilities are in **Poor** condition. On the south side above the maintenance deck, there is a large group of PVC conduits supported by a truss, mounted to the unused overhead floorbeam. Under these conduits there is a large diameter natural gas line supported on the maintenance deck. An electrical conduit is mounted to the north maintenance deck rail. **The electrical conduit is detached from the utility box in Span 7 at Pier 6 (Photo 32).** For utility deficiency locations and descriptions, see Table 6 in Appendix C.



Photo 32: Electrical Conduit Detached From Utility Box in Span 7

The PVC telecom conduits are damaged, and cables are exposed in many locations (Photo 33). The telecom truss support, sheds, and corrugated roofs/walls have widespread heavy deterioration (Photo 34). At several truss locations, the lower chords have 100% section loss at supports, the lateral bracing is detached or bent, and gusset plates are warped. The corrugated roofs under the deck joints have completely deteriorated at

most deck joint locations (Photo 35). At the utility access hatches in the deck, there is widespread corrosion of the supports and evidence of leakage.



Photo 33: Typical Damaged PVC Conduits



Photo 34: Typical Deteriorated PVC Conduit Truss with Broken and Warped Gusset Plates



Photo 35: Typical Deteriorated Corrugated Roof For PVC Conduits Under Deck Joints

In spans 6, 11, 12, and 13, the electrical conduit is detached from the railing and is laying on the maintenance deck floorbeams. In span 11, a junction box for the electrical conduit is deformed and missing its cover plate **and in span 13, a junction box has a deformed cover plate** (Photo 36).



Photo 36: Deformed Junction Box For Electrical Conduit with Deformed Cover Plate in Span 13

Several of the street lights are non-operational, but no damage was detected on **most of** these street lights. Street light poles on the north side are **removed and laying against the interior railing** in Span 3 (Photo 37) and missing in Span 6 (Photo 38). **A street light pole on the south side is missing the globe at the top of the pole in Span 7 (Photo 39).**



Photo 37: Removed Street Light Pole Laying Against North Interior Railing in Span 3



Photo 38: Missing Street Light Pole Outside of North Railing in Span 6



Photo 39: Street Light Missing Globe Outside of South Railing in Span 7

5.14 Summary & Recommendations

The Ohio General Appraisal (SNBI Item B.C.13.01) for the bridge is a **4** and the Load Posting Status (SNBI Item B.PS.01) for the bridge is **PO**, indicating that it is in **Poor** condition and is open with no restrictions.

The following is a summary of the field inspection performed on **June 9-12, 2025**:

SNBI Item	Component	Rating
B.C.01	Deck	6
B.C.01.01	Wearing Surface	7
B.C.02	Superstructure	4
B.C.02.01	Protective Coating System (PCS)	6
B.C.03	Substructure	6
B.C.05	Bridge Railing	5
B.C.07	Bridge Bearings	6
B.C.08	Bridge Joints	6
B.C.09	Channel	6
B.C.10	Channel Protection	6
B.C.11	Scour	6

DLZ has determined the following recommendations for the bridge. Based on the level of urgency, recommendations have been divided into three categories: Priority, Maintenance, and Monitor.

5.14.1 PRIORITY

The following recommendations are priority repairs which should be completed as soon as possible to address an immediate safety concern:

1. Remove areas of loose and deteriorating concrete on the deck fascia over Canal Road, the parking lot between Piers 3 and 4, W. 3rd Street, Scranton Road, and the Lake Link Trail.
2. Repair spalls on the wearing surface with a rigid patching material.
3. Replace and/or repair the non-functioning navigation lights.
4. Repair the access manholes in the pier caps and replace the missing manhole covers at Pier 6.
5. Fix the areas of broken and deteriorated utility supports.
6. Install deck netting to protect the new paved parking lot between Piers 3 and 4 from spalling concrete.
7. Repair security fence at south end of West Pylon.
8. Clean out the drainage recesses covered by grates in the north sidewalk that are clogged with significant debris.
9. Repair or replace the deteriorated truss that is above the maintenance deck and supports the PVC telecom conduits.

10. Repair or replace the street light poles on the north side that are **removed** in Span 3 and missing in Span 6. **Replace the missing globe on the street light pole on the south side in Span 7.**
11. **Repair large pothole in the eastbound lane along the joint between the east approach slab and approach pavement.**
12. **Repair the electrical conduit that is detached from the utility box in Span 7 at Pier 6 on the north maintenance deck rail.**

5.14.2 MAINTENANCE

The following recommendations are on-going repairs which are intended to maintain the current level of service for the bridge:

1. Clean out debris from all joints.
2. Check scuppers and catch basins to ensure proper drainage.
3. Remove fallen spalled concrete from netting below deck.

5.14.3 MONITOR

The following items should be investigated and recorded with each annual bridge inspection:

1. Monitor areas of fatigue cracking and fatigue crack repairs during future inspections.
 2. Monitor areas of deteriorating substructure and deck concrete to ensure potential spalls are not a public safety concern.
-



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2025 Physical Condition Routine Element Level Inspection Report
CUY-10-1613, SFN 1801503

APPENDIX A – AssetWise Bridge Inspection Field Report

Inspector: Agler,Justin

Inspection Date: 06/12/2025

Structure Number: 1801503

Facility Carried: SR 10

Ohio Bridge Inspection Summary Report**CUY-00010-1613 (1801503)**

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

B.CL.02: Major Maint 01 - State Highway Agency /

225 Routine Main A/B 04 - City or Municipal Highway /
Agency

221 Inspection A/B 01 - State Highway Agency /

5A: Inventory Route 1 00010

7: Facility On SR 10

6: Feature Ints CUY RIVER VALLEY & FI RR

9: Location LORAIN/CARNEGIE BRIDGE

Lat, Lon 41.487381 ,-81.696439

Condition**B.C.01: Deck 6**

58.01: Wearing Surface 7

B.C.08: Joint 6**B.C.02: Superstructure 4**

59.01: Paint & PCS 6

B.C.03: Substructure 6**B.C.09: Channel 6****B.C.11: Scour 6****B.C.10: Channel Prot. 6****B.C.05: Bridge Railing 5****B.C.06: Transitions N****B.C.07: Bearings 6****B.C.04: Culverts N****Ohio GA 4****Appraisal**B.AP.03: Scour Vul. 0 - Scour appraisal has not been
completed.**Geometric**

48: Max Span Length (ft) 299.0
 49: Structure Length (ft) 3657.3
 52: Deck Width, Out-To-Out (ft) 83.0
 424: Deck Area (sf) 303555.9
 32: Appr Roadway Width (ft) 60.0
 51: Road Width, Curb-Curb (ft) 60.0
 50A: Curb/SW Width: Left (ft) 6.7
 50A: Curb/SW Width: Right (ft) 6.7
 34: Skew (deg) 0
 33: Bridge Median 0 - No median
 54B: Min Vert Underclearance (ft) 0
 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 (%) 140
 704: Analysis Date 07/21/2016
 63: Analysis Method 6 - Load Factor (LF) rating reported by
 rating factor (RF) method using MS18
 loading.

Structure Type

43: Bridge Type 3 - Steel

09 - Truss - Deck

N- Not Applicable

45: Spans Main / Approach 15 / 5

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

408: Composite Deck Y - Composite Construction

414A Joint Type 1 0 - Other

414B: Joint Type 2 N - None

108A: Wearing Surface 2 - Integral Concrete (separate
non-modified layer of concrete
added to structural deck)

3 - MicroSilica

422: WS Date 09/01/2001

423: WS Thick (in) 1.5

482: Protective Coating 5 - Paint System OZEU

483: PCS Date 03/04/2004

453: Bearing Type 1 1 - Rollers

455: Bearing Type 2 N - None

528: Foundn: Abut Fwd 4 - Spread Footing (on soil)

533: Foundn: Abut Rear 4 - Spread Footing (on Soil)

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

539: Foundn: Pier 2 0 - Other

Age and Service

27: Year Built/ 106 Rehab 1932 / 1983

42A: Service On 5 - Highway-pedestrian

42B: Service Under 7 - Railroad - waterway

28A: Lanes on 04

28B: Lanes Under 00

19: Bypass Length 2

29: ADT 13835

109: % Trucks (%) 7

Inspections

		Months	
B.IE.03 Routine Insp.		12	06/12/2025
B.IE.03: NSTM Insp.	Y	24	06/03/2024
B.IE.03: UW Insp.	Y	72	07/08/2020
B.IE.03: Special Insp.			
UBIT Insp.	N		06/12/2025
Drone Insp.	N	0	

Inspector Agler,Justin

Structure Number: 1801503
Facility Carried: SR 10

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12-Reinforced Concrete Deck	3 - Mod.	263774	sq. ft.	237174	13200	13300	100
	<p>CS2: Delaminations, Moderate cracking with efflorescence, Failing patches, Saturation.</p> <p>CS3: Spalling with exposed rebar.</p> <p>CS4: In east approach spans between Column 6A and the east end of bridge, spalling with exposed reinforcing, with section loss ranging from minor to complete. See attached report for additional details.</p>						
510-Wearing Surfaces		178959	sq. ft.	168939	10000	20	0
	<p>CS2: There are isolated moderate longitudinal, transverse, and map cracks up to 1/16" wide throughout the deck.</p> <p>CS3: Several areas with shallow potholes.</p>						
107-Steel Open Girder/Beam	3 - Mod.	1207	ft.	1195	12	0	0
	CS2: Minor surface corrosion at the west abutment.						
515-Steel Protective Coating		11120	sq. ft.	10340	780	0	0
	CS2: Areas of surface dulling and surface corrosion (substantially effective).						
113-Steel Stringer	3 - Mod.	36709	ft.	32238	3671	800	0
	<p>CS2: Areas of active surface corrosion.</p> <p>CS3: Areas of active and painted over minor web and flange loss. Isolated corrosion holes which are cleaned and painted.</p>						
515-Steel Protective Coating		187210	sq. ft.	181360	5600	250	0
	<p>CS2: Areas of surface dulling and surface corrosion (substantially effective).</p> <p>CS3: Areas of loss of pigment.</p>						
120-Steel Truss	3 - Mod.	11830	ft.	8810	1600	1420	0
	<p>CS2: Corrosion and pack rust are reactivating. At deck joints and junction box drains, leakage is causing active corrosion to adjacent members. Several cracks running longitudinally along the fillet between the legs of the flange angle with crack arrest holes</p> <p>CS3: Members have varying degrees of pitting and section loss, and pack rust located between the flange angles and the web plates. At lower chords pack rust measures up to 2" thick, causing significant distortion of the web plates and flange angles. Portions of the flange angles and webs of the lower chords have pockets of deep pitting or corrosion holes. The greatest section loss is typically in located in Spans 11 and 13. In these spans, twelve (12) lower chord members had section loss between 5% and 22%. The lower chords, mainly in Span 12, have several cracks in the flange angles. The cracks typically run longitudinally along the fillet between the legs of the flange angle. Crack arrest holes have been drilled at some of the crack locations.</p>						
515-Steel Protective Coating		650910	sq. ft.	566660	71000	13250	0
	<p>CS2: Areas of surface dulling, surface corrosion (substantially effective), and peeling surface coat.</p> <p>CS3: Areas of loss of pigment and limited effectiveness.</p>						
152-Steel Floor Beam	3 - Mod.	11218	ft.	10118	1000	100	0
	<p>CS2: Surface corrosion, mainly below deck joints</p> <p>CS3: Areas of active and painted over minor web and flange loss.</p>						

Structure Number: 1801503
Facility Carried: SR 10

[illegible]

Inspection Date: 06/12/2025

Facility Carried: SR 10

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
331-Reinforced Concrete Bridge Railing	3 - Mod.	10527	ft.	5627	2700	2200	0
	CS2: Moderate cracks, spalls, and delaminations.						
	CS3: Map cracks. Rust staining. Spalls with exposed reinforcing.						
815-Drainage	3 - Mod.	32	each	8	8	16	0
	CS2: Partially clogged scupper.						
	CS3: Clogged scupper. All of the drainage recesses covered by grates in the north sidewalk are clogged with significant debris.						
830-Abutment Backwall	3 - Mod.	171	ft.	130	40	1	0
	CS2: Moderate cracking and delamination.						
	CS3: Cracking with rust staining						

Inspector: Agler,Justin

Structure Number: 1801503

Inspection Date: 06/12/2025

Facility Carried: SR 10

ODOT District: District 12

CUY-00010-1613 _(1801503)

Date Built: 07/01/1932

Major Maint: 01 - State Highway Agency

Facility Carried: SR 10

Traffic On: 5 - Highway-pedestrian

Rehab Date: 01/01/1983

Routine Maint: 04 - City or Municipal Highway Agency

Feature Inters: CUY RIVER VALLEY & FI RR

Traffic Under: 7 - Railroad - waterway

Insp. Resp A: 01 - State Highway Agency

FIPS Code: 16000 - CLEVELAND (CUY county)

Location: DISTRICT 12

LORAIN/CARNEGIE BRIDGE

Insp
Resp B:

Inspector

Agler,Justin

Inspection Date 06/12/2025

Reviewer Not Approved

Inspector Comments - Deck and Approach

Deck, Wearing Surface, Joints, Railing

Element 12 - Reinforced Concrete Deck (SF)

The deck is overall in **Satisfactory** condition. The underside of the deck has areas of spalling with exposed rebar, delaminations, cracking with efflorescence, and failing patches noted throughout. Heavier concrete deterioration is noted near the joints and scuppers. Many of the previous spalls have been coated with a spray-on cathodic protection, but corrosion is reactivating at some of these locations. Netting and/or wood falsework are in place over the roadways and parking lots to prevent loose concrete from falling into traffic. There was spalled concrete caught in the netting, and it should be removed before more spalls fall off and overload the netting. There is a new paved parking lot, which was not present in the 2020 inspection, between Pier 3 and 4, and there is no netting on the underside of the maintenance deck in this area. The edge of the deck has areas of delamination and cracking scattered throughout with isolated areas of spalling. Some of the delaminated and cracking deck edge has the potential to spall off onto roadways, parking lots or trails underneath the bridge. The condition is present on the south deck overhang above Canal Road, W. 3rd Street, Scranton Road, and the Lake Link Trail, and on the north deck overhang above W. 3rd Street, the parking lot between Piers 3 and 4, Scranton Road, and the Lake Link Trail. The deck in east approach spans between Column 6A and the east end exhibits areas of cracking, saturation, delamination and spalling with exposed reinforcing, with section loss ranging from minor to complete. The deck in the west approach unit has areas of spalling with exposed rebar, delaminations and cracking with efflorescence. See the inspection report for additional details.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantities or considered with the rating of Item 58 Deck or Item 58.01 Wearing Surface. On the top side, there are some areas of shallow spalling and delamination, with isolated areas of heavy spalling with exposed, corroded reinforcing. There are areas of cracking, delamination and spalling on the underside of the deck.

See the inspection report for additional details.

Element 300 - Strip Seal Expansion Joint (LF)

Strip seal expansion joints are present at Joints 1, 2, and 15 through 18. The strip seal expansion joints are in **Satisfactory** condition. There is evidence of leakage through the joint seals. There is debris accumulation through most of the length of the joints. At Joint 17, there is a 6' long missing length of joint material in the westbound lanes. At Joint 18, there are two areas of where the seal is tearing or has come out of the retainer. See the inspection report for additional details.

Element 302 - Compression Joint Seal (LF)

Compression seal expansion joints are present at Joints 3, 5, 7, 9, 11, and 13. The compression joints are in **Satisfactory** condition. There is evidence of leakage through the joint membranes. There is some minor debris accumulation in the joints and some gouges in the joint armor. See the inspection report for additional details.

Inspector: Agler, Justin

Structure Number: 1801503

Inspection Date: 06/12/2025

Facility Carried: SR 10

Element 303 - Assembly Joint with Seal (LF)

Modular joints with seals are present at Joints 4, 6, 8, 10, 12, and 14. The modular joints are in **Satisfactory** condition. There is evidence of leakage through the joint seals. There is debris accumulation through most of the length of the joints. See the inspection report for additional details.

Element 331 - Reinforced Concrete Bridge Railing (LF)

The concrete railings are in **Fair** condition. The exterior railings have widespread cracking with rust staining and some areas of delamination and spalls with exposed reinforcing. The bikeway railing, located between the roadway and north sidewalk, is in good condition with a few minor deteriorated areas. See the inspection report for additional details.

Element 815 - Drainage (EA)

The deck drainage is in **Poor** condition. The drainage recesses covered by grates in the north sidewalk are clogged with significant debris. Otherwise, there is minor debris in the deck scuppers and recesses, and some isolated surface corrosion below the deck in the drainage downspouts. At the At Pier 6, two of the manhole covers at the base of the pier are missing. See the inspection report for additional details.

Curb/Sidewalk

The concrete and steel plate curbs and concrete sidewalk are in **Fair** condition. The steel plate curb on the south sidewalk exhibits rust. Both sidewalks have isolated areas of delamination and light cracking with efflorescence. The south sidewalk shows more deterioration with some areas of spalling and the seal between the top of the steel curb plate and the concrete is deteriorating with vegetation growing in many of the cracked areas adjacent to the curb. On the south sidewalk in Span 7, there is a 9'x4'x1" spall with deteriorated reinforcing on the sidewalk. See the inspection report for additional details.

Element 510 - Wearing Surface (SF)

The microsilica concrete wearing surface is in **Good** condition. There are isolated longitudinal, transverse, and map cracks up to 1/16" wide throughout the deck (less than 5% of total area), and several areas with shallow potholes that have been patched with asphalt. In the eastbound lanes of Span 13, there is an 18"x20"x2" pothole in the wearing surface. See the inspection report for additional details.

Signs

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The signs on the structure are in **Good** condition.

Approach

Item 321 - Approach Slab (SF)

An approach slab is located on the west approach, and has been paved over. The approach slab is in **Good** condition with no signs of settlement or shifting. The west approach was repaved in 2022.

Approach Wearing Surface

The approach wearing surfaces are in overall **Good** condition. The west approach was repaved in 2022. There is a 3'Lx9"Wx3.5"D pothole in the outside eastbound lane along the joint between the east approach slab and approach pavement. Approach sidewalks typically have minor delamination and cracking, similar to the deck sidewalk. See the inspection report for additional details.

Embankment

The approach embankments are in **Good** condition. There are some locations of minor erosion present on the approaches. See the inspection report for additional details.

Guardrail

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The approach guardrails are in **Fair** condition. The approach guardrail is an extension of the concrete rail on the bridge. It exhibits cracking, minor surface spalling, and rust staining. See the inspection report for additional details.

Security Items

At the West Pylon, the barbed wire on the top of the vandal protection fence at the south end has been damaged, and there is evidence of access to the bridge at this location by vandals.

Inspector Comments - General Appraisal

Superstructure, Bearings

Element 107 - Steel Open Girder/Beam (LF)

The beams that are part of the west approach superstructure are in overall **Good** condition. There is some minor surface corrosion at the abutment. See the inspection report for additional details.

Element 113 - Steel Stringer (LF)

The stringers are in **Satisfactory** condition. There are isolated areas of active corrosion at the floorbeam connections and fascia stringers, with some minor web loss. There are areas of isolated corrosion holes which were previously cleaned and painted, and in some locations, repaired. See the inspection report for additional details.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of Steel Stringers or considered with the rating of Item N59 Superstructure. There are areas of section loss and active corrosion of the stringers, especially near the joints.

Element 120 - Steel Truss (LF)

The truss is in **Poor** condition. The rating is primarily controlled by section loss in the lower chord of the exterior trusses and section loss of members at the deck joints. Areas of corrosion, pitting and pack rust were cleaned, sealed and painted during the 2002 Rehabilitation. Select areas, where corrosion had reinitiated most heavily since 2002, were cleaned, sealed and painted as part of the rehabilitation

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completed in 2020. At numerous locations, corrosion and pack rust are reactivating.

The lower chords have varying degrees of section loss and pack rust located between the flange angles and the web plates. This pack rust measures up to 2" thick, causing significant distortion of the web plates and flange angles. Portions of the flange angles and webs of the lower chords have pockets of deep pitting or corrosion holes. The greatest section loss is typically located in Spans 11 and 13. In these spans, twelve (12) lower chord members had section loss measurements between 5% and 22%, as previously reported by the 2014 Inspection Report with no notable progression since that inspection. Bolted plates have been placed in some areas to repair areas with corrosion holes & advanced section loss. The lower chords, mainly in Span 12, have cracks in the flange angles. The cracks typically run longitudinally along the fillet between the legs of the flange angle. Crack arrest holes have been drilled at some of the crack locations.

The verticals are generally in good condition. The verticals below some of the deck joint locations exhibit moderate painted over pitting and pack rust throughout the full height, some of which is reactivating. There is localized moderate section loss of the web plates at some of the lateral bracing and unused floorbeam connections.

The diagonals are generally in satisfactory condition. Areas of section loss or active pack rust are present, mainly near the lower gusset plates and near the deck joints. Exterior diagonals, adjacent to abandoned utility supports, have remnants of brackets welded to the web plates. Several diagonals have lower stay plates with deep section loss or corrosion holes.

The upper chords are in overall good condition, with some areas of painted over pitting and minor section loss. At deck joints and junction box drains, leakage is causing active corrosion to upper chord members. There is dirt and construction debris present below the expansion joints inside some upper chord connections with the verticals. At several locations, abandoned drainage or utility brackets are welded to the webs. At U0-U1 of the Span 8-9-10 South Exterior Truss, the welds to one of these brackets is cracked. At U4-U5 of the Span 6-7-8 South Exterior Truss, there are five (5) cracked welds at the inboard web and at the U4 inboard gusset plate. At U6-U7 of the Span 2-3-4 South Exterior Truss, there are several cracked welds around the abandoned utility support.

The lateral and sway bracing members are in fair condition with section loss and some corrosion holes near the connections. Many of the lateral bracing gusset plates have section loss, pack rust, and corrosion holes. Pack rust at the lateral bracing members is causing distortion of the gusset plates. Minor pack rust and corrosion was noted at the connections of the sway bracing to the verticals below the deck joints.

See the inspection report for additional details.

Element 152 - Steel Floor Beam (LF)

The floor beams are in overall **Satisfactory** condition. There is minor section loss and surface corrosion along the floor beams, mainly below deck joint locations. See the inspection report for additional details.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Steel Floor Beams or considered with the rating of Item N59 Superstructure. There are areas of section loss and active corrosion of the floor beams, especially near the joints, with 100% section loss. At many locations, the floorbeam webs have arrested cracks at the truss connections.

Item 161 - Steel Pin and Pin & Hanger Assembly (EA)

The pins, hangers, and hinges are in **Fair** condition. Minor to moderate section loss and pack

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rust were noted on the pins and the adjacent plates. At some locations, minor misalignments of the pins were noted. More severe defects of pins and adjacent plates noted in previous inspection were repaired as part of the most recent inspection. See the inspection report for additional details.

Item 162 - Steel Gusset Plate (EA)

The truss gusset plates are in **Poor** condition. Areas of corrosion, pitting and pack rust were cleaned, sealed and painted during the 2002 Rehabilitation. At numerous locations, corrosion and pack rust are reactivating. Areas of heavy corrosion occur below the deck expansion joints. Advanced section loss commonly occurs just above the lower chord, along the edges and at ends of the diagonal connections. Rivet head loss is also common at these locations. At pin locations, the gusset plates typically have section loss and pitting around the pins. Minor bows were noted along the free edges of the gusset plates due to pack rust. The upper chord gusset plates are in good condition with little corrosion and pitting observed, except at locations of deck joint leakage where some section loss and pack rust are present. The free edges of many of the gusset plates have been stiffened during the most recent rehabilitation. See the inspection report for additional details.

Item 311 Moveable Bearing (EA)

The moveable bearings are in **Satisfactory** condition. Moderate surface corrosion with areas of section loss was noted on the pins and adjacent plates. There is debris and water accumulation in several of the truss bearings. At the west abutment, the bearings all have light surface corrosion. The stringer saddle bearings exhibit minor corrosion and some pack rust. See the inspection report for additional details.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Moveable Bearings. There is active corrosion and section loss of the rocker bearings. The locations of excess tilt noted on previous inspections have been corrected by the most recent rehabilitation.

Item 313 Fixed Bearing (EA)

The fixed bearings are in **Satisfactory** condition. Moderate surface corrosion with areas of section loss was noted on the pins and adjacent plates. There is debris and water accumulation in several of the truss bearings. See the inspection report for additional details.

The lower (maintenance) deck is not open to the public and does not present a public safety concern, and therefore it is not included in the element level quantity of the Fixed Bearings.

Item 515 - Steel Protective Coating (SF)

The protective coating system (PCS) is in **Fair** condition. The most severe areas of PCS degradation noted in the 2019 inspection have been or were being addressed as part of the ongoing rehabilitation. There are areas of peeling and bubbling paint and surface corrosion, especially at expansion joints where water infiltration and active corrosion is occurring. At some locations, corrosion is reinitiating where pack rust was previously cleaned and sealed. There is widespread fading and loss of pigment, particularly on the portions of the truss where sun exposure is the highest. At scattered locations the top coat of paint is peeling, revealing the epoxy intermediate coat. See the inspection report for additional details.

Fatigue Prone Details

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The Fatigue Prone Details are in **Satisfactory** condition. Fatigue prone details are present on the abandoned drainage and utility brackets, which are welded to the upper chords and diagonals. At U0-U1 in Span 10 of the Span 8-9-10 South Exterior Truss, the welds to one of these brackets is cracked, but the crack does not propagate into the base metal.

Utilities

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The utilities are in **Poor** condition. The PVC telecom conduits are damaged, and cables are exposed in many locations. The telecom structural supports, sheds, and corrugated roofs/walls have widespread heavy deterioration. The corrugated roofs under the deck joints have completely deteriorated at most deck joint locations. At several truss locations, the lower chords have 100% section loss at supports and lateral bracing is detached or bent, and gusset plates are warped. At the utility access hatches in the deck, there is widespread corrosion of the supports and evidence of leakage.

In spans 6, 11, 12, and 13, the electrical conduit is detached from the railing and is laying on the maintenance deck floorbeams. In span 11, a junction box for the electrical conduit is deformed and missing its cover plate and in span 13, a junction box has a deformed cover plate.

Several of the street lights are non-operational, but no damage was detected on most of these street lights. Street light poles on the north side are removed and laying against the interior railing in Span 3 and missing in Span 6. A street light pole on the south side is missing the globe at the top of the pole in Span 7.

Substructure

Item 202 - Steel Column (EA)

The steel pier columns in the West Approach Spans are in **Good** condition. There is minor spalling at the column base plates, typical. See the inspection report for additional details.

Item 205 - Reinforced Concrete Column (EA)

The reinforced concrete pier columns are in **Satisfactory** condition. Pier columns have areas of cracking, staining, delamination, or spalling concentrated around previously patched areas. On Pier 7, there is damage where the south and east faces of the southern columns were scraped by vehicle/equipment.

Item 210 - Reinforced Concrete Pier Wall (LF)

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The pier walls are in **Satisfactory** condition. Pier walls are present at the East and West Pylons. Minor cracking, staining, patched areas and some minor spalling were noted throughout . See the inspection report for additional details.

Item 215 - Reinforced Concrete Abutment (LF)

The abutment walls are in Satisfactory condition. There are cracks, areas of patching, rust staining, and some delaminations. See the inspection report for additional details.

Item 234 - Reinforced Concrete Pier Caps (LF)

The pier caps are in **Satisfactory** condition. There are areas of cracking, delamination, and patching on the caps. The inspection manholes in the pier caps are in poor condition. There is insufficient surface bearing area to support the lid and care should be taken when walking near them or opening them. There is standing water at several places on top of the pier caps, including around some bearings. See the inspection report for additional details.

The non-structural pier towers located above the pier caps of Piers 1-12 are not considered in the rating but are in poor condition. Many portions of the pier towers have been removed, but those that remain show active degradation with debris accumulating on the pier cap below.

Item 830 - Abutment Backwalls (LF)

The backwalls are in **Satisfactory** condition. Cracking and delamination were noted in some of the backwall. See the inspection report for additional details.

Wingwalls

The wingwalls are in **Satisfactory** condition with scattered areas of cracking, delamination, and minor spalling. See the inspection report for additional details.

Decorative Pylons

Inspector: Agler,Justin
Inspection Date: 06/12/2025

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Facility Carried: SR 10

The decorative sandstone pylons are in **Satisfactory** condition. The sandstone units exhibit some areas of spalling and deterioration. See the inspection report for additional details.

Culvert

Inspector Comments - Waterway

Channel Protection

Channel

Alignment

The alignment is in **Satisfactory** condition. The channel is skewed with respect to the piers, but this is an as-built condition.

Protection

The channel protection is in **Satisfactory** condition. There are some minor deficiencies to the protection on both banks.

Hydraulic Opening

The hydraulic opening is in **Very Good** condition. There is no indication of the bridge restricting high flow in the river.

Fenders

The new concrete fenders are in **Very Good** condition.

Navigation Lights

The navigation lights are in **Poor** condition. On the north side of the bridge, the middle and west navigation lights are not functioning. Damage at these locations was not noted.

Scour

The scour is in **Satisfactory** condition. An underwater inspection was performed on July 8, 2020.

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The underwater inspection found the following deficiencies contributing to the scour rating:

Pier 10 (West Pier), Column D: Scour has exposed a maximum height of 3.0 feet of the vertical face of the footing at the southeast corner. This represents a decrease from the 3.7 feet noted in the 2015 underwater inspection. The horizontal footing exposure extends 18 feet on the east face and 11 feet on the south face from the southeast corner.

See the 2020 Underwater Inspection Report for additional details.

Scour



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2025 Physical Condition Routine Element Level Inspection Report
CUY-10-1613, SFN 1801503

APPENDIX B – Existing General Plan, Elevation, & Transverse Section

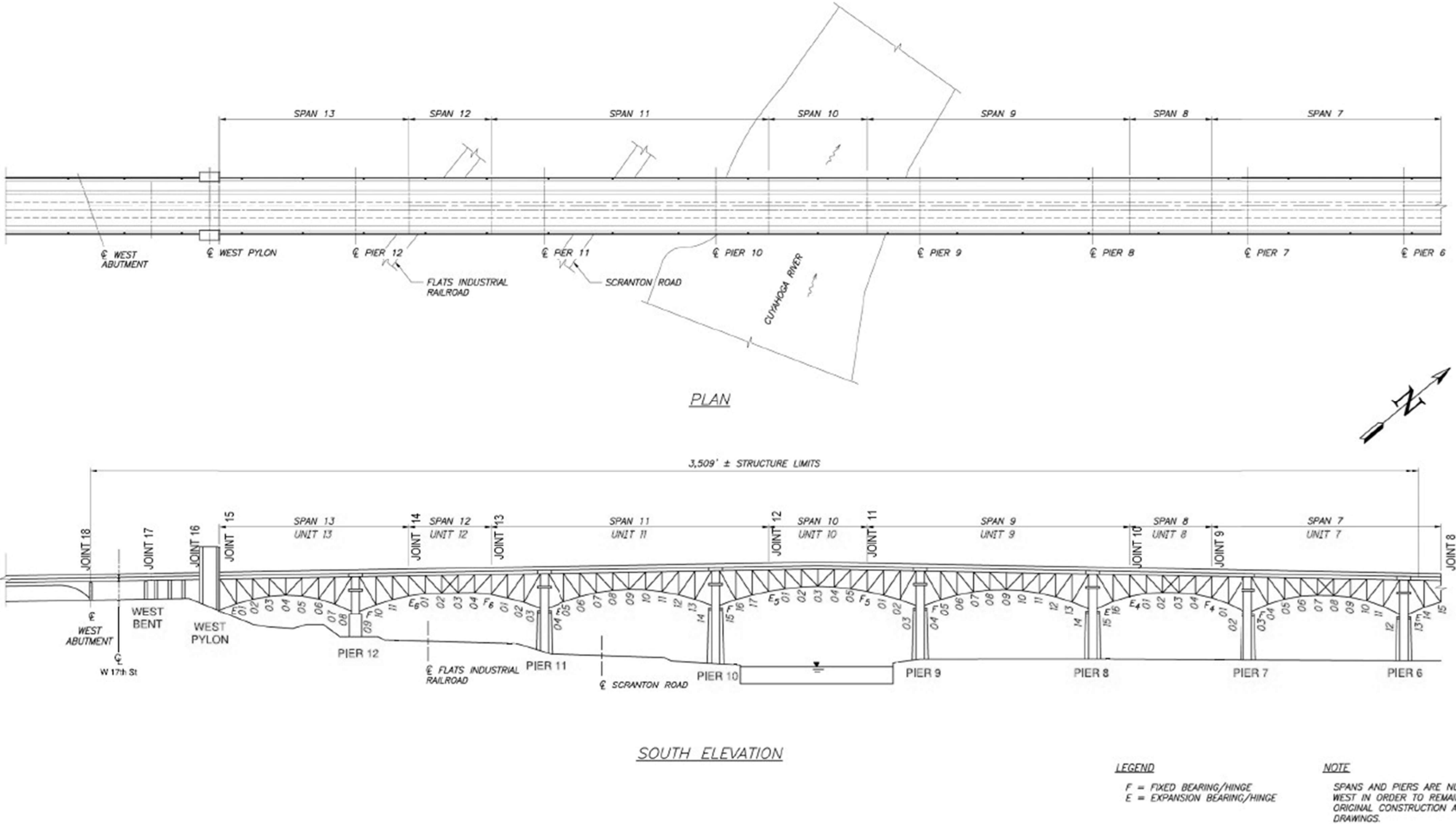
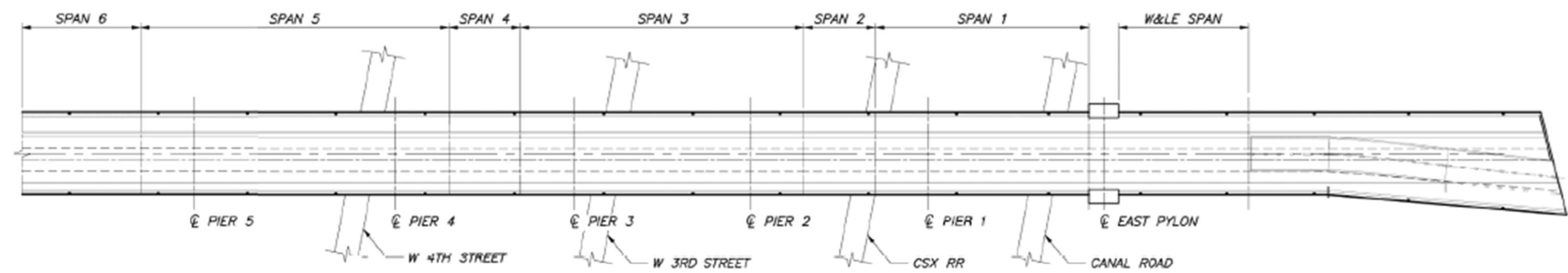
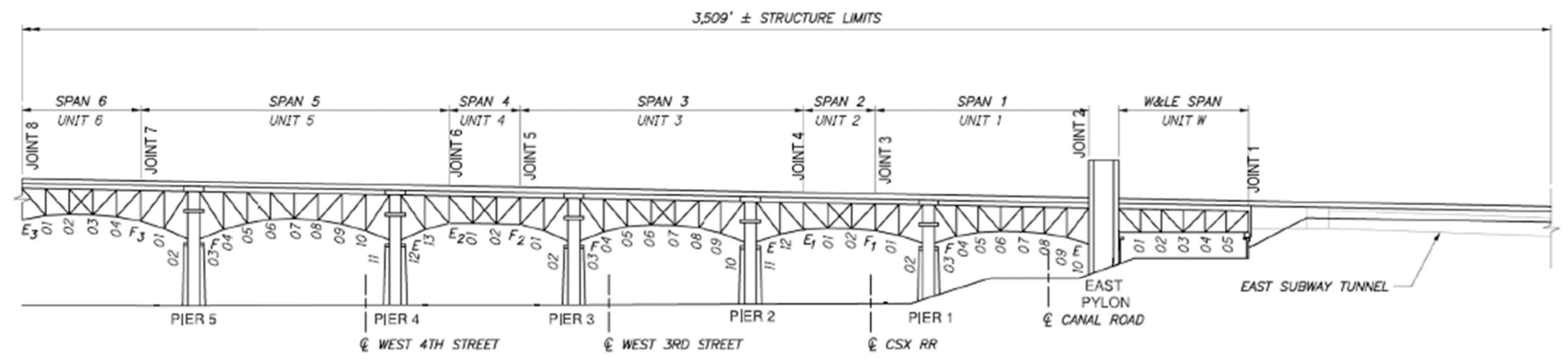


FIGURE 1: GENERAL PLAN & ELEVATION



PLAN



SOUTH ELEVATION

LEGEND
F = FIXED BEARING/HINGE
E = EXPANSION BEARING/HINGE

NOTE
SPANS AND PIERS ARE NUMBERED EAST TO WEST IN ORDER TO REMAIN CONSISTENT WITH ORIGINAL CONSTRUCTION AND REHABILITATION DRAWINGS.

FIGURE 1: GENERAL PLAN & ELEVATION

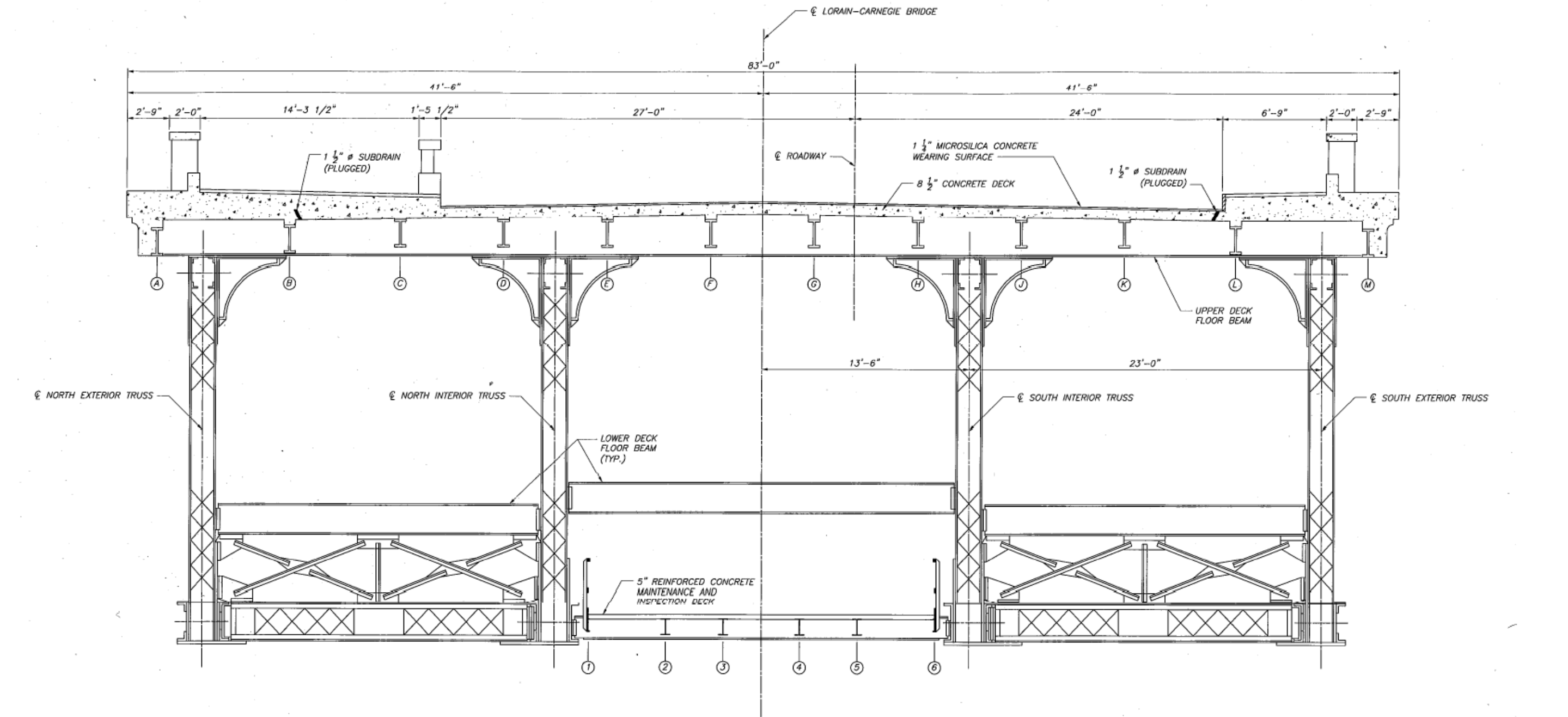


FIGURE 2: TRANSVERSE SECTION (MAIN SPANS)

APPENDIX C – Inspection Findings, Tables, & Figures

Table 1: Wearing Surface, Sidewalk, Railing, & Joint Deficiencies			
Span	Element	Location	2025 Finding
ALL	Sidewalk	North Sidewalk	Hairline transverse cracking. Areas of map cracking and delamination.
ALL	Sidewalk	South Sidewalk	Areas of map cracking, delamination, and spalling
All	Railing	Both Sides	Heavy cracking & rust staining. Areas of delamination and spalling.
All	Wearing Surface	All Lanes	Typical map and longitudinal cracking for 5% of bridge.
All	Deck Fascia	Both Fascia	Typical transverse cracking, 3' to 10' spacing. Spalling noted in the following areas: Span 1 (South) over Canal Rd. Span 3 (Both) over W 3rd St. Span 2 (North) over parking lot. Spalls also noted over Scranton Rd, Towpath Trail, and the river.
All	Joints	Expansion Joints	Typical light debris in joints. At the south curb of Joint 7, there is water and debris at the curb line.
1	Decorative Pylon	Southeast Pylon	Spall on west side of pylon at 5' high. Both screens missing at opening.
1	Decorative Pylon	Northeast Pylon	The lower three stones at sidewalk level are spalled. Both gratings missing at top of old doorway.
3	Wearing Surface	Left Lane, Westbound	1-1/2' diameter bituminous patch in wearing surface.
4 / 5	Wearing Surface	Westbound Lanes	At Joint 6, 2 transverse cracks on either side of the joint.
6 / 7	Railing	North Railing	18" L x 8" H spall with exposed reinforcing to parapet.
11	Wearing Surface	Right Lane, Eastbound	3' L x 2' W patched pothole with adjacent cracking.
12/13	Wearing Surface	All Lanes around Jt 14	4' L x 2' W area of repaired spalls in the westbound lanes. 5.5' L x 1.5' W area of patched potholes in the eastbound lanes.
13	Railing	Southwest Pylon	Spall with exposed corroded reinforcing in railing on east and west side of southwest pylon. The east screen is missing.
13	Pylon	Northwest Pylon	24" H x 15" W spall in the sandstone unit on the lower right of the opening, east side.
West Approach	Expansion Joint	Joint 17	6 LF of missing joint material in the westbound lanes.
West Approach	Expansion Joint	Joint 18	6 LF of retainer torn/out of place in the westbound lanes, and 6 LF in the eastbound lanes.
West Approach	Wearing Surface	All Lanes	The pavement has spalling, cracking and bituminous patching over 35% of the pavement.
West Approach	Sidewalk	North Sidewalk	Hairline transverse cracking.

Table 2: Joint Measurements					
Joint	Span	Substructure	Westbound	Center	Eastbound
Joint 1	W&LE	East Abutment	1-7/8"	2"	1-7/8"
Joint 2	1	East Pylon, West Side	1-3/4"	1-3/4"	1-3/4"
Joint 3	1 & 2	N/A	2-1/4"	2-1/4"	2-1/4"
Joint 4	2 & 3	N/A	4-5/8"	4-5/8"	4-5/8"
Joint 5	3 & 4	N/A	2-1/4"	2-1/4"	2-1/4"
Joint 6	4 & 5	N/A	4-1/2"	4-1/2"	4-1/2"
Joint 7	5 & 6	N/A	2-1/8"	2-1/8"	2-1/8"
Joint 8	6 & 7	N/A	5"	5"	4-7/8"
Joint 9	7 & 8	N/A	2-3/8"	2-3/8"	2-3/8"
Joint 10	8 & 9	N/A	5-7/8"	5-5/8"	5-5/8"
Joint 11	9 & 10	N/A	2-1/8"	2"	2-1/8"
Joint 12	10 & 11	N/A	4-1/2"	4-1/2"	4-1/2"
Joint 13	11 & 12	N/A	2-1/8"	2-1/8"	2-1/4"
Joint 14	12 & 13	N/A	8-3/4"	8-1/2"	8-1/2"
Joint 15	13	West Pylon, East Side	1-3/4"	1-3/4"	1-3/4"
Joint 16	N/A	West Pylon, West Side	1-3/4"	1-3/4"	1-3/4"
Joint 17	N/A	West Bent	1-1/4"	1-1/4"	1-1/4"
Joint 18	N/A	West Abutment	1-1/2"	1-1/2"	1-3/8"

Temperature at time of measurement = 65° F

Table 3: Bearing Measurements						
Substructure Unit	Temp.	Location	Bearing Alignment *			
			North Exterior	North Interior	South Interior	South Exterior
East Pylon	68	PP10	1 1/4 " C	1 1/4 " C	3/4 " C	1 1/4 " C
Pier 2	63	East	1 3/4 " C	1 1/4 " C	2 1/4 " C	1 1/2 " C
		West	1 1/2 " C	1 1/4 " C	2 1/4 " C	1 1/4 " C
Pier 4	64	East	3/8 " E	1/4 " E	3/4 " E	0 "
		West	1 3/8 " E	1 3/4 " E	0 " E	3/4 " E
Pier 6	64	East	1 " E	3/4 " E	2 3/4 " E	2 3/4 " E
		West	1 1/4 " E	1 3/8 " E	3 " E	3 " E
Pier 8	68	East	5/8 " C	5/8 " C	1 " C	No Measurements
		West	0 "	1/2 " C	2 3/4 " C	Hawks Nesting Here
Pier 11	70	East	1 7/8 " E	1 3/4 " E	4 3/8 " E	2 1/4 " E
		West	1 1/4 " E	7/8 " E	3 " E	1 5/8 " C

* The bearing alignment is the longitudinal offset between the top and bottom of individual rollers in the roller nest due to tilting. This measurement taken in the field is the longitudinal offset between the top and bottom alignment bars. The bearing alignment value shown in the table is two times this measured value.

Table 4: Crack Locations on Main Members											
Span	Truss Line	Member	Type	2025 Findings	2025 Length	2024 Length	2023 Length	2022 Length	2021 Length	Arrested	
4	S Int.	L1-L2	LC	South lower angle at L1 has crack 33-1/4" L caused by corrosion.	33-1/4"	33-1/4"	33-1/4"	33-1/4"	33-1/4"		
7	N Int.	L11-L12	LC	L12: North gusset plate, north face has a 7/8" L crack in north splice web plate under top flange due to pack rust (1/8" propagation compared to last marking).	7/8"	7/8"	7/8"	7/8"	7/8"		
9	S Ext.	U0-U1	UC	The east vertical weld is partially cracked 4-1/4" L.	4-1/4"	4-1/4"	4-1/4"	4-1/4"	4-1/4"		
12	N Int.	L0-L1	LC	7'-9" L crack in the south bottom flange angle. Arrestor holes drilled at both ends of the crack. Crack extends 49" E and 44" W of L1.	7'-9"	7'-9"	7'-9"	7'-9"	7'-9"	x	
12	N Int.	L0-L1	LC	4'-6" crack in north bottom flange at L1, w/ arrestor hole drilled in the west end. Only running west of L1	4'-6"	4'-6"	N/A	N/A	N/A	x	
12	N Int.	L1-L2	LC	6'-7" L crack in the south bottom angle of lower chord at L2. Arrestor hole drilled at east end of crack. Crack extends 35" W and 44" E of L2. West end marked for growth monitoring, with 1" propagation since previous marking. An arrestor hole is drilled 14" W of the crack.	6'-7"	6'-7"	6'-7"	6'-7"	7'-4"	x	
12	N Int.	L2-L3	LC	6'-4" L crack in south bottom angle of lower chord at L3 w/ arrestor holes at both ends. Crack extends 41" W and 35" E of L3. Arrestor hole is filled with construction debris.	6'-4"	6'-4"	6'-4"	6'-4"	6'-4"	x	
12	N Int.	L3-L4	LC	40" L crack with arrestor hole drilled 5" west of the west end of the crack in the south lower flange angle at L4.	40	40	37"	37"	37"	x	
12	S Int.	L0-L1	LC	At L1: The north lower flange angle has a 47" crack.	47"	46"	46"	46"	46"		
12	S Int.	L1-L2	LC	20" L crack in the south lower flange angle at L1	24"	20"	20"	20"	20"		
12	S Int.	L2-L3	LC	39" L crack in south lower flange near L3.	39"	39"	39"	39"	39"		
12	S Int.	L3-L4	LC	North lower angle at L3 has a possible crack 40" L.	40"	40"	40"	40"	44"		
12	S Int.	L3-L4	LC	South lower angle at L3 has crack 43" L.	43"	43"	43"	43"	43"		
12	S Int.	L3-L4	LC	South lower angle at L4 has crack 38-1/4" L.	38-1/4"	38-1/4"	38-1/4"	38-1/4"	38-1/4"		

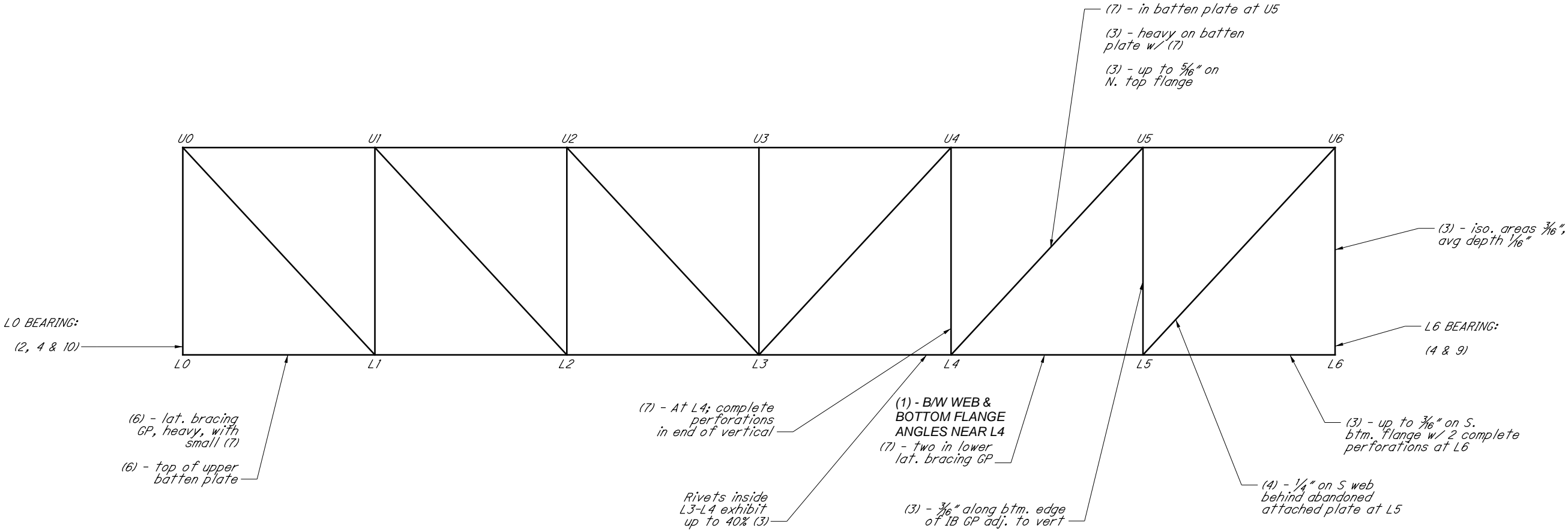
Table 4: Crack Locations on Main Members										
Span	Truss Line	Member	Type	2025 Findings	2025 Length	2024 Length	2023 Length	2022 Length	2021 Length	Arrested
12	S Ext.	L3-L4	LC	23-3/4" L longitudinal crack in top north flange angle at L3 and appears stable. The crack is due to pack rust up to 1" T south side of connection and 1/2" T on the north side of the connection between the top batten plate and the top flange connection angle. This crack has been arrested.	23-3/4"	23-3/4"	23-3/4"	23-3/4"	23-3/4"	x
13	N Int.	L0-L1	LC	2-3/4" L crack/corrosion hole due to pack rust along west end of north web at L0 riveted connection.	2-3/4"	2-3/4"	2-3/4"	2-3/4"	2-3/4"	
13	S Int.	L0-L1	LC	2" L x 1" H crack/corrosion hole due to pack rust in north web at L0 riveted connection.	2" x 1"	2" x 1"	2" x 1"	2" x 1"	2-1/2"	

Table 5: Crack Locations on Maintenance Deck Floorbeams									
Span	Truss Line	Member	2025 Findings	2025 Length	2024 Length	2023 Length	2022 Length	2021 Length	Arrested
2	S Int.	PP0 E	2-1/4" crack in web, arrested.	2-1/4"	2-1/4"	2-1/4"	2-1/4"	2-1/4"	x
2	S Int.	PP0 W	1-5/8" crack in web, arrested.	1-5/8"	1-5/8"	1-5/8"	1-5/8"	1-5/8"	x
2	N Int.	PP1	Retrofit plate prevents measurement of full vertical crack length.	7/8"	7/8"	7/8"	7/8"	7/8"	
2	S Int.	PP1	Retrofit plate prevents measurement of full vertical crack length.	7/8"	7/8"	7/8"	7/8"	7/8"	
2	N Int.	PP2	Retrofit plate prevents measurement of full vertical crack length.	1"	1"	1"	1"	1"	
2	S Int.	PP2	Retrofit plate prevents measurement of full vertical crack length.	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	
4	S Int.	PP0 W	Covered by repair plate and is no longer visible, likely arrested.	N/A	N/A	N/A	N/A	N/A	x
6	N Int.	PP 0 E	2 horizontal cracks in web, both arrested.	7-7/8", 5-1/2"	7-7/8", 5-1/2"	7-7/8", 5-1/2"	7-7/8", 5-1/2"	7-7/8", 5-1/2"	x
6	N Int.	PP 0 W	Horizontal crack in the web, arrested	7-1/2"	7-1/2"	7-1/2"	7-1/2"	7-1/2"	x
6	N Int.	PP2	1-1/2" vertical crack in the web with a 1/2" D arrester hole at the end.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
6	S Int.	PP2	Vertical crack in the web, arrested.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	N/A	x
6	N Int.	PP3	Vertical crack in the web, arrested.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
6	S Int.	PP3	Vertical crack in the web, arrested.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	N/A	x
8	N Int.	PP2	Vertical crack in web, arrested.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
8	N Int.	PP3	Vertical crack in the top of the web, arrested.	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	x
8	S Int.	PP3	Possible crack, marked 18. 2025: Not seen - bolted repair possibly covering	-	1-1/4"	1-1/4"	1-1/4"	1-1/4"	
10	N Int.	PP1	Arrested 2" vertical crack.	2"	2"	2"	2"	2"	x
10	S Int.	PP1	Arrested 3" horizontal crack.	3"	3"	3"	3"	3"	x
10	N Int.	PP2	Arrested 2" vertical crack.	2"	2"	2"	2"	2"	x
10	S Int.	PP2	Arrested 2" vertical crack.	2"	2"	2"	2"	2"	x
10	N Int.	PP3	Arrested 1-1/8" vertical crack.	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	x
10	S Int.	PP3	Arrested 2" vertical crack.	2"	2"	2"	2"	2"	x

Table 5: Crack Locations on Maintenance Deck Floorbeams									
Span	Truss Line	Member	2025 Findings	2025 Length	2024 Length	2023 Length	2022 Length	2021 Length	Arrested
10	N Int.	PP4	Arrested 1-1/2" vertical crack.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
10	S Int.	PP4	Arrested 1-1/2" vertical crack.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
10	N Int.	PP5	1-5/8" L vertical crack in web with arrester hole at termination.	1-5/8"	1-5/8"	1-5/8"	1-5/8"	1-5/8"	x
10	S Int.	PP5	Arrested 2-1/2" vertical crack.	2-1/2"	2-1/2"	2-1/2"	2-1/2"	2-1/2"	x
11	S Int.	PP7	Arrested 1-1/2" vertical crack.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
11	S Int.	PP17	5" L arrested crack and a 1-5/8" L non arrested crack in the web near the top fillet.	5" and 1-5/8"	5" and 1-5/8"	5" and 1-5/8"	5" and 1-5/8"	5" and 1-5/8"	x
12	N Int.	PP2	vertical crack 1", arrested.	1"	1"	1"	1"	1"	x
12	S Int.	PP2	vertical crack 1-5/8", arrested.	1-5/8"	1-5/8"	1-5/8"	1-5/8"	2"	x
12	N Int.	PP3	vertical crack 1-1/2", arrested.	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	x
12	S Int.	PP3	vertical crack 1-1/4", arrested.	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/2"	x

Table 6: Utility Deficiencies			
Span	Element	Truss Line	2025 Finding
ALL	Utility Truss & Sheds	S. Int.	The PVC telecom conduits are damaged, and cables are exposed in many locations. The telecom structural supports, sheds, and corrugated roofs/walls have widespread heavy deterioration and pack rust, worst at joint locations. At several truss locations, the lower chords have 100% section loss at supports, the lateral bracing is detached or bent, and gusset plates are warped. At the utility access hatches in the deck, there is widespread corrosion of the supports and evidence of leakage.
ALL	6" Metal Conduit	N. Int.	Surface corrosion typical throughout, less than 1/16".
ALL	2" Metal Conduit - Pier Lighting	N. Int.	Isolated areas of surface corrosion throughout. Portions of the conduit is detached from the handrail and is laying on the maintenance deck floorbeams in Span 6 and Spans 11-13. The conduit is detached from the utility box in Span 7 at Pier 6.
3	Street Lighting	North	A street light pole has been removed and is laying against the interior railing.
6	Street Lighting	North	A street light pole is missing.
7	Street Lighting	South	A street light pole is missing the globe at the top of the pole.
9	Maintenance Deck Handrail	PP 12	Heavy deterioration and pack rust around the floorbeam connection is present at this panel point. The handrail connections have pack rust, section loss, and are disconnected at some points in this area.
11	Pier Lighting	N. Int.	A junction box is deformed and is missing its cover plate.

WHEELING & LAKE ERIE SPAN - NORTH EXTERIOR TRUSS ELEVATION



W&LE NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L2, BOTH - (10)
- L3, IB GP - (2) - 1" T b/w top edge and diagonal, reactivating (6) - BELOW L3U4
- L4, IB GP - (6) - widespread 5/16"
(4) - up to 1/4" D
(3) - up to 3/16" D on OB face
- L4, OB GP - (5) - localized 1/4"
- L6, OB GP - (4) - widespread 1/4" & rivet head loss
- U6, IB GP - (9) - between FB and upper chord
U6, OB GP - (10)

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
10 - Active Corrosion

NOT TO SCALE

DATE
JUNE 2025



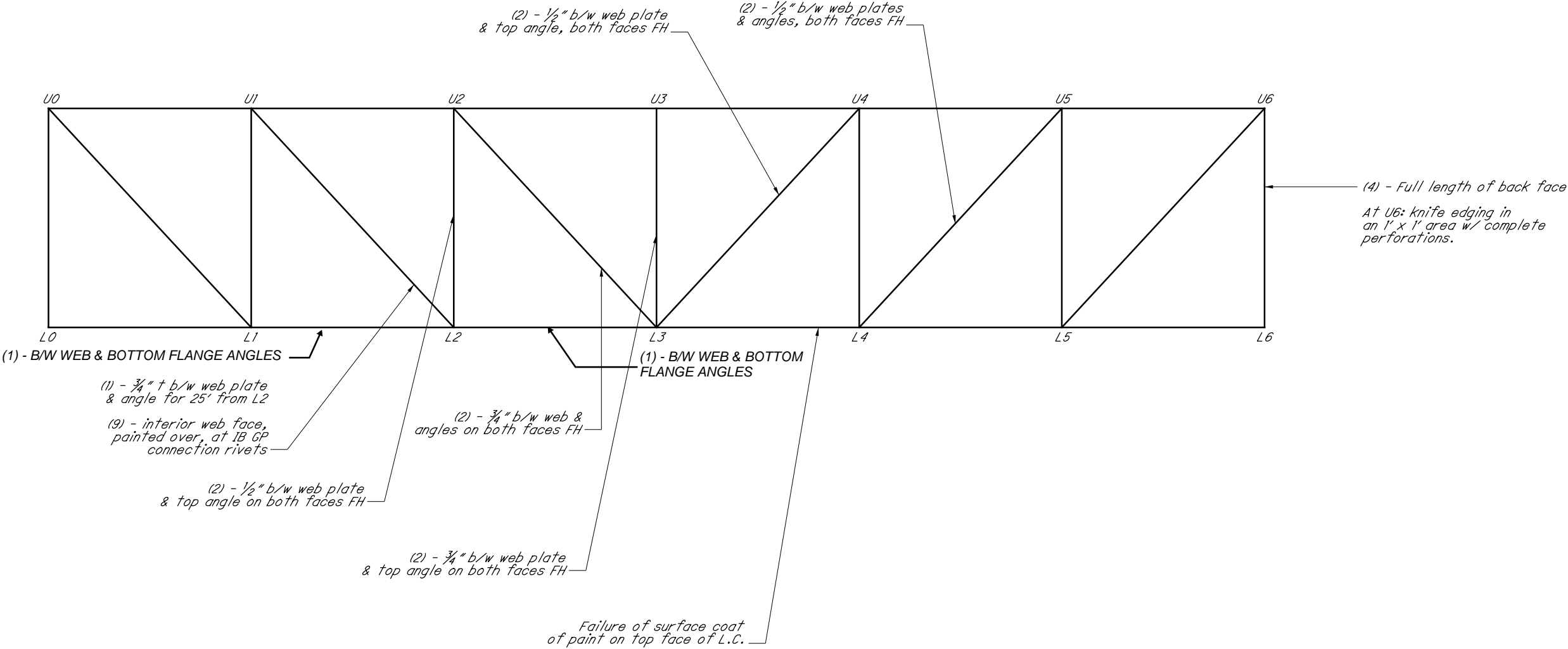
LORAIN-CARNEGIE BRIDGE

CUY-10-16.13

W&LE SPAN TRUSS ELEVATION
(NORTH EXTERIOR)

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WHEELING & LAKE ERIE SPAN - NORTH INTERIOR TRUSS ELEVATION



W&LE NORTH INTERIOR GUSSET PLATE DEFICIENCIES

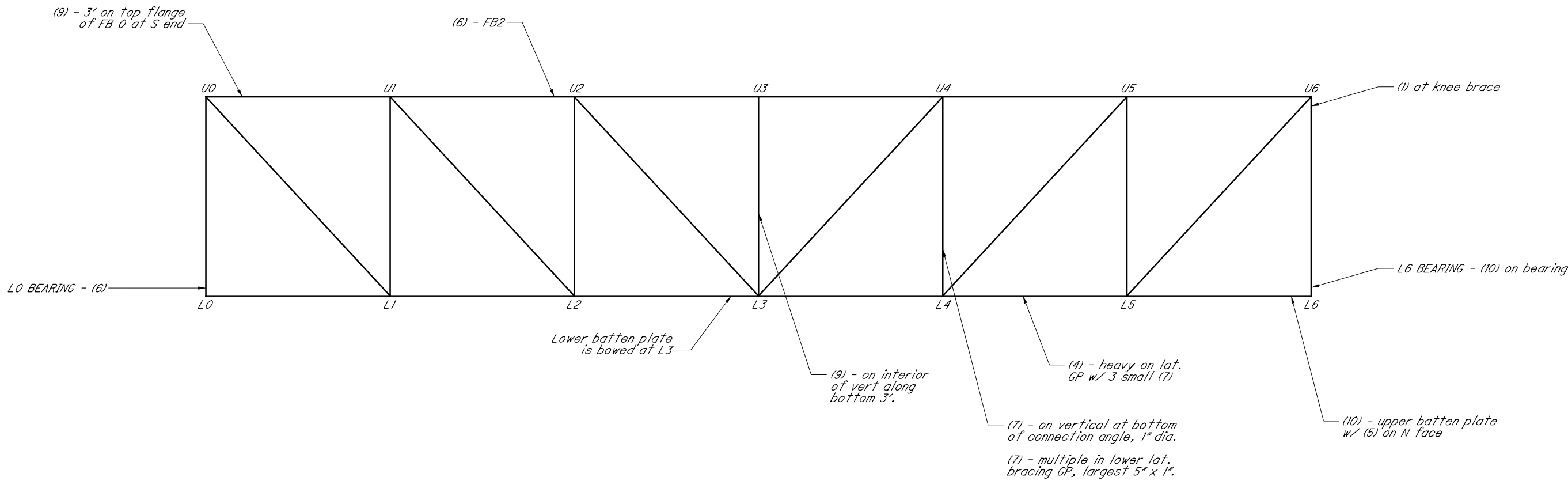
L3, BOTH - (4) - minor, up to $\frac{1}{8}$ "
L5, BOTH - (1) - between both GPs and vertical, up to $\frac{5}{8}$ " T for 20" L

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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		W&LE SPAN TRUSS ELEVATION (NORTH INTERIOR)	PAGE 2/61

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WHEELING & LAKE ERIE SPAN - SOUTH EXTERIOR TRUSS ELEVATION




W&LE SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L3, OB GP - (9) - active along top of the bottom flange.
- L4, IB GP - (3) - 1/4"
- L4, OB GP - (3) - 1/8" along bottom chord
- L5, OB GP - (10) - 1/8" with (5) on IB face and minimal (3)

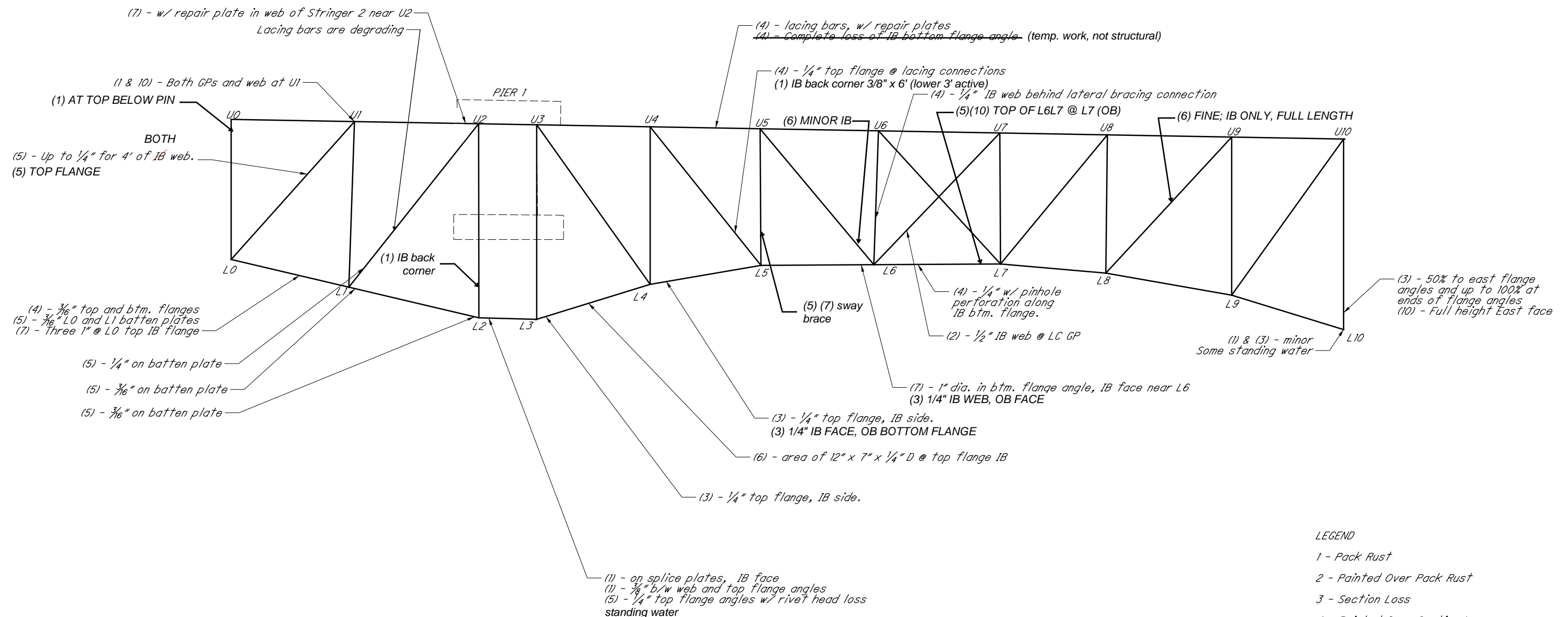
LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE JUNE 2025		CUY-10-16.13	
		W&LE SPAN TRUSS ELEVATION (SOUTH EXTERIOR)	PAGE 3/61

SPAN 1 - NORTH EXTERIOR TRUSS ELEVATION

OPEN HOLE THROUGH DECK AT END
OF JOINT ADJACENT TO GUARDIAN;
DUMPS ON TO STEEL COLUMN U10L10



NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (6) 1/2" remaining

U0, OB GP - (3) AROUND PIN BOTH FACES AT VERTICAL

L1, IB GP - (1) at diagonal; (1) at LC x 2' active BOTH SIDES

L3, IB GP - (3) 3/8" in area 30" x 14". Original T: 3/4". Repair plate placed

L4, BOTH - (3) along bottom flange above the bottom of the lower chord, full length - (1/4" - 3/8" IB), (3/16" OB) active, (10) INTERIOR OF GP ABOVE DIAGONAL

L5, OB GP - (4) - 3/16" over lower batten, 2' x 6" x 18" ACTIVE

L5, IB GP - (3) 1/8" x 2" x FULL WIDTH

L6, IB GP - (4) - OB face, 2' H x 2" W x 3/16" @ L6-L7

(5) - 3/16" above top flange of lower chord along IB face of GP active

L7 IB GP - (6) ALONG TOP OF CHORD

L10, BOTH - (6) 1/4", both faces and (8) reactivating; IB active

L4, - GP - (10) Active corrosion between gussets and upper chord diagonal

L3, - GP - (2) Painted over pitting at horizontal diagonals to gusset connection

LEGEND

1 - Pack Rust

2 - Painted Over Pack Rust

3 - Section Loss

4 - Painted Over Section Loss

5 - Pitting

6 - Painted Over Pitting

7 - Corrosion Hole

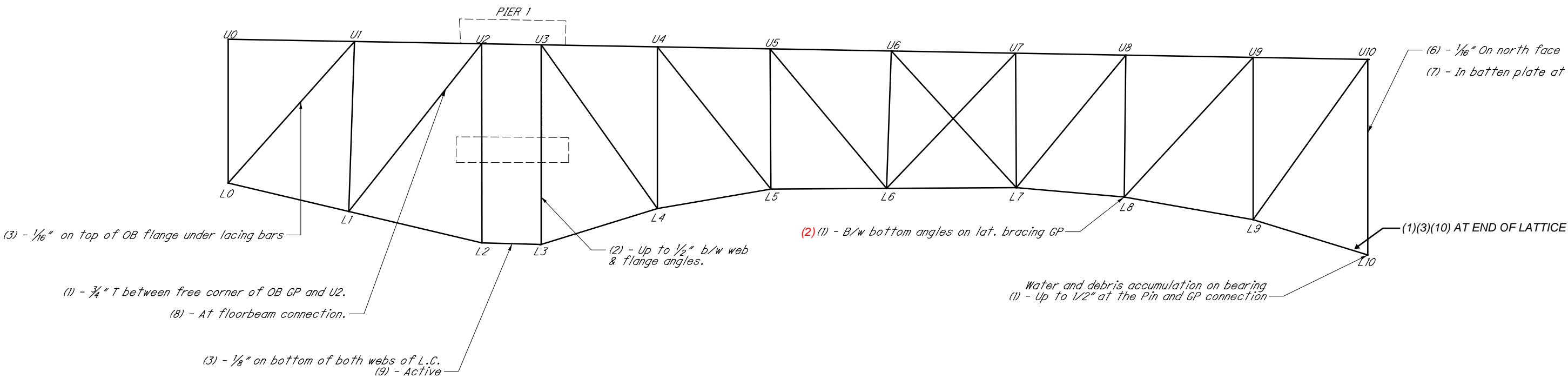
8 - Laminate Corrosion

9 - Layered Corrosion

10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE JUNE 2025		CUI-10-16.13	
		SPAN 1 TRUSS ELEVATION (NORTH EXTERIOR)	PAGE 4/61

SPAN 1 - NORTH INTERIOR TRUSS ELEVATION



L0 - GP - (1)
L1 - GP - (10) (9) (3) at horizontal bracing angles near gusset connections
L5 - GP - (2) at top of lower chord and connection
L6 - GP - paint failure between gussets
L7 - GP - (2) at horz. diagonal gusset up to 1.5"
L8 - GP - reactivated corrosion at bottom

L0, IB GP - (1) AT DIAGONAL; PAINT FAILURE
L0, OB GP - (4) - 3/16\" around the pin nut.; (1) AT LATERAL BRACE CONNECTION
U0 - BOTH - (1) between GP & vertical
L1, IB GP - paint failure at bottom
L4, IB GP - (5) inside between diagonal & vertical
L4, OB GP - (10)
L6, IB GP - (3) - Up to 1/4\" between vertical and diagonal, (8)
L10, BOTH - (4) - 3/16\", inboard faces (6), (1) at lateral brace connection

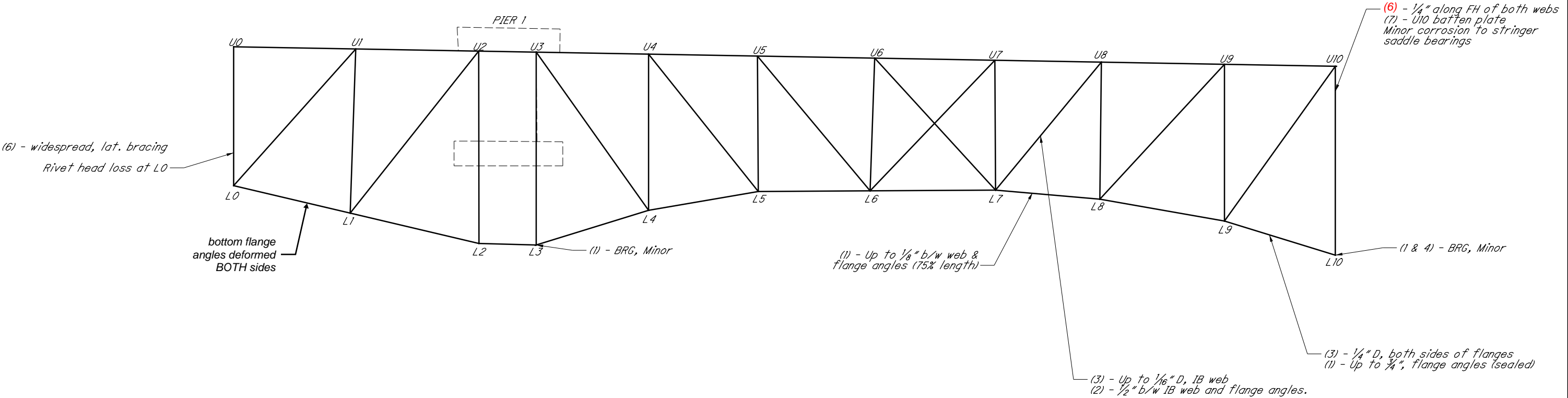
FLOORBEAM DEFICIENCIES
U0 - (10) - on top flange between stringers 2 & 3
U7 - (6) - 1/16"

NORTH EXTERIOR DECK CHANNEL DEFICIENCIES
(7) AT L10

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

SPAN 1 - SOUTH INTERIOR TRUSS ELEVATION

SPAN 1 - SOUTH INTERIOR TRUSS



- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion

SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

L1, IB GP - widespread laminar paint failure at bottom

L2, IB GP - (4) along connection with lower chord, reactivating

L2, OB - (1) between GP and pin plate

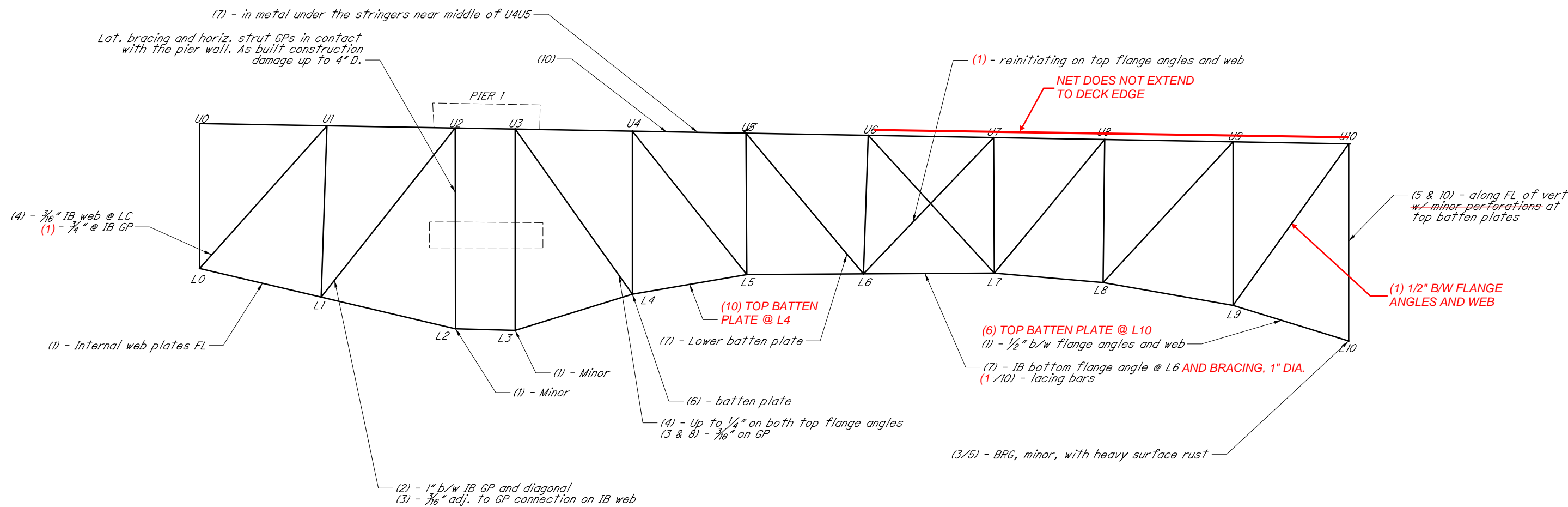
L8, GP - (8) - 2' long above LC - 15% section loss

FLOORBEAM DEFICIENCIES

U5 - (6) - 1/16" for full length on top and bottom flanges , and scattered on web.

U7 - (6) - 1/16" on bottom flange from N Int. to S Ext.

SPAN 1 - SOUTH EXTERIOR TRUSS ELEVATION



SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH- (5) 3/16"
- L2, IB GP - (4) 3/16" along top of lower chord
OB GP - (4) 1/4" behind OB web
- L4, IB GP - (6) 1/4", with widespread above the lateral bracing gusset plate for full width
(3) 3/16" for BOTH
(10)
- U5, IB GP - (10) on rivet heads
- L6, IB GP - (5) 1/4" D on IB face above LC
- L10, IB GP - (5) 1/2" above vertical
OB GP - (5) 1/2" between lower chord and vertical

FLOORBEAM DEFICIENCIES

- FB0 - (9 & 10) - active layered corrosion on top flange between Stringer 8 and south fascia and bottom flange between Stringer 10 and south fascia and painted over section loss between Stringer 10 and south fascia.
- FB2 - (6) - 1/16"
- FB4 - (7) - TWO 1" DIA. IN UTILITY FB

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
10 - Active Corrosion

NOT TO SCALE

DATE
JUNE 2025



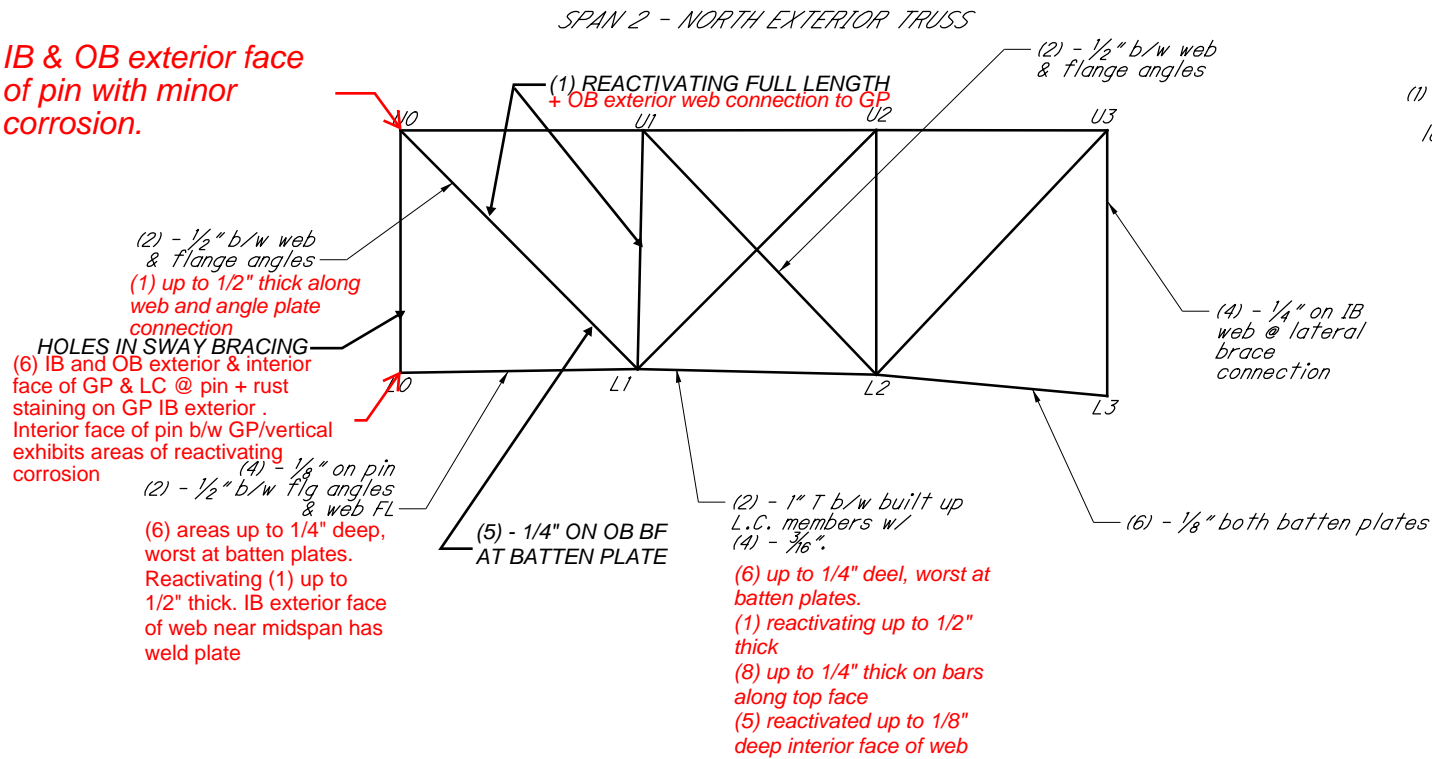
LORAIN-CARNEGIE BRIDGE
CUY-10-16.13

SPAN 1 TRUSS ELEVATION
(SOUTH EXTERIOR)

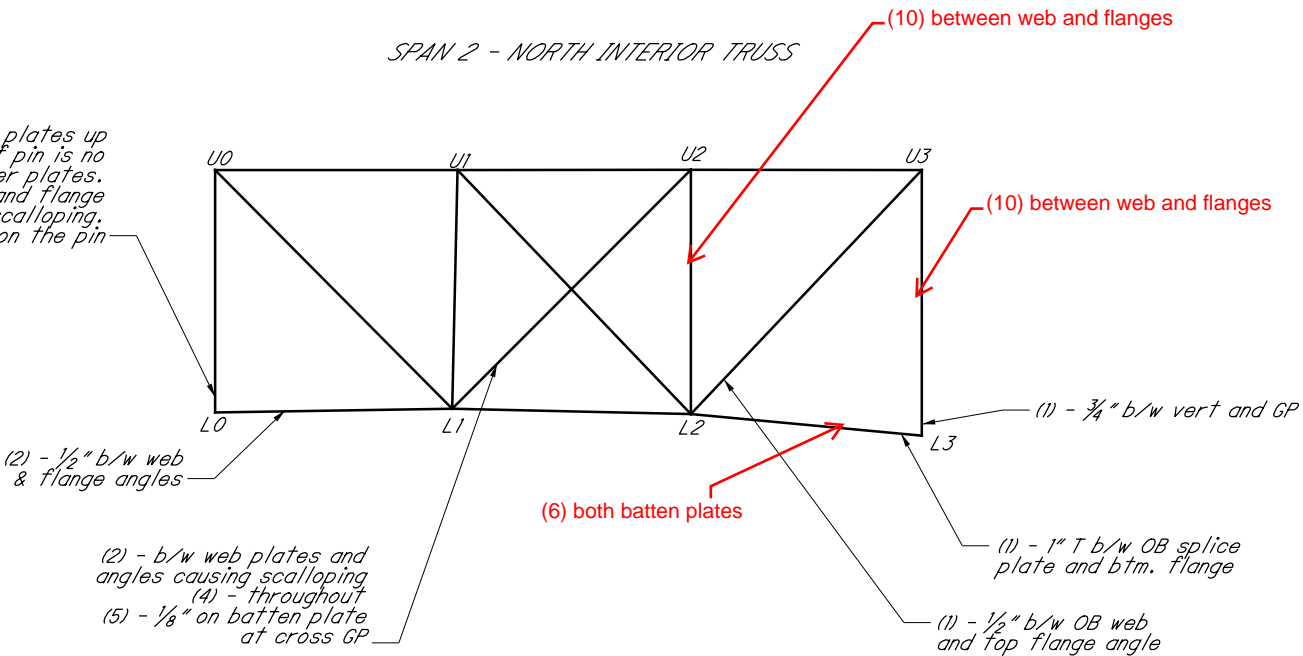
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SPAN 2 - TRUSS ELEVATIONS

IB & OB exterior face of pin with minor corrosion.



(1) - b/w IB and OB L.C. plates up to 1-3/4", OB end of pin is no longer flush with cover plates.
(2) - 1/8" b/w web and flange angles causing scalloping.
(5) - 1/4" on the pin



LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion

L0, OB GP interior face west of vertical (6) and rivet head loss up to 95% typical at IB L0, reactivating (1) between GP and vertical/pin areas, typ. IB and OB GP L0, IB GP exterior face around connection to bracing reactivation of corrosion. (6) up to 1/4" L0, Reactivating (1) b/w GP and vertical/pin area, typ. IB and OB GP

NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

L0, IB GP - (5) - up to 1/4" IB face on east side.
U0 - (1) OB GP; (6) AROUND PIN. IB GP at east connection to pin/vertical (1) initiating
L1, BOTH - (5) - 1/8" on exterior faces, with reactivating corrosion.
L2, BOTH - (4) - 3/16" above lower chord w/ some (1) reactivating, IB active
L3 & U3, BOTH - (2) - up to 1/2" between, GPs. vertical and diagonal.
(6) - 1/4" full plate

L1, (8) interior face of GP around connection to west diagonal
L1, (8) IB GP exterior face along connection to LC and bracing
L1, OB GP - (8) exterior face along LC and exterior web connection to GP reactivation

NORTH INTERIOR GUSSET PLATE DEFICIENCIES

L1, IB GP (8), (3) 1/4" INSIDE ABOVE DIAGONAL
L1, OB GP - (10) above LC ; (6) 3/16" ABOVE LC
L2, OB GP - (4) - 1/8" along top of LC, OB face, active
L2, IB GP - (1) active between diagonal and vertical
L3, OB GP - (6) AROUND PIN
U0 - (5) ON OUTSIDES

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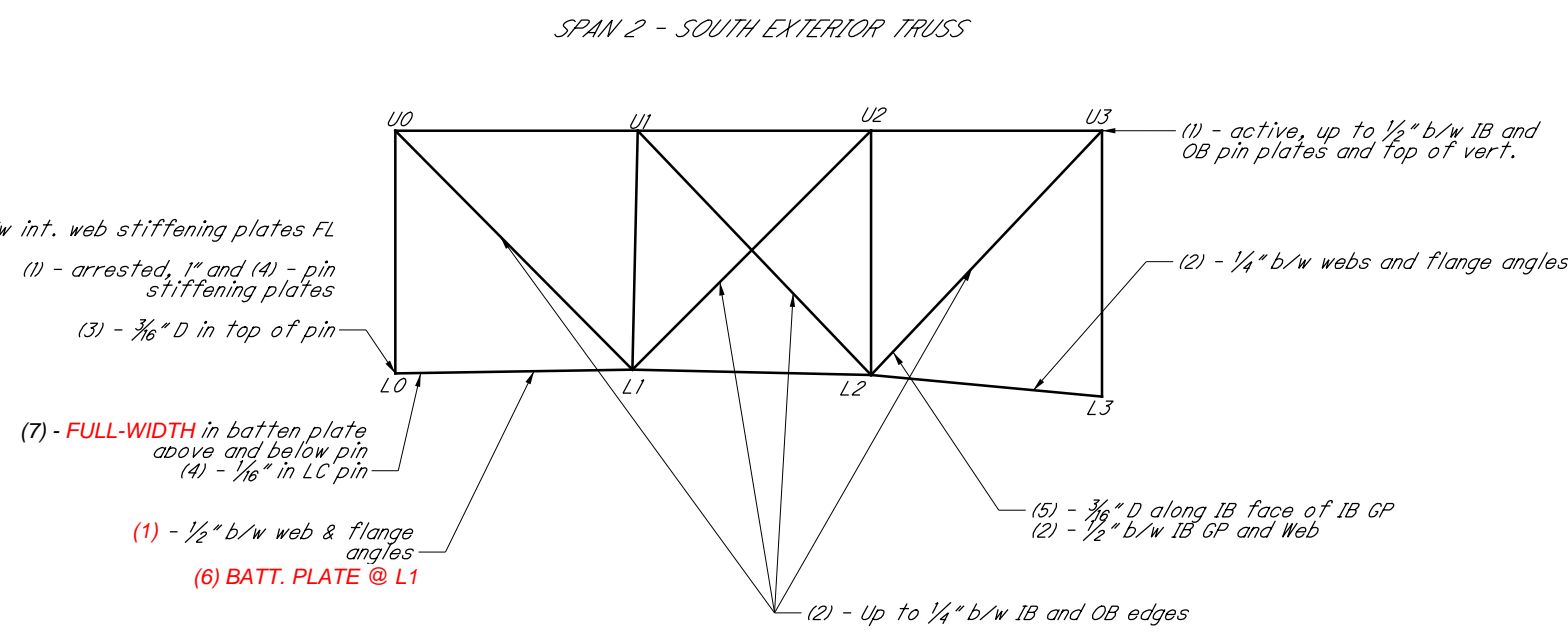
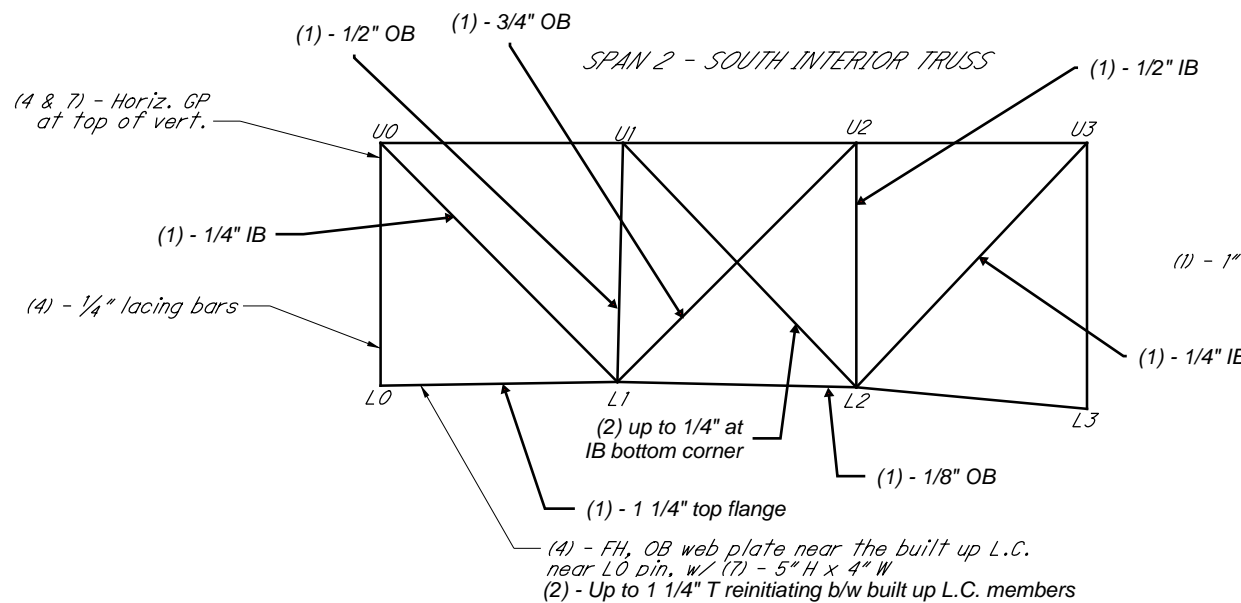
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CUY-10-16.13

SPAN 2 TRUSS ELEVATIONS
(NORTH)

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SPAN 2 - TRUSS ELEVATIONS




SOUTH INTERIOR GUSSET PLATE DEFICIENCIES
L0, BOTH - (6) - heavy up to 1/4" around 8" pin
(2) - Reactivated 1-1/4"

SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES
L0, BOTH - (4) - 3/16" along LC around pin.
L1, IB GP - (4) - 3/8" on IB face along top of lower chord. OB GP - (3) - 3/16" ALONG L.C.
L2, IB GP - (4) - 3/16" along IB face on both sides of the connection. OB GP - (3) - 3/16" ALONG L.C.
L3, BOTH - (3) - up to 1/8" with (1) reactivated up to 5/8" b/w GPs & vertical.
U3, BOTH - (3) - up to 1/8" full perimeter of the upper pins.

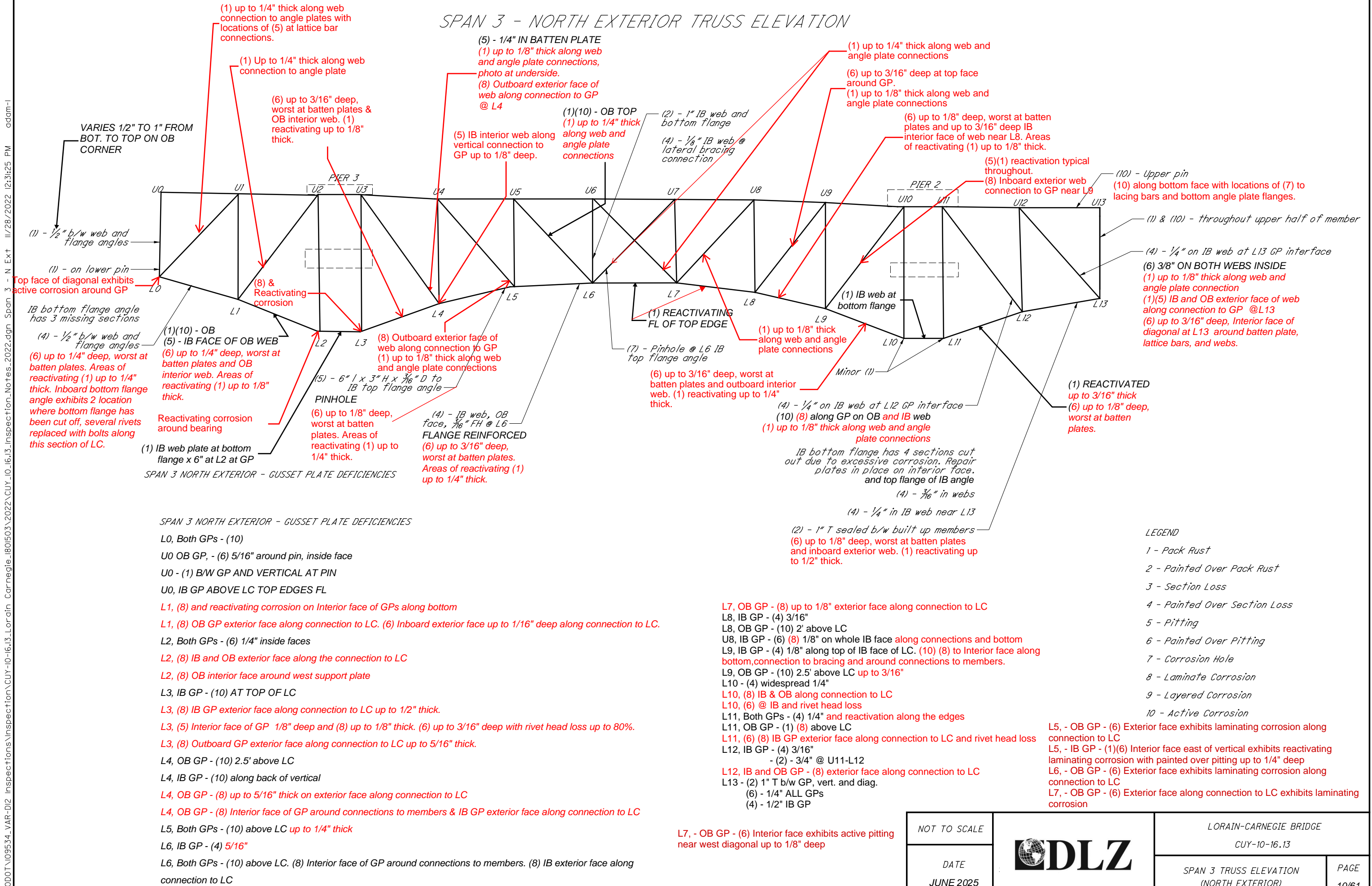
SOUTH EXTERIOR FLOORBEAM DEFICIENCIES
FB0 - (7) - SEVERAL UTILITY FB, BUCKLING AT END
FB1 - (9) - 1/16"
FB2 - (9) - 1/16"
FB3 - (9) - 1/16"

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion

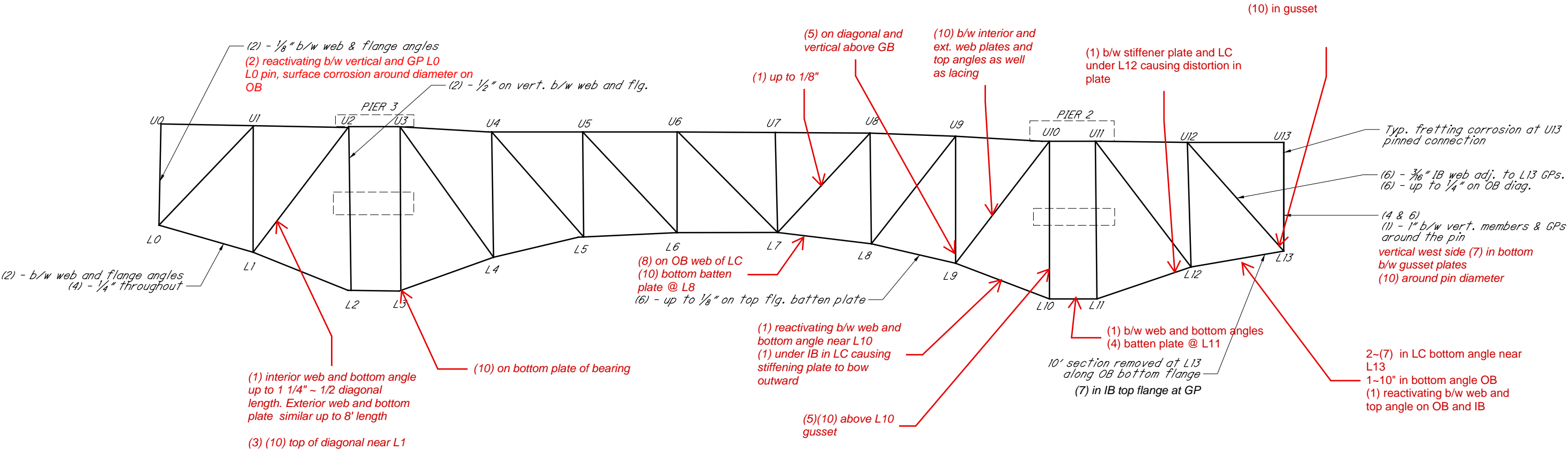
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SPAN 3 - NORTH EXTERIOR TRUSS ELEVATION



SPAN 3 - NORTH INTERIOR TRUSS ELEVATION



SPAN 3 NORTH INTERIOR - GUSSET PLATE DEFICIENCIES

- L0, Both GPs - (1) $\frac{3}{4}$ " at vertical member.
(10) along bottom edges
- U0 Both GPs - fretting corrosion from upper chord at both GPs
- L2 - (5) ALONG LC OUTSIDE FACES
- L3, OB GP - (5) ALONG LC
- L9, OB GP - (6) $\frac{1}{16}$ " OB FACE
- L12, OB GP - (4) $\frac{3}{16}$ " OB face over LC
- (3) on downhill side -(10) interior OB and diagonal
- L12, IB GP - (5) $\frac{3}{16}$ " B/W VERTICAL AND DIAGONAL
- L13, OB GP - (4) $\frac{3}{16}$ " around pin nut on OB face
- (4) $\frac{1}{4}$ " around pin nut on IB face
- L13, IB GP - (5) up to $\frac{1}{4}$ " on IB face and rust staining. Batten plate has corrosion and rust staining
- L1, IB GP, (1) b/w GP and LC causing gusset to lift up to $\frac{1}{4}$ " (3) (10) top of diagonal near L1
- L1, IB GP, (3)(10) on IB GP along LC
- L0, OB GB, (4)
- L6, Both - interior (10) initiating along LC
- L7, IB - interior (8) along LC
- L8, Both GP - interior (10) along LC
- L9, OB GB - (10) near and on rivets
- L10, IB interior - (3)(10) up to $\frac{1}{16}$ "
- OB interior - missing rivet with rust. (3) up to 0.15"
- OB - (5) along LC and between rivets
- L13, pin, interior rust @ pin connection

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

NOT TO SCALE

DATE
JUNE 2025

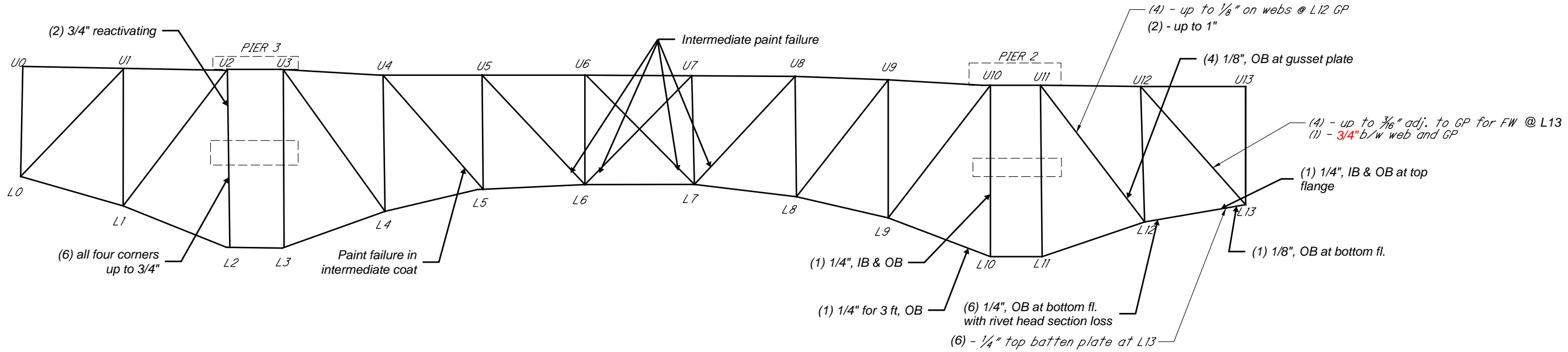


LORAIN-CARNEGIE BRIDGE
CUY-10-16.13

SPAN 3 TRUSS ELEVATION
(NORTH INTERIOR)

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SPAN 3 - SOUTH INTERIOR TRUSS ELEVATION

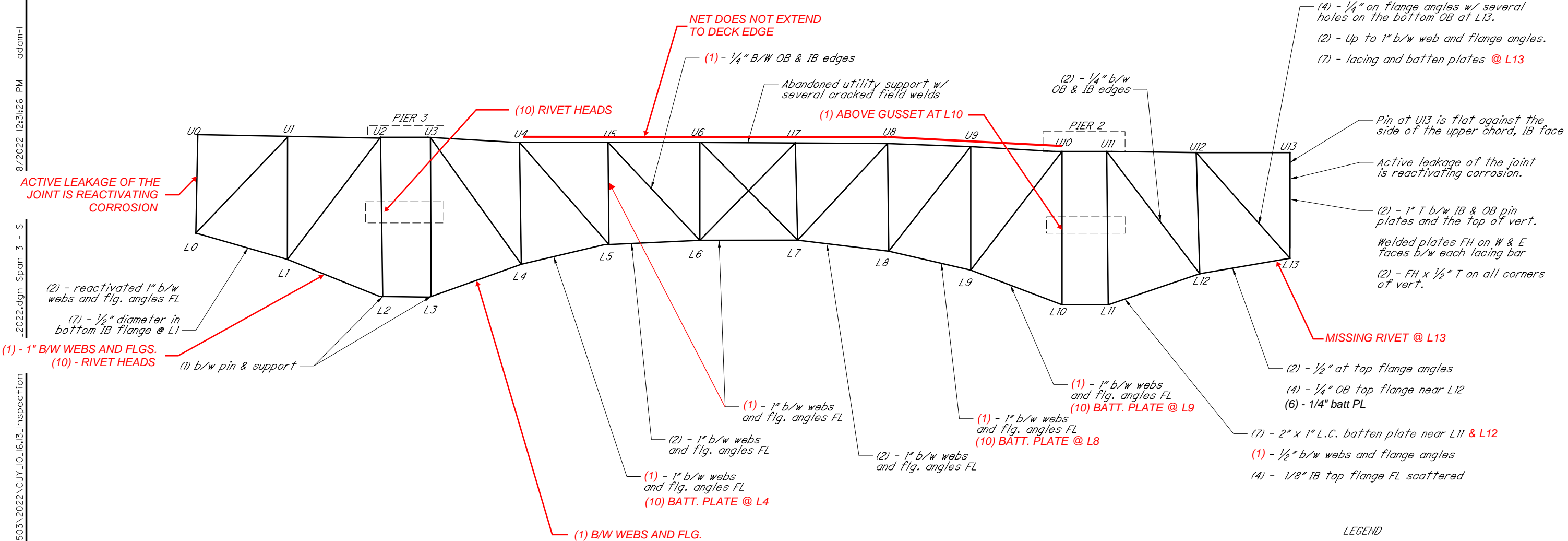


SOUTH INTERIOR - GUSSET PLATE DEFICIENCIES

- L2, IB GP - (4) up to 1/4" on IB face around bearing pin.
OB GP - (4) 1/16" along LC.
- L12, OB GP - (1) 1-1/2" T x 20" L between south diagonal.
- U12, BOTH - (6) 1/8" around vertical pin.
- L13, OB GP - (1) 3/4" at diagonal connection

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

SPAN 3 - SOUTH EXTERIOR TRUSS ELEVATION



SPAN 3 SOUTH EXTERIOR - GUSSET PLATE DEFICIENCIES

- L2, IB GP - (3) 1/16" with active (1) along top of lower chord.
- L4, BOTH - (3) - 1/8" IB face above LC.
- L5, OB GP - (3) 1/8" ALONG L.C.
- L6, IB GP - (3) - 1/8" ALONG LC
- L8, BOTH - (3) - active above lower chord connection, east side of IB face, 18" L x 7" H x 3/16" D
- L9, BOTH - (4) - west side of IB face, area 13" x 13" x 3/16" D
- L11, Both GPs - (3) 1/16" along LC.
- L12, BOTH - (3) 1/8" along LC and scattered.
- U12, IB GP - (5) 1/16" on SW face.
- L13, Both GPs - (3) up to 3/16" with (2) on all faces.
- L13, Both GPs - (2) - 1" between the GP and vertical and diagonal.
- U13, Both GPs - (3) - 3/16" full perimeter of upper pins.
(1) - 1" at vertical reactivated

FLOORBEAM DEFICIENCIES

- L0 & U0 - (10) - on top flange from south fascia to Stringer 8.
- L13 - (7) - TWO 3" DIA. & TWO 1" DIA. ON UTILITY FLOORBEAM

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

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DATE
JUNE 2025



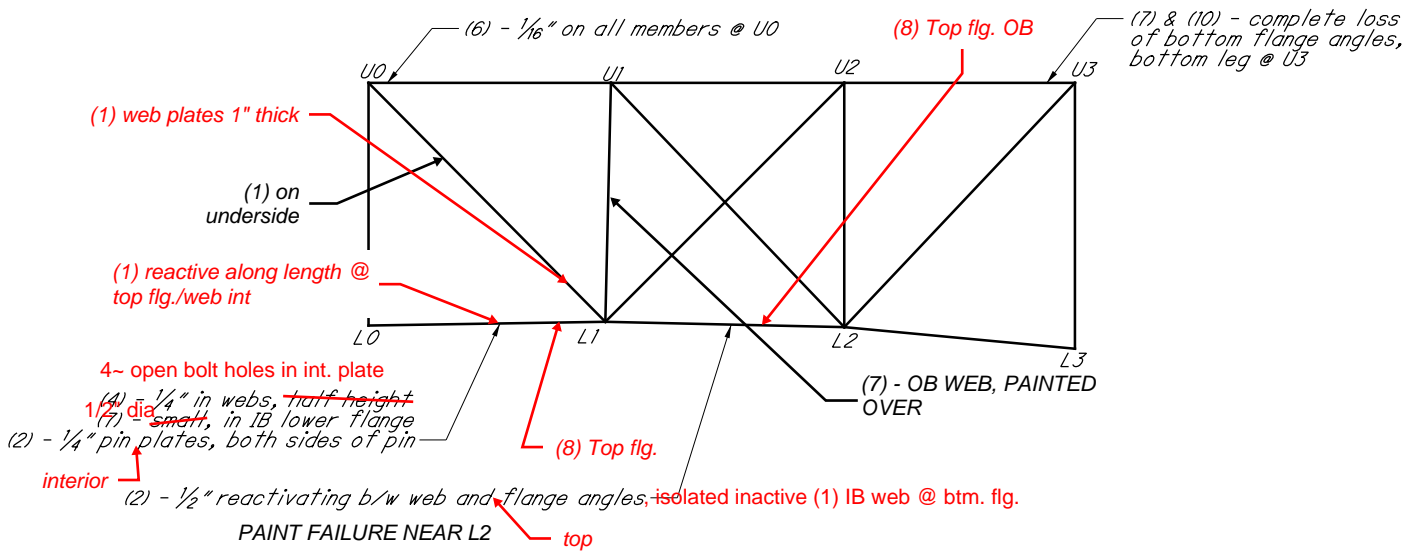
LORAIN-CARNEGIE BRIDGE
CUY-10-16.13

SPAN 3 TRUSS ELEVATION
(SOUTH EXTERIOR)

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SPAN 4 - TRUSS ELEVATIONS

SPAN 4 - NORTH EXTERIOR TRUSS



NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

L1, IB GP - (6) 1/4" IB face above LC; (10) (6) scattered
L1, BOTH GPs- PAINT FAILURE

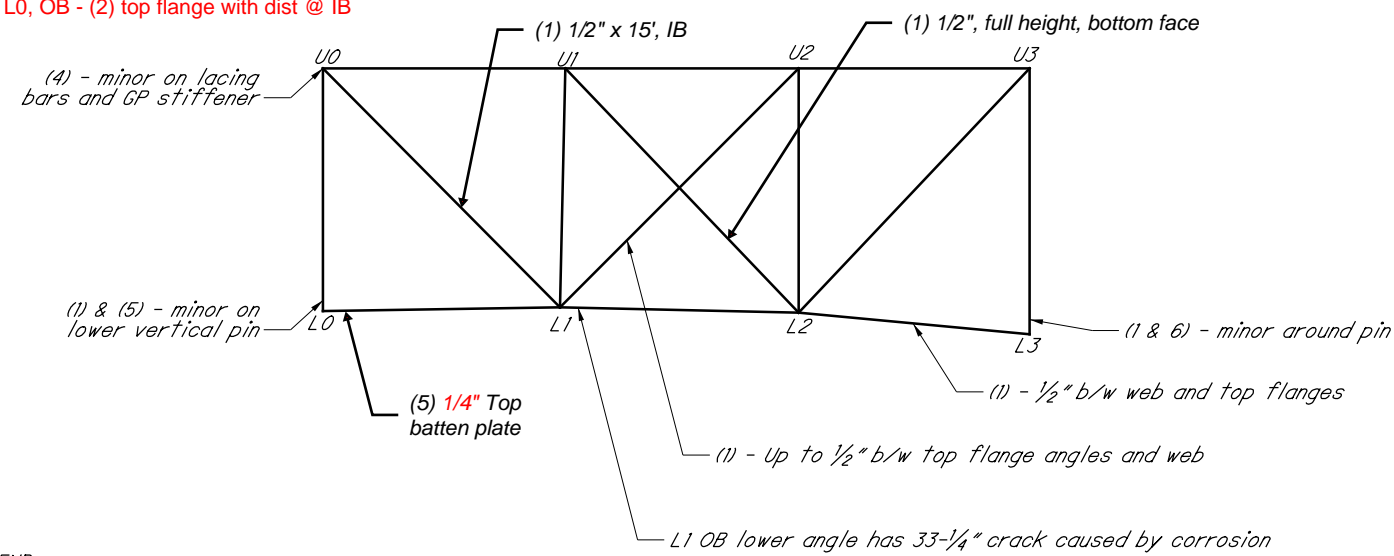
L2, OB GP - (10) above LC

L2, IB GP, (6) 1/16" along IB LC face
L2, OB GP, (8) along top of LC

L0, (3) heavy rivet head at internal pin angles ~6 missing rivet heads
L0, OB - (2) top flange with dist @ IB

L2, - OB GP - (2) Painted over packed rust at lower bracing gusset plate.
L2, - IB GP - (2)(10) Painted over pitting and activated corrosion on bottom of gussets and top flange plate.

SPAN 4 - SOUTH INTERIOR TRUSS



LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

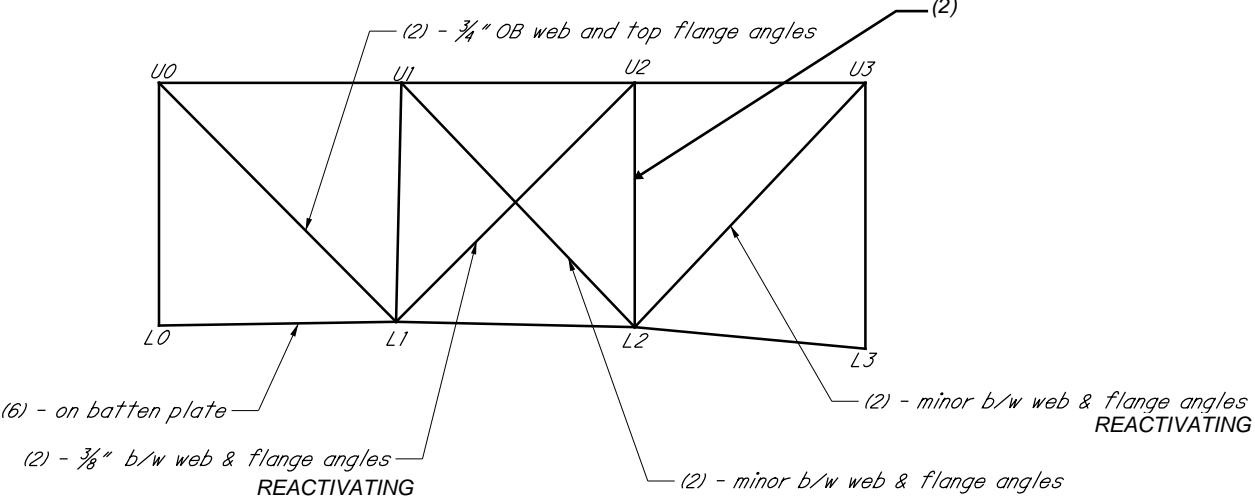
FLOORBEAM DEFICIENCIES

U3 - Stringer 10 connection on west side retrofit is unpainted.

SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, IB and OB - (6) 1/8" around pin and LC connection

SPAN 4 - NORTH INTERIOR TRUSS



NORTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, (7) - in GP internal stiffening plate

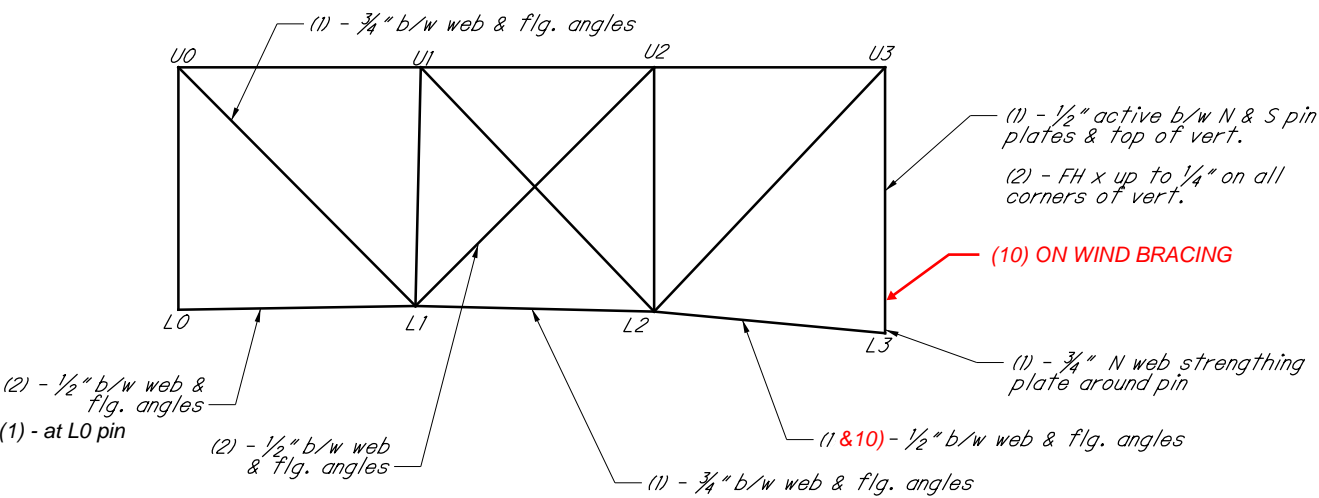
L0, BOTH GP - (10)

L1, OB GP - (2) 3/4" @ L1-U0

L1, BOTH GP - (10) AT VERTICAL AND DIAGONAL

L1 BOTH GP - Paint failure at bottom of gusset plates and flange plates at lower chord w/ activated corrosion

SPAN 4 - SOUTH EXTERIOR TRUSS



SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

L1, IB GP - (6) 1/8" IB face above LC reactivating.

L2, IB GP - (6) 1/8" IB face above LC reactivating.

L3, Both GPs - (10) 1/8" throughout.
(1) - reactivated along all edges.

IB GP - (5) active, with minor surface corrosion within a 12" perimeter of the pin.
(1) 1" b/w GP and vertical.

U3, Both GPs - (3) 1/8" full perimeter of upper pins.
(10) AROUND VERTICALS

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LORAIN-CARNEGIE BRIDGE

CUY-10-16.13

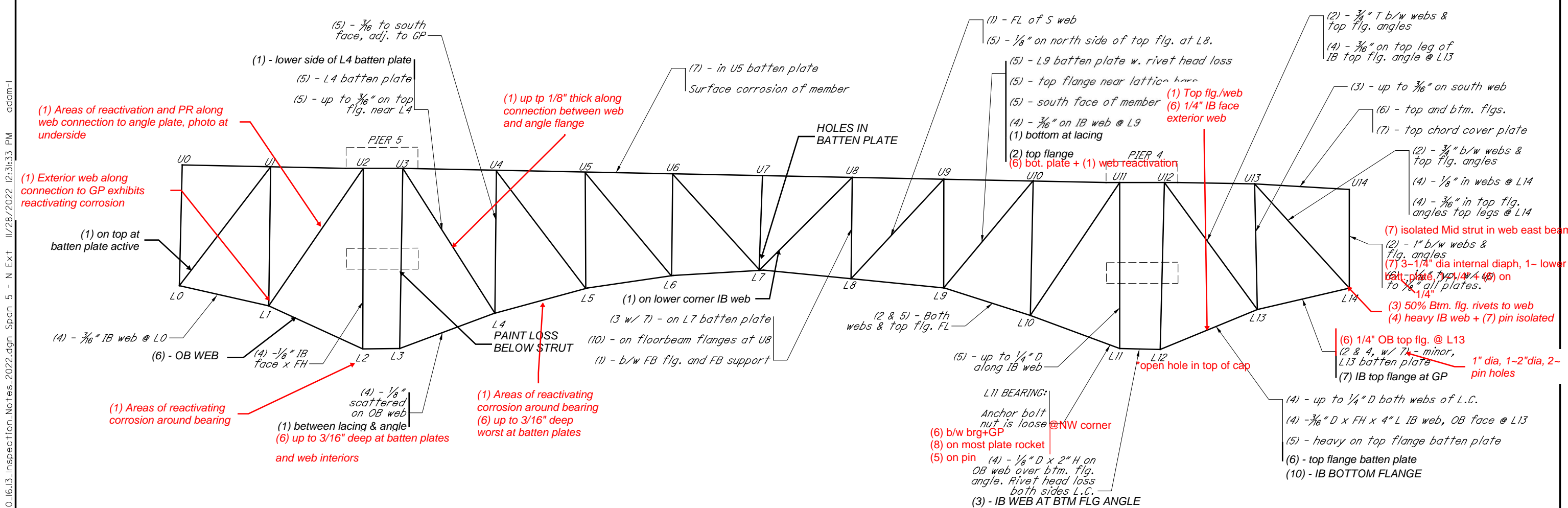
SPAN 4 TRUSS ELEVATIONS

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SPAN 5 - NORTH EXTERIOR TRUSS ELEVATION

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SPAN 5 NORTH EXTERIOR - GUSSET PLATE DEFICIENCIES

- L0, Both GPs - (1) - at vert. and diag. active
- L1, BOTH - (5) - 3/16" IB face along lower chord w/ (10)
- L2, Both GPs - (6) - 1/4" inside faces; (10) AT LC
- L3, IB GP - (5) - 1/8" OB face @ ends
- (4) - 1/8" along L.C.
- L3, OB GP - (8) - interior face east of vertical
- L4, OB GP - (1) - along diag. active; (10) AT LC (8) exterior face along connection to LC
- L4, IB GP - (1) AT VERTICAL (6) up to 1/8" deep east of vertical
- L5, IB GP - (6) - 1/4" IB face
- L5, OB GP - (1) - @ LC reactivated (8) along connection to LC
- L6, OB GP - (1) - @ LC reactivated
- L7, OB GP - (10) AT LC
- L7, IB GP - (6) - 1/8" along L.C.
- L7, Both GPs - (5) - along LC active
- L8, OB GP - (1) - @ LC
- L9, IB GP - (6) - 1/8" D widespread IB face
- L9, OB GP - (4) - 1/4" D w/ (10) on IB face
- L9, BOTH - (2) - up to 1" @ diag., (8)
- L11, OB GP - (6) - 3/16" scattered on IB face @ W. end
- L11, IB GP - (6) - 1/8" widespread both faces w/ some 3/16"

FLOORBEAM DEFICIENCIES

- U0 - (10) - on top flange between Stringers 1 and 3.
- L12 Bearing
- (6) on brg. assembly
- (8) masonry plate and rocker
- (1) b/w brg. plate + GP

SPAN 5 NORTH EXTERIOR - GUSSET PLATE DEFICIENCIES

- L12, IB GP - (6) - 1/16" IB face, 1/8" OB face; (10) AT LC
- L12, OB GP - (4) - 1/8" above L.C.; (10) AT LC
- L13, IB GP - (4) - up to 1/4" D along L.C.
- L14, BOTH - (2) 1/2" @ vert. & diag.
- L14, OB GP - (4) - 1/8" along L.C. & around pin OB face, scattered on IB face
- L14, IB GP - (6) - 3/16" widespread both faces & around pin
- U14, BOTH - (2) - 1" @ vert.
- (6) - 1/16" widespread both faces

- L10, IB GP - (8) along btm int. face and along LC, (6) int. face
- L10, OB GP - (8) isolated + 1/16" along LC
- L13, OB GP - (6) IB face 3/16" b/w diag + vertical
- L2, - IB GP - (1) Exterior face exhibits areas of reactivation along connection to LC
- L2, - OB GP - (10) Interior face west of vertical exhibits active pitting up to 3/16" deep
- L2, - OB GP - (6) Exterior face along connection to LC exhibits laminating corrosion

- L1, - OB GP - (6) Exterior face along connection to LC exhibits laminating corrosion
- L1, - IB GP - (1)(6) Interior face exhibits reactivation and laminating corrosion
- L1, - IB GP - (6) Exterior face along connection to LC at west side exhibits laminating corrosion
- L9-U9, - OB GP - (10) Activated corrosion at horizontal bracing connection
- L10, - GP - (4) Failing paint between gussets
- L13, - GP - (4)(10)(3) Between gussets: paint failure at bottom flange plate and activated corrosion with isolated section loss on inside of north gusset plate

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

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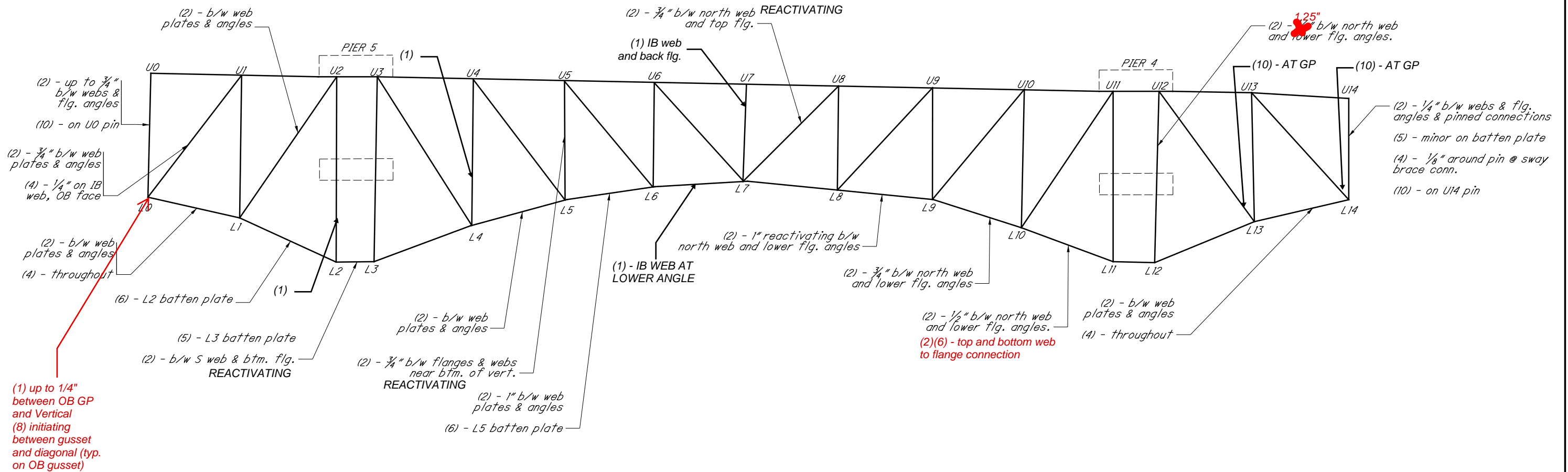
LORAIN-CARNEGIE BRIDGE

CUY-10-16.13

SPAN 5 TRUSS ELEVATION
(NORTH EXTERIOR)

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SPAN 5 - NORTH INTERIOR TRUSS ELEVATION



SPAN 5 NORTH INTERIOR - GUSSET PLATE DEFICIENCIES

U0, BOTH - FRETTING CORROSION ON INTERIOR
(2) - UP TO 5/8" B/W GPs & VERT.

L1, IB GP - (10) AT DIAGONAL
L1, OB GP - (4) AT LC
L2, IB GP - (3) - UP TO 1/4" ON OB FACE
(10) AT LC
(1) @ VERTICAL
L2, OB GP - (4) ON OUTSIDE FACE
(10) AT LC
L3, IB GP - (6) NEAR LC EAST SIDE
L3, OB GP - (4) AT LC WEST SIDE
L7, OB GP - (5) - UP TO 3/16" ALONG LOWER CHORD ON OB FACE. ALSO HAS (2 & 10).
(3) REACT. UP TO 1/8" D X 18" L X 6" H ALONG BOT. OF L.C. ON IB FACE.
L8, OB GP - (4) AT BRACE CONNECTION
L9, BOTH (3 & 10) - UP TO 1/8" ADJACENT TO DIAGONAL.
L9, OB GP - (3) - 5/16" X 6" H X FL ALONG TOP OF L.C. ON OB FACE
AREA OF PAINT FAILURE ON IB FACE
L11, IB GP - (6)
L11 BOTH GPs - (4) AT LC
L12, OB GP - (4) AT LC
L13, OB GP - (8) AT LC
L14, BOTH - (2) - REACTIVATING, ALONG ALL CORNERS AND LACING CONNECTIONS
(3) - REACT. UP TO 3/8" D X 30" L 30" H
L14, OB GP - (2) - REACTIVATING 1-1/8" AROUND THE PIN.
L14, IB GP - (10) (6) failed paint with active corrosion and minor section loss
L0, lower pin, (8) initiating around diameter of pin both side
L0, (1) between GP and LC
L5, OB GP, (3) up to 0.13" near GP above LC

L5-L6
IB GP - (1) Pack rust at lower angle
L5, - IB Web - (1) Pack rust at lower angle

L6-L7
(2)(10) Reactivating corrosion in north web and lower flange angles
(2) 3/4" between north web and top flange - Reactivating
(1) IB web and back flange

L7-L8
(2) Reactivating rust in 1" gap between north web and lower flange angles


L8-L9
(2) 1/2" between north web and lower flange angles

L10-L11
(2)(6)(10) Throughout: Active corrosion at top and bottom web to flange connections
(2) Rust staining at U11 pin
(10), AT GP - (2) Laminating corrosion and reactivation along web and angle plates
(1) Pack rust on batten plate

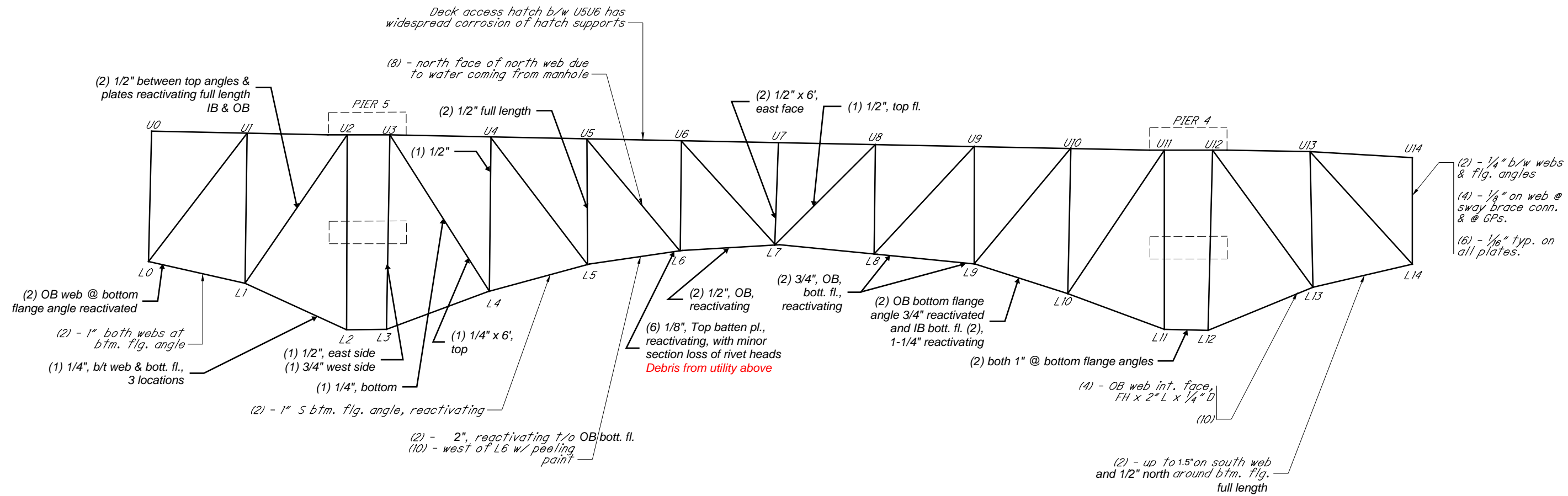
L11-L12
(2) 1/4" between web and flange angles + pinned connections
(2)(4) 1/4" around pin and away from brace connection
(2)(6)(10) Paint failure at outboard surface of pin
(2) Minor corrosion on bottom plate

LEGEND

1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE		CUY-10-16.13	
JUNE 2025		SPAN 5 TRUSS ELEVATION (NORTH INTERIOR)	PAGE 16/61

SPAN 5 - SOUTH INTERIOR TRUSS ELEVATION



- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

SPAN 5 SOUTH INTERIOR - GUSSET PLATE DEFICIENCIES


L2, IB GP - (4) up to $\frac{3}{16}$ " above lower chord reactivated & (5) interior faces, IB & OB

L6, Both GPs - (10) (8) @ diag. & L5L6

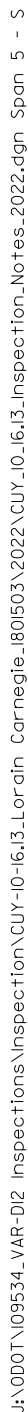
L5, IB GP - (10) up to $\frac{1}{8}$ " on IB face

L14, Both GPs - (4) up to $\frac{1}{4}$ " around 8" pin

L14, IB GP - (1) - $1\frac{1}{4}$ " react. b/w GP & vert.
(3) - react. $\frac{1}{4}$ " along top of L.C.

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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JUNE 2025		SPAN 5 TRUSS ELEVATION (SOUTH INTERIOR)	PAGE 17/61

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L0, IB GP - (4) - $\frac{3}{16}$ " along L.C.
(2) - $\frac{1}{2}$ " @ diag.

L1, IB GP - (4) - $\frac{1}{8}$ " along L.C.

L2, OB GP - (6) - $\frac{3}{16}$ " IB face @ W. end

L2, IB GP - (4) - $\frac{1}{8}$ " along L.C.
(6) - $\frac{1}{8}$ " OB face @ E. end

L3, IB GP - (4) $\frac{1}{8}$ " along L.C.

L4, IB GP - (4) $\frac{1}{4}$ " along L.C. OB GP - (3) $\frac{1}{8}$ " ALONG L.C.

L5, IB GP - (4) - $\frac{1}{8}$ " above L.C. OB GP - (3) $\frac{1}{8}$ " ALONG L.C.

L6 IB GP - (4) $\frac{1}{8}$ " along L.C. OB GP - (3) $\frac{1}{8}$ " ALONG L.C.

L7, BOTH - (10) $\frac{1}{8}$ " along top of L.C.

L8, BOTH - (10) $\frac{1}{8}$ " along top of L.C.

L9, IB GP - (4) $\frac{3}{16}$ " along L.C. & scattered OB GP - (3) $\frac{1}{8}$ "

L9, OB GP - (4) - $\frac{1}{4}$ " D x $\frac{1}{2}$ " L x 5" H IB face above lower

L10, IB GP - (4) $\frac{1}{4}$ " & (10) along L.C.

L11, OB GP - (4) - $\frac{1}{8}$ " along L.C. & IB face @ W. end

L11, IB GP - (6) - $\frac{1}{8}$ " scattered.

L12, OB GP - (4) - $\frac{1}{8}$ " above L.C.

L9, IB GP - (4) $\frac{3}{16}$ " along L.C. & scattered

L9, OB GP - (4) - $\frac{1}{4}$ " D x 12" L x 5" H IB face above lower bracing plate, reactivated

L10, IB GP - (4) $\frac{1}{4}$ " & (10) along L.C.

L11, OB GP - (4) - $\frac{1}{8}$ " along L.C. & IB face @ W. end

L11, IB GP - (6) - $\frac{1}{8}$ " scattered.

L12, OB GP - (4) - $\frac{1}{8}$ " above L.C.

(1) - OB along L.C.

L13, IB GP - (4) $\frac{3}{16}$ " along top of L.C.

L14, Both GPs - (3) $\frac{1}{8}$ " t.o w/ (1) - 1" @ vert. & widespread (10)


114, IB GP - (5) active, within a 12" perimeter of pin

(1) - 1" @ vert.

U14, Both GPs - (3) $\frac{1}{8}$ " around perimeter of upper pins

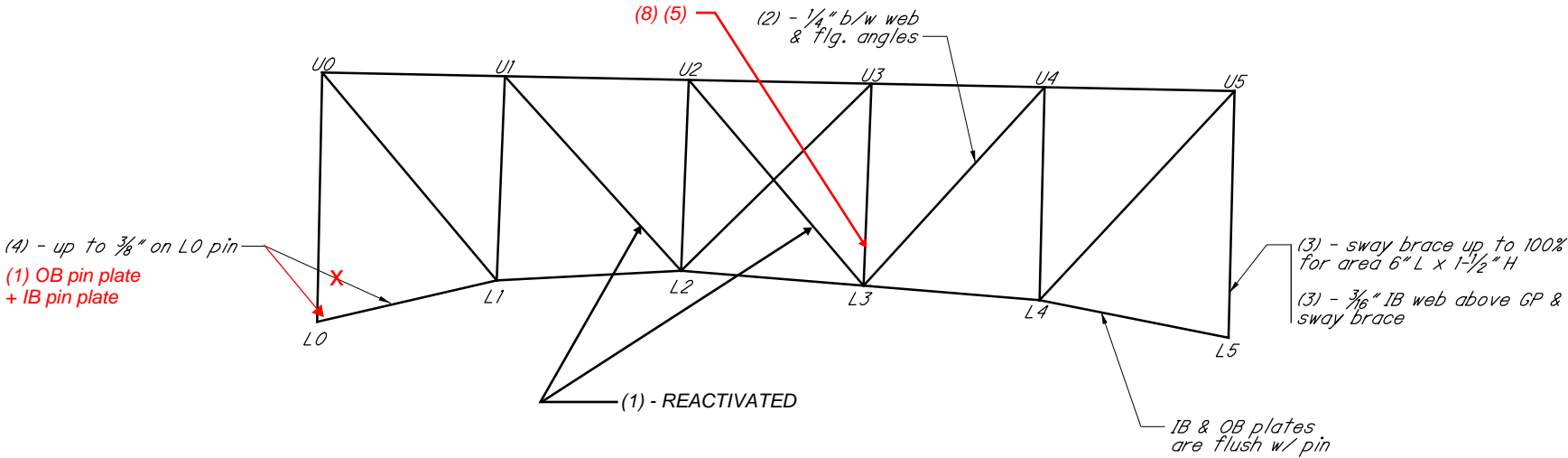
U0 - (10) - on top flange between Stringer 9 and south fascia and bottom flange between Stringer 10 and south fascia.
 L13 - (7) - 1" dia. **ON TOP FLANGE**
 L14 - (7) - 6" DIA. **ON UTILITY FB WEB**
 U14 - (10) - **TYPICAL**

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE JUNE 2025		CUY-10-16.13 SPAN 5 TRUSS ELEVATION (SOUTH EXTERIOR)	
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SPAN 6 - TRUSS ELEVATIONS

SPAN 6 - NORTH EXTERIOR TRUSS

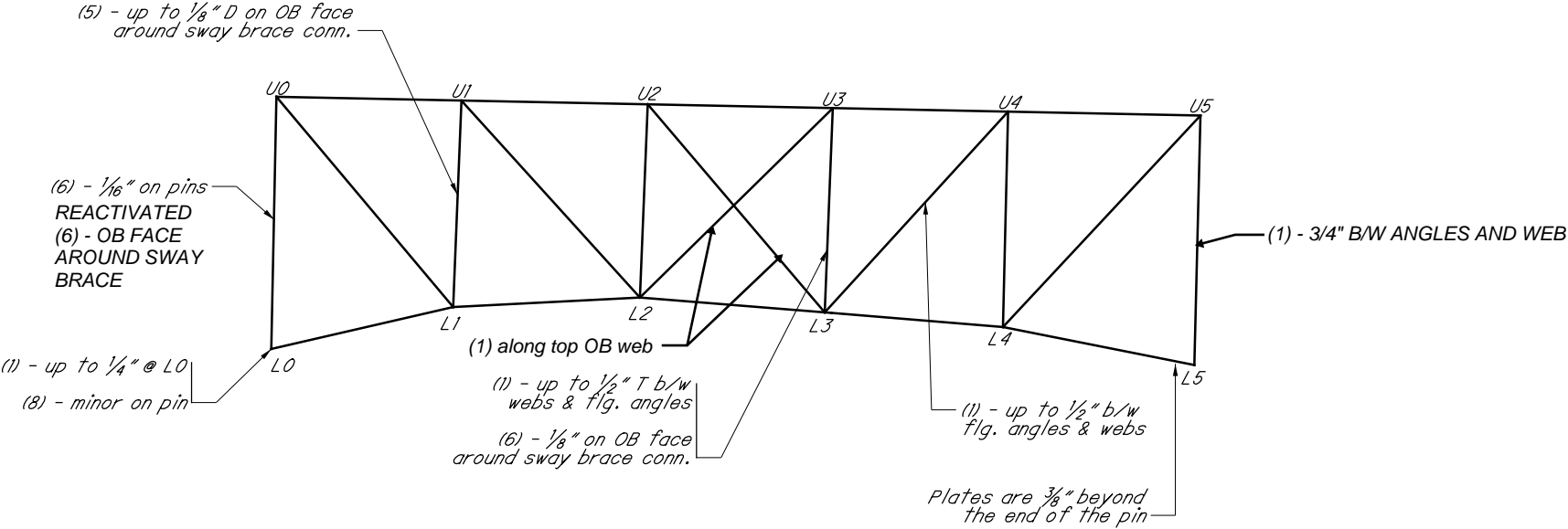


NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (3) - @ stiffening strut & minor reactivation
L1, IB GP - (5) - up to 1/8" D along L.C.
L2, IB GP - (6) - up to 1/8" along L.C. reactivated
L2, OB GP - (1) - above LC active
L3, IB GP - (6) - 1/16" D along L.C.
(1) - along L.C.
L3, OB GP - (6) - iso. 1/8" D along L.C.
L4, IB GP - (5) - iso. 1/8" D along L.C., some active
L4, BOTH - (1) - reactivated along L.C.
L5, BOTH - (2) - up to 1" b/w vert.
L5, IB GP - (6) - 1/8" widespread REACTIVATED
(2) - 1/2" @ diag.
(1) between stiffening strut and GP
U5, BOTH - (4) - up to 1/8" D full perimeter of upper pins
(2) - up to 1" b/w vert.
U5, OB GP - 5 partially filled-in holes (misdrilled or corrosion?)

- L5, - IB GP - (10) Interior face east of vertical exhibits active corrosion
L5, - OB GP - (6) Exterior face exhibits laminating corrosion along connection to LC
L5, - IB GP - (6) Interior face along connections to members exhibits heavy laminating corrosion
L5, - IB GP - (1) PR up to 1" wide between pin area/vertical and GP
Pin @ L5, GP
(6) Inboard exterior face of pin with areas of laminating corrosion
L5, - IB GP - (1) Exterior face exhibits active PR around bracing connections to GP
L5, - IB GP - (1) Exterior face between LC pin connection areas exhibits potential plug welds
Pin @ L5, LC
Inboard exterior face of pin
Pin @ L5, GP
(6) Interior of pin between GPs exhibits heavy laminating corrosion
Pin @ L5, LC
Outboard exterior face of pin
Pin @ L5, GP
(10) Outboard exterior face of pin with areas of corrosion

SPAN 6 - NORTH INTERIOR TRUSS



NORTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, Both GPs - (3) - @ stiffening strut
L0, IB GP - (1) - 1 1/2"+ @ pin
L1, OB GP - (6) ABOVE LC (UP TO 1/4")
L1, IB GP - (4) - 1/8" above L.C.
L2, BOTH - (6) - isolated, along lower chord up to 1/8"
L2 - IB GP - (10) at bottom
L3, BOTH - (6) - isolated, along lower chord up to 1/8"
L5, BOTH - (2) - up to 5/8" between GPs & vertical.

- L0, - GP - (1)(10) Activated corrosion and packed rust between gusset plates at vertical and diagonal truss member connections
L2, - GP - (10) Activated corrosion on top of horizontal gusset plates and at horizontal bracing connections
L2-U2, - IB GP - (10) Isolated areas of activated corrosion between web and flange angles, north quadrants
L1, - GP - (2) Painted over pitting inside gussets at diagonal truss member connections

- LEGEND
1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
(10) - Active Corrosion

NOT TO SCALE

DATE
JUNE 2025

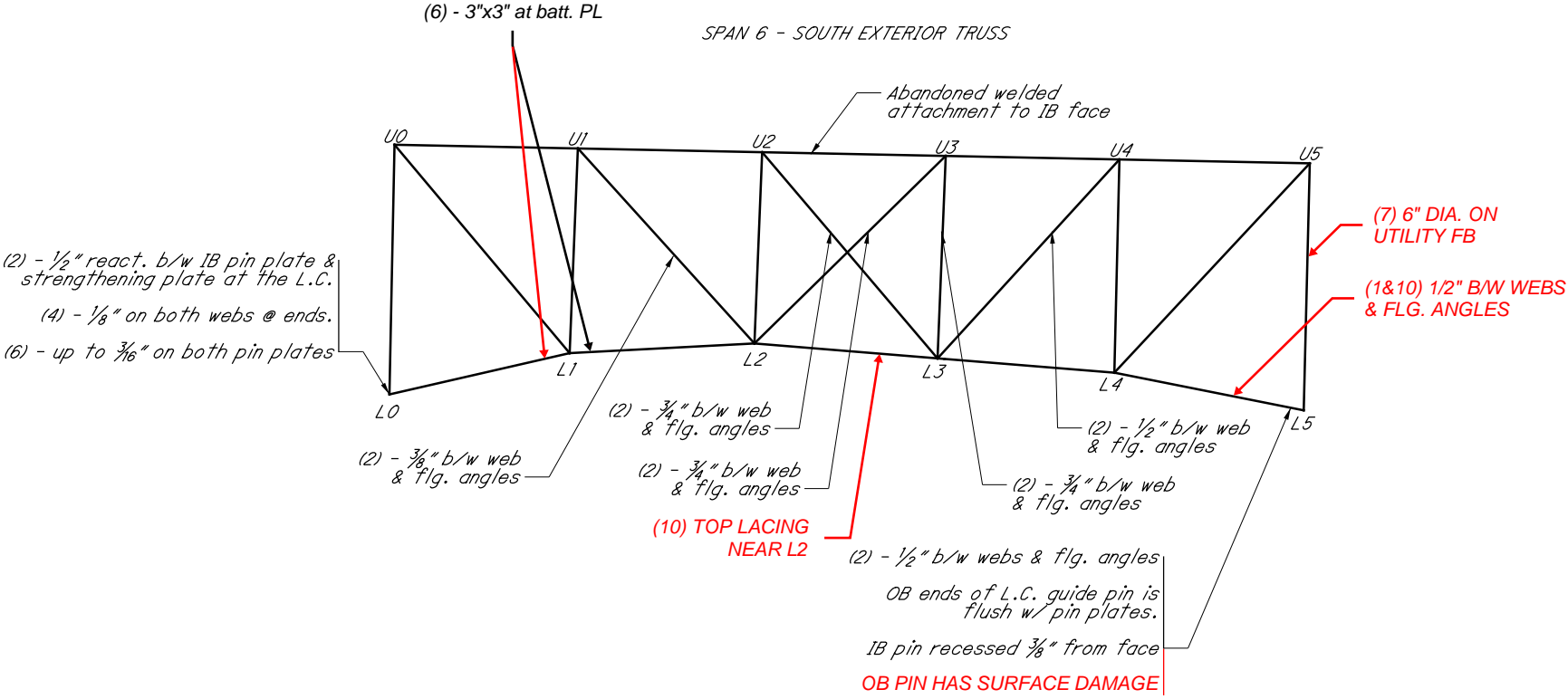


LORAIN-CARNEGIE BRIDGE
CUY-10-16.13

SPAN 6 TRUSS ELEVATIONS

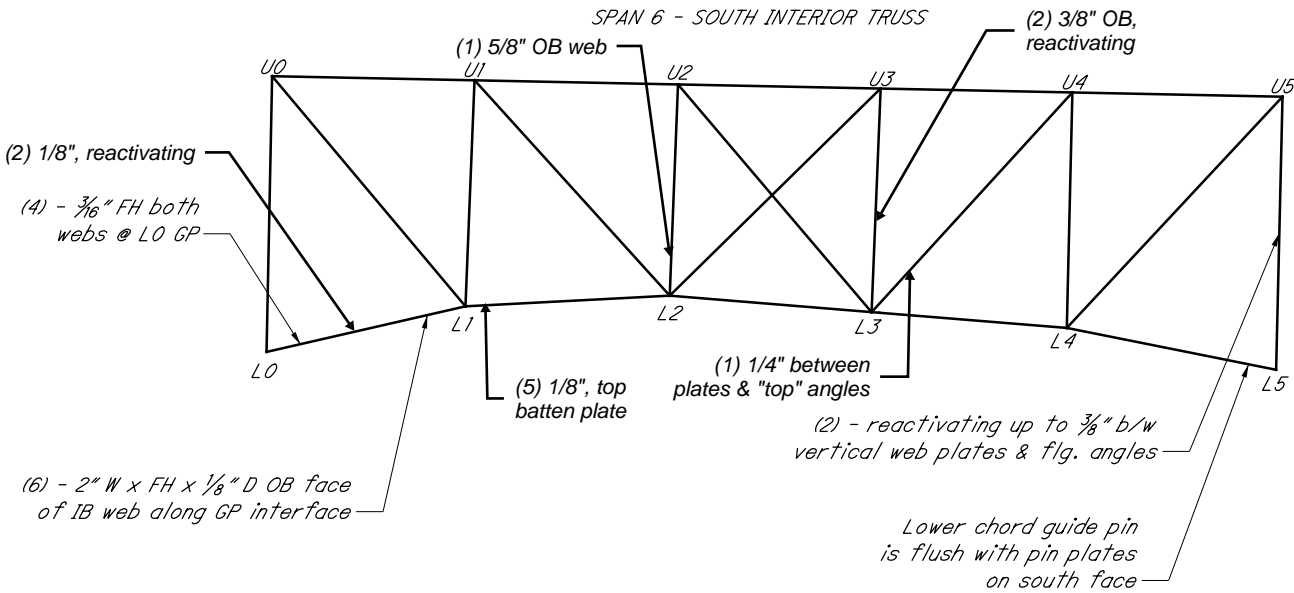
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SPAN 6 - TRUSS ELEVATIONS



SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (4) - 1/8" along L.C.
- L1, IB GP - (4) - 3/16" above L.C.
- L2, IB GP - (4) - 1/8" along L.C.
- (6) - 2"x4"x3/16" at L2-U3
- L3, IB GP - (6) - widespread 1/16"
- L5 & U5, BOTH - (2) - react. up to 1" T b/w GP, vert., diag., and pin.
- (6) - up to 1/4" D.
- U5, BOTH - (2) - 1/2" @ vert. reactivated
- (4) - 1/8" around pin



SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (1) - 1-3/4" b/w both GPs and vertical & OB/lower chord connection
- (4) - exterior faces up to 3/16" around pin
- (5) - interior faces up to 1/8" D
- U0, BOTH - (1) - 1" b/w GPs and the verticals
- (6) - up to 1/8" D around pin
- L1, OB - (6) 1/8" x 1" x 2", OB face at top of lower chord connection

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminar Corrosion
- 9 - Layered Corrosion
- (10) - Active Corrosion

NOT TO SCALE

DATE
JUNE 2025



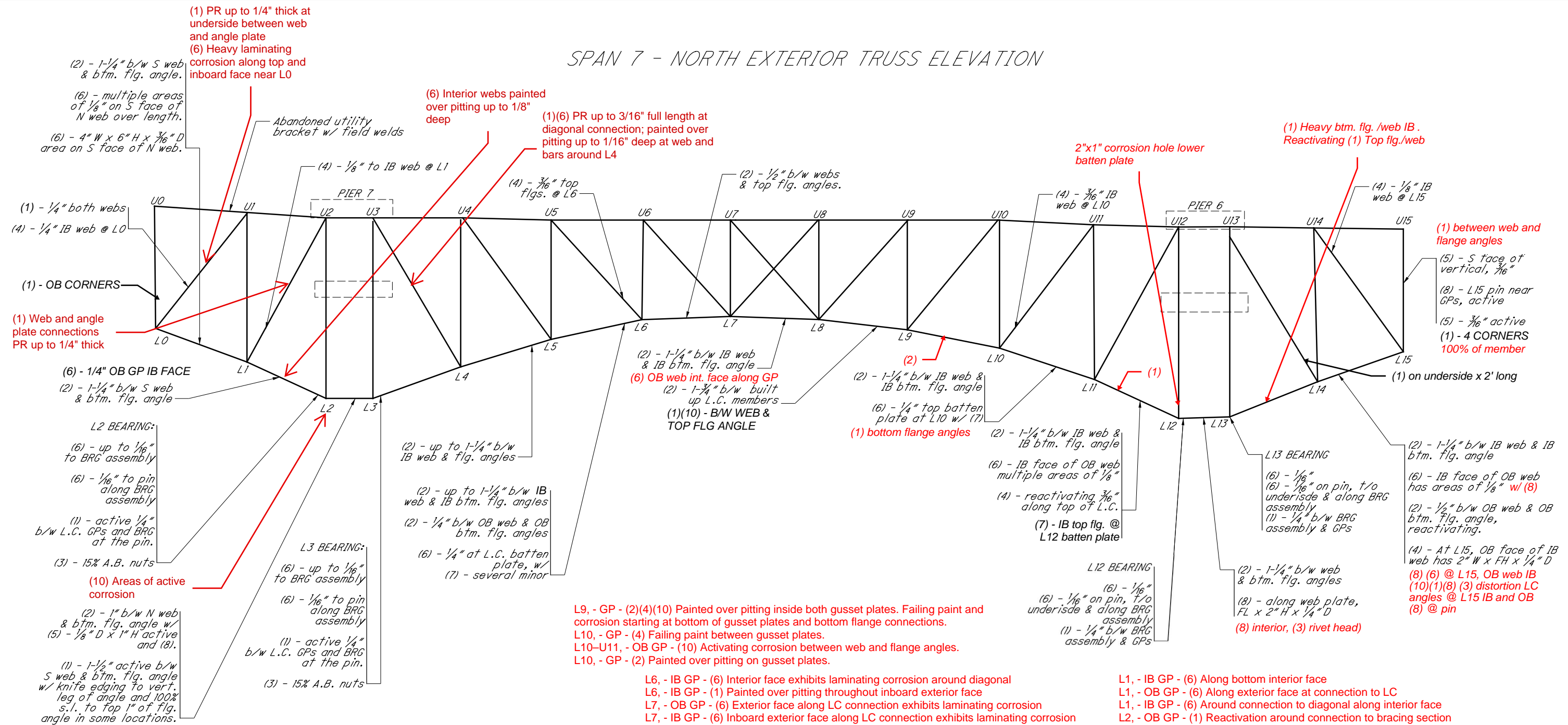
LORAIN-CARNEGIE BRIDGE
CUY-10-16.13

SPAN 6 TRUSS ELEVATIONS

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SPAN 7 - NORTH EXTERIOR TRUSS ELEVATION



SPAN 7 NORTH EXTERIOR - GUSSET PLATE DEFICIENCIES


- L0, BOTH GPs - (4) AROUND PIN
- L1, BOTH - (6) - 1/8" D ON INTERIOR FACES, IB UP TO 3/16"
(2) - 1/2" REACT. BETWEEN GP AND DIAGONAL.
- L2, OB GP - (6) - 3/16" D ON INTERIOR FACES
- L2, IB GP - (6) - 1/8" WIDESPREAD BOTH FACES
- L3, IB GP - (6) - 3/16" TO BOTH FACES AT W. END
- L4, OB GP - (1) 1/2" AT DIAGONAL (ACTIVE)
- L4, BOTH GPs - (5) ALONG LC (ACTIVE)
- L6, IB GP - (6) - 3/16" ON IB FACE
- L6, OB GP - (5) AROUND DIAGONAL
- L7, IB GP - (6) 1/8" ALONG L.C.
- L7, OB GP - (1) ALONG LC REACTIVATED
- L8, IB GP - (6) - 3/16" D on IB face (6) reactivating
- L8, OB GP - (1) between GP and lower chord.
- L9, IB GP - (6) - 1/16" D on IB face
- L10, IB GP - (2) - 1" t reactivating between GP and diagonal.
(6) - 1/8" near diag.

SPAN 7 NORTH EXTERIOR - GUSSET PLATE DEFICIENCIES (CONT'D)

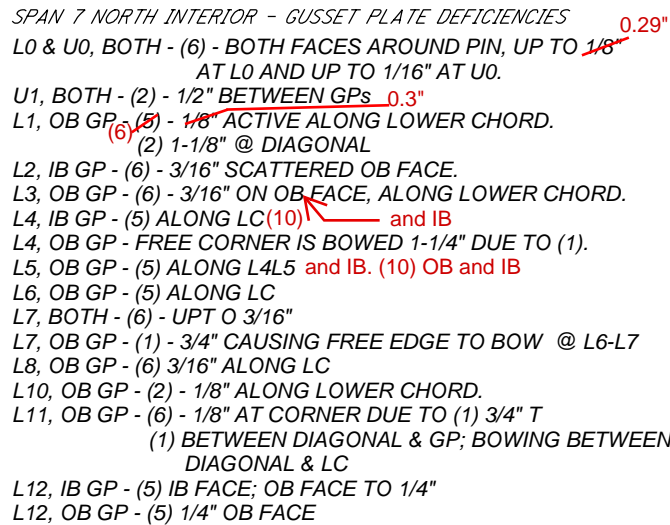
- L11, IB GP - (6) - 1/16" IB face; (1) @ diagonal bottom
- L11, OB GP - (4) - 1/8" IB face @ W. end
- L12, OB GP - (6) - 1/8" D on OB face; BOTH - (1) - @ L.C.
- L12, IB GP - (6) - 1/8" both faces
- L13, OB GP - (4) - 1/8" along L.C. (6) 3/16" IB and OB
- L14, IB GP - (6) - 1/16" IB face
(6) - 1/16" OB face, scattered
- L14, IB GP - (6) - 1" H x 1/16" D on OB face along lower chord interface with active (8)
- L14, OB GP, (8) along top of LC and (5) 1/16"
- L15 & U15, BOTH - (2) - 1" T reactivating between them, vertical, diagonal and pin.
(6) - 1/8" around pin
- L15, IB GP - (6) - 1/4" scattered IB face ACTIVE

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

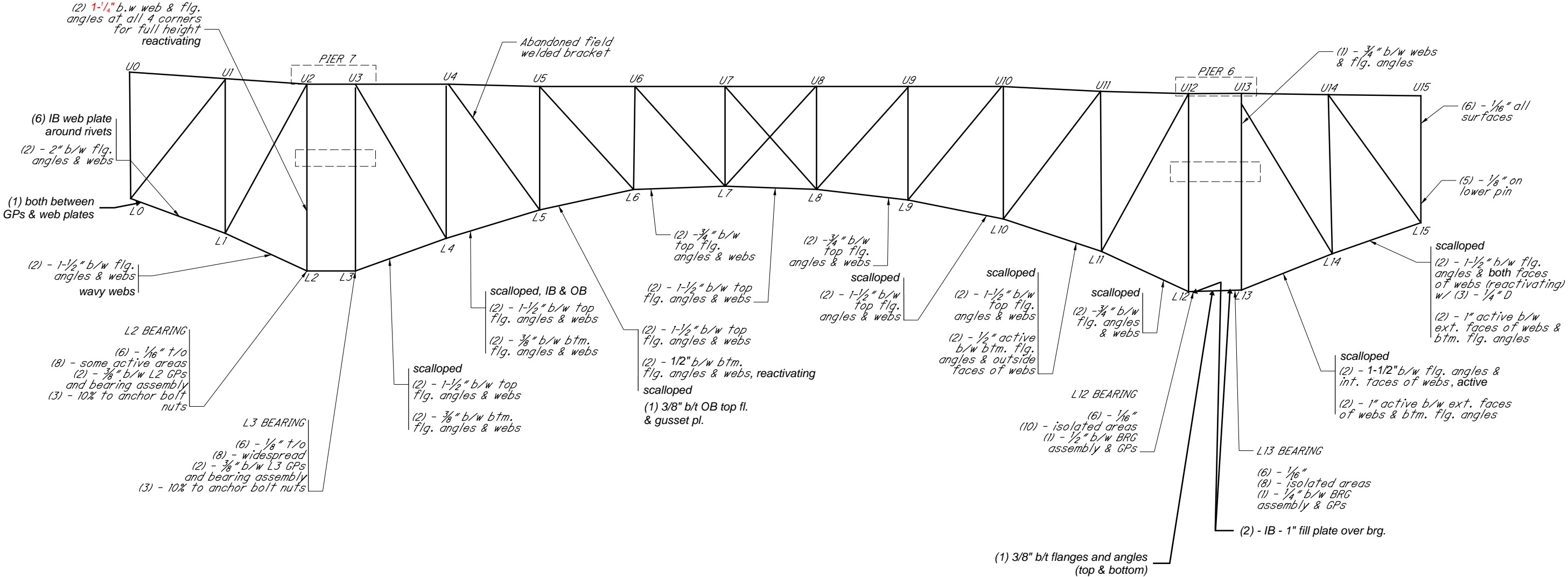
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		CUY-10-16.13	
		SPAN 7 TRUSS ELEVATION (NORTH INTERIOR)	PAGE 22/61

SPAN 7 - SOUTH INTERIOR TRUSS ELEVATION

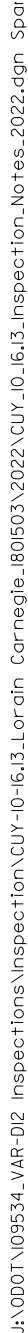


SPAN 7 SOUTH INTERIOR - GUSSET PLATE DEFICIENCIES
L0, OB GP - (3) - 4 rivets at bottom @ 50%
L0, OB GP - (6) around pin
L1, IB GP - (8) - bottom of plate above lower chord connection
L2, IB GP - (5) - 1/8" x 2" H on IB face, with (8 & 10)
L2, OB GP - (4) - 1/8" along L.C. on OB face
(6) - 1/16" scattered @ IB face
L12, BOTH - (5) - 3/8" deep x 2.5" high x 3' long @ vert. above top flange of L.C.
L15 OB GP - (5)

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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L8, BOTH - (5) - up to $\frac{1}{8}$ " along lower chord plates
and along vertical.

U15, BOTH - (4) - $\frac{3}{16}$ " both faces full perimeter of upper pin.

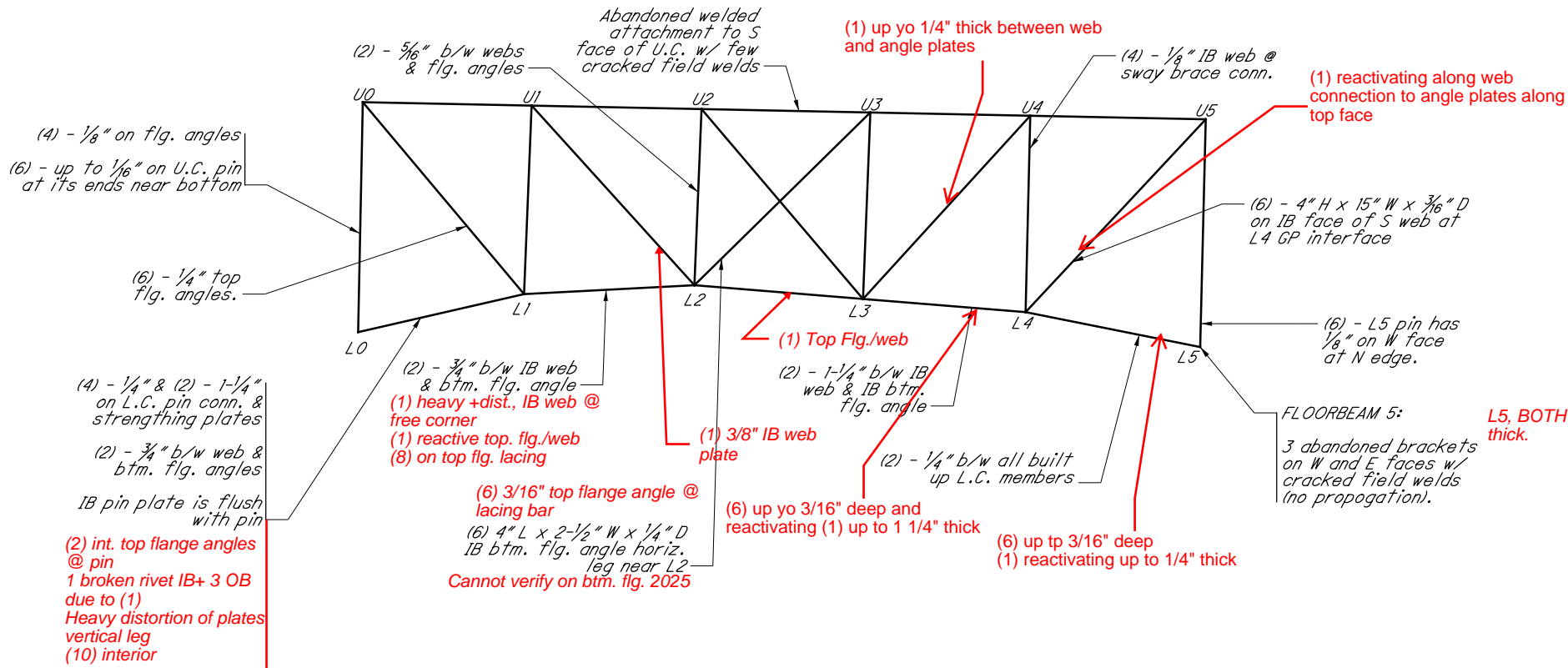
10 - Active Corrosion

U15 - (3) - 100% at support: (7) - 3ct. 1-2" dia. **ON UTILITY SUPPORT**

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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		SPAN 7 TRUSS ELEVATION (SOUTH EXTERIOR)	PAGE 24/61

SPAN 8 - NORTH TRUSS ELEVATIONS

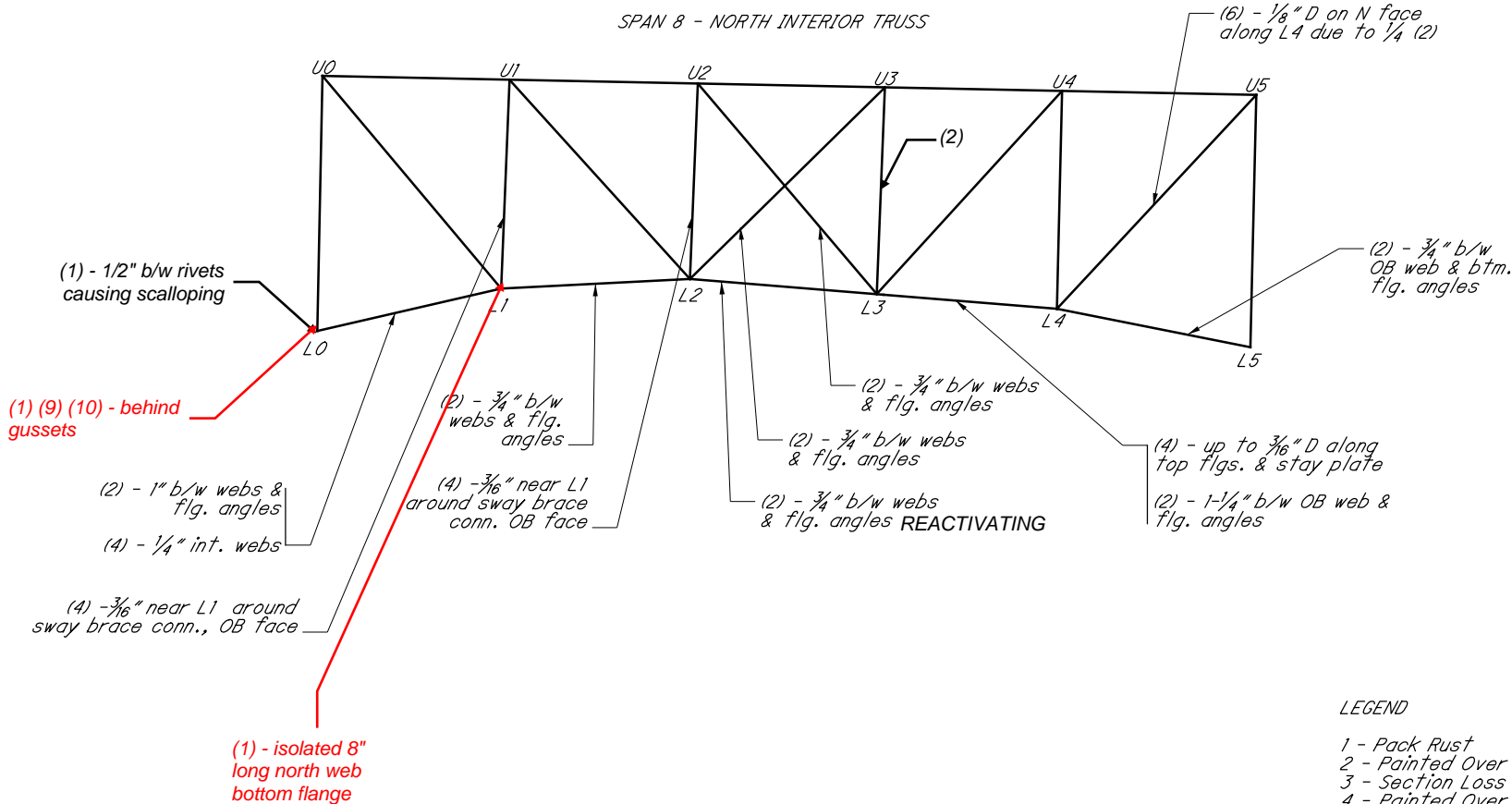
SPAN 8 - NORTH EXTERIOR TRUSS



NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (2) - up to 1" T between the verticals
(6) - exterior faces around pin, up to 1/8"
- L0, IB GP - (6) - 1/4" along its west end.
- L1, OB GP - (10) AT LC (6)
- L1, BOTH GPs - (10) AT DIAGONAL (6)
- L2, IB GP - (6) - 1/8" along L.C. Peeling paint (8)
- L3, IB GP - (6) - scattered 1/8"
- L3, OB GP - (10) AT LC Peeling paint
- L4, IB GP - (6) - up to 1/4", reactivating, IB face along lower chord
(8) - with minor surface corrosion(1)
- L5, BOTH - (2) - up to 3/4" @ vert. & diag.
L5, IB GP - (4) - up to 1/4" D on IB face around pin & scattered (8) (10), exterior face thick.
- L5, OB GP - (4) - 1/8" around pin.
- U5, BOTH - (2) - 1" T between the vertical webs
- Pin @ L5 @ GP
(8) Interior pin exhibits areas of laminating corrosion.
- Pin @ L5 @ GP
(10) IB pin face exhibits areas of active corrosion
- Pin @ L5, @ GP
(10) OB pin face exhibits areas of corrosion
- Pin @ U5
(8) OB pin face exhibits areas of active corrosion. FB and stringers at this location exhibits laminating corrosion.

SPAN 8 - NORTH INTERIOR TRUSS



NORTH INTERIOR GUSSET PLATE DEFICIENCIES

- L1, OB GP - (4) - 1/4" scattered.
- L2, OB GP - (10) AT LC AND DIAGONAL
- L3, OB GP - (8) AT LC
- L4, OB GP - (4) - 1/4" OB face along E free edge. (8) interior face around diagonal connections
- L5, - IB GP - (6) East of vertical along interior face exhibits heavy laminating corrosion
- L0, - GP - (1) Both gusset plates distorted up to 1-3/4" due to pack rust
- L2-U2, - OB GP - (1) Isolated areas of pack rust causing web distortion
- L2, - OB GP - (10) At LC and diagonal
- L3, - OB GP - (8) At LC
- L4, - OB GP - (4) 1/4" OB face along east free edge
- L1, - BW GP - (1)(6) Pack rust and pitting at bottom of gusset.
- L3, - BW GP - (1)(6)(10) Active corrosion, pack rust, and pitting at bottom of gusset.
- L3, - OB GP - (4) Failing paint on gusset.

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminating Corrosion
9 - Layered Corrosion
10 - ACTIVE CORROSION

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LORAIN-CARNEGIE BRIDGE

CUY-10-16.13

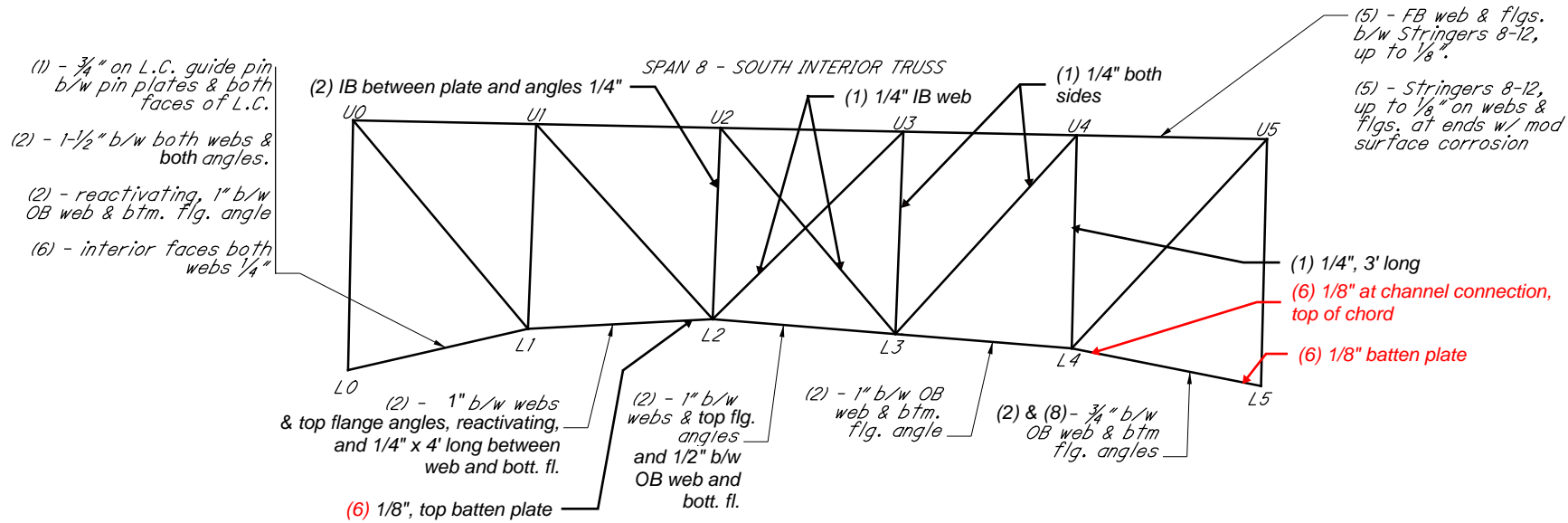
SPAN 8 TRUSS ELEVATIONS
(NORTH)

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SPAN 8 - SOUTH TRUSS ELEVATIONS



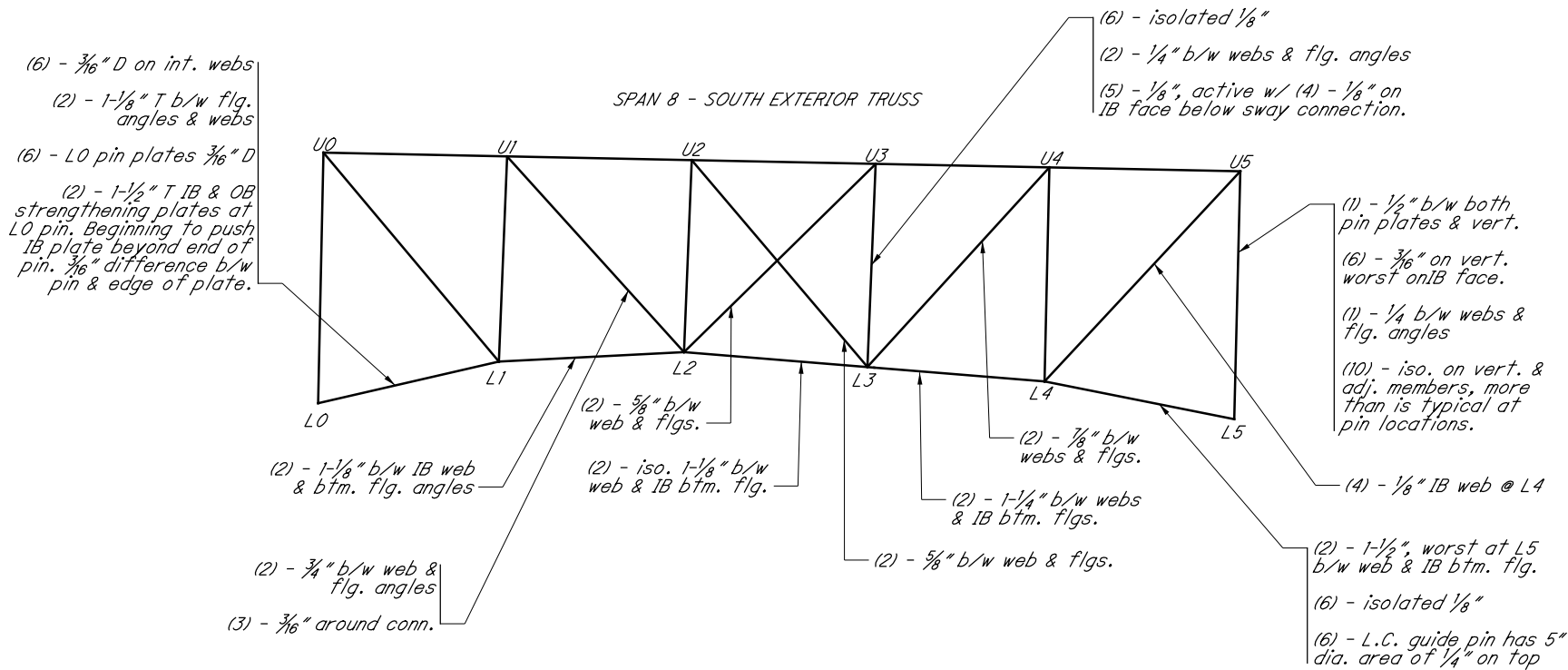
SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (4) - up to $\frac{3}{8}$ " around pin w/
(1) - 2" T, active
(1) - 2- $\frac{1}{4}$ " T, active, between plates and vertical web plates
- L1, IB GP - (6) - $\frac{1}{4}$ " x 2- $\frac{1}{2}$ " H area along lower chord interface.
- L2, IB GP - (6) - $\frac{1}{4}$ " D x 1" H x 3' L along top of lower chord and pack rust/deformation of top of lower chord at GP connection
- L4, IB GP - (5) along LC interface
- L5, BOTH - (2) - reactivating, 1- $\frac{1}{2}$ " T between top of plates and vertical.
- L5, BOTH - (1) - $\frac{1}{2}$ " T above lower chord guide pin. *
(5) - $\frac{1}{8}$ " around L.C. guide pin.
- U5, IB GP - (2) - $\frac{1}{2}$ " t between IB GP and vertical.

* Pack rust at guide pin plate is causing plate to bow and its outer face is flush with the guide pin

Pin @ U0

- (1) up to 1 $\frac{1}{2}$ " thick between GP and vertical pin at OB
(6) at OB side



SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (2) - $\frac{1}{2}$ " between lower chord and GPs.
- L1, IB GP - (6) - $\frac{3}{16}$ " IB face
- L2, IB GP - (2) - 1" T between IB GP and diagonal connection
(6) - $\frac{3}{16}$ " with one 6" area of active
- L3, IB GP - (6) - $\frac{1}{8}$ " w/ some react.
(2) - 1" @ L3-U4
- L4, BOTH - (6) - isolated $\frac{1}{8}$ " D
- L4, IB GP - (4) - IB face along lower chord, $\frac{3}{16}$ " D
(6) - $\frac{3}{16}$ " D on IB face w/ (2) $\frac{1}{2}$ " T
- L4, OB GP - (6) - $\frac{3}{16}$ " on IB face @ diag.
- L5, IB GP - (6) - $\frac{1}{8}$ " D within a 12" perimeter of the pin reactivating
(1) - up to 1- $\frac{1}{4}$ " between GP and vertical
and up to 1/8" at diagonal, L.C., and sway connection
- U5, BOTH - (10) - with minor section loss
(6) - $\frac{1}{16}$ "

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion

Pin @ U0

- (1) up to 1 $\frac{1}{2}$ " thick between GP and vertical pin at OB
(6) at OB side

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LORAIN-CARNEGIE BRIDGE

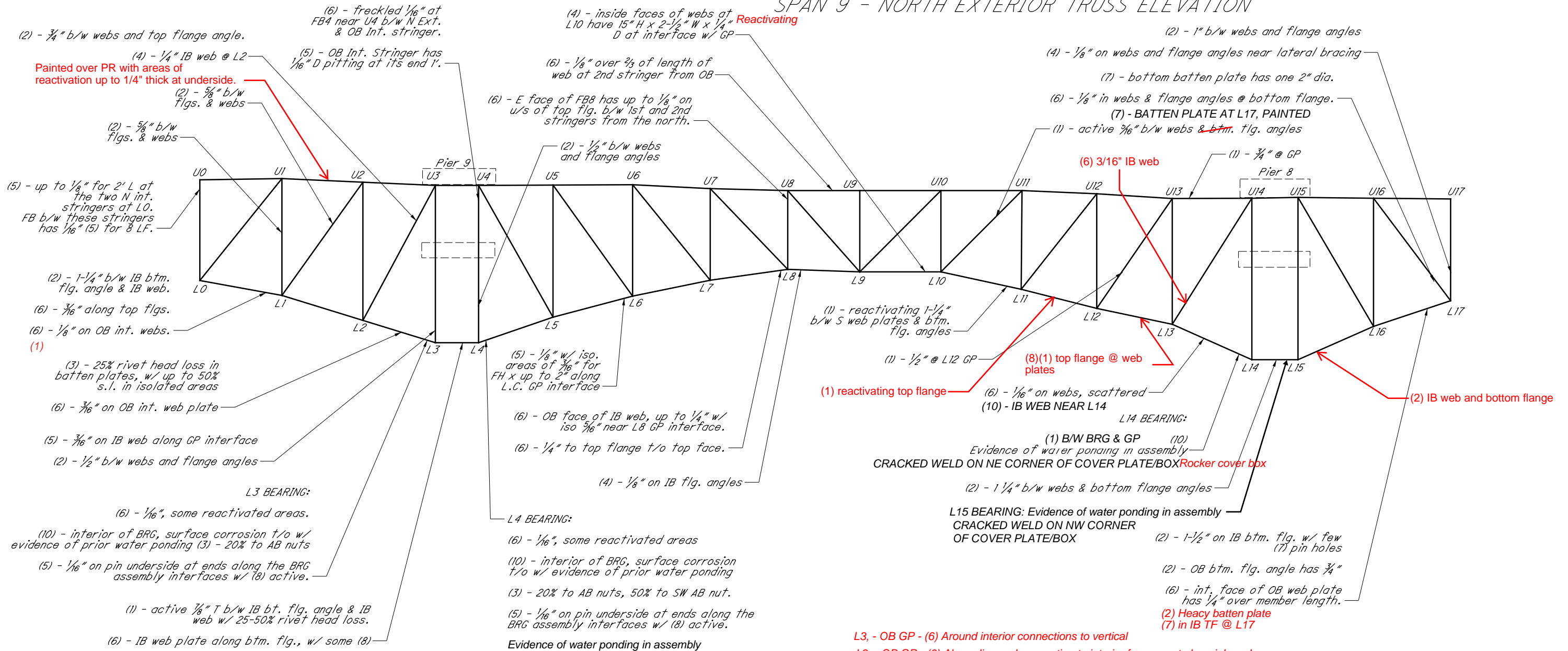
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SPAN 8 TRUSS ELEVATIONS
(SOUTH)

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SPAN 9 - NORTH EXTERIOR TRUSS ELEVATION



SPAN 9 NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L1, IB GP - (6) - areas of $\frac{1}{4}$ " above LC IB face
L1, BOTH GPs - (10) INTERIOR AT DIAGONAL
L1, OB GP - (10) AT VERTICAL
L2, IB GP - (6) - areas of reactivating $\frac{3}{8}$ " near interface
with lower chord and around sway brace connection.
(4) - $\frac{1}{8}$ " IB @ diagonal connection.
L2, OB GP - (5) - isolated $\frac{1}{8}$ ".
L3, OB GP - (10) AT VERTICAL
L3, IB GP - (4) - $\frac{1}{4}$ " above LC w/ rivet head loss.
BOTH - (4) - $\frac{1}{4}$ " interior face @ L3-L4.
L4, IB GP - (4) - $\frac{1}{4}$ " on interior face @ L3-L4
L5, OB GP - (2) - $\frac{1}{2}$ " @ diagonal.
(10) AT DIAGONAL
L6, BOTH - (5) - on interior faces of GPs as reactivating
along bottom batten plate at the lower chord connection.
L6, IB GP - (6) - area of up to $\frac{1}{4}$ " with typ. $\frac{3}{8}$ "
L7, IB GP - (2) - reactivating $\frac{3}{8}$ " between south web plate
at the west edge.
L7, OB GP - (10) AT LC & DIAGONAL
L8, IB GP - (6) - areas up to $\frac{1}{4}$ " along the lower chord.
L8, OB GP - (6) - OB face, 1-1#2" h x 36" L x 1#16" D with (10)
and laminated (1) along LC.
L9, OB GP - (10) AT LC
L10, IB GP - (4) - 3#16" along LC.

SPAN 9 NORTH EXTERIOR GUSSET PLATE DEFICIENCIES (CONT'D)


- L10, OB GP - (10) AT LC
L10, IB GP - (4) - 3#16" along LC.
- L11, BOTH GPs - (10) AT LC
L12, IB GP - (6) - up to 1#4" reactivating, worst on IB face
with isolated areas up to 5#16" at east end along lower chord.
- L12, OB GP - (6) - isolated areas up to 3#16" on IB face.
L12, BOTH GPs - (10) AT LC
- L13, IB GP - (6) - areas up to 1#4".
- L13, BOTH - (1) between GP and diagonal.
- L13, BOTH - (8) active along bottom + rust along LC OB
- L14, OB GP - (10) AT LC
L14, BOTH - (6) - UP TO 1#4" THROUGHOUT
- L15, OB GP - (10) AT LC
L15, BOTH - (6) - ISOLATED AREAS UP TO 1#4"
- L16, IB GP - (6) - AREAS UP TO 1#4"
L16, BOTH GPs - (10) AT LC
- L17, BOTH - (6) - 3#16" widespread around pins. IB everywhere
(1) - 5/8"
- U17, BOTH - (2) - 1-1#8" and (6) - 1#4" widespread.


FLOORBEAM DEFICIENCIES

- U0 - (10) - on top flange between Stringers 1 and 2.
- U17 - (10) - on top flange between Stringers 1 and 2.
- L14 Brg
- (6) on assembly
(1) b/w GP and pin (CS3)

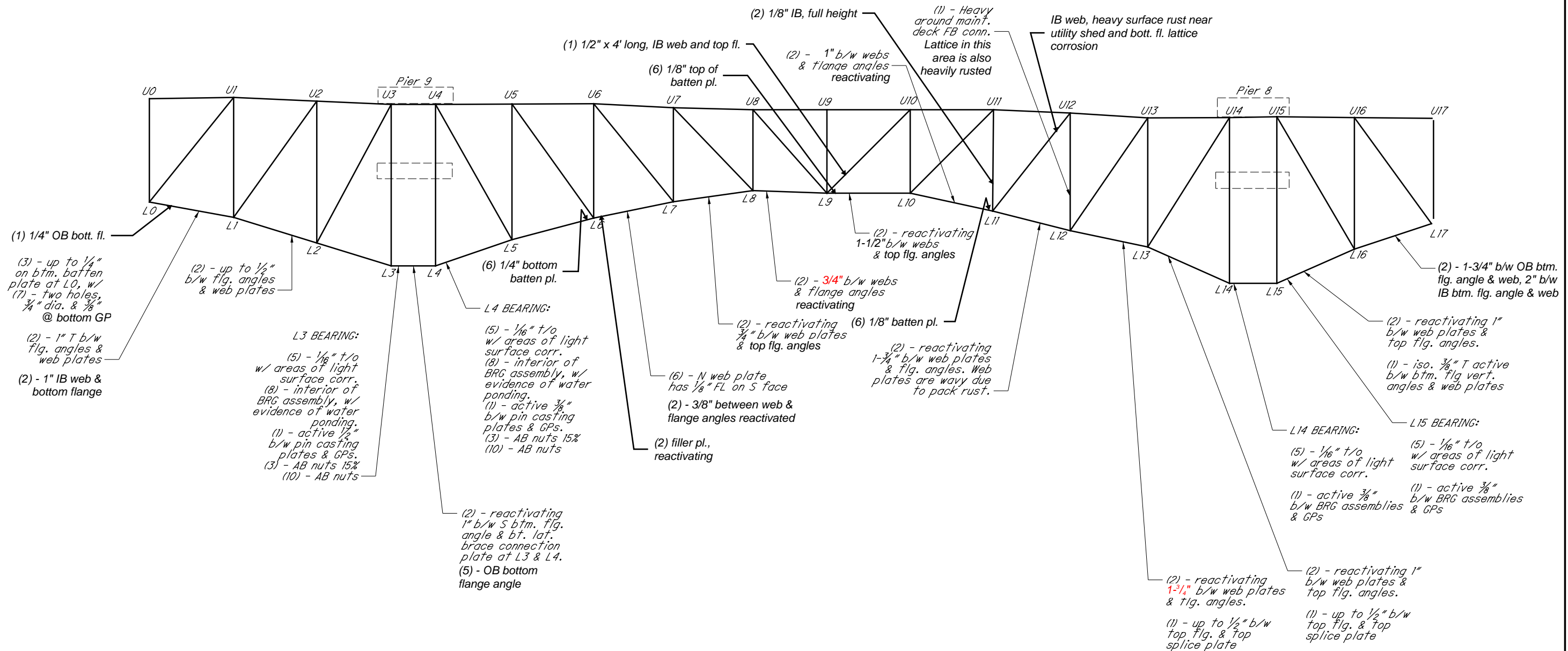
LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

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SPAN 9 - SOUTH INTERIOR TRUSS ELEVATION



SPAN 9 SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (6) - exterior faces have up to 1/16".

L1, BOTH - 1/4" bow on east edge (1/16" plate)

L3, IB GP - (5) - 1/4", active along lower chord interface

L5, BOTH - (5) - IB face 1" x 1/16" active along LC interface

L6, IB GP - (5) - IB face has 1" H x 1/16" active along lower chord interface. (4) OB face reactivating at bottom with connection to top flange

L8, IB GP - (5) - IB face has up to 1/8" active along lower chord interface with isolated area at west end that has reactivated.

L12, BOTH - (5) - reactivated 1/16" on ext. & int. faces along LC.

L13, BOTH - (5) - exterior faces; 1/4" bowing on OB GP

L15, IB GP - (5) - active 1/8" on lower chord interface.

L16, BOTH - (2) - 1-1/8" at diagonals, reactivating

L17, BOTH - (1) - 1" reactivated causing free edge of IB GP to bow outward 1/8" and OB GP 1-1/8" (6) - 1/8" widespread.

(3) - 50% around pin

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

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LORAIN-CARNEGIE BRIDGE

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SPAN 9 TRUSS ELEVATION
(SOUTH INTERIOR)

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L1, BOTH - (6) - isolated $\frac{1}{16}$ ", with an area of $\frac{1}{8}$ " due to $\frac{1}{8}$ " pack rust.
L2, OB GP - (6) - $\frac{1}{4}$ " on IB face
L2, IB GP - (5) - $\frac{1}{8}$ " on IB face along lower chord.
(2) - reactivating $1\frac{1}{2}$ " T between east top edge & the diagonal
L3, OB GP - (6) - $\frac{3}{16}$ " on OB face on bottom around the pin.
(4) - $\frac{1}{16}$ " on IB face @ L2-L3
L5, IB GP - (4) - up to $\frac{1}{4}$ " with (1) - $\frac{3}{4}$ " between GP and diagonal connection.
L6, IB GP - (5) - $\frac{1}{8}$ " at the corner of GP due to $\frac{1}{2}$ " (1).
L7, OB GP - (1) - $\frac{1}{8}$ " at flange angles
L8, BOTH - (6) - isolated areas of up to $\frac{1}{8}$ "
L9, BOTH - (6) - up to $\frac{3}{16}$ " around the diagonal connections with some active
L9, IB GP - (5) - $\frac{1}{8}$ " at the corner of GP due to $\frac{7}{8}$ " (1) @ L9-U10.
L10, BOTH - (6) - isolated $\frac{1}{8}$ " typical, up to $\frac{3}{16}$ " on all faces.
L10, OB GP - (5/8) - active (5) w/ (8) up to $\frac{3}{16}$ " over the diagonal.

L12, BOTH - (6) - isolated $\frac{1}{8}$ " on IB face of the IB plate & around the diagonal on the interior of the OB plate

L12, IB GP - (2) - $1\frac{1}{4}$ " @ diagonal.

L13, BOTH - (6) - up to $\frac{3}{16}$ " on OB & $\frac{1}{8}$ " on IB reactivated

L13, IB GP - (2) - $1\frac{1}{4}$ " between GP and diagonal. reactivated

L14, OB GP - (5) - $\frac{1}{4}$ " on IB face near west end

L14, IB GP - (5) - $\frac{1}{8}$ " OB face along vertical & $\frac{1}{8}$ " around the pin.

L15, IB GP - (6) - $\frac{3}{16}$ " on inside face near west end.

L17, IB GP - (3) - up to $\frac{3}{16}$ " throughout with (2) along all edges up to 1".


L17, OB GP - (4) - $\frac{1}{8}$ " around pin.
(2) - $\frac{1}{2}$ " diagonal and vertical.

U0 - (8) - on top flange between Stringer 9 and south fascia (east side only) and bottom flange between Stinger 10 and south fascia.

U17 - (8) - on top flange between Stringer 9 and south fascia (east side only) and bottom flange between Stinger 10 and south fascia.

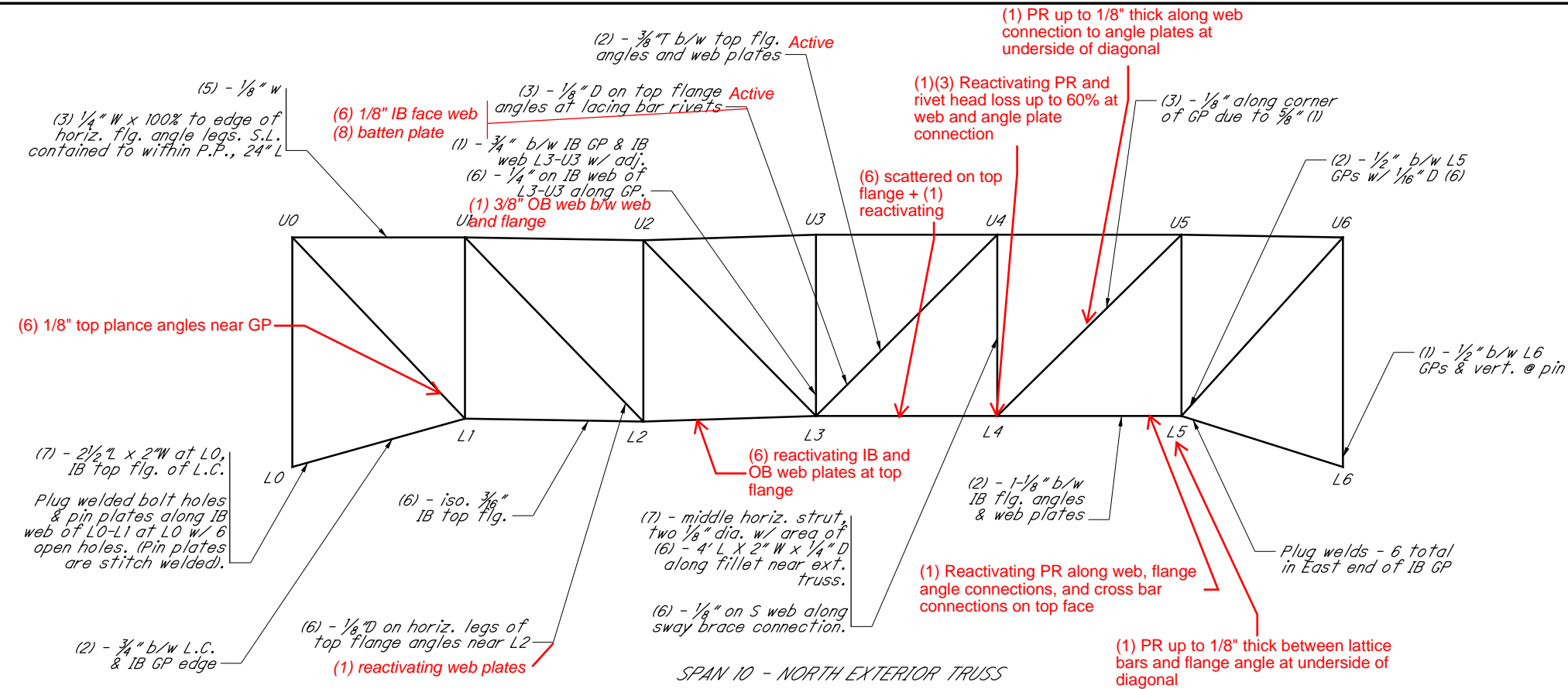
L17 - (7) - 2 ct. 2" dia. at lower FB

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

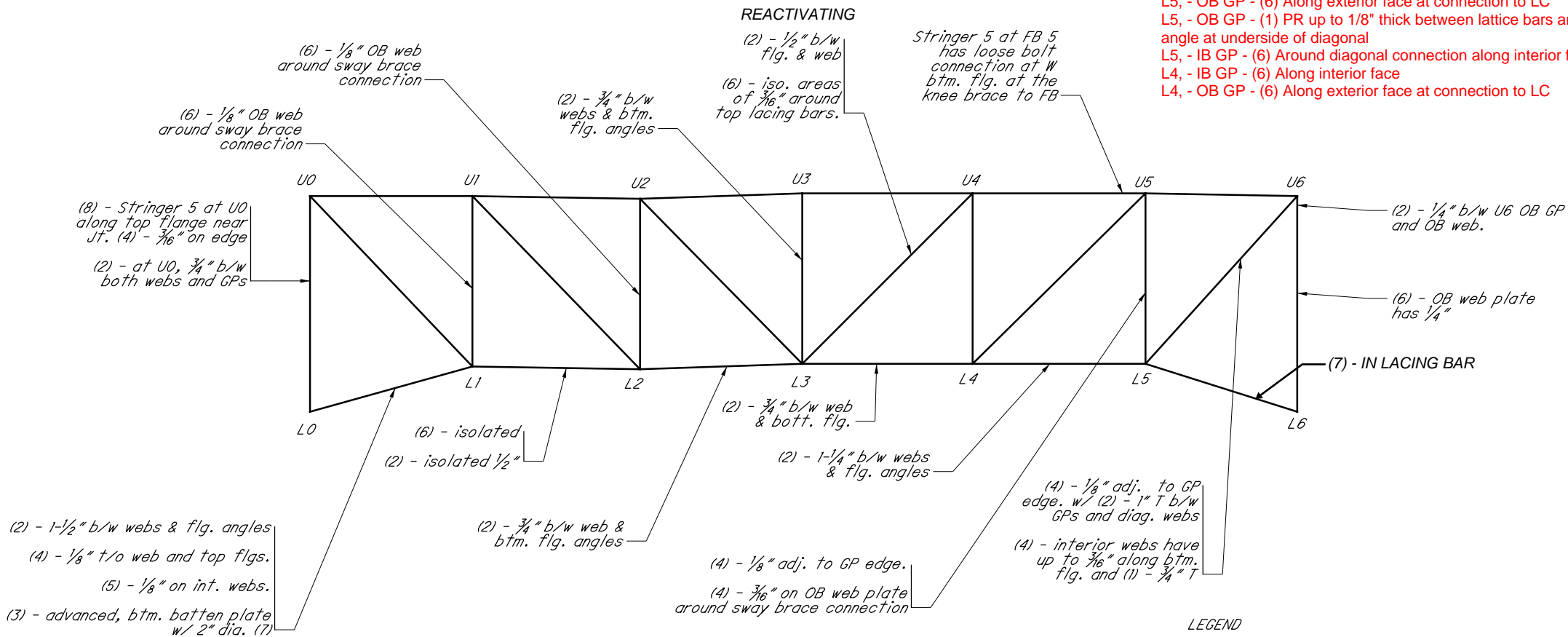
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SPAN 10 - NORTH TRUSS ELEVATIONS



SPAN 10 - NORTH EXTERIOR TRUSS



SPAN 10 - NORTH INTERIOR TRUSS

L0-L1, - Expansion Pin - (1) Pack rust behind expansion pin and pin plate; corrosion at north web channel at expansion pin location
L0-L1, - OB GP - (1) Pack rust behind gusset plates causing top flange angle distortion
L0-L1, - OB GP - (7)(3) Corrosion holes and section loss at top flange
L1, - IB GP - (6) Pitting up to 9/32" deep at northwest end of north gusset plate
L1, - OB GP - (3)(6) Pitting section loss on gusset plate and connection bolts, up to 7/32" deep
L0, - OB GP - (7)(3)(6) Corrosion holes and section loss at top flange plate near L0, with pitting

NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

L1, BOTH GPs - (1) up to 1/16" D on ext. faces along L.C. interface
L2, IB GP - (6) - IB face 3/16"; (10) AT DIAGONAL; IB GP face (5) 1/8"
L2, OB GP - (5) - OB face 1/16" D along L.C. interface; (10) AT LC diagonal
L3, BOTH GPs - (6) - IB face 1/16" along lower chord, with (10)
L4, IB GP - (6) - IB face 1/4" with areas up to 5/16" along free edge
L5, IB GP - (6) - IB face 1/4"; (8) AT VERTICAL
L5, OB GP - (5) - 1/16" D along L.C. interface.
L6, IB GP - (6) - IB face 3/16" around pin connection.; (10) AT LC
(8)
(3) - 1/8" x 6" H along west side of vertical
L6, OB GP - (5) - OB face up to 1/8" D along L.C. interface
(6) - IB face up to 3/16" D; (10) AT LC & DIAG.; (1) AT VERT.
U6, BOTH GPs - (6) - 1/8" on ext. faces around pin
(1) - up to 3/4" b/w both GPs & vert.
L4, OB GP - (10) AT LC

Pin @ L6, @ GP
(10) Inboard pin exhibits areas of active corrosion.

Pin @ L6, @ GP
(10) Inboard pin exhibits areas of active corrosion.

Pin @ U6
(10) Outboard pin exhibits areas of active corrosion.(6) The stringer and FB at this location also exhibit laminating corrosion.

Pin @ L6, @ LC
Typical pin condition at exterior face.

Pin @ L6, @ LC
(6)(10) Interior pin exhibits areas of heavy laminating corrosion at the ends.

NORTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (6) - 1/16" with scattered areas of up to 1/8" around the pin.
L1, BOTH - (4) - 1/8" on interior faces, reactivating
(4) - exterior faces have 1/8"
L2, BOTH - (6) - isolated 1/8" D
L3, BOTH - (6) - 1/8" along lower chord.
(2) - up to 3/4" @ diagonals.
L4, BOTH - (4) - 3/16" on both faces of both, worst along lower chord interface.
L5, BOTH - (4) - 3/16" on both faces of both GPs
L6, OB GP - (4) - OB face 1/4" D, worst around pin
L2, IB GP - (9) AT LC
L6, IB GP - (10) AT DIAGONAL
L5, Both- (10) Interior of IB and OB
L6, - IB GP - (6) Around connection to vertical and diagonal members

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - ACTIVE CORROSION

NOT TO SCALE

DATE

JUNE 2025



LORAIN-CARNEGIE BRIDGE

CUY-10-16.13

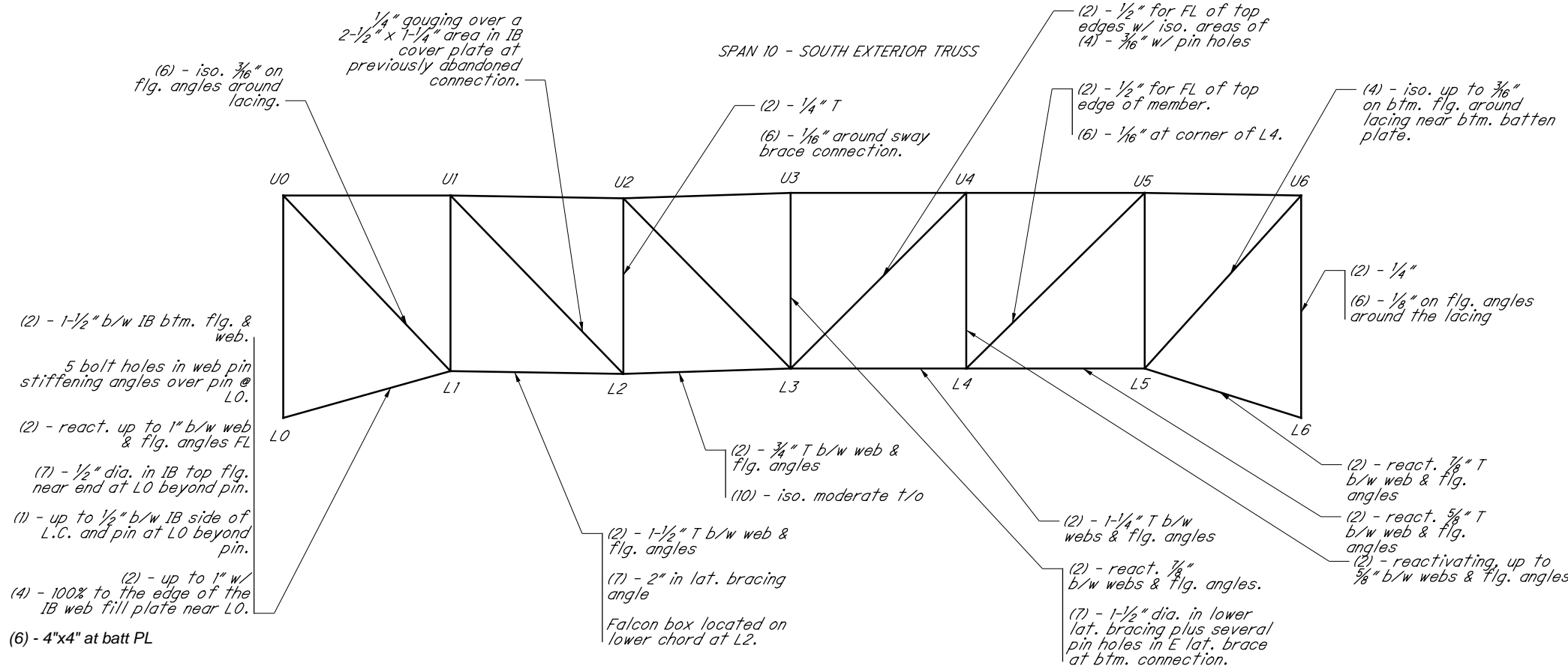
SPAN 10 TRUSS ELEVATIONS
(NORTH)

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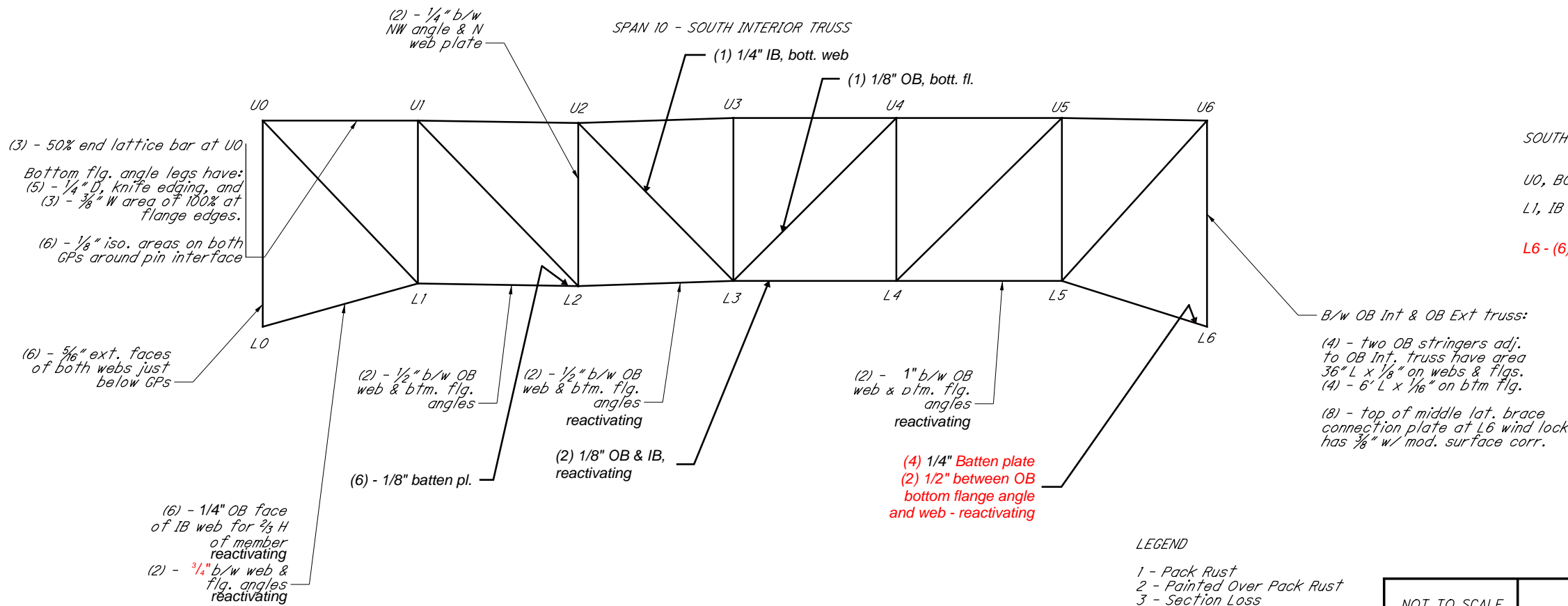
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SPAN 10 - SOUTH TRUSS ELEVATIONS



SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L2, BOTH - (6) - isolated up to $\frac{1}{8}$ "
- L2, IB GP - (10)
- L3, IB GP - (1) - up to $\frac{1}{4}$ " at the corner
- L5, IB GP - (6) - up to $\frac{1}{8}$ " along IB corner due to 1- $\frac{1}{4}$ " (1).
- L6, BOTH - (3) - $\frac{3}{16}$ " t/o
- (2) - reactivated along all edges and isolated areas of reactivated surface corrosion.
- (2) - up to $\frac{3}{4}$ " between GPs and vertical at the pin.
- U6, BOTH - (1) - active, up to $\frac{1}{2}$ " between pin plates and top of vertical.
- (3) - up to $\frac{3}{16}$ " full perimeter of the upper pins.




SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

- U0, BOTH - (6) - $\frac{1}{8}$ " reactivating, around pin interface.
- L1, IB GP - (6) $\frac{1}{8}$ " along the lower chord.
- Reactivating around diagonal riveted connections.
- L6 - (6) $\frac{1}{8}$ " at LC connection, reactivating

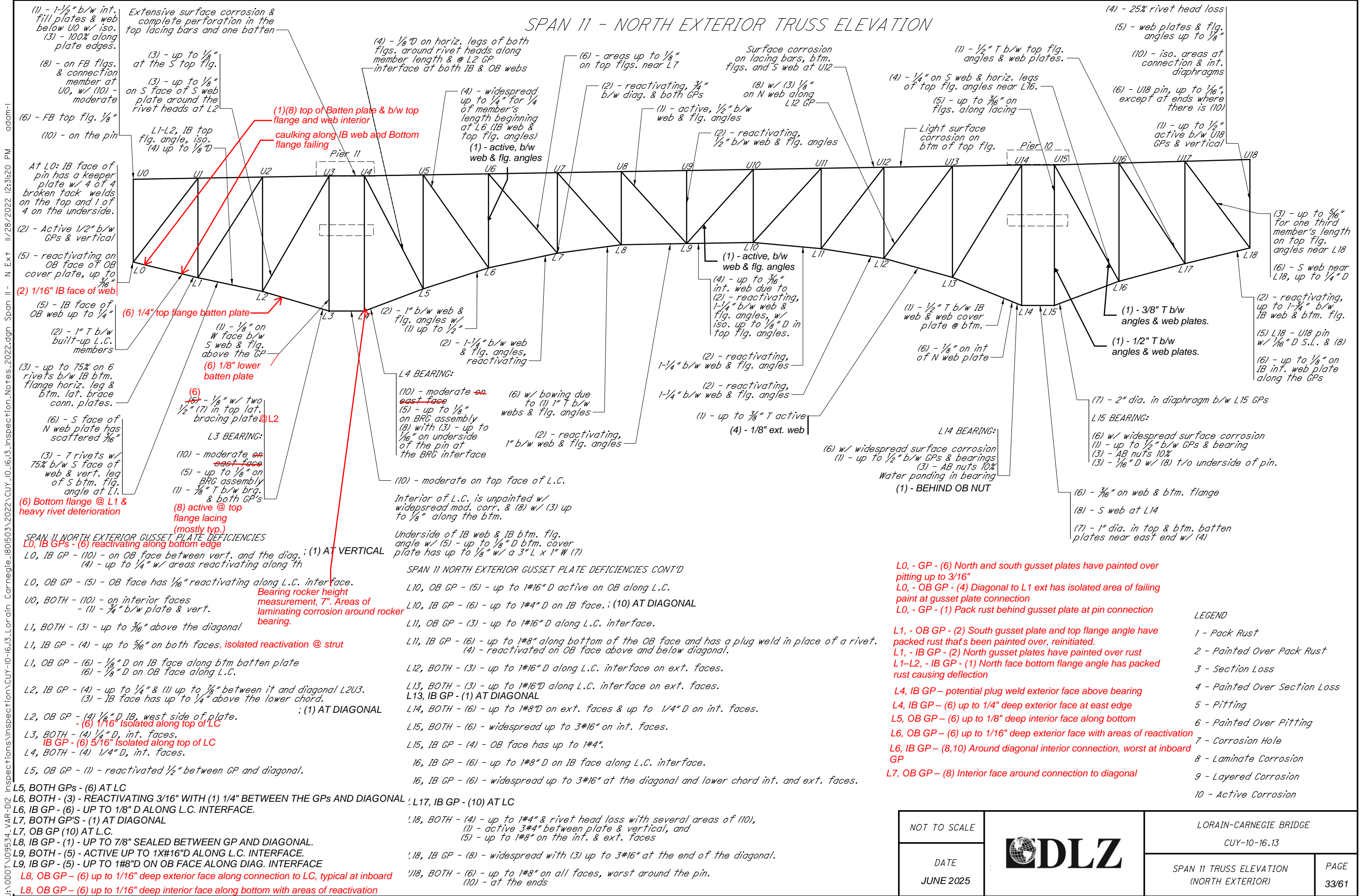
LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

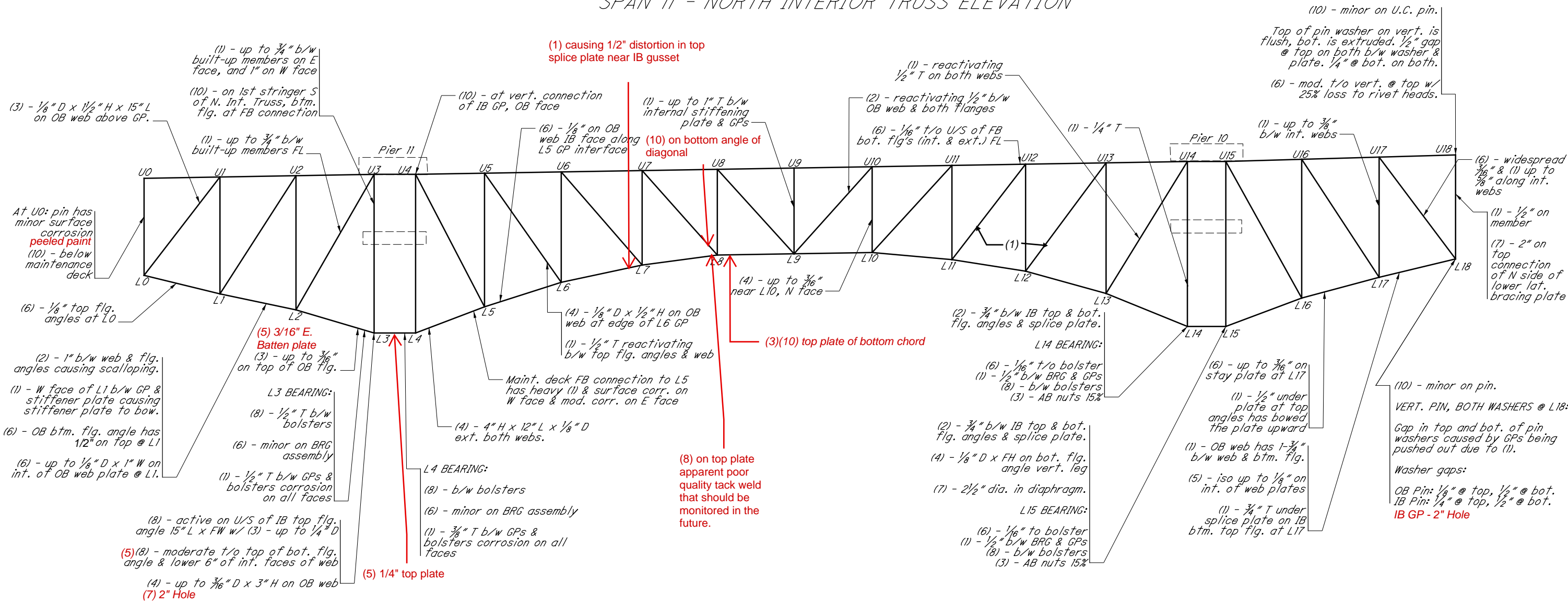
NOT TO SCALE			LORAIN-CARNEGIE BRIDGE	
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			SPAN 10 TRUSS ELEVATIONS (SOUTH)	PAGE 32/61

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SPAN 11 - NORTH EXTERIOR TRUSS ELEVATION



SPAN 11 - NORTH INTERIOR TRUSS ELEVATION



SPAN 11 NORTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (4) - OB face has up to $\frac{1}{4}$ " above the diagonal conn. angle.

L1, IB GP - (4) - OB face has up to $\frac{3}{16}$ " above the diagonal conn. angle.

U1, OB GP - (1) 1/4" B/W GP AND U1U2

L2 and U2, (5) 3/16"

L3, IB GP - (10) - OB face above the diagonal. (5) 5/16" max

(6) - $\frac{1}{8}$ " t/o OB face on west side.

U3, IB GP - (10) - OB face above the diagonal.

L4, IB GP - (3) - OB face has widespread up to $\frac{1}{4}$ ", $\frac{1}{8}$ " typ.

L5, (3) up to 1/8" at connection plate between lateral bracing and OB gusset

L5, BOTH - (1) - reactivating $\frac{3}{4}$ " at free edges causing minor distortion.

L6, IB GP - (6) - $\frac{3}{16}$ " D x 30" L x 3" H along L.C. on OB face.

L6, BOTH - (6) - $\frac{3}{16}$ " D x 3" L x 3" H above diagonal conn. angle, interior faces.

L7, IB GP - (6) - $\frac{1}{8}$ " D x 18" L x 2" H along L.C. on OB face.

L7, (4) on gusset above LC

L8, IB GP - (10) - OB face around the diagonal, with 3" dia. (4) up to $\frac{3}{16}$ " D above the diagonal.

L8, OB GP - (4) - $\frac{1}{16}$ " D x 5" H x 30" L along L.C., OB face. (10) reactivating

L10, IB GP - (6) - $\frac{3}{16}$ " on OB face above the diagonal.

L10, OB GP - (6) - $\frac{1}{4}$ " D x 12" H x FL along L.C., OB face.

L11, IB GP - (4) - $\frac{3}{16}$ " D above diag. on OB face.

L12, OB GP - (6) - $\frac{1}{16}$ " D t/o OB face.

(4) - $\frac{1}{8}$ " D x 1" H x FL along L.C., OB face.; (10) AT LC

SPAN 11 NORTH INTERIOR GUSSET PLATE DEFICIENCIES (CONT'D)

L14, IB GP - (4) - OB face up to $\frac{1}{4}$ " D x 12" H x FL & some rivet head loss

L15, BOTH - (4) - up to $\frac{1}{4}$ " & minor rivet head loss

L16, BOTH - Two blind holes with plug welds at interior face of GPs at W end

L16, IB GP - (6) - $\frac{3}{16}$ " above the diagonal on OB face.; (10) AT LC

L16, OB GP - (4) - iso. up to $\frac{1}{16}$ " D on OB face.

L17, IB GP - (10) AT LC

L17, OB GP - (4) - $\frac{1}{8}$ " D x 2" H x FL on OB face.

L18, BOTH - (4) - $\frac{3}{16}$ " on interior faces

L18, IB GP - paint failure, heavy surface corrosion and (4).

(1) - b/w GP & vert. $\frac{1}{8}$ " T @ top, $\frac{1}{2}$ " T @ bot.


L18, OB GP - (1) - b/w GP & vert. $\frac{1}{4}$ " T @ top, $\frac{3}{4}$ " T @ bot.

U18, BOTH - (1) - up to $\frac{3}{8}$ " T b/w vert. angles & both GPs.

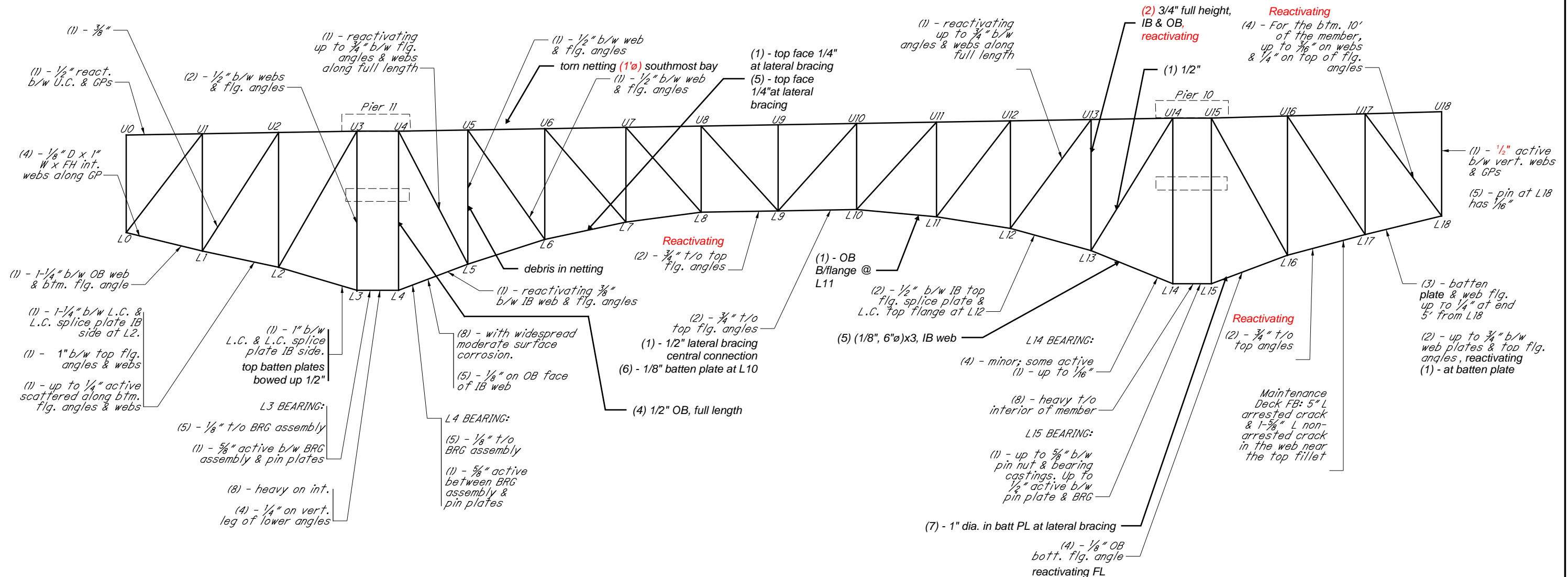
(4) - $\frac{3}{16}$ " on interior faces

NORTH EXTERIOR DECK CHANNEL DEFICIENCIES
(7) JUST EAST OF L17

LEGEND	
1	Pack Rust
2	Painted Over Pack Rust
3	Section Loss
4	Painted Over Section Loss
5	Pitting
6	Painted Over Pitting
7	Corrosion Hole
8	Laminate Corrosion
9	Layered Corrosion
10	Active Corrosion

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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SPAN 11 - SOUTH INTERIOR TRUSS ELEVATION



SPAN 11 SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (4) - $\frac{1}{16}$ " T/O with isolated up to $\frac{3}{16}$ "
(1) - reactivating between vertical & GPs
- U0, IB GP - (1) $\frac{1}{2}$ " reactivating between GP & vertical
- L3, BOTH - (5) - $\frac{1}{8}$ " along lower chord, with some scattered areas of $\frac{3}{16}$ " (6)
- L3, OB GP - (4) - $\frac{3}{16}$ " scattered on IB face
- L5, IB GP - (5) - $\frac{1}{16}$ " on IB face
(1) - $\frac{1}{2}$ " b/w GP & diagonal
- L7, BOTH - (1) - 1" at lateral bracing top face
- L10, IB GP - (4) - $\frac{3}{16}$ " along the lower chord
- L12, IB GP - (5) - up to $\frac{1}{16}$ " active on IB face along lower chord interface
(1) - up to 1" @ lateral, BOTH sides of connection PL
- L13, BOTH - (5) - up to $\frac{1}{8}$ " along the lower chord interface on exterior faces
(1) - up to 1 $\frac{1}{2}$ " @ lateral bracing
- L16, BOTH - (4) - up to $\frac{3}{16}$ " along the lower chord interface, reactivating
- L17, IB GP - (5) - up to $\frac{1}{16}$ " active along lower chord interface, **both sides of GP**
- L18, BOTH - (6) - $\frac{1}{4}$ " on interior faces and up to 9 rivets along the bottom that exhibit 50% section loss
- L18, OB GP - (6) - $\frac{3}{16}$ " on OB face
- L18, IB GP - (5) - above LC

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

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LORAIN-CARNEGIE BRIDGE

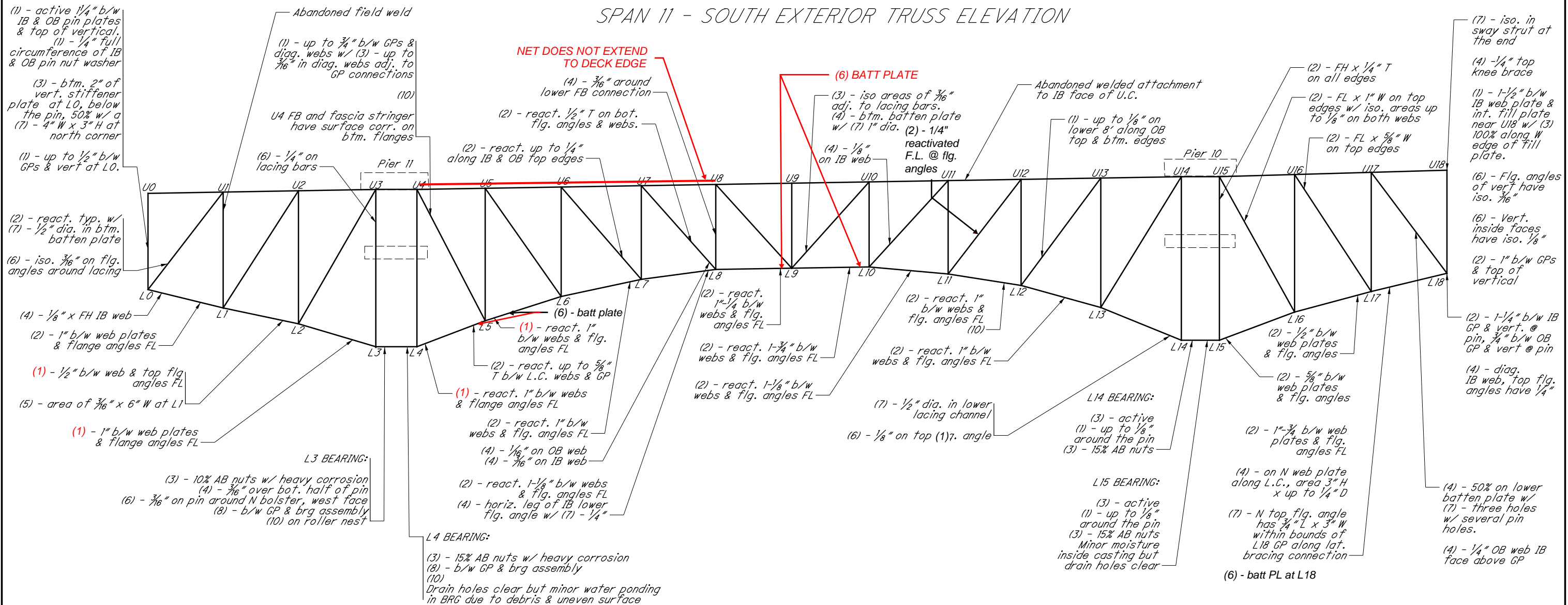
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SPAN 11 TRUSS ELEVATION
(SOUTH INTERIOR)

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SPAN 11 - SOUTH EXTERIOR TRUSS ELEVATION



SPAN 11 SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (6) - widespread, worst on IB plate around pin (avg. $\frac{3}{16}$ ")

U0, BOTH - (5) - $\frac{3}{16}$ ", worst around the vert. pins.

L1, OB GP - (3) - widespread with (5) up to $\frac{1}{2}$ " for a 30" L x 12" H area @ W end of IB face of plate w/ 3 rivets w/ 75% S.L.
(4) - $\frac{3}{16}$ " along L.C.
(6) - $\frac{3}{16}$ " over the diagonal.

L1, IB GP - (4) - $\frac{3}{16}$ " along L.C.

L2, IB GP - (4) - $\frac{1}{8}$ " along L.C.
Retrofit along L.C.

L3, IB GP - (4) - $\frac{1}{8}$ " scattered.

L4, IB GP - (4) - $\frac{1}{8}$ " widespread.

L4, OB GP - (4) - $\frac{1}{8}$ " @ IB face, E of pin.

L5, BOTH - (4) - up to $\frac{3}{16}$ " near bot. int. faces. and along L.C.

L5, IB GP - (4) - up to $\frac{3}{16}$ " along L.C.

L6, IB GP - (6) - widespread $\frac{1}{4}$ "

L7, IB GP - (4 & 5) - up to $\frac{3}{16}$ "

L8, IB GP - (4) - up to $\frac{3}{16}$ " along L.C.

SPAN 11 SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES (CONT'D)

L11, IB GP - (4) - $\frac{3}{16}$ " along L.C.

L13, BOTH - (4) - up to $\frac{3}{16}$ " typical

L14, BOTH - (4) - scattered up to $\frac{1}{4}$ "

L15, BOTH - (4) - up to $\frac{3}{16}$ " around pin
(6) - up to $\frac{3}{16}$ " along L.C.

L16, IB GP - (4) - up to $\frac{1}{8}$ " along L.C.

L17, BOTH - (4) - up to $\frac{1}{8}$ "

L18, BOTH - (4) - up to $\frac{3}{16}$ " throughout with (2) along all edges.

L18, IB GP - (6) - $\frac{3}{16}$ " within a 12" perimeter of pin

U18, BOTH - (3) - up to $\frac{3}{16}$ " full perimeter of upper pins

LEGEND

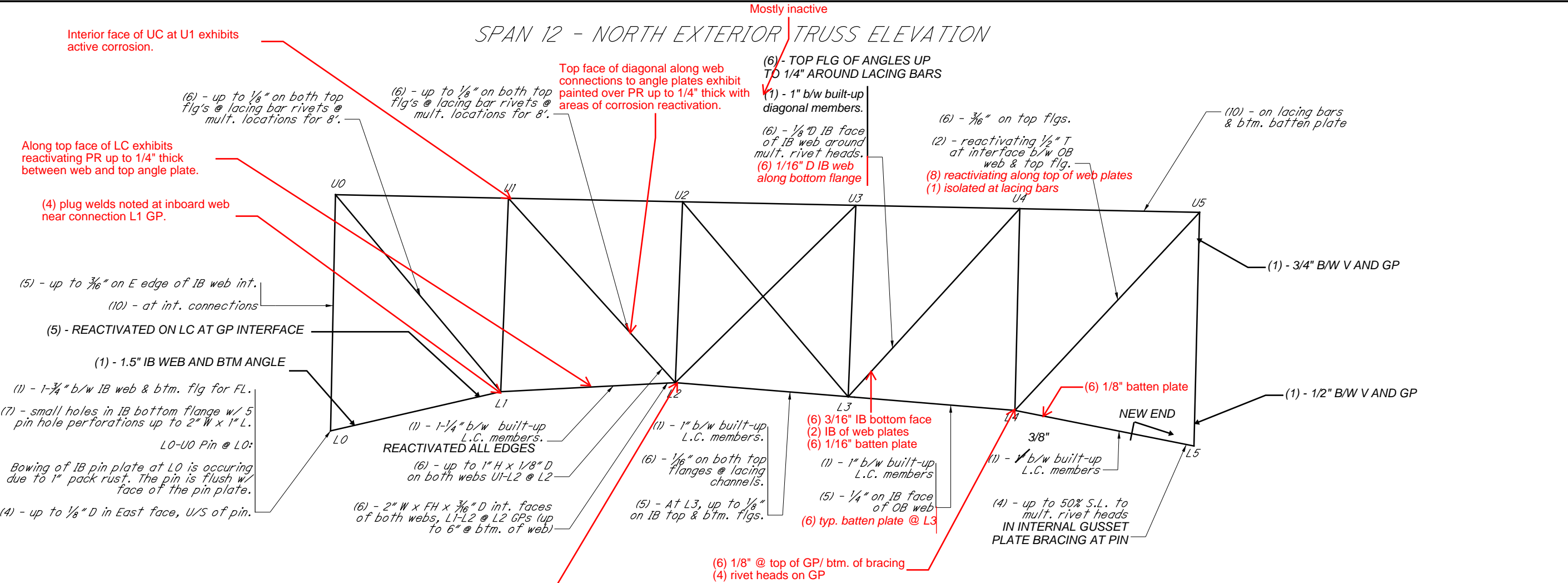
- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

FLOORBEAM DEFICIENCIES

- U0 - (10) - on top flange between Stringer 9 and south fascia and bottom flange between Stringer 10 and south fascia.
- U18 - (10) - on top flange between Stringer 9 and south fascia and bottom flange between Stringer 10 and south fascia.

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L0, OB GP – (6) up to 1/16" deep exterior face along connection to LC
L2, OB GP – (6) up to 1/8" D along IB face bottom
L2, IB GP – (6) up to 1/4" D along OB face, areas of reactivation

NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, IB GP - (1) - 1/4" T active b/w IB GP & vert.
- (5) - up to 1/4" on IB face above lower chord.
- (5) - up to 1/4" t/o OB face, worst around pin.
- L0, OB GP - (4) - 1/8" D around pin nut.
- (1) - 1/2" T active b/w OB GP & vert.
- L1, IB GP - (6) - 1/8" on IB face along the top of the lower chord.
- L0, OB GP - (4) - 1/8" D around pin nut.
L2, IB GP - (6) - areas of 3/16", with (10) and rivet head loss (up to 50% S.L.) on IB face
- L2, BOTH - (1) - up to 1" T b/w GPs & diagonal & L.C.
- L3, IB GP - (6) - up to 3/16" along L.C. interface.
- L3, OB GP - (5) - up to 1/8" along 3/4 of the length of the L.C. interface on OB face.
- (6) - Iso. up to 1/16" D on IB face.
- L4, IB GP - (6) - areas up to 1/4"
(2) - up to 3/8" T b/w GP & diagonal
- L4, OB GP - (6) - 6" x up to 1/4" D along L.C. interface.
- L4, BOTH - (5) - 3" H x 3/16" D pitting along btm. batten plate for F.L. of GP.
- U5 - (5) 1/8" D AROUND PIN
(1) 1/2" B/W TC & GP (SPAN 11 U0)
- L5, IB GP - (5) - 1/8" near vertical.
- (5) - up to 1/4" around the pin.
- (5) - up to 3/16" along L.C. interface.
- L5, OB GP - (5) - 1/8" D x up to 5" H, on both faces.

TACK WELD BROKEN ON KEEPER (PIN/NUT)

Underside of diagonal at inboard side exhibits reactivating pitting up to 1/8" deep and PR up to 1/4" thick, PR typical at inboard and outboard web connections to angle plates for full length.

Pin @ L5
(1)(6) heave on LC pin housing. Isolated areas of minor reactivation.
(3) Moderate to heavy on rivet heads

L5-L4 windlock:
(8) Moderate on Top flange connection plate @ L5
(6) on sliding plate
(8) active on transverse strut

Pin @ L6, @ GP
(10) Inboard pin exhibits areas of active corrosion.


Pin @ L6, @ GP
(10) Inboard pin exhibits areas of active corrosion.

Pin @ U6
(10) Outboard pin exhibits areas of active corrosion.(6) The stringer and FB at this location also exhibit laminating corrosion.

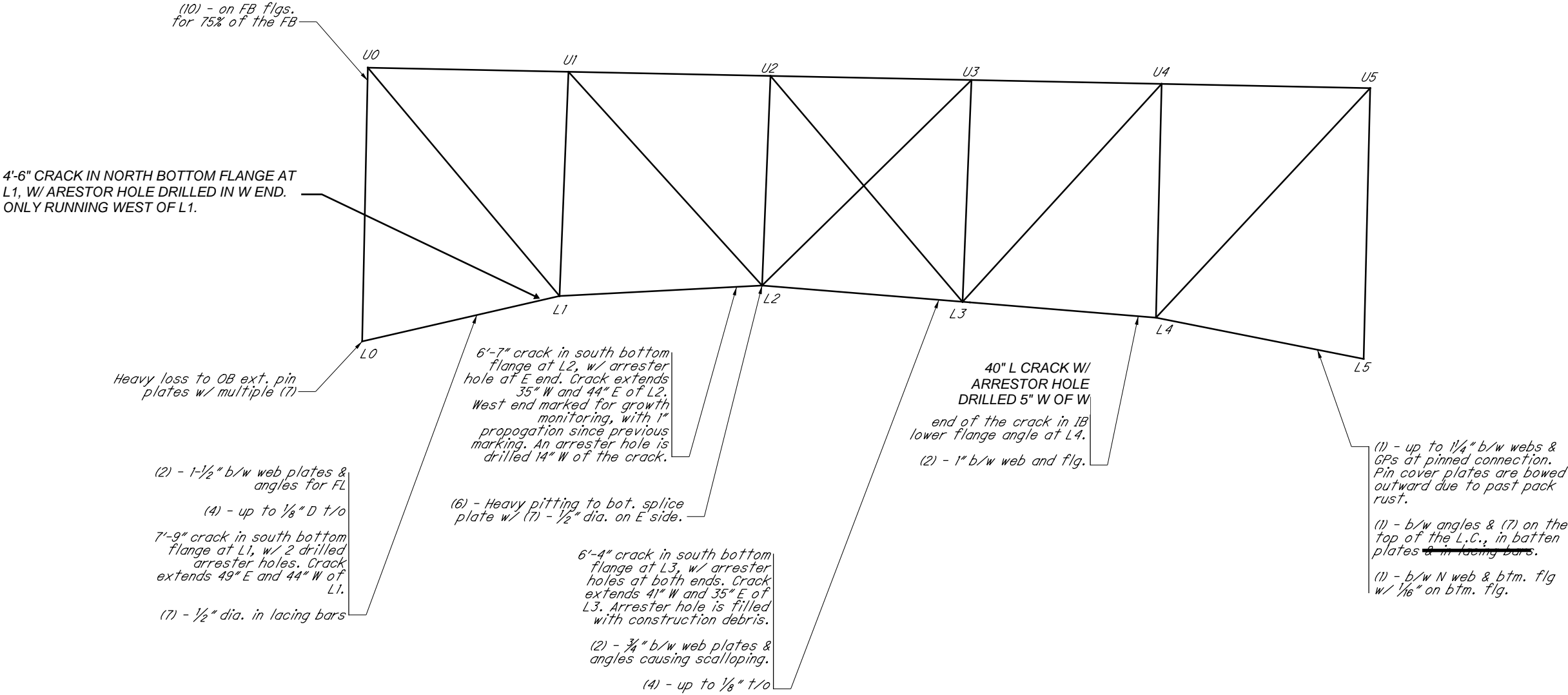
Pin @ L6, @ LC
Typical pin condition at exterior face.

Pin @ L6, @ LC
(6)(10) Interior pin exhibits areas of heavy laminating corrosion at the ends.

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

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		SPAN 12 TRUSS ELEVATION (NORTH EXTERIOR)	PAGE 37/61

SPAN 12 - NORTH INTERIOR TRUSS ELEVATION



NORTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (10) - on GPs and interior stiffener plate.
- L0, IB GP - (6) - 1/8" t/o on IB face.
- L0, OB GP - (6) - 1/4" t/o on OB face
- L1, OB GP - (6) - 3/16" along top of the lower chord.
- L2, BOTH - (8) - 1/4" T x 4" H on int. faces.
- L4, BOTH - (4) - 1/4" D x 4" L x 4" H on int. faces @ top of diag. top flg. angle.
- L4, OB GP - (4) - 55" L x 3" H x up to 1/4" D on OB face.
- L5, OB GP - (6) - 3/16" along top of the lower chord.
- (1) 3/4" T b/w GP & lower strut connection angles.

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

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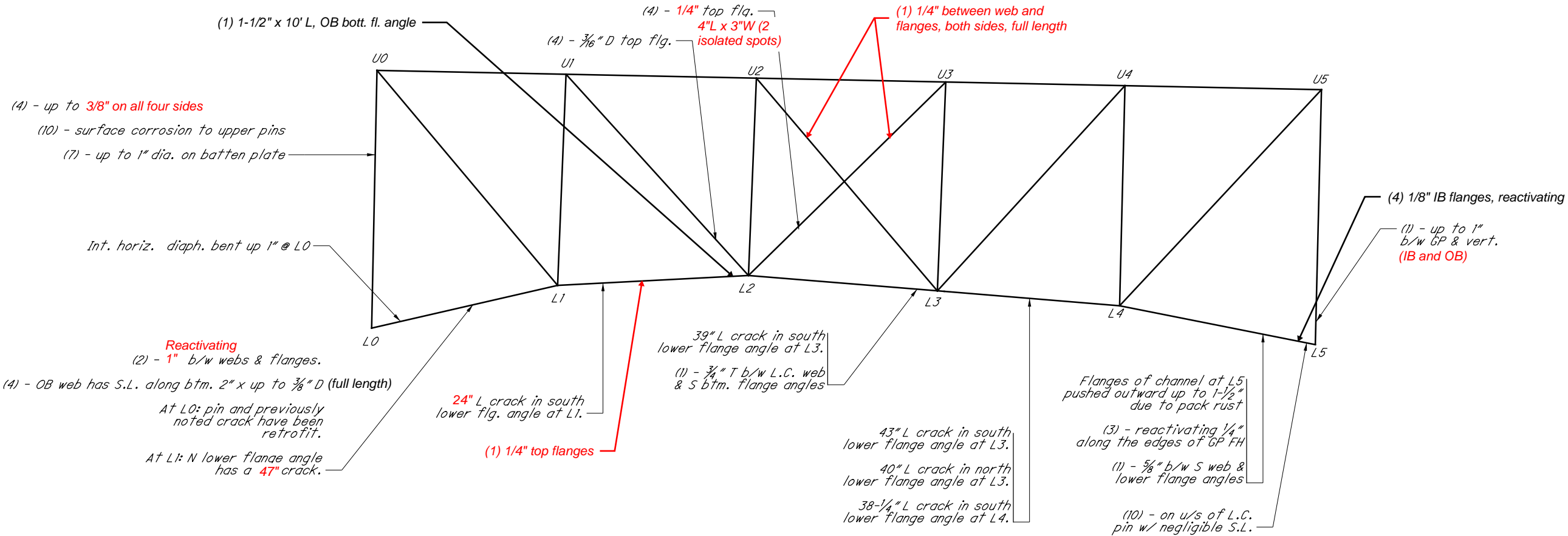


LORAIN-CARNEGIE BRIDGE
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SPAN 12 TRUSS ELEVATION
(NORTH INTERIOR)

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SPAN 12 - SOUTH INTERIOR TRUSS ELEVATION



SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

U0, BOTH - GPs are bowing up to 1-1/4\"/>
L1, IB GP - (4) - iso. small areas up to 3/16\"/>
L2, IB GP - (4) 3/8\" deep above U1L2 (6\"L x 2\"H)
L4, IB GP - (4) - 1/8\" D x 5\" x L x 2\" H over diag.
L4, IB GP - (4) - 1/4\" D x 6\" L x 2\" H IB face at lower chord
L5, BOTH - (6) 1/8\" deep, top half

LEGEND

- 1 - Pack Rust
- 2 - Painted Over Pack Rust
- 3 - Section Loss
- 4 - Painted Over Section Loss
- 5 - Pitting
- 6 - Painted Over Pitting
- 7 - Corrosion Hole
- 8 - Laminate Corrosion
- 9 - Layered Corrosion
- 10 - Active Corrosion

NOT TO SCALE

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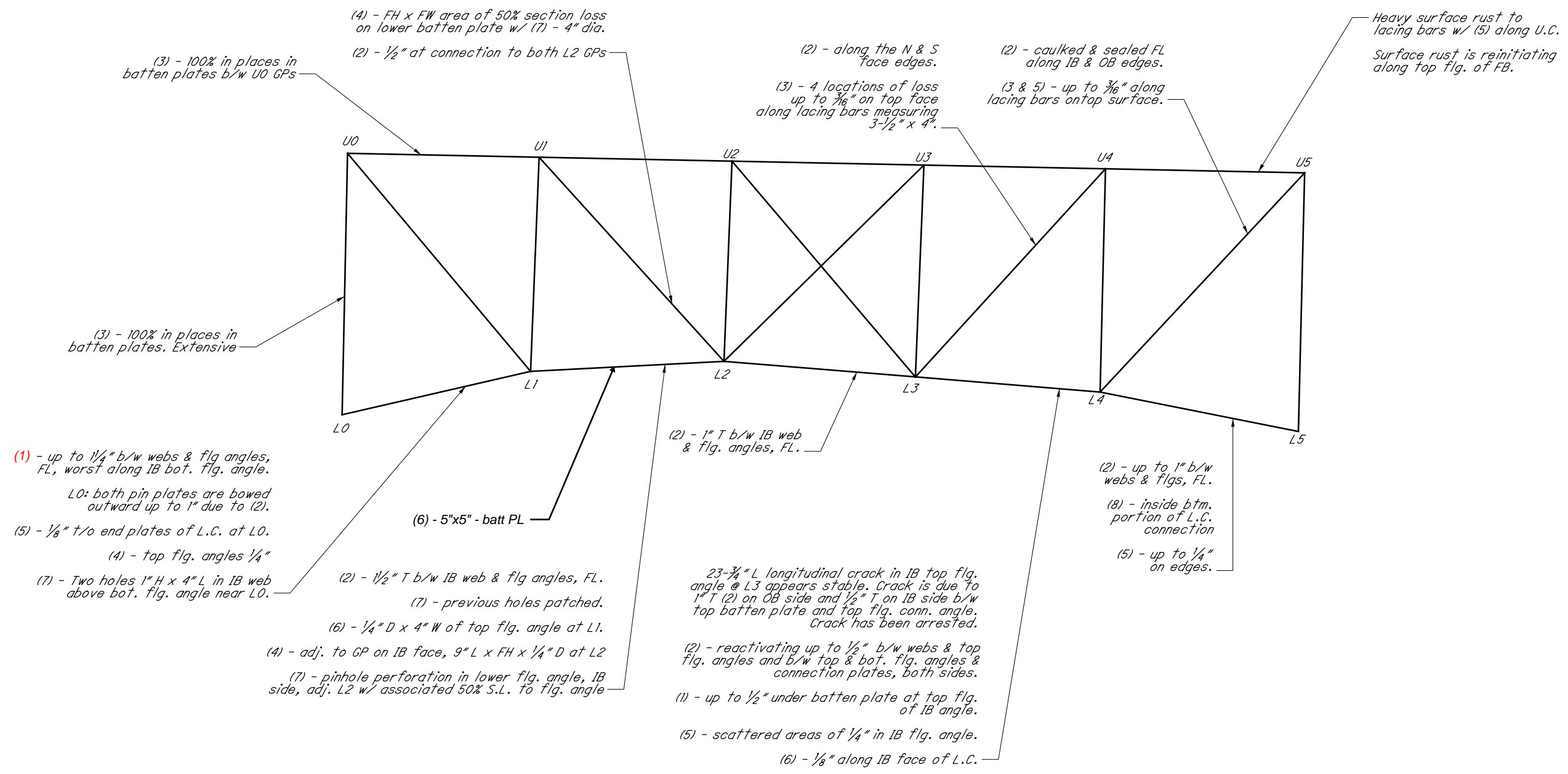


LORAIN-CARNEGIE BRIDGE
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SPAN 12 TRUSS ELEVATION
(SOUTH INTERIOR)

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SPAN 12 - SOUTH EXTERIOR TRUSS ELEVATION




SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L1, IB GP - (3) - 1/4" D x 9" x 6" in area just above L.C.
L2, IB GP - (3) - widespread reactivating 5/16" on IB face
L2, OB GP - Retrofit
L3, IB GP - (6) - 1/8" above bottom flange.
(3) - 1/8" on IB face along sway brace connection.
L4, BOTH - (5) - 1/4" along top of diagonal, 9" x 4".
L5, BOTH - (3) - up to 3/16" along a 6-8" perimeter of the pin.
Sporadic areas t/o rest of GPs w/ 3/16" typ.
(1) - 1/2" T typ. b/w north & south GPs and vertical

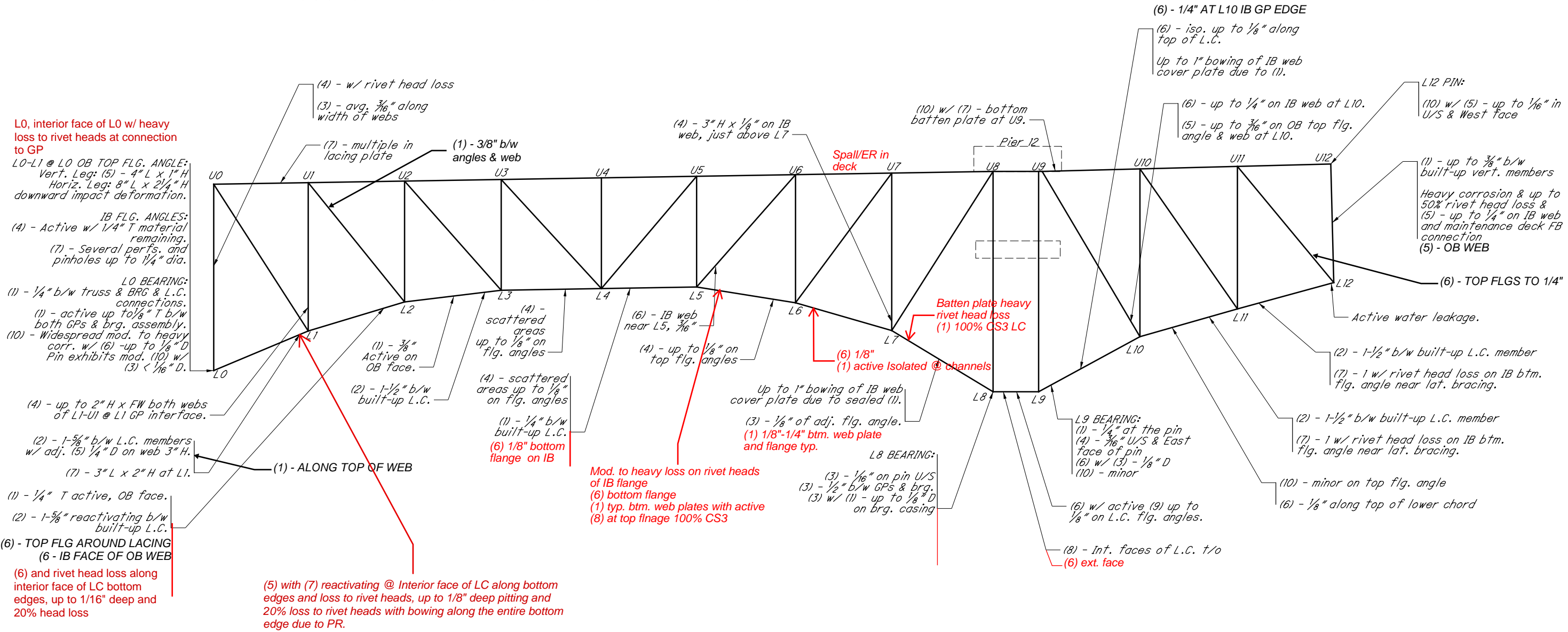
LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
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SPAN 13 - NORTH EXTERIOR TRUSS ELEVATION

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L0, interior face of L0 w/ heavy loss to rivet heads at connection to GP
L0-L1 @ L0 OB TOP FLG. ANGLE:
Vert. Leg: (5) - 4" L x 1" H
Horiz. Leg: 8" L x 2 1/4" H
downward impact deformation.
IB FLG. ANGLES:
(4) - Active w/ 1/4" T material remaining.
(7) - Several perfs. and pinholes up to 1/4" dia.
L0 BEARING:
(1) - 1/4" b/w truss & BRG & L.C. connections.
(1) - active up to 1/8" T b/w both GPs & brg. assembly.
(10) - Widespread mod. to heavy corr. w/ (6) - up to 1/8" D Pin exhibits mod. (10) w/ (3) < 1/16" D.
(4) - up to 2" H x FW both webs of L1-U1 @ L1 GP interface.
(2) - 1-5/8" b/w L.C. members w/ adj. (5) 1/4" D on web 3" H.
(7) - 3" L x 2" H at L1.
(1) - 1/4" T active, OB face.
(2) - 1-5/8" reactivating b/w built-up L.C.
(6) - TOP FLG AROUND LACING
(6) - IB FACE OF OB WEB
(6) and rivet head loss along interior face of LC bottom edges, up to 1/16" deep and 20% head loss

(5) with (7) reactivating @ Interior face of LC along bottom edges and loss to rivet heads, up to 1/8" deep pitting and 20% loss to rivet heads with bowing along the entire bottom edge due to PR.

Mod. to heavy loss on rivet heads of IB flange
(6) bottom flange
(1) typ. btm. web plates with active
(8) at top flange 100% CS3

L1, IB GP - Inboard GP exterior face exhibits loss to rivet heads up to 80% with areas of reactivating pitting. 90% rivet head loss along interior face of GO bottom row of rivets
L1, IB GP - (2) up to 1/8" deep and rivet head loss up to 100% at connection to GP L1-U0

SEE NEXT SHEET FOR MORE NOTES FOR SPAN 13 - NORTH EXTERIOR TRUSS

SPAN 13 NORTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (6) - ext. faces have up to 1/8".
- L0, IB - ext. face loss to rivet heads up to 90%
- U0, BOTH - (5) - 1/8" x 2" W on GP adj. to pylon.
- L1, IB GP - (6) - up to 1/4" D
- (3) - up to 3/16"
- L1, OB GP - (4) - 1/16" D x 3" H along L.C.
- L2, IB GP - (3) - 2" H x 1/8" along L.C.
- L2, OB GP - (4) - 1/16" D x 3" H along L.C.
- L3, IB GP - (3) - up to 1/4" active along L.C.
- L3, OB GP - (3) - 1/8" D x 2" H along L.C.
- L4, OB GP - (3) - up to 1/16" D along L.C.
- L4, (6) isolated on GP + reactivating**
- U5, IB GP - (3) - 10" L x 3 1/2" H x 1/8" D
- L5, IB GP - (1) - between GP and L.C.
- (6) - up to 3/16" along top of L.C., REACTIVATED
- L5, OB GP - (5) w/ (8) - 4" H x FL x 1/16" D

SPAN 13 NORTH EXTERIOR GUSSET PLATE DEFICIENCIES (CONT'D)

- L6, IB GP - (6) - up to 1/8" along top of L.C.; (6) 1/4" AROUND SEVERAL RIVETS
- (5) - 2" H x FL x 1/16" D
- (1)(7) in connection plate
- L7, IB GP - (6) - widespread up to 3/16"
- (5) - up to 1/16" D along L.C.
- L8, BOTH - (6) - widespread 1/4" Int. faces.
- (3) - Mod to heavy on rivet heads
- L9, BOTH - (6) - up to 1/4" along top of L.C. int. faces.
- L10, BOTH - (2) - 1/8" at interface with diagonal.
- (6) - up to 3/16" on GPs
- (5) - minor along bot. edge and bot. lat. bracing GP.
- L12, OB GP - (5) - up to 3/16" above L.C. on OB face.
- L12, IB GP - (4) - around pin connection up to 1/4" along bot. and vert. edges of pin stiffening plate on IB face of L.C. Only 1/16" T material remains at the edge.
- U12, BOTH - (2) - reactivating up to 1" between GP and vertical
- U12, IB GP - (6) - 1/8" on OB face
- (5) - 1/8" at the pin
- L11, IB GP - (6) REACTIVATING FULL LENGTH

- LEGEND
- 1 - Pack Rust
 - 2 - Painted Over Pack Rust
 - 3 - Section Loss
 - 4 - Painted Over Section Loss
 - 5 - Pitting
 - 6 - Painted Over Pitting
 - 7 - Corrosion Hole
 - 8 - Laminate Corrosion
 - 9 - Layered Corrosion
 - 10 - Active Corrosion

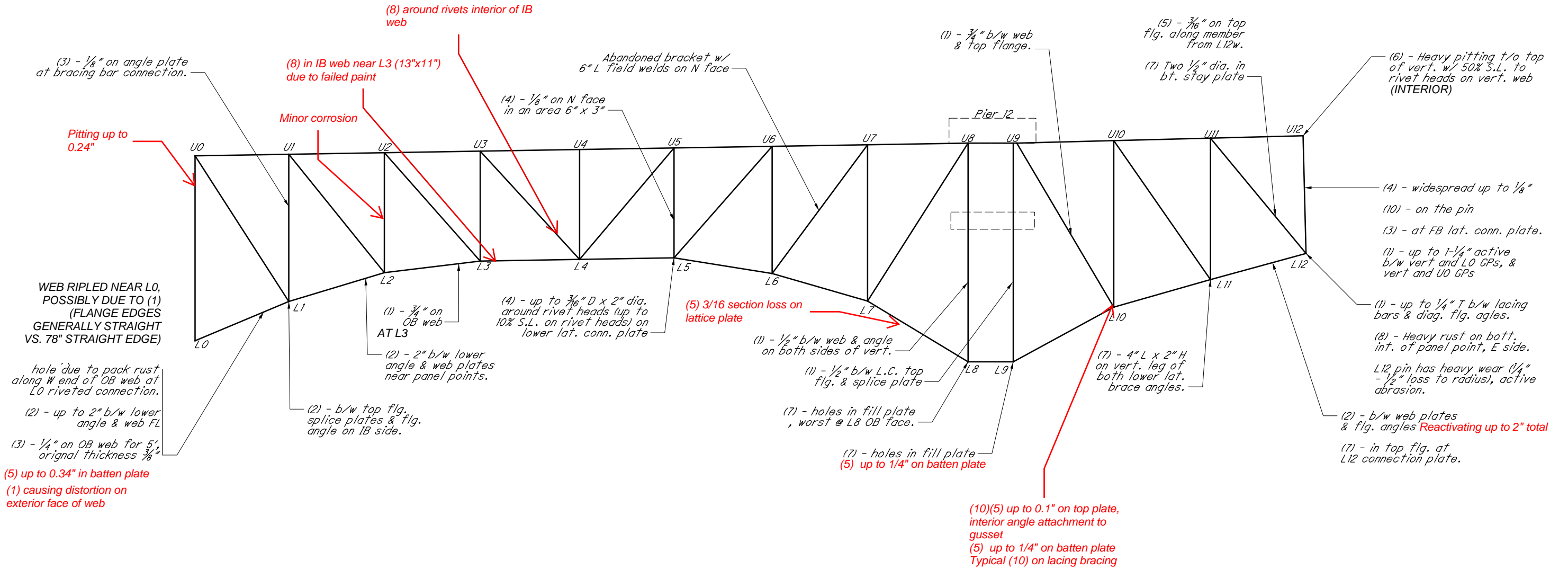
SPAN 13 NORTH EXTERIOR TYPICAL NOTES

- Top & bot. batten plates on truss L.C.'s exhibit (5) - up to 1/4" D.
- Splice plates on top of L.C. flg. angles at panel point have (6) - up to 1/4" D.
- Lateral brace connection plates typ. exhibit (5) - 1/4" D w/ iso. (7).

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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SPAN 13 - NORTH INTERIOR TRUSS ELEVATION

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SPAN 13 NORTH INTERIOR GUSSET PLATE DEFICIENCIES

L0, BOTH - (6) - $\frac{1}{8}$ " on ext. faces and $\frac{1}{16}$ " full height throughout.

L0, IB GP - (3) - $\frac{1}{8}$ " D x 15" x 8" between vertical and lower chord members.

L1, OB GP - (6) 1/16" GENERAL

L3, IB GP - (4) - $\frac{1}{4}$ " D x 6" dia. b/w vert. & diag. on OB face

L5, IB GP - (6) 1/8" INSIDE FACE ABOVE DIAGONAL

L5, OB GP - (4) - 48" L x 10" H x up to $\frac{3}{16}$ " D on OB face along L.C. interface.

L6, OB GP - (6) - 60" L x 2 $\frac{1}{2}$ " H x up to $\frac{1}{4}$ " D on OB face along L.C. interface.

L8, BOTH GPs - (5) 1/16" ON OUTSIDE FACES

L9, OB GP - (5) - $\frac{1}{16}$ " on OB face

U9, OB GP - (1) 1/4" B/W GP AND UC

L10, OB GP - (6) 1/16"

L10, BOTH - (4) - 4" L x 4" H x up to $\frac{1}{4}$ " D on int. faces above diag. conn. angle.

L11, BOTH - (4) - 4" L x 4" H x up to 1- $\frac{1}{4}$ " D on int. faces above diag. conn. angle. and OB exterior face

L11, IB - (4) - up to $\frac{1}{8}$ " D x 3" H x FL on ext. face.

L12, BOTH - (1) - up to $\frac{1}{2}$ " T b/w L.C. angles & int. faces.

L12, IB GP - (4) - up to $\frac{1}{8}$ " D x 12" dia. area on ext. face.

L12, OB GP - (1) - up to $\frac{1}{2}$ " T b/w ext. face GP & diag. web.

(4) - up to $\frac{1}{4}$ " ($\frac{1}{8}$ " typ.) on ext. face.

(4) - $\frac{1}{16}$ " t/o int. face.

U12, BOTH - (6) - $\frac{1}{16}$ " t/o int. faces.

(4) 1/16" AROUND PINS EXTERIOR FACES; (1) B/W VERTICAL & GPs

LEGEND

1 - Pack Rust

2 - Painted Over Pack Rust

3 - Section Loss

4 - Painted Over Section Loss

5 - Pitting

6 - Painted Over Pitting

7 - Corrosion Hole

8 - Laminate Corrosion

9 - Layered Corrosion

10 - Active Corrosion

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LORAIN-CARNEGIE BRIDGE

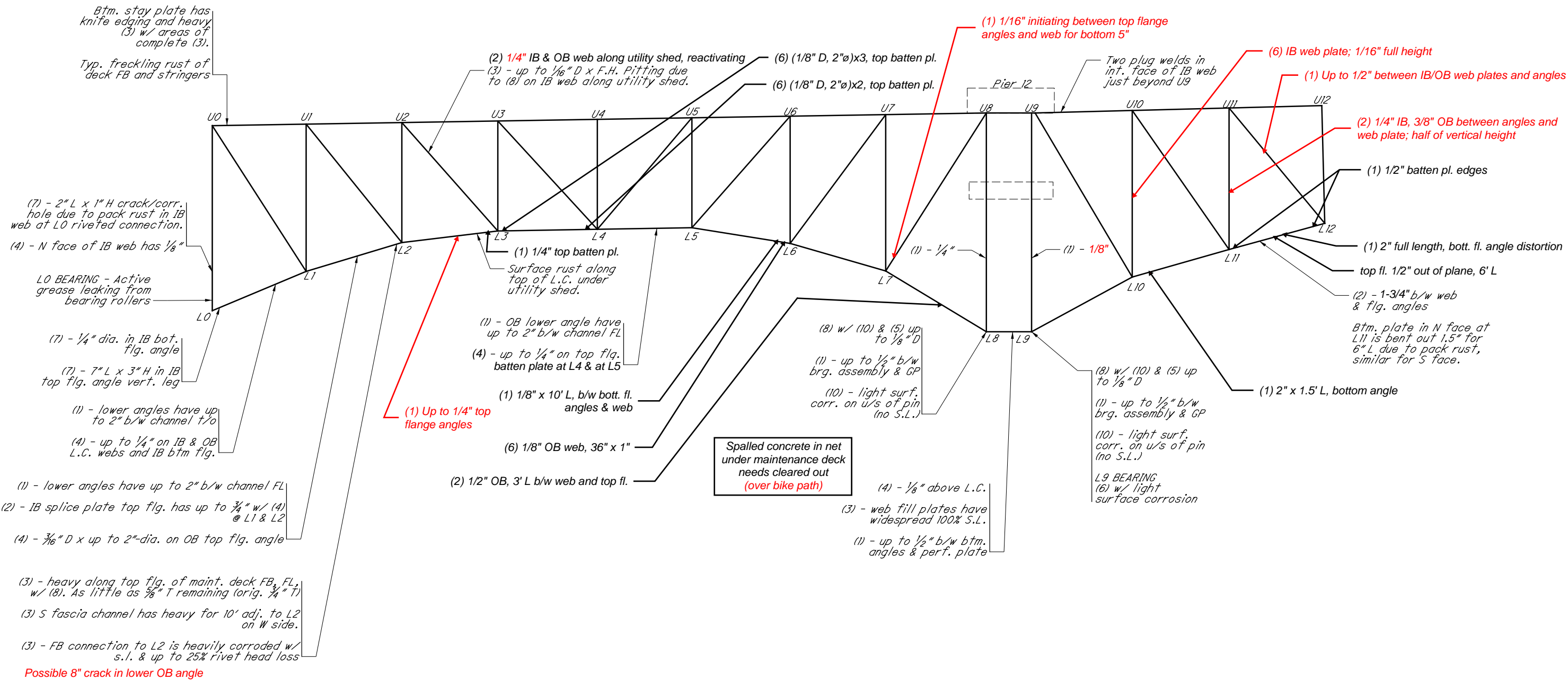
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SPAN 13 TRUSS ELEVATION
(NORTH INTERIOR)

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SPAN 13 - SOUTH INTERIOR TRUSS ELEVATION

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SPAN 13 SOUTH INTERIOR GUSSET PLATE DEFICIENCIES

- L0, IB GP - (4) - isolated up to $\frac{3}{8}$ " D x $\frac{1}{2}$ " dia.
L0, BOTH - (4) - interior faces have $\frac{3}{8}$ " D
L1, IB GP - (4) - $\frac{1}{8}$ " in a 2' L x 2" H area, OB face
L6, BOTH - (4) - $\frac{1}{4}$ " on interior faces, reactivating
L6, IB GP - (1) - $\frac{3}{4}$ " between lower chord top flange and splice plate 33" L.
L7, IB GP - (6) - $\frac{1}{8}$ " D x 6" H x 3" W over diag.
(4) - $\frac{1}{8}$ " D over diag.
L7, OB GP - (3) - $\frac{1}{8}$ " D over diag.
(5) w/ (8) - $\frac{1}{8}$ " D x 6" H x 3" W over diag.
L8, BOTH - (8) w/ (3) - $\frac{1}{16}$ " D on int. faces
L9, IB GP - (8) w/ (3) - $\frac{1}{8}$ " D x 2" H x 38" L, IB face along L.C.
L10, BOTH - (4) - $\frac{1}{8}$ " w/ (8) 36" L x 2" H

SPAN 13 SOUTH INTERIOR GUSSET PLATE DEFICIENCIES (CONT'D)

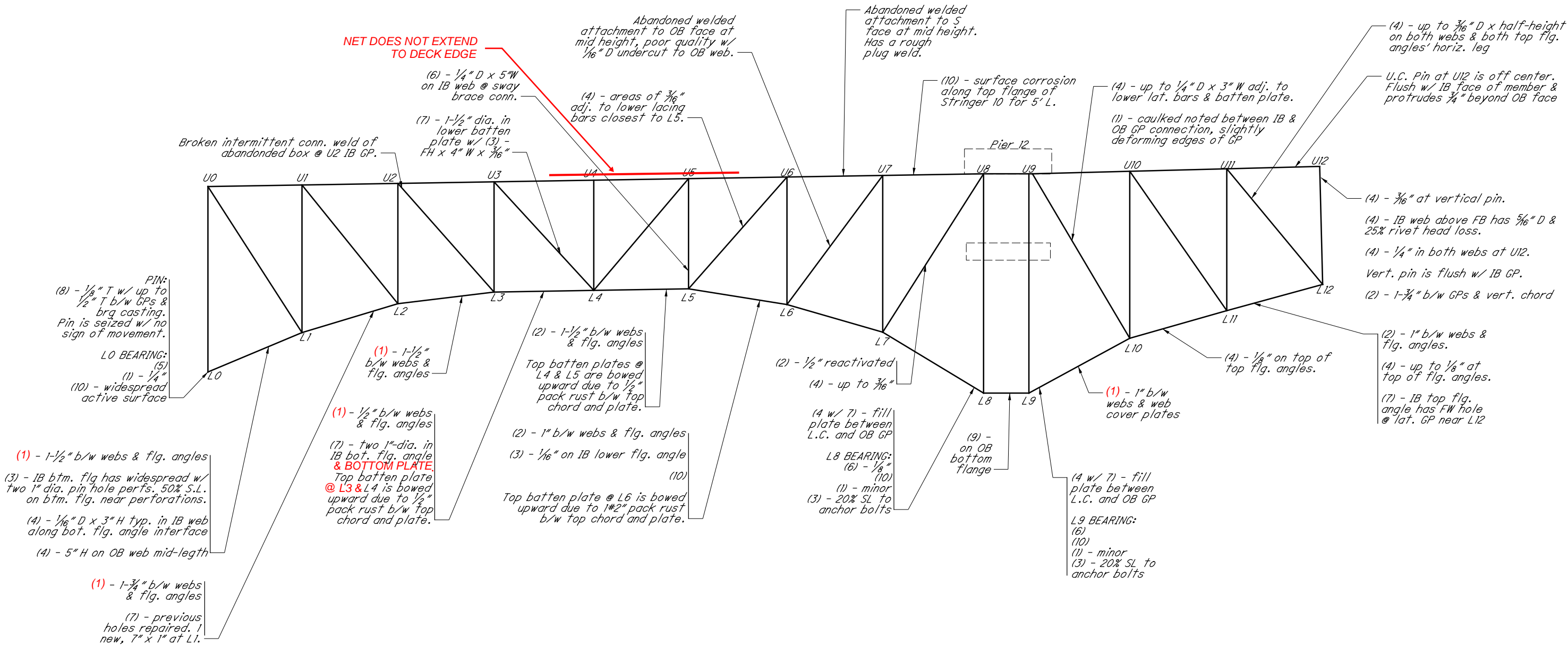
- L11, IB GP - (8) w/ (3) - $\frac{1}{16}$ " D x 3" H x 30" L along L10-L11.
L12, BOTH - (7) - multiple 1" in vertical web plate
L12, IB GP - (1) - up to $1\frac{3}{8}$ " between vertical member at pin location.
Retrofit @ W half
L12, OB GP - (4) w/ (10) up to $\frac{3}{8}$ " D, original thickness $\frac{3}{4}$ ".
(1) - up to 1" between vertical member at pin location.

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
10 - Active Corrosion

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SPAN 13 - SOUTH EXTERIOR TRUSS ELEVATION



SPAN 13 SOUTH EXTERIOR GUSSET PLATE DEFICIENCIES

- L0, BOTH - (4) - $\frac{1}{8}$ " along back edge of vertical, & along top of L.C. and inside faces.
- L1, IB GP - (4) - scattered up to $\frac{3}{16}$ "
- L1, OB GP - (4) - $\frac{1}{4}$ " t/o L1-L2 conn.
- L2, IB GP - (4) - $\frac{1}{4}$ " on top of the L.C.
- L3, BOTH - (4) - scattered up to $\frac{1}{8}$ "
- L4, BOTH - (4) - scattered up to $\frac{3}{16}$ "
- L5, BOTH - (4) - up to $\frac{1}{4}$ " along L.C. below vert. on OB; scattered on IB
- L6, IB GP - (4) - $\frac{3}{16}$ " along top of L.C.
- L7, BOTH - (4) - $\frac{1}{8}$ " along top of L.C., OB GP has $\frac{1}{4}$ " on IB face.
- L8, BOTH - (4) - up to $\frac{1}{8}$ "
- L9, BOTH - (4) - up to $\frac{3}{16}$ "
- L10, IB GP - (4) - $\frac{3}{16}$ " along top of L.C.
- L12, BOTH - (4) - $\frac{1}{4}$ " around pin & in scattered locations throughout.
Up to $\frac{1}{2}$ " bowing due to arrested pack rust.
- U12, BOTH - Up to $1\frac{3}{4}$ " localized bowing along bot. free edge due to arrested pack rust.
(3) - $\frac{3}{8}$ " around vertical pin.

LEGEND

- 1 - Pack Rust
2 - Painted Over Pack Rust
3 - Section Loss
4 - Painted Over Section Loss
5 - Pitting
6 - Painted Over Pitting
7 - Corrosion Hole
8 - Laminate Corrosion
9 - Layered Corrosion
10 - Active Corrosion

TYPICAL NOTES:

Previously noted areas of (2) are reactivating w/ wide caulk cracks.

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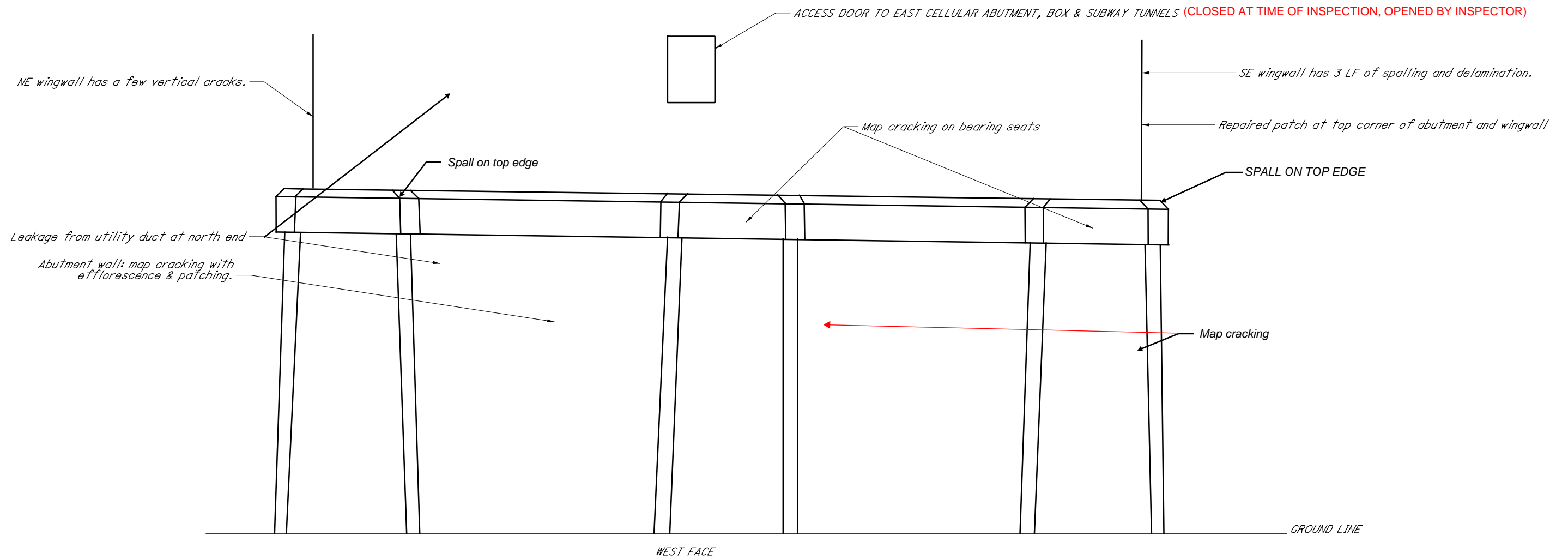
LORAIN-CARNEGIE BRIDGE

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SPAN 13 TRUSS ELEVATION
(SOUTH EXTERIOR)

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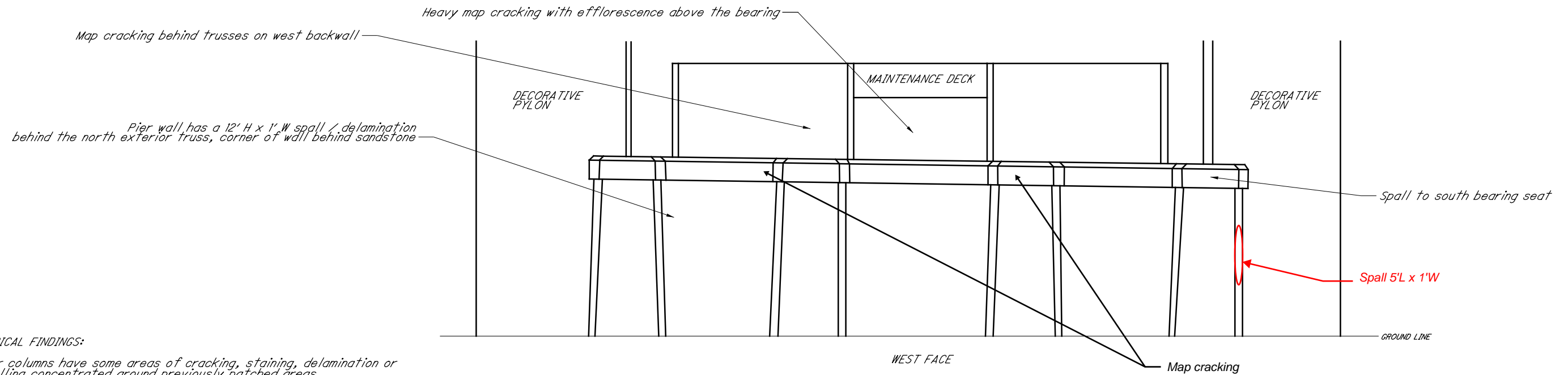


TYPICAL FINDINGS:

There are cracks, areas of patching, rust staining and some delaminations on the abutment walls.
Scattered areas of crack, delamination and minor spalling on wingwalls.

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TYPICAL FINDINGS:

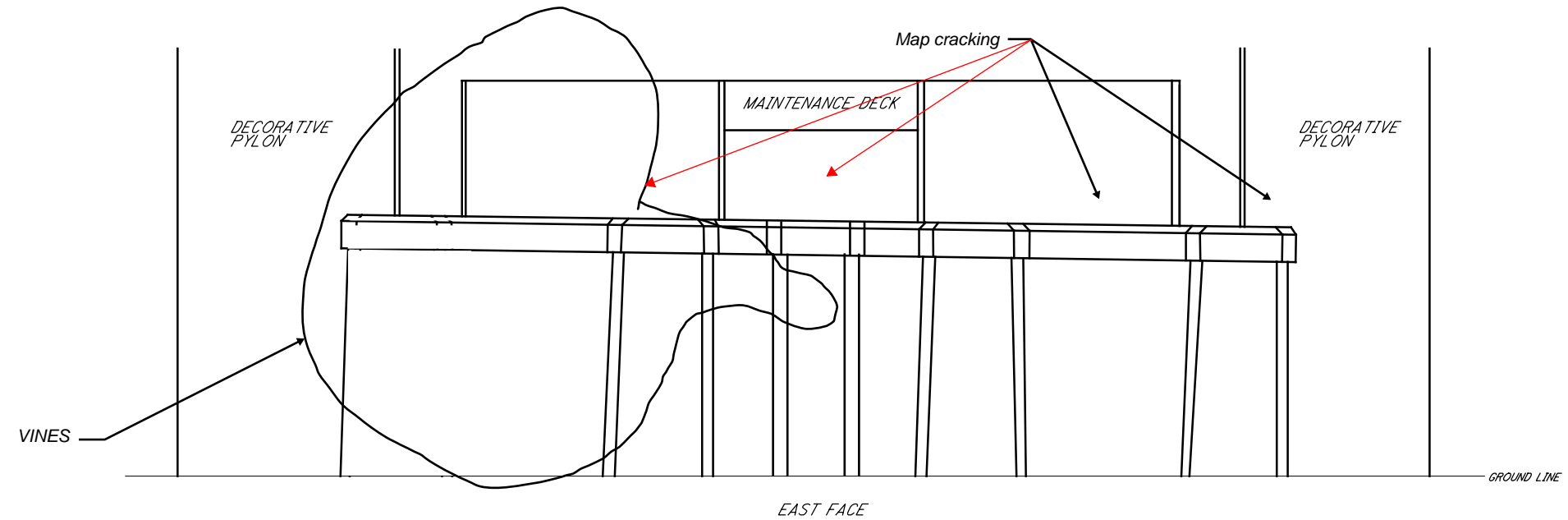
Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

Pier Walls have minor cracking, staining, patched areas and some minor spalling throughout.


Cracking at the bearing seats.

The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



Does not look like this.
There are only 3 bearings
at East Face.

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		EAST PYLON ELEVATION	PAGE 46/61

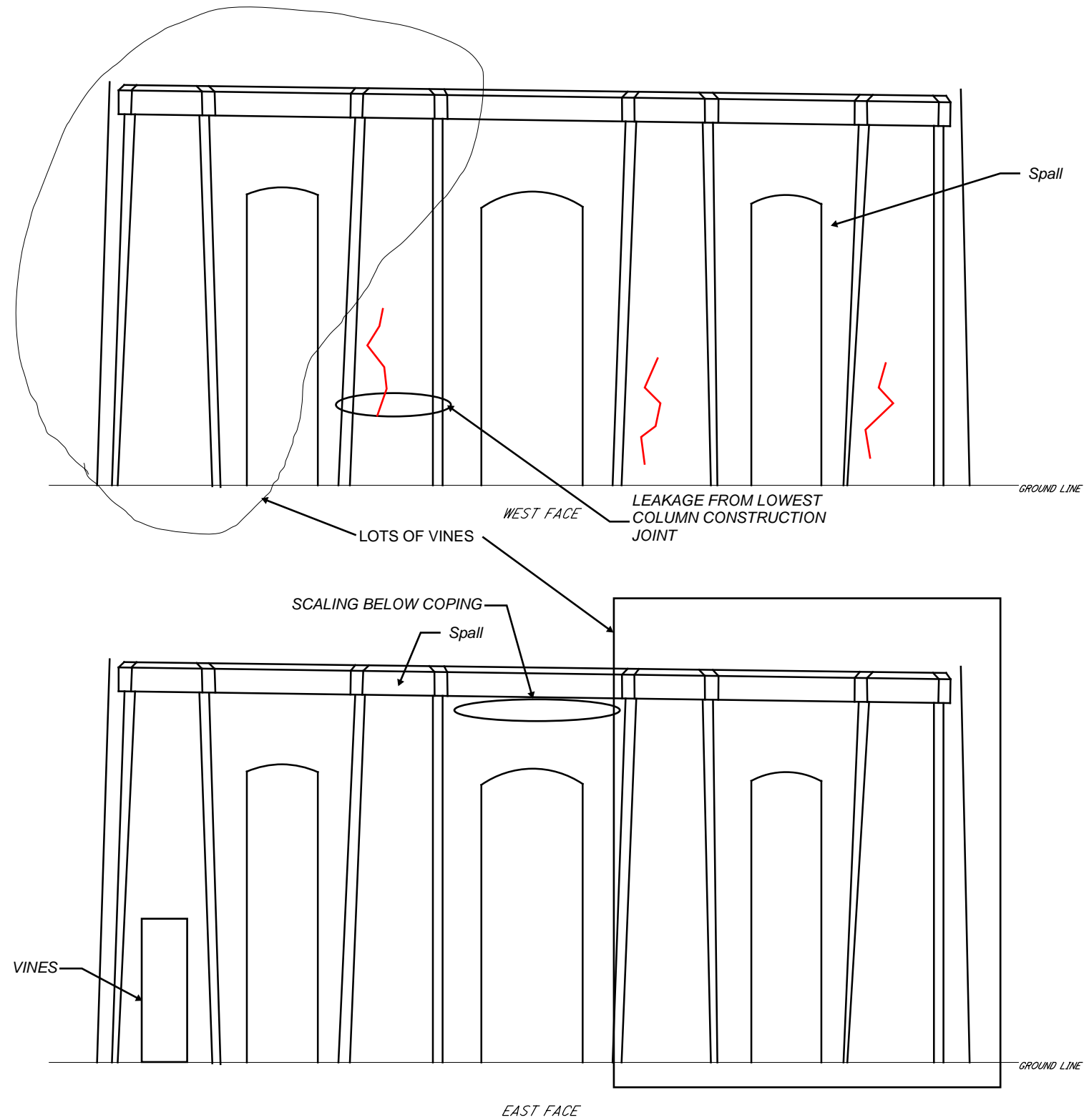
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TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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DATE JUNE 2025		PIER 1 ELEVATION	PAGE 47/61

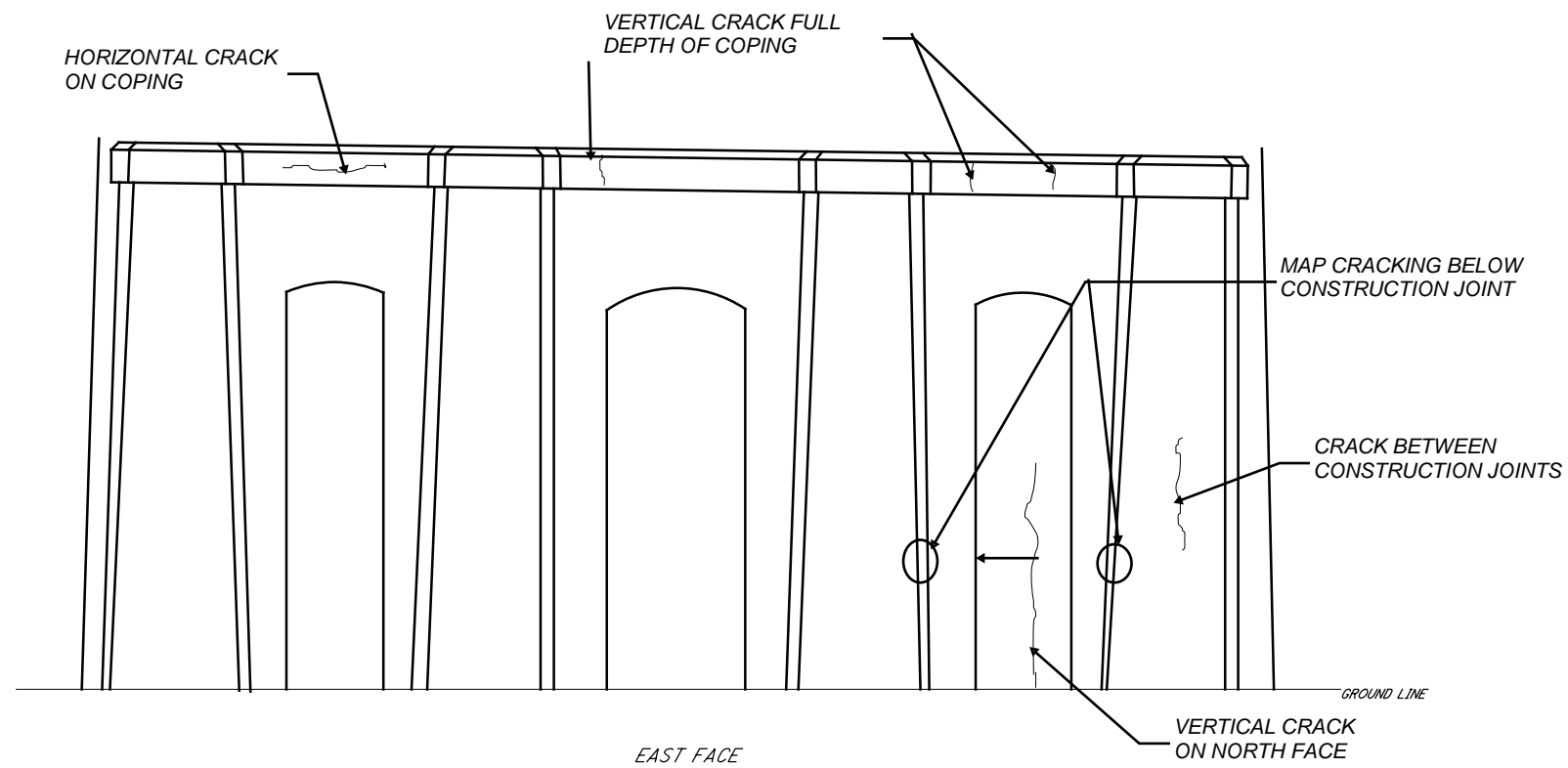
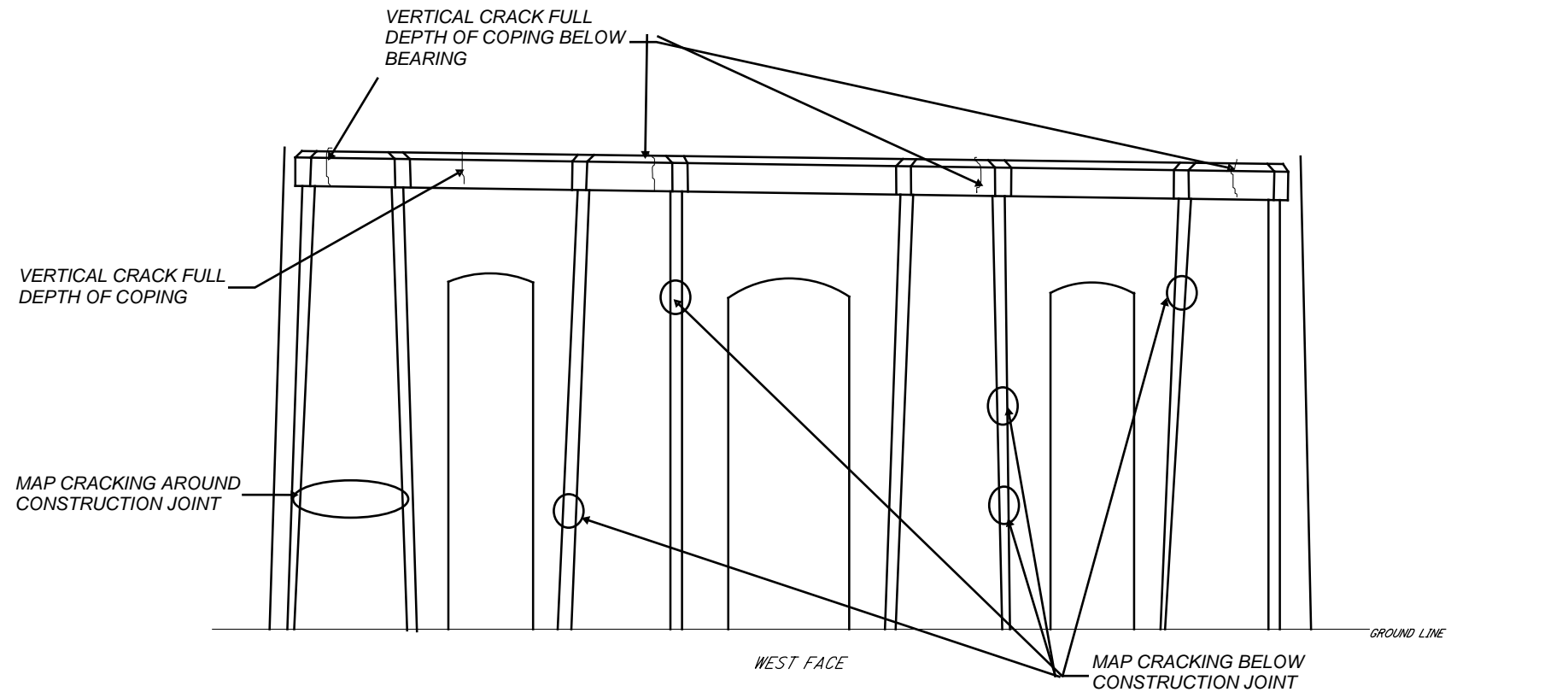
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TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

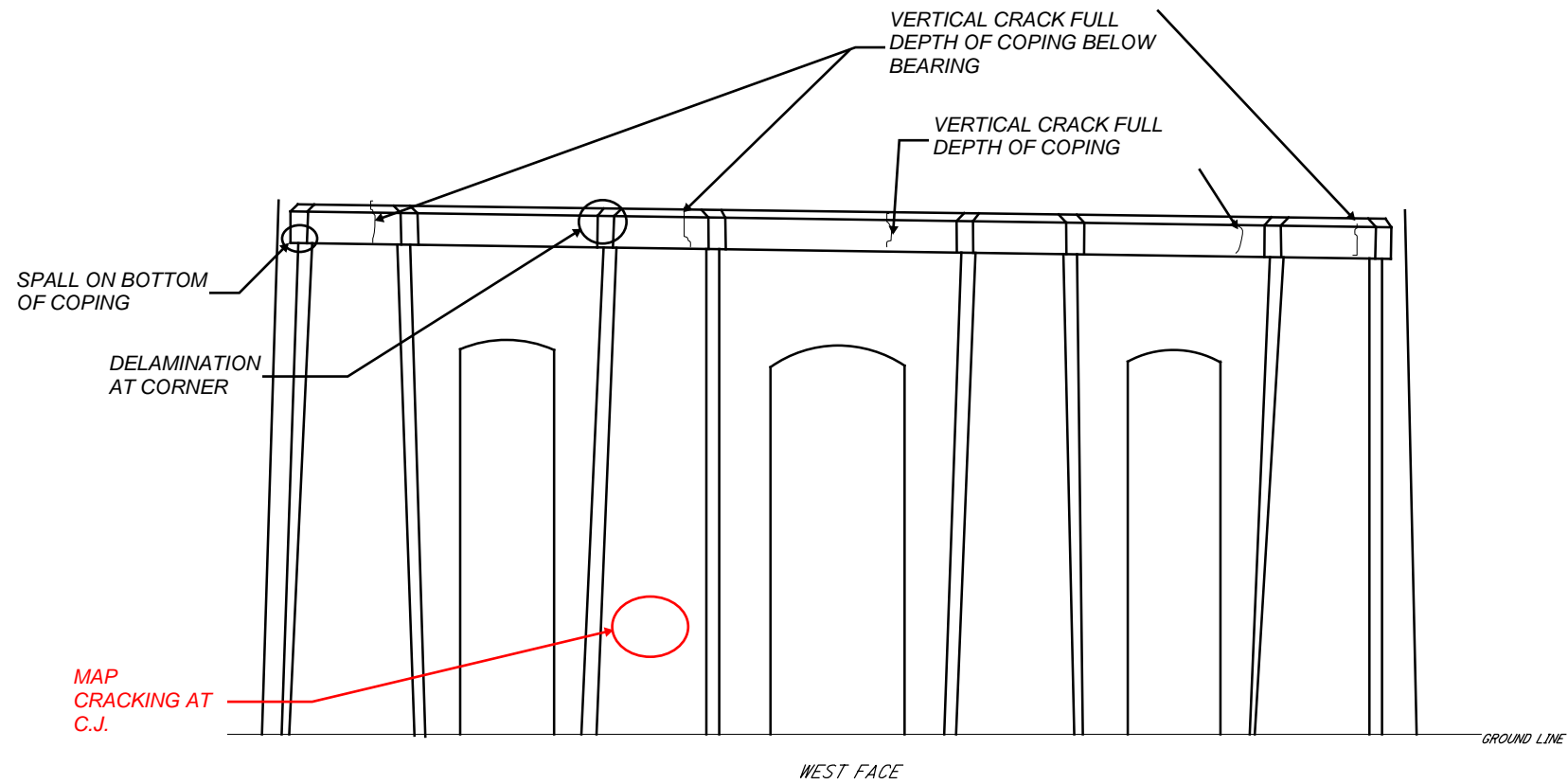
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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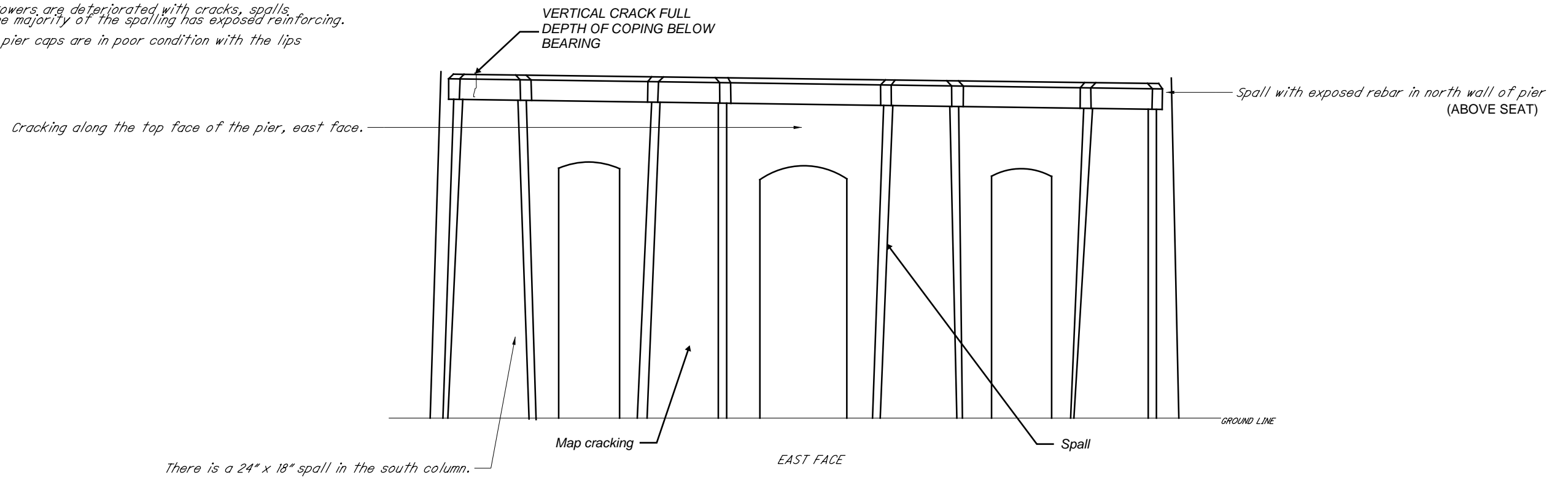


TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



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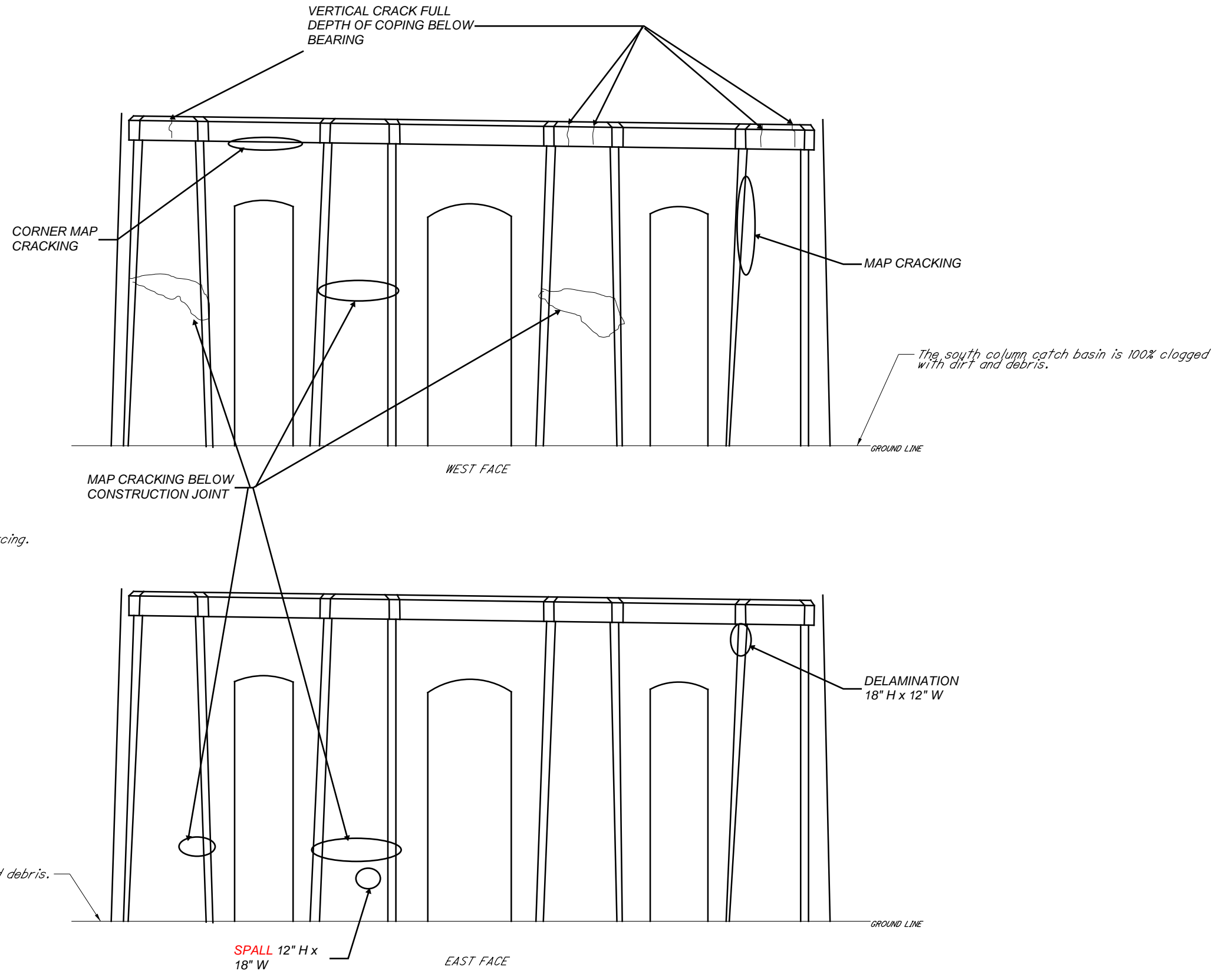
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TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

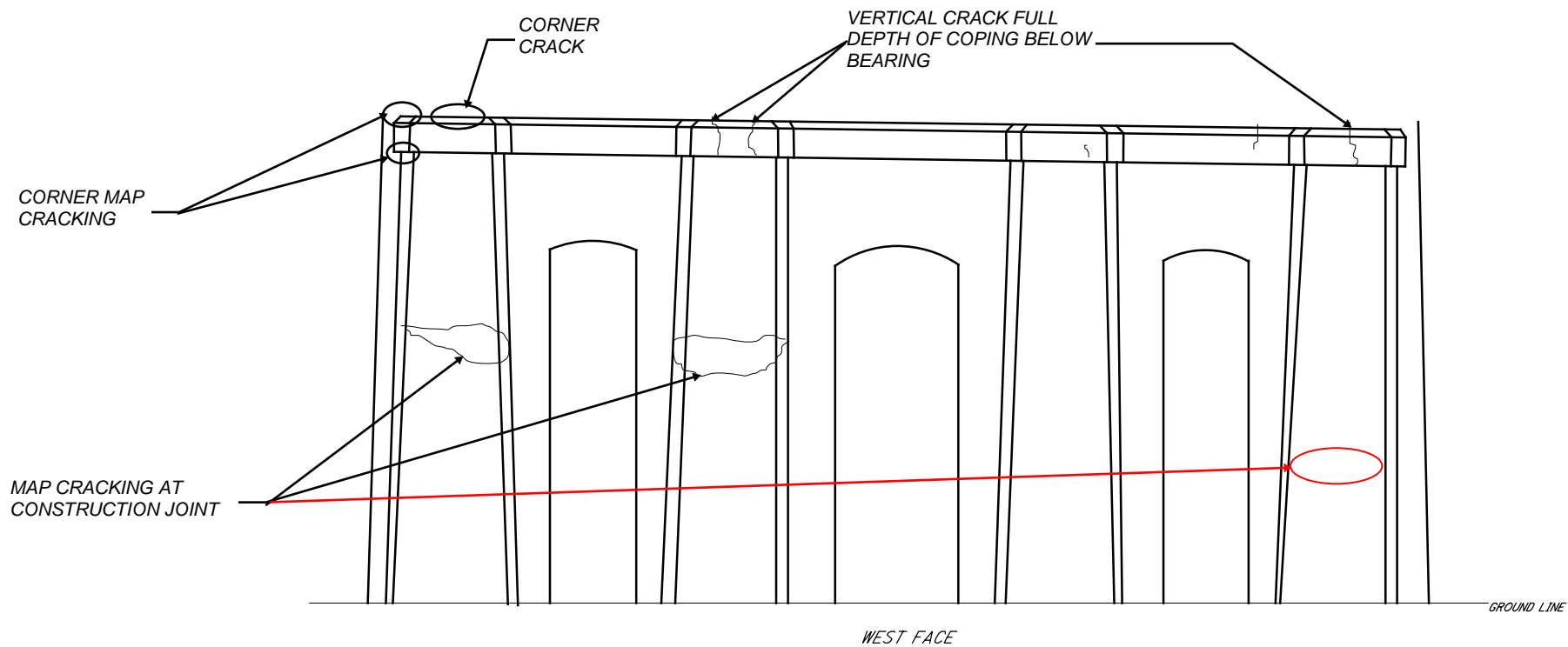
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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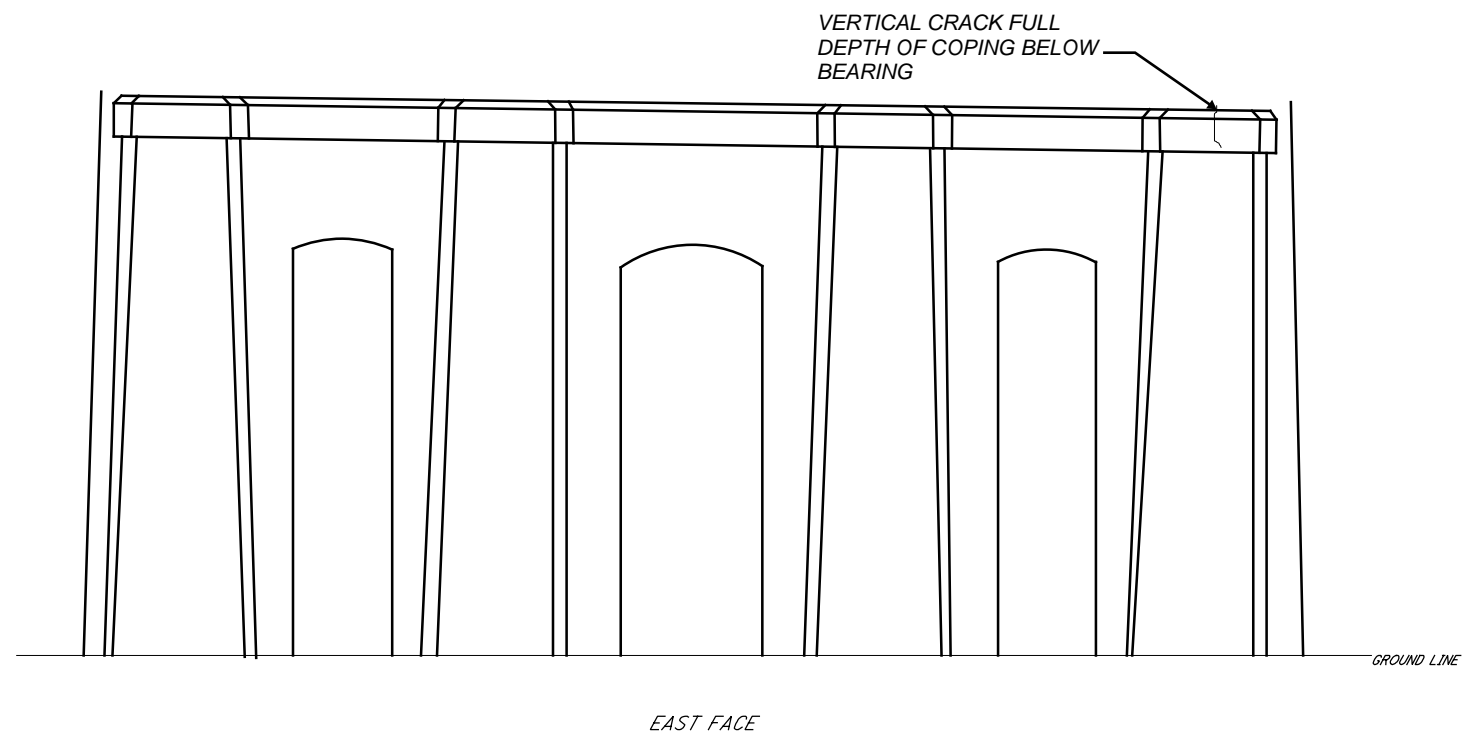



TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

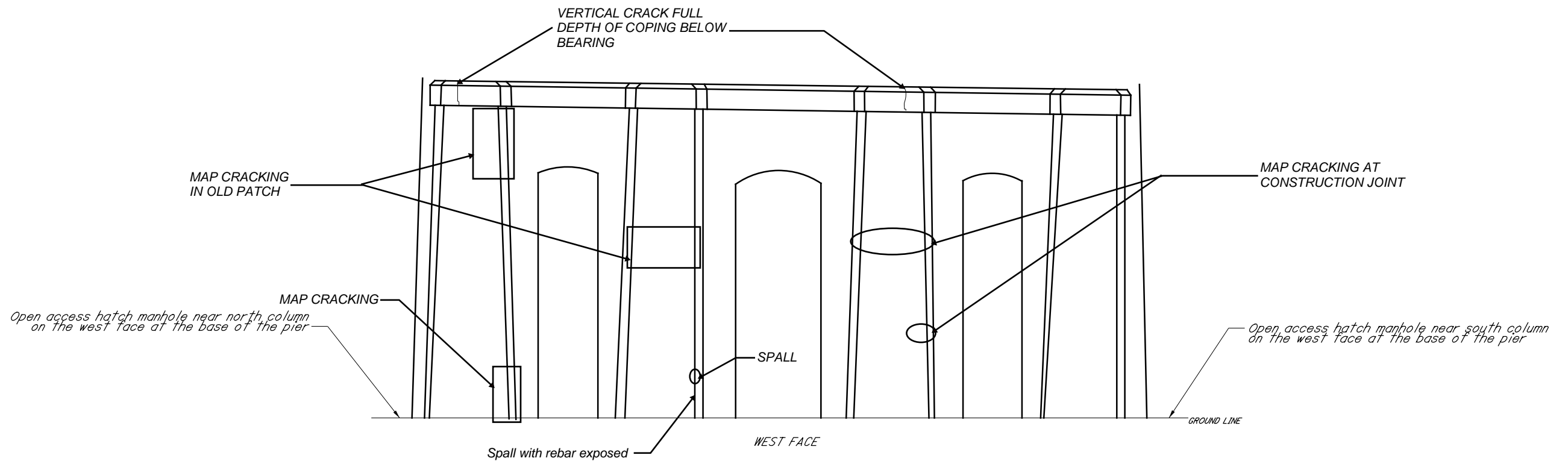
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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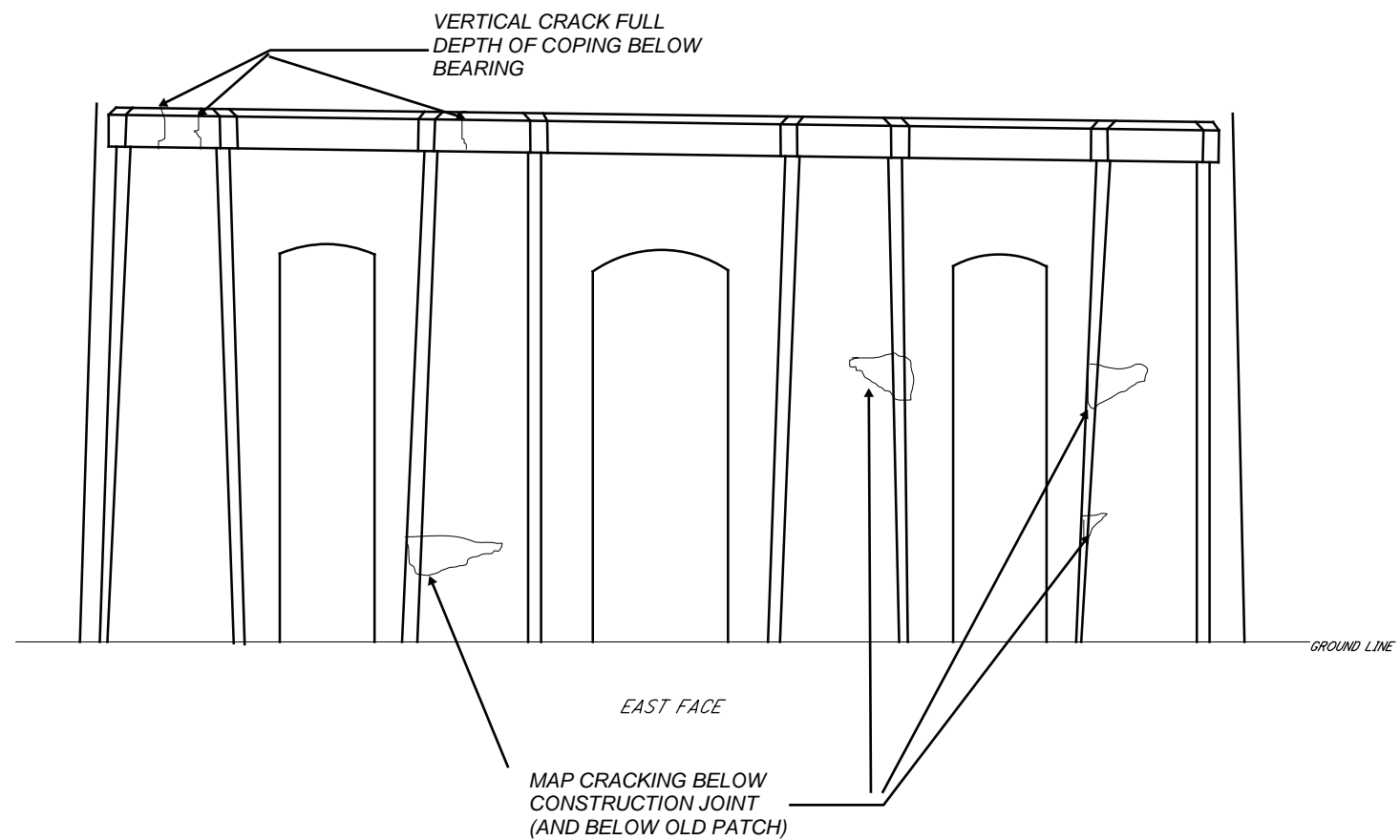


TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

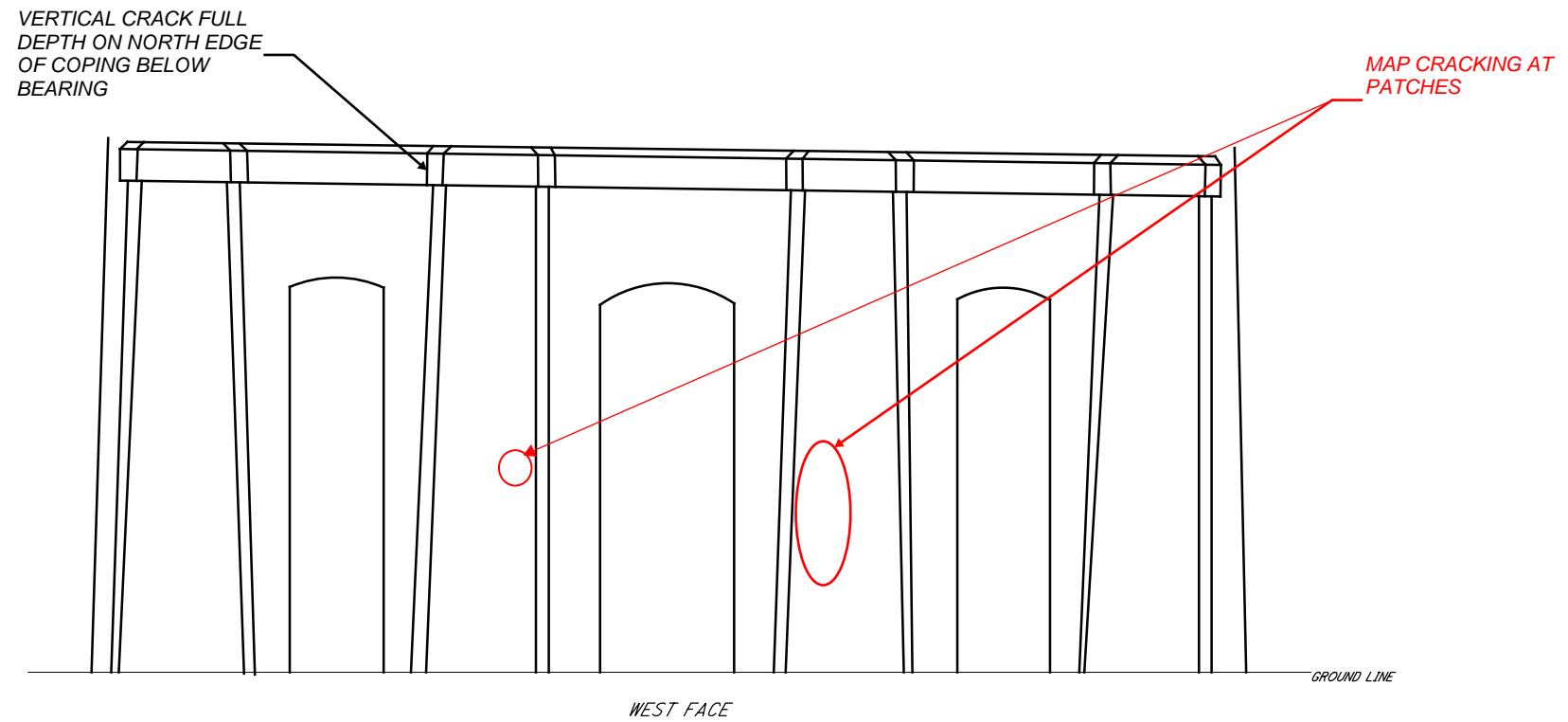
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



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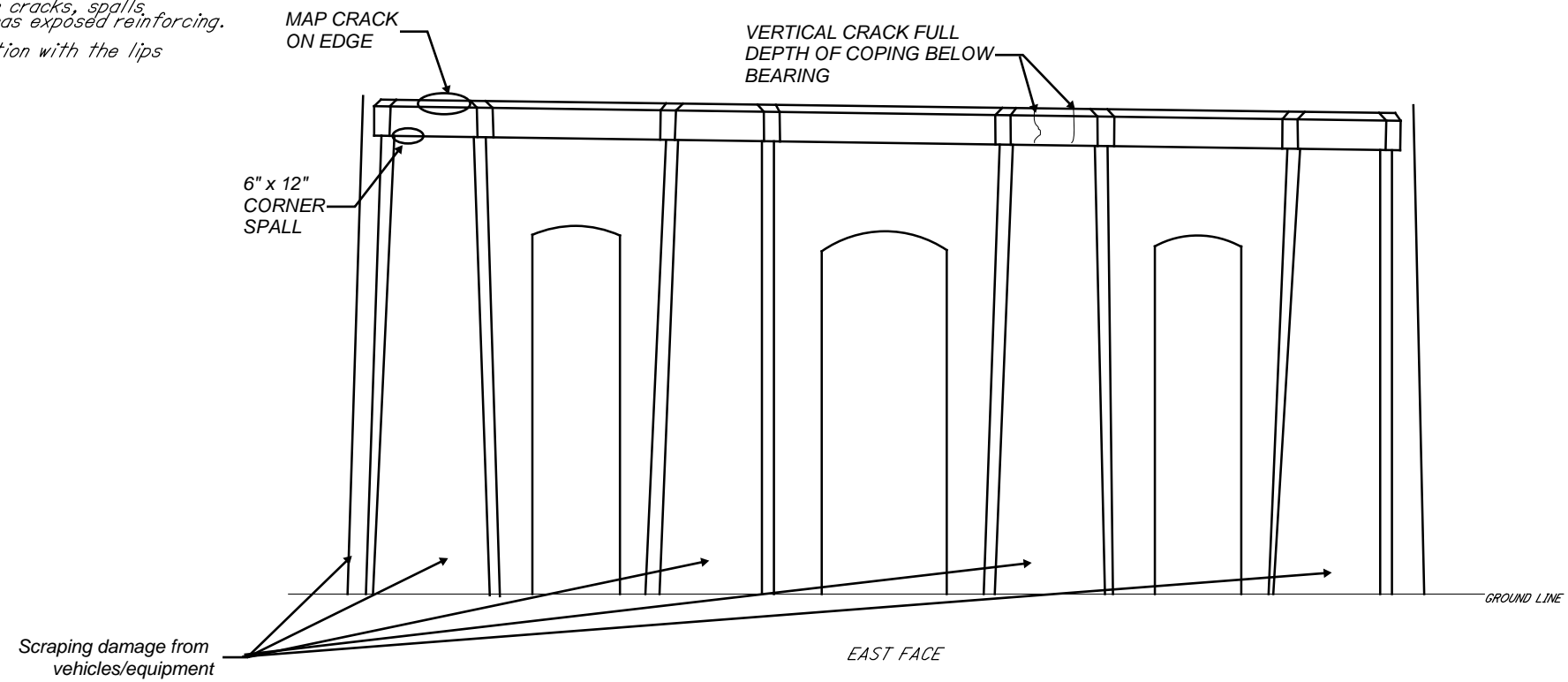


TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

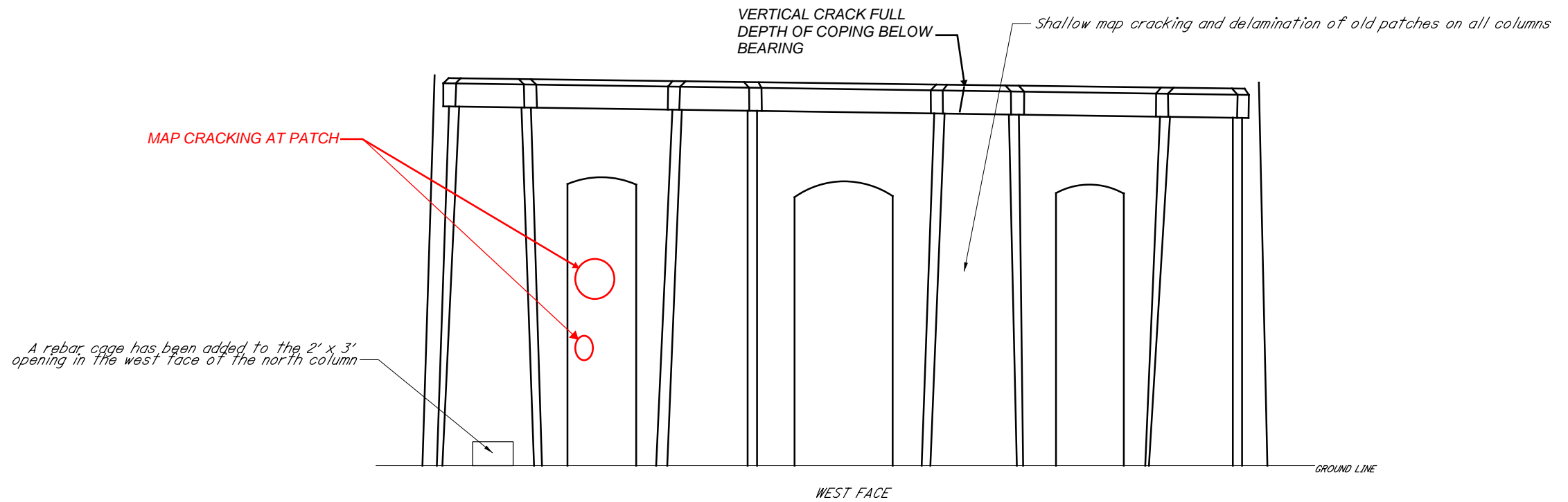
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



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		CUY-10-16.13	
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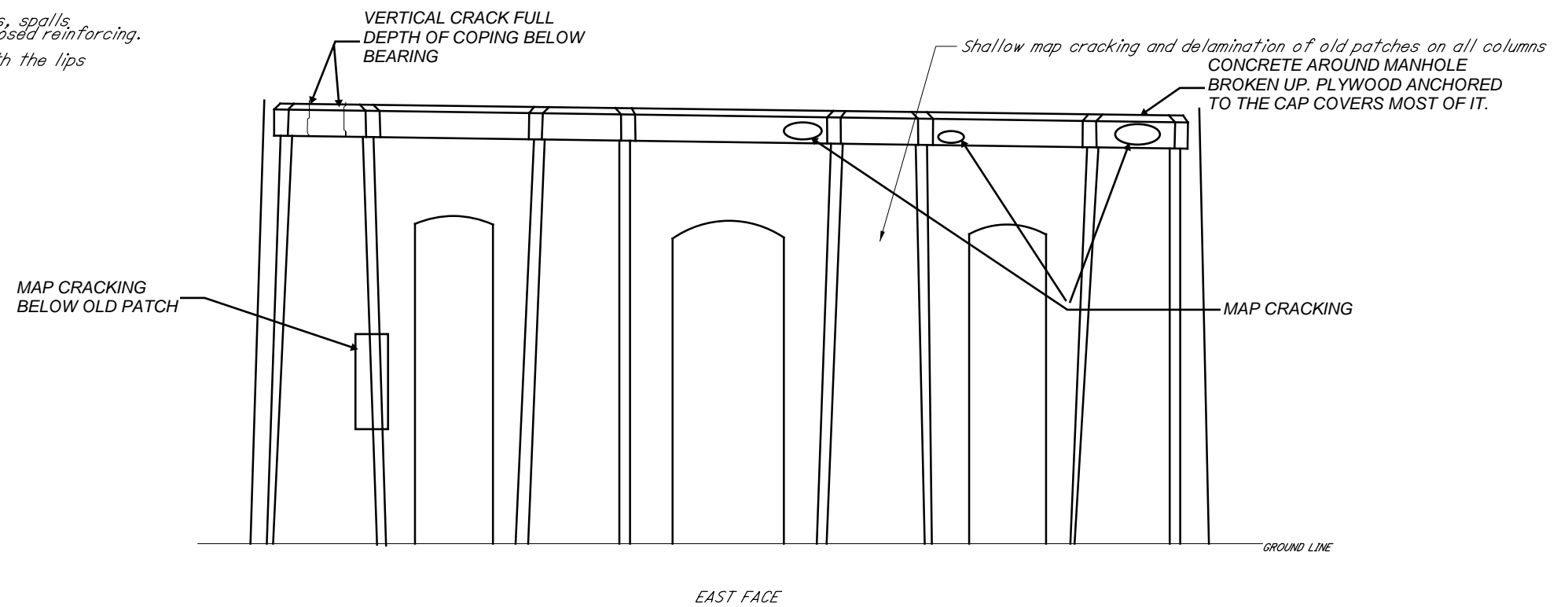


TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

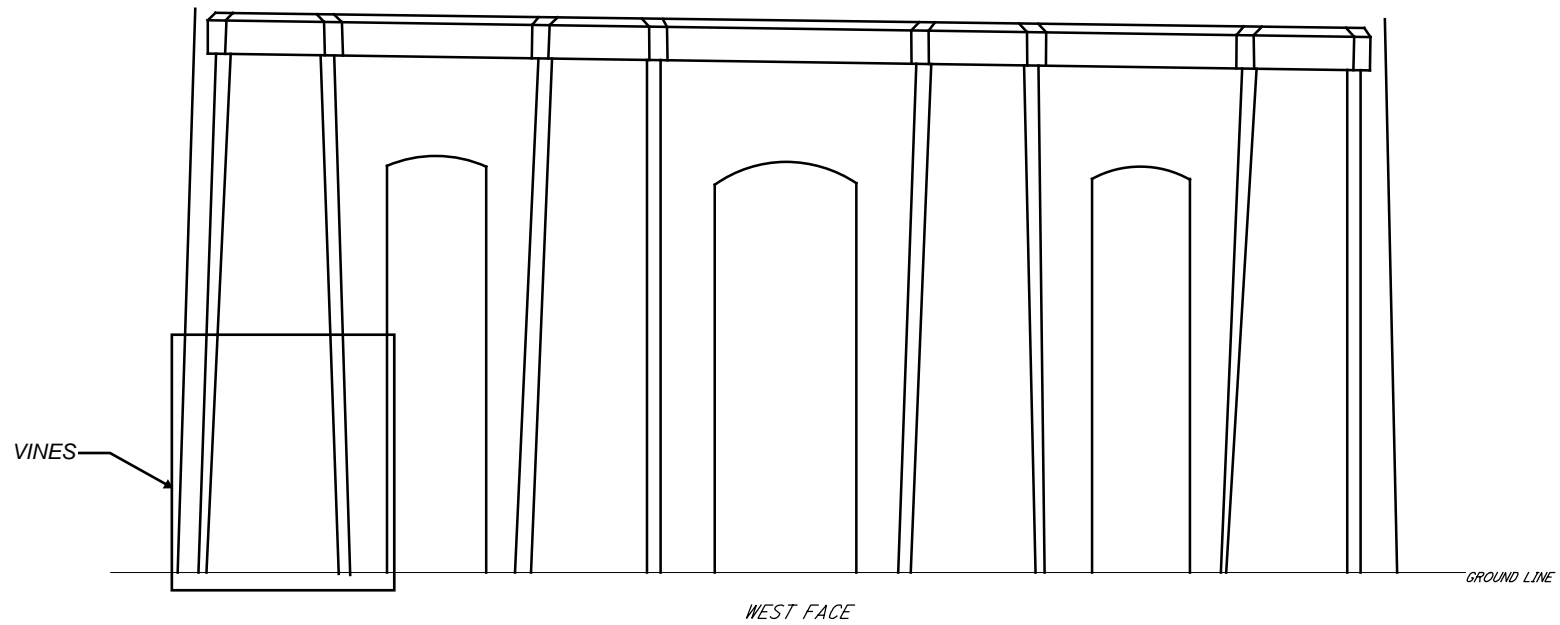
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE CUY-10-16.13	
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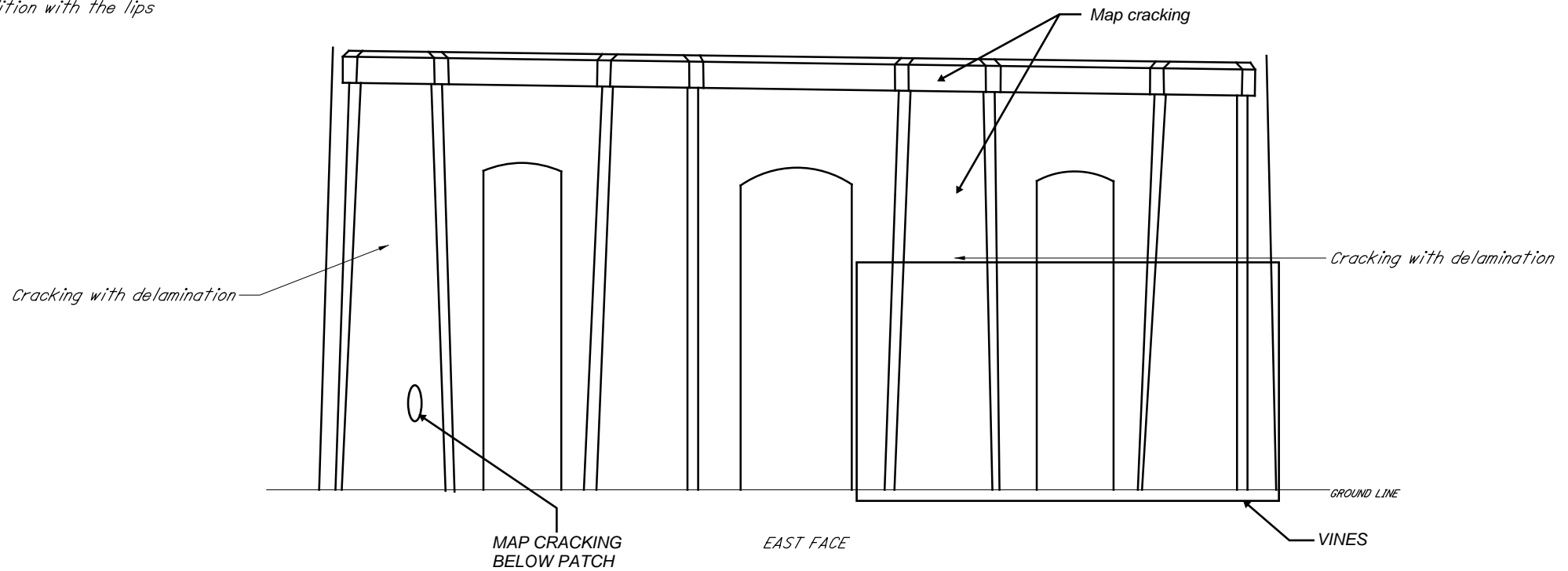


TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

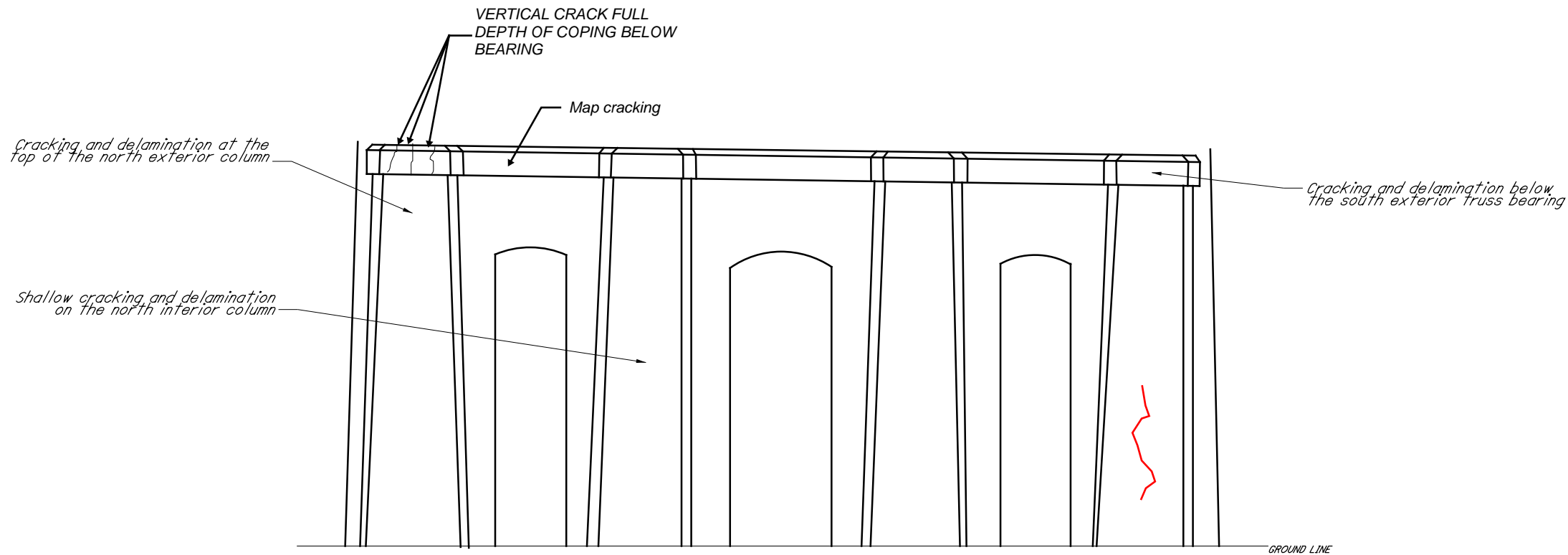
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



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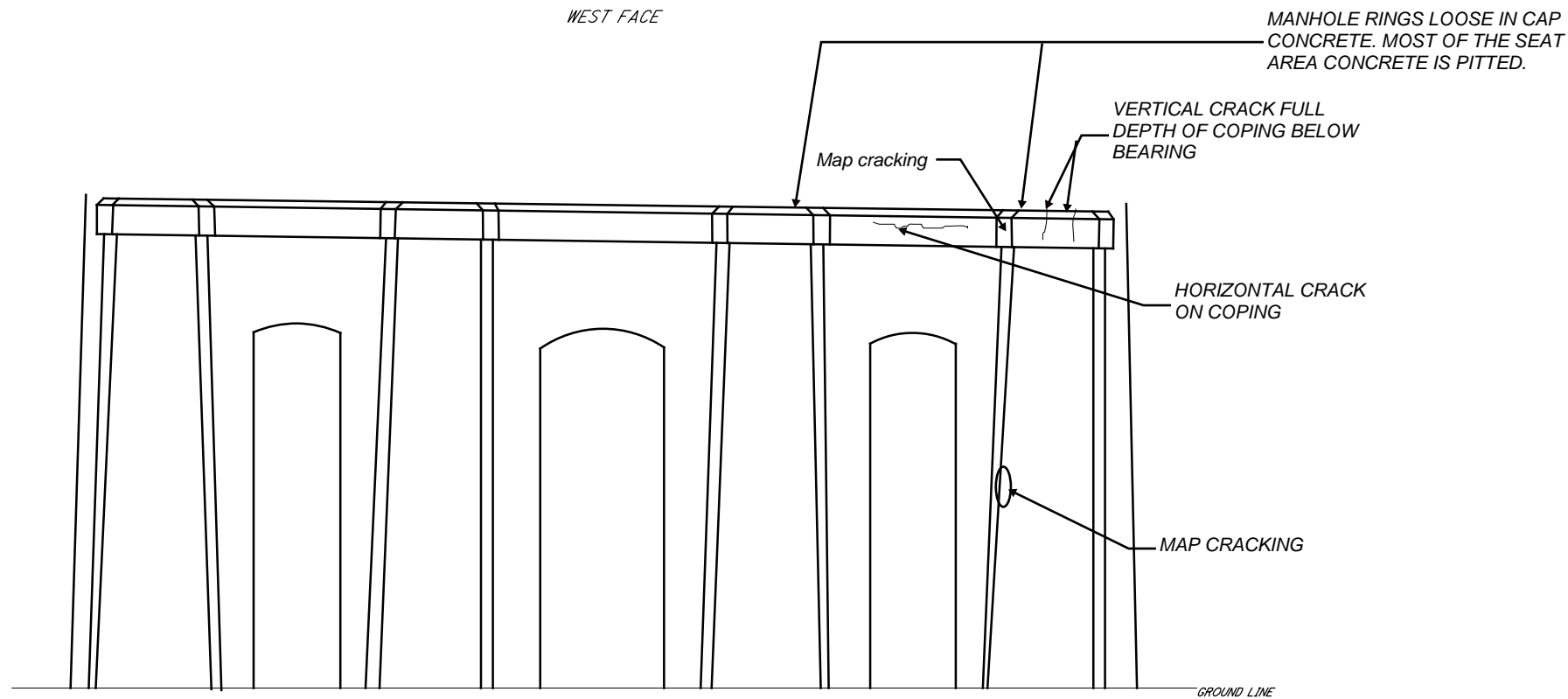
WEST FACE

TYPICAL FINDINGS:


Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



EAST FACE

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
		CUY-10-16.13	
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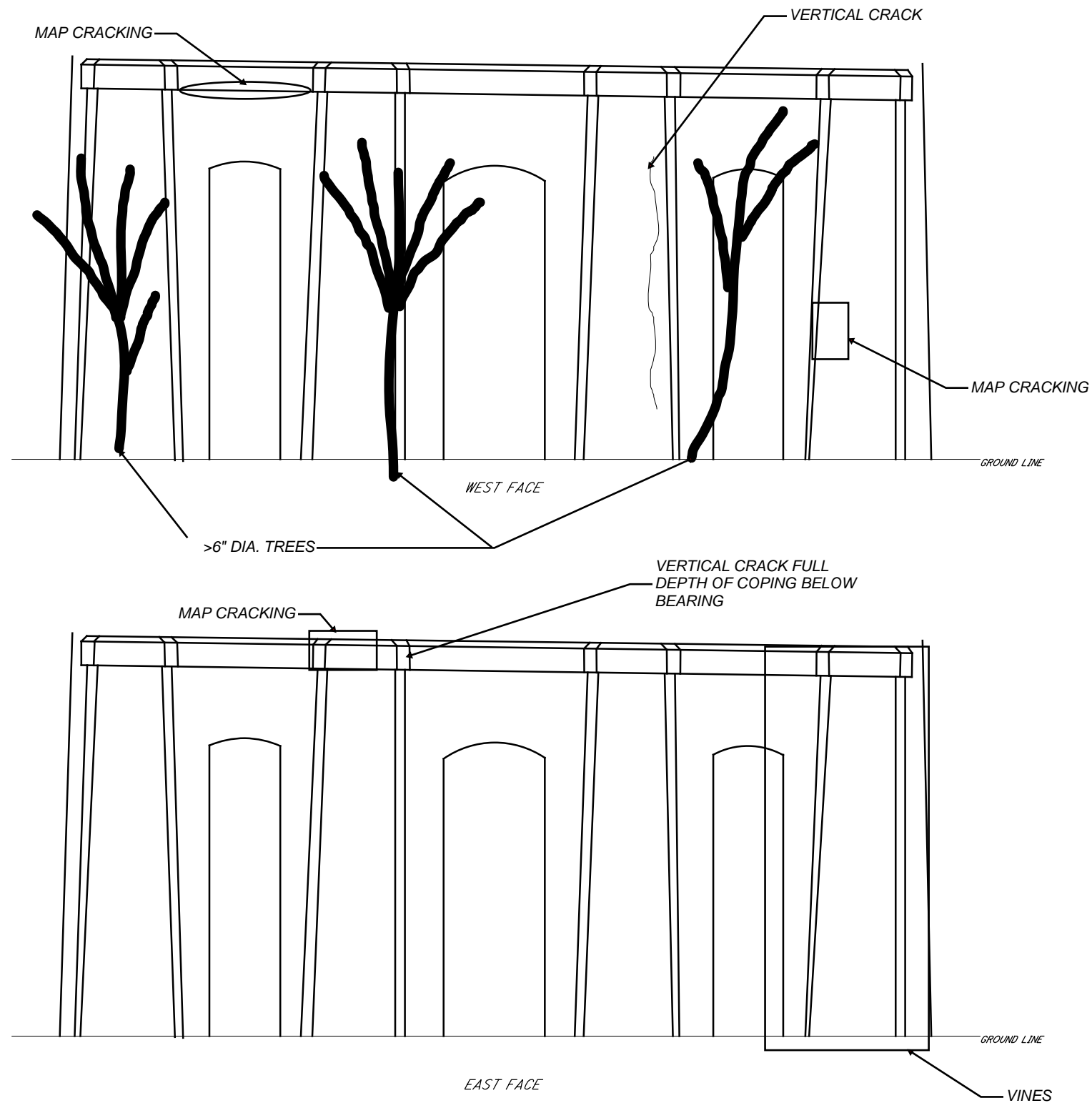
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TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

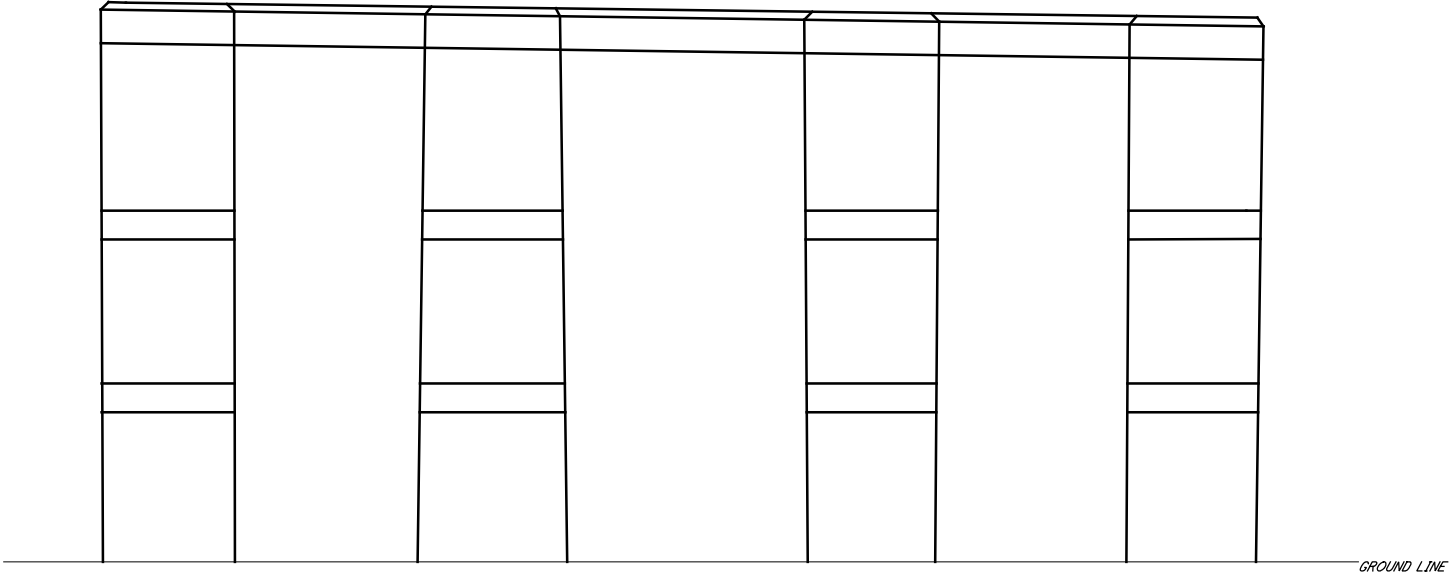
The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.



NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
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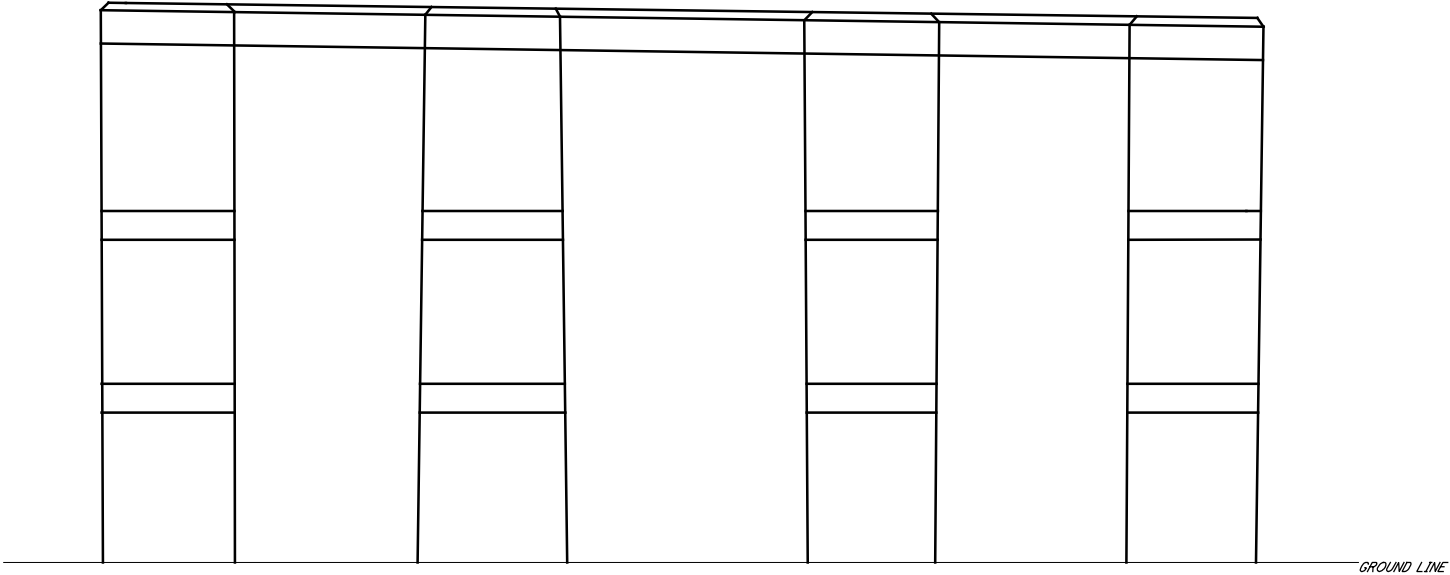
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WEST FACE

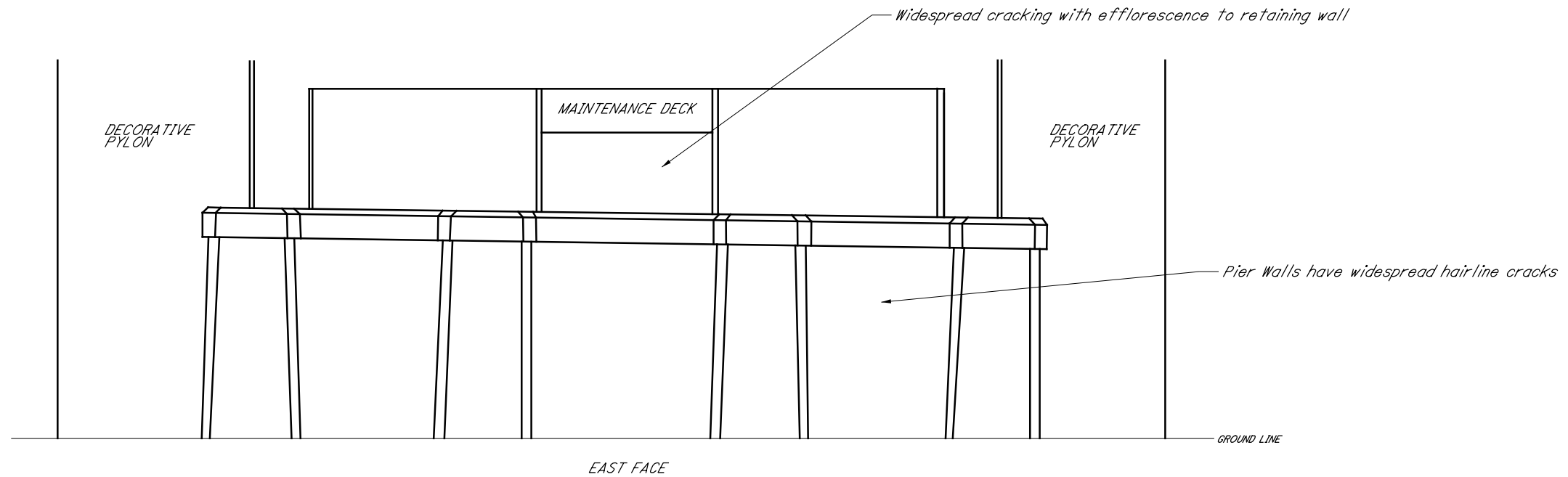
TYPICAL FINDINGS:

- Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.
- The underside of the pier towers are deteriorated with cracks, spalls, delaminations and spalls. The majority of the spalling has exposed reinforcing.
- The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.
- Spalls with exposed rebar at corbels on pier legs.



EAST FACE

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TYPICAL FINDINGS:

Pier columns have some areas of cracking, staining, delamination or spalling concentrated around previously patched areas.

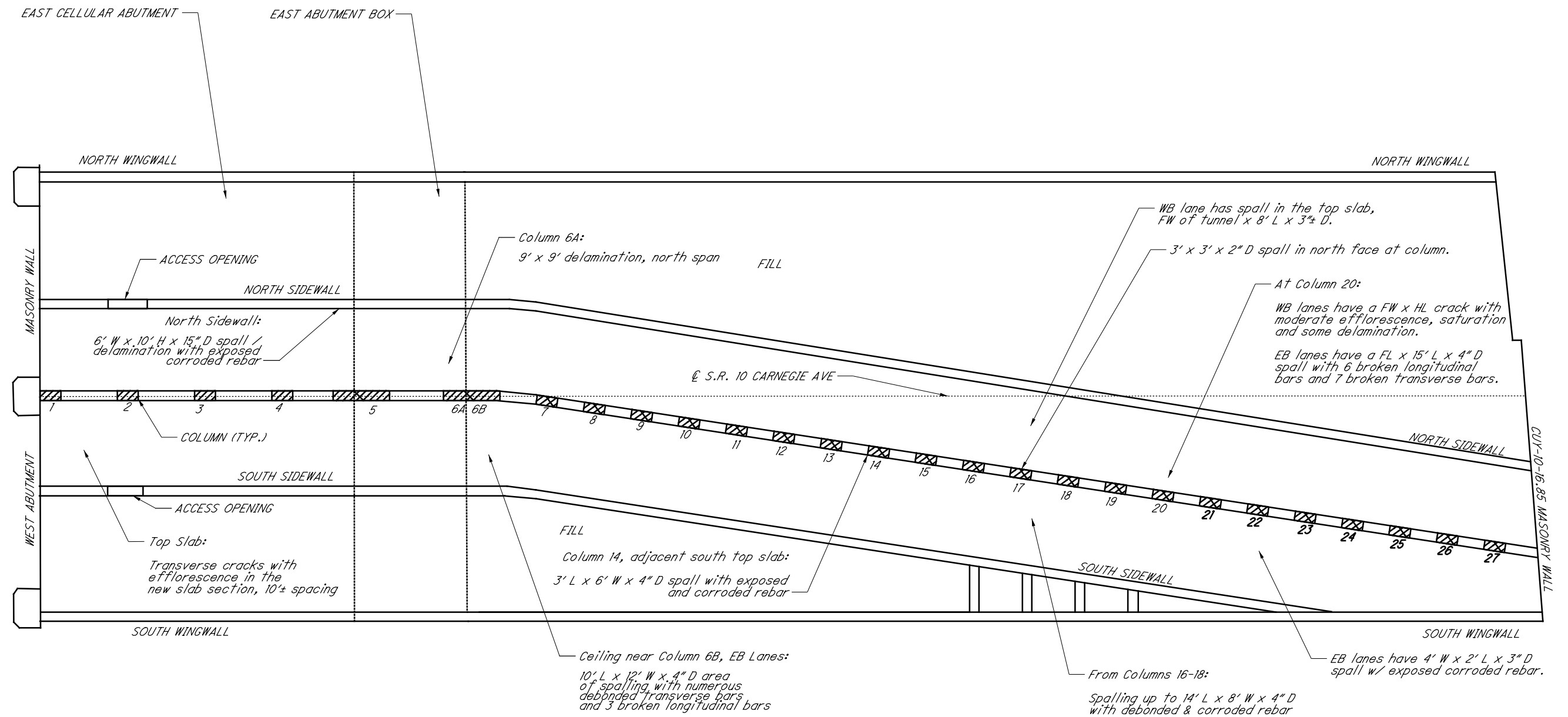
Pier Walls have minor cracking, staining, patched areas and some minor spalling throughout.

The underside of the pier towers are deteriorated with cracks, delaminations and spalls. The majority of the spalling has exposed reinforcing.

The access manholes in the pier caps are in poor condition with the lips heavily deteriorated.

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE CUY-10-16.13	
DATE JUNE 2025		WEST PYLON ELEVATION	PAGE 59/61

EAST CELLULAR ABUTMENT, ABUTMENT BOX & SUBWAY TUNNEL DEFICIENCIES



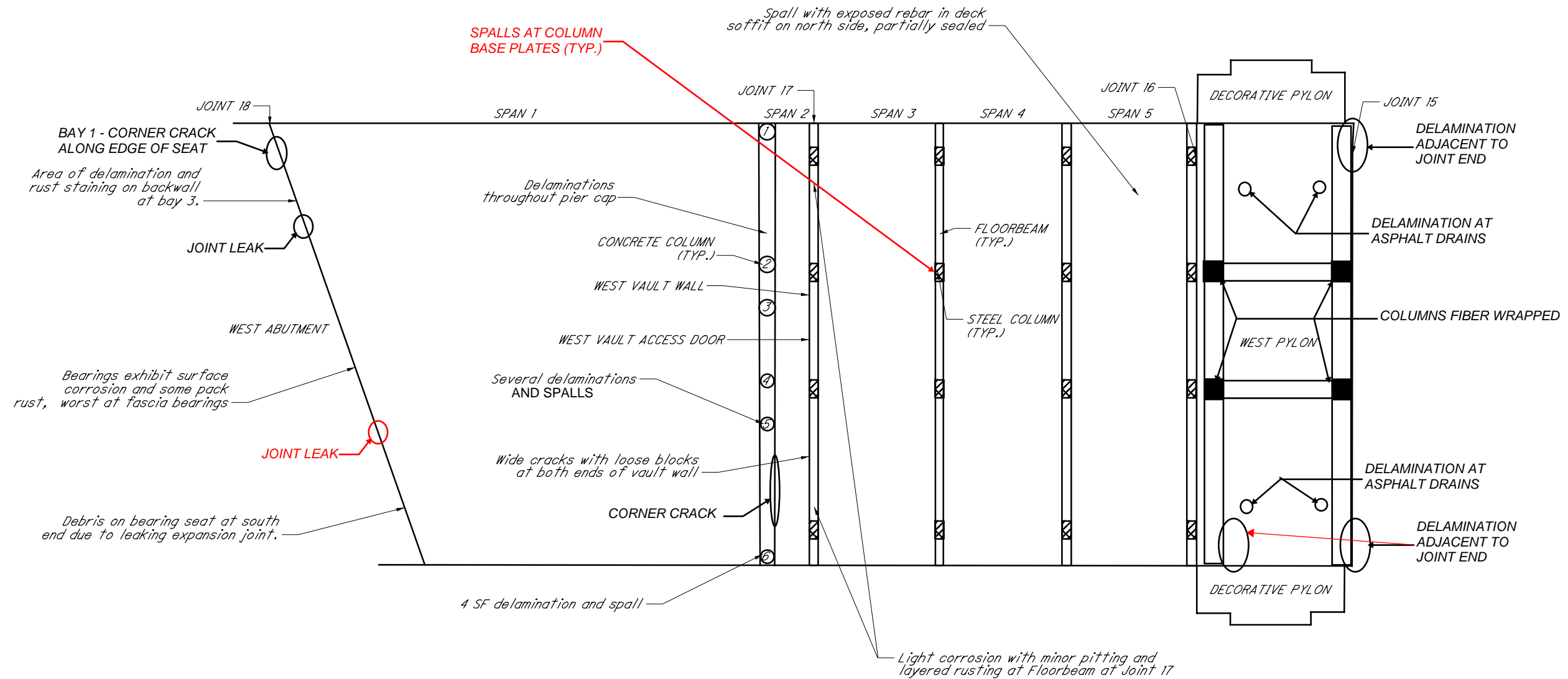
TYPICAL FINDINGS:

Columns typically have a FH x 1/4" W crack at jack arches

Typical vertical cracks in sidewalls up to 3/8" L. A few diagonal cracks are also present

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE JUNE 2025		CUI-10-16.13	
		EAST CELLULAR ABUTMENT, ABUTMENT BOX AND SUBWAY TUNNELS PLAN	PAGE 60/61

WEST APPROACH PLAN VIEW



TYPICAL FINDINGS:

ABUTMENTS: There are cracks, areas of patching, rust staining and some delaminations.

BACKWALLS: Cracking and delamination were noted in some of the backwalls.

WINGWALLS: Scattered areas of cracking, delamination and minor spalling.

DECORATIVE PYLONS: Exhibit some areas of spalling and deterioration.

NOT TO SCALE		LORAIN-CARNEGIE BRIDGE	
DATE JUNE 2025		CUY-10-16.13	
		WEST APPROACH PLAN VIEW	PAGE 61/61



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

2025 Physical Condition Routine Element Level Inspection Report
CUY-10-1613, SFN 1801503

APPENDIX D – Nonredundant Steel Tension Member (Fracture Critical Member) Plan

Ohio Department of Transportation



Fracture Critical Member and Fatigue Prone Connection Identification Plan

Reference: ODOT Manual of Bridge Inspection Chapter 4 and Appendix E

District: 12
County-Route-SLM: CUY-010-1613
Structural File Number: 1801503

Fatigue Life Study: Year of Study N/A Remaining Fatigue Life N/A

Load Path Redundant: No, structure is fracture critical, inspect FCM's every 24 months

Structurally Redundant: No, acts as simple spans

Internally Redundant: Yes/No, some built up riveted members present

System Redundant: Analysis has not been performed to determine



Figure 1: CUY-10-1613 over the Cuyahoga River

Location: CUY-10-1613 (SFN 1801503), commonly known as the Lorain-Carnegie Bridge and later renamed the Hope Memorial Bridge, carries four lanes of vehicular traffic and two pedestrian walkways over the

Cuyahoga River Valley, local streets, parking lots, Flat Industrial Railroad and a Norfolk Southern Railroad spur line.

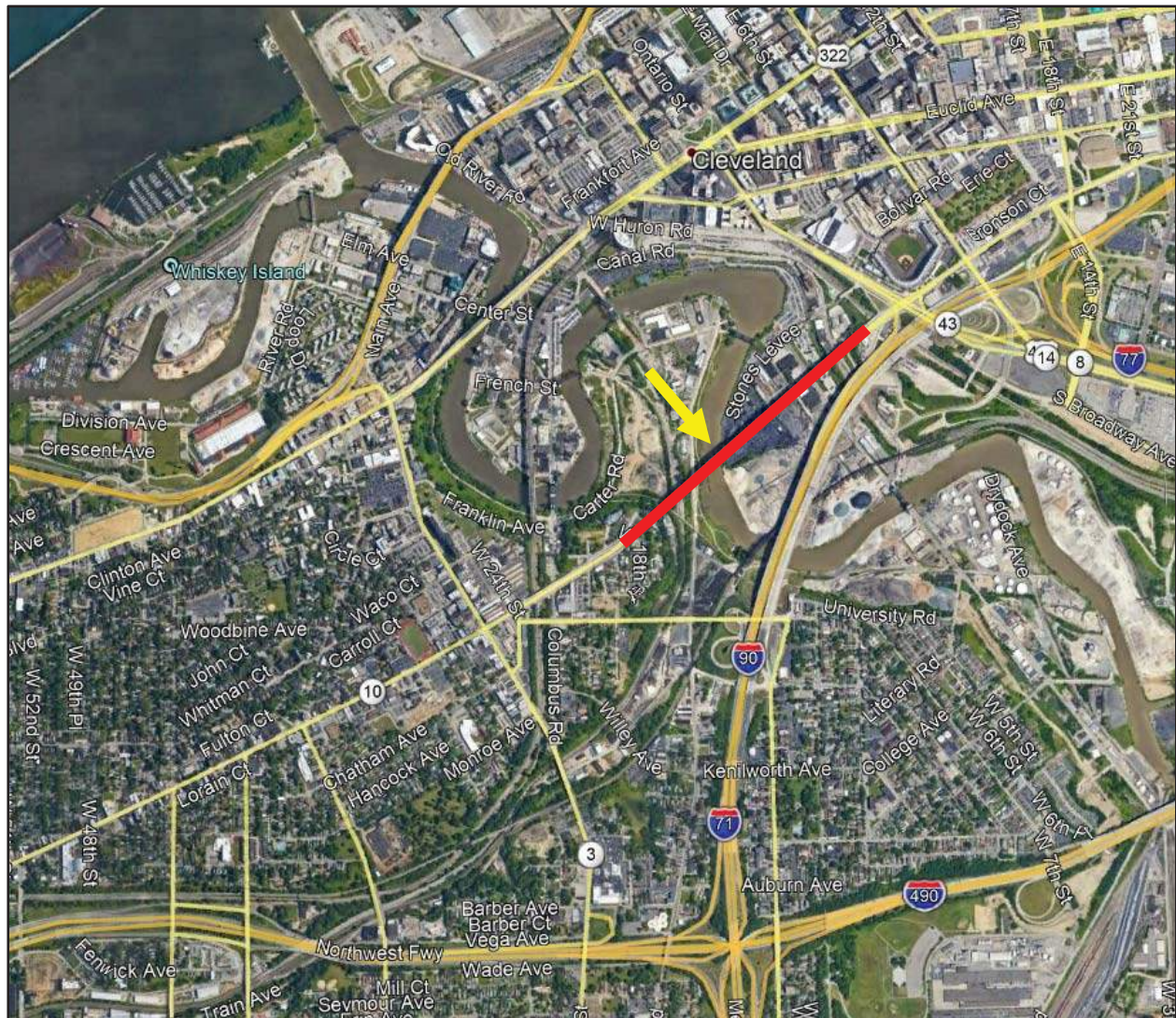


Figure 2: CUY-10-1613 in Cleveland over the Cuyahoga River

Description: The bridge is approximately 3,515 feet long, which includes 230 feet of subway tunnel on the east end leading up to Bridge No. CUY-10-1685. The bridge is comprised of three sections referred to as Main Spans, West Approach and East Approach:

Main Spans: Thirteen (13) spans of four (4) lines of cantilever Pratt deck style trusses totaling 2,916'-1". Truss spans vary from 161'-2" to 299'-0". A maintenance deck is in place in the center bay, below the vehicular upper deck.

West Approach: Five (5) multi-beam spans bearing on concrete piers and steel bents. Total length of the approach spans total length 157'-8".

East Approach: Concrete cellular construction approximately 307'-0" long with one 131'-0" long span, consisting of three lines of Pratt deck trusses

Fracture critical members include select truss chords, diagonals, pins, gusset plates, and upper deck floorbeams (see *Figures 3 & 4*).

FCM Access: A combination of climbing techniques, aerial work platform, and ladder were used in previous inspections to achieve arms' length inspection. Alternate techniques to those described below may be employed at the discretion of the inspection team.

Climbing Techniques / Aerial Work Platform: The truss members, gusset plates, pins and floorbeams are mainly accessed utilizing climbing techniques. This work can be assisted with an aerial work platform operating from the ground below the bridge, in some of the east spans.

Ladder: The steel floorbeams in the west approach span are accessed with an aerial work platform or a 24' ladder, placed on the ground below.

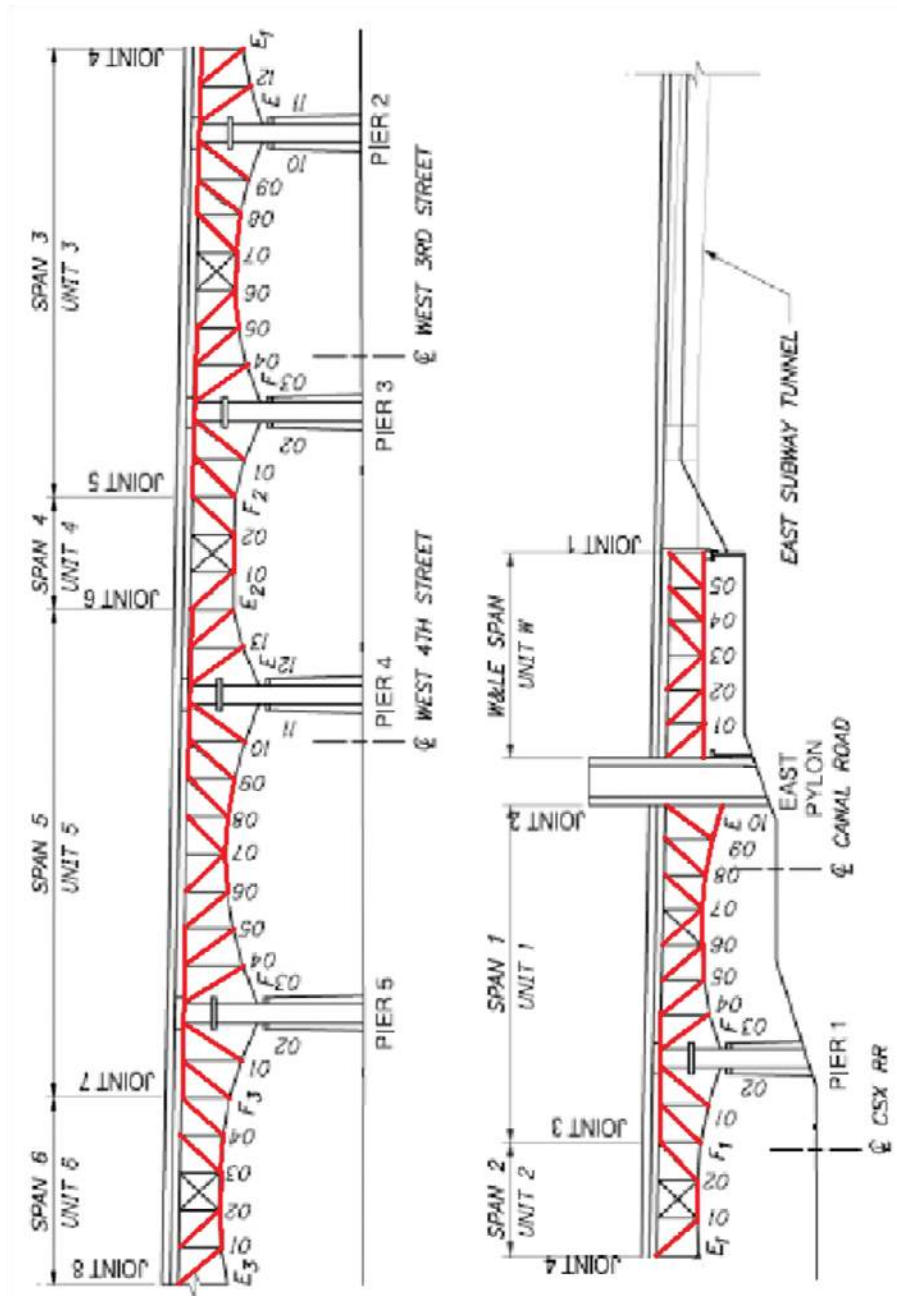


Figure 3b: Fracture Critical Member Locations (Highlighted Red)

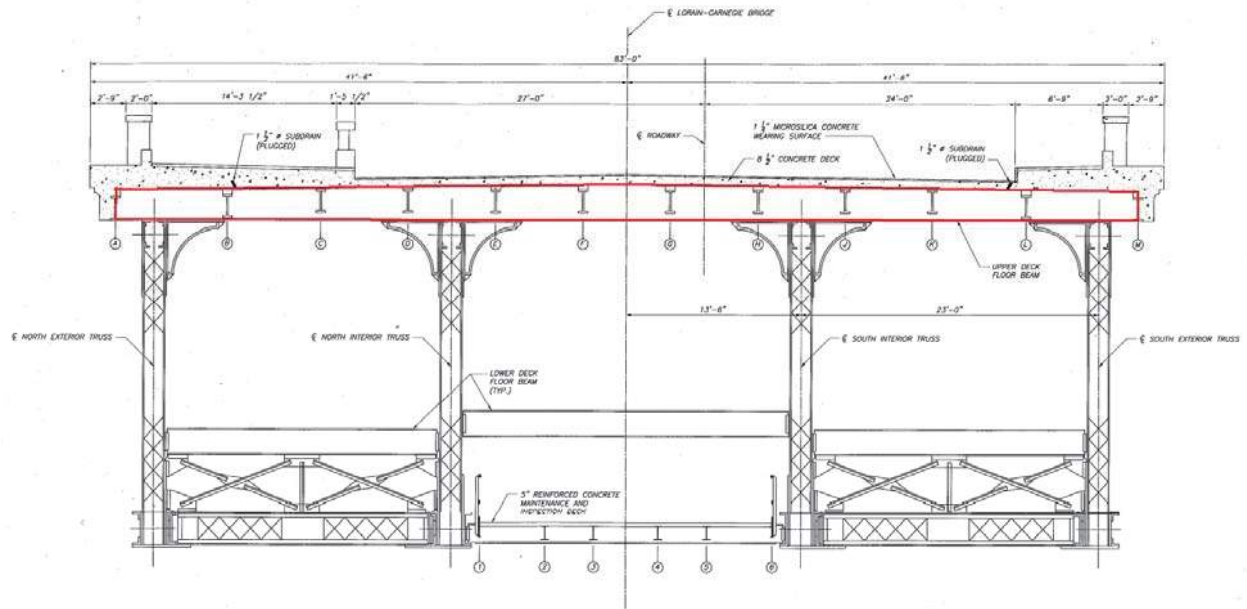


Figure 4: Fracture Critical Member Locations (Highlighted Red)

Known Structural Risk Factors & Fatigue Prone Details <i>Category reference: AASHTO LRFD Bridge Design Specs, 9th Ed. Table 6.6.1.2.3-1</i>			
Photo Reference	Label / Fatigue Category	Where?	Description
1	Abandoned Drainage Brackets, Fatigue Category E	Span 13 Truss Diagonals	Fillet welds connecting abandoned drainage brackets to truss diagonals (NI L6-U7, SI L6-U7, SE L6-U7)
2	Abandoned Utility Brackets, Fatigue Category E	South Exterior Truss Upper Chords	Fillet welds connecting abandoned utility brackets to truss upper chords (S5 U10-U11, S7 U4-U5, S9 U0-U1, S9 U12-U13, S11 U11-U12, S13 U6-U7). Crack present in vertical fillet weld at S9 U0-U1.
3	Cracks in Flange Angles	Lower Chords	Cracks in fillet of lower flange angles at gusset plates (S6 SI L1-L2, S12 NI L1-L2, S12 NI L2-L3, S12 NI L2-L4, S12 SI L0-L1, S12 SI L2-L3, S12 SI L3-L4, S12 SE L3-L4). Some locations have been arrested with drilled holes.
4	Cracks in Floorbeam Connections	Maintenance Deck Floorbeams	Cracks in floorbeam webs at connection to truss. Some locations have been arrested with drilled holes.

*Blank cells are for inspectors to add FPD's, retrofits or fatigue crack locations in future inspections

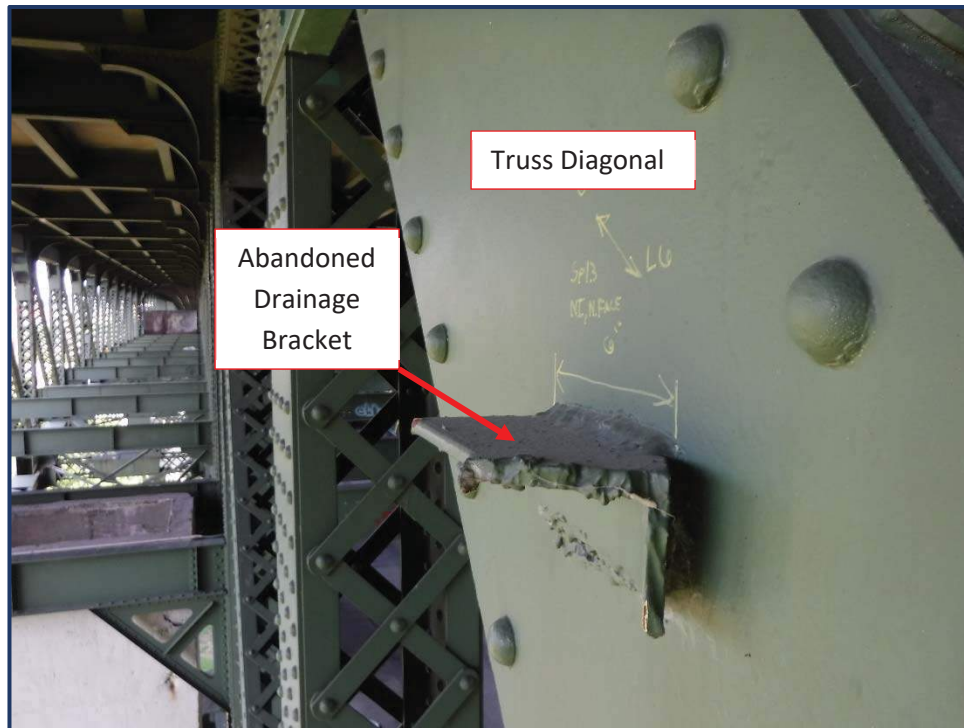


Photo 1 – Abandoned Drainage Bracket on Truss Diagonal

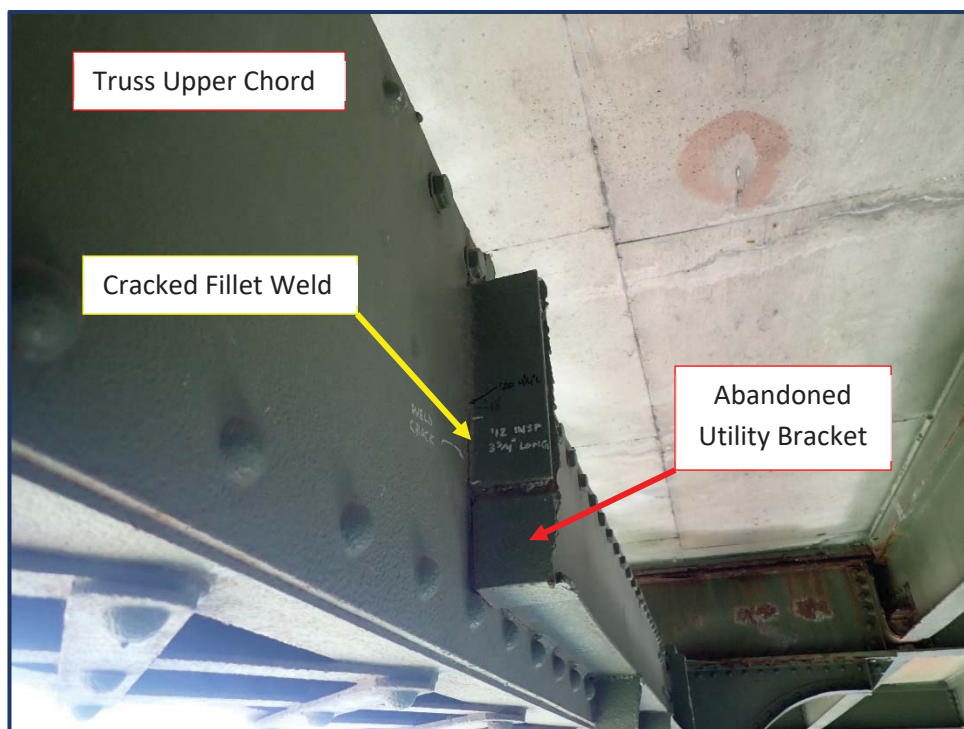


Photo 2 – Abandoned Utility Bracket on Truss Upper Chord

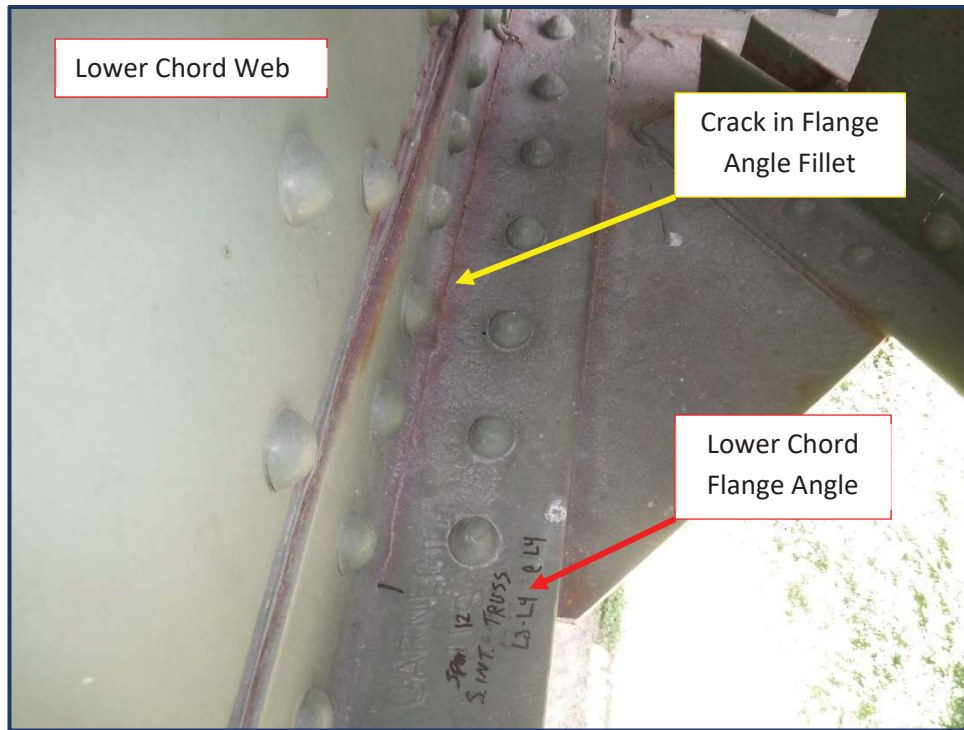


Photo 3 – Cracks in Fillet of Lower Chord Flange Angles

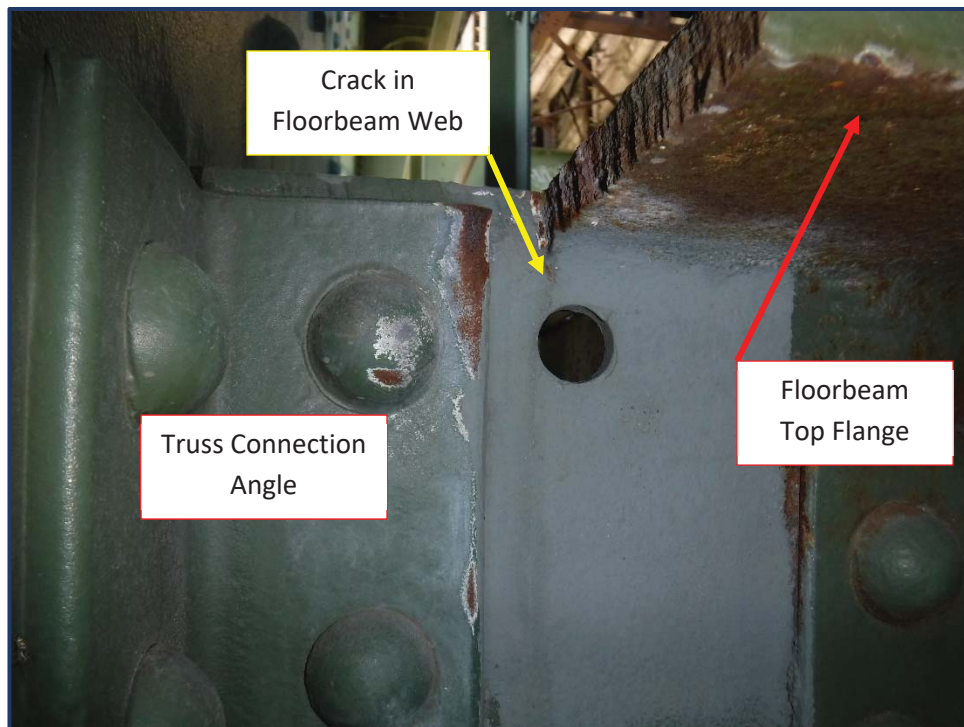


Photo 4 – Cracks in Maintenance Deck Floorbeam Web at Truss Connection