Physical Condition Report for

CUY-006-1456

SFN 1800930

Detroit-Superior (Veterans Memorial) Bridge over the Cuyahoga River

2022 Routine and Fracture Critical Inspection

Prepared for:

Ohio Department of Transportation

District 12

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1/18/23

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Inspection Dates and Procedure

NBI Inspection Completion Date: 10/31/22
NBI Fracture Critical Inspection Completion Date: 10/14/22

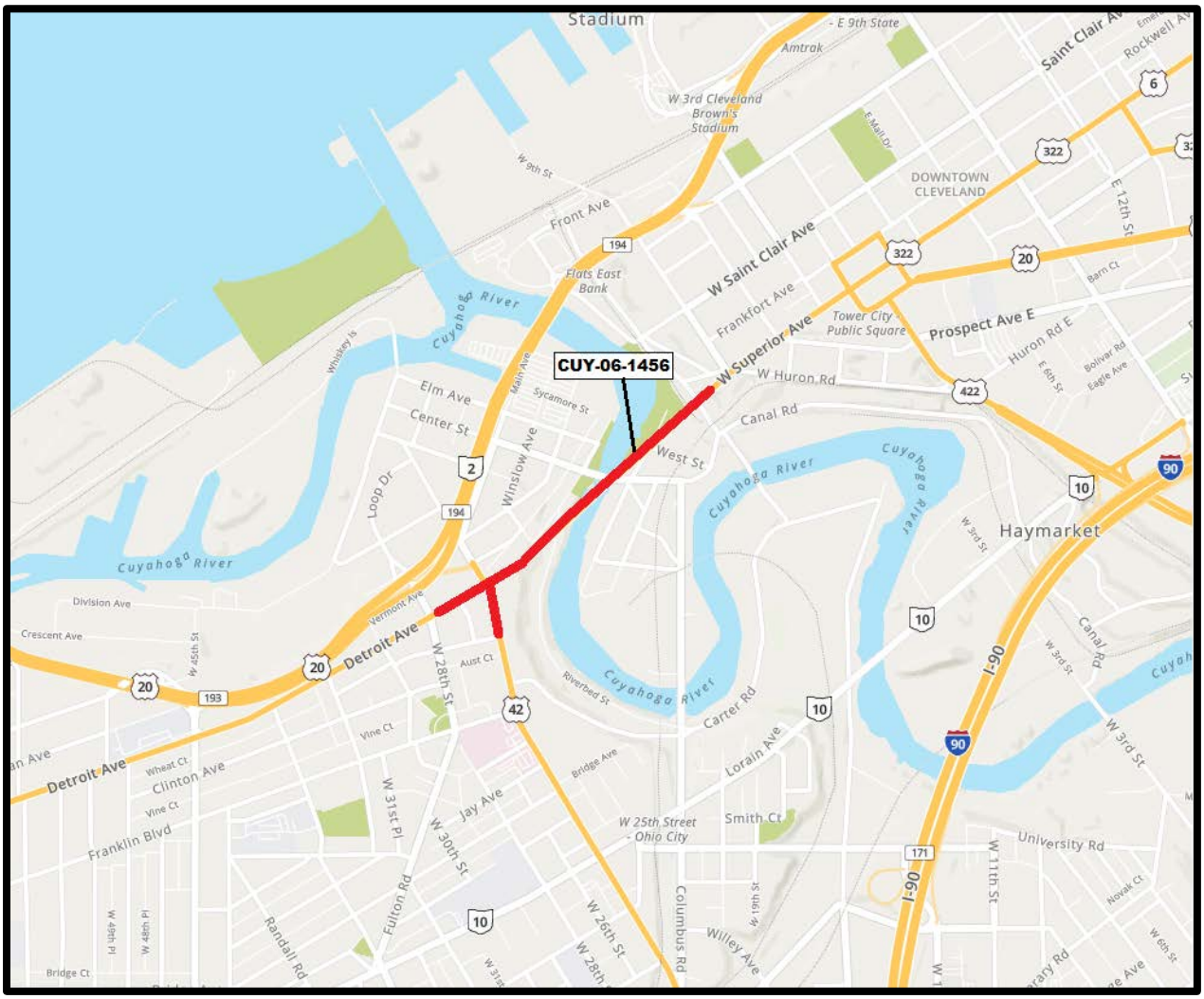
Palmer Engineering, with the assistance of Strinteg conducted a routine & fracture critical inspection on the structural elements of the bridge. The majority of the bridge elements were accessed using aerial work platforms. A 120-ft aerial work platform was used to access Spans 1-3 and 5-13 from the ground below. A 40-ft aerial work platform was used to access portions of Spans 1-13 from the maintenance (lower) deck. The Span 4 steel truss was accessed using industrial rope access techniques. The inspection crews documented previously reported and new areas of deterioration and structural distress.

The following personnel were involved in the bridge inspection:

- Justin Rufener, PE, Team Leader (Palmer)
- Matt Johnson, PE, Team Leader (Palmer)
- Adam Lenemier (Palmer)
- Don Cartwright, PE, Team Leader (Strinteg)
- Nick Fisco, PE, Team Leader (Strinteg)
- Andrew Mahall, EI, (Strinteg)

Active construction work on the Cuyahoga River limited access to portions of Spans 5 & 6 from below the bridge.

Location Map



Structure: CUY-06-1456
Detroit-Superior/Veterans Memorial over the Cuyahoga River
Cleveland, OH

General Bridge Description

The Veterans Memorial/Detroit-Superior Bridge (CUY-6-1456, SFN 1800930) carries three lanes of vehicular traffic and one lane of bike traffic over the Cuyahoga River Valley, local streets, and RTA railroad tracks. The bridge is approximately 2,880 feet long, including 1,673 feet of subway tunnel that is linked by the lower deck. The bridge was constructed from 1912 to 1917.

The upper deck was opened to vehicular traffic in November 1917 and currently carries three lanes of traffic. The lower deck was designed for four streetcar lines with room for an additional two lines. The rail lines were active from January 1918 to 1953. On January 18, 1974, the bridge was added to the National Register of Historic Places. On Veterans Day, November 11, 1989, the bridge was renamed the Veterans Memorial Bridge.

The bridge consists of three (3) units of varying structure types within each unit:

Unit I – West Approach
Unit II – Main Unit Spans
Unit III – East Station

Plan views of the Veterans Memorial/Detroit-Superior Bridge with the units identified are shown in *Figures 1 - 3*.

Unit I – West Approach

The West Approach section consists of the West Station area spanning a total of 350 feet west of Tower A and two abandoned subway tunnels: the Detroit Avenue Tunnel (660 feet long) and the West 25th Street Tunnel (480 feet long). There are several utilities that pass through the west station and tunnels.

Unit II – Main Unit Spans

The Main Unit is composed of Spans 1A, 1B, and Spans 1 through 13. Spans 1A and 1B are transition structures from the underground West Station to the main spans. These two concrete cellular spans total 220 feet long and have an enclosed cellular construction below the lower deck referred to as the chambers. Spans 1 through 13 are the main spans of the bridge with a double deck design. Spans 1 through 3, 5 through 11, and 13 are concrete open spandrel arches. Span 12 is a concrete encased steel half through arch. Span 4 is a 591-foot long, three-hinged steel half through arch truss in a Pratt configuration. The upper deck is used for vehicular and pedestrian traffic and the lower deck is used for utilities and maintenance access.

Unit III – East Station

The East Station is a concrete cellular span that extends 165 feet past the East Abutment. A three-panel long, cellular construction is present under the East Station lower deck immediately behind the East Abutment.

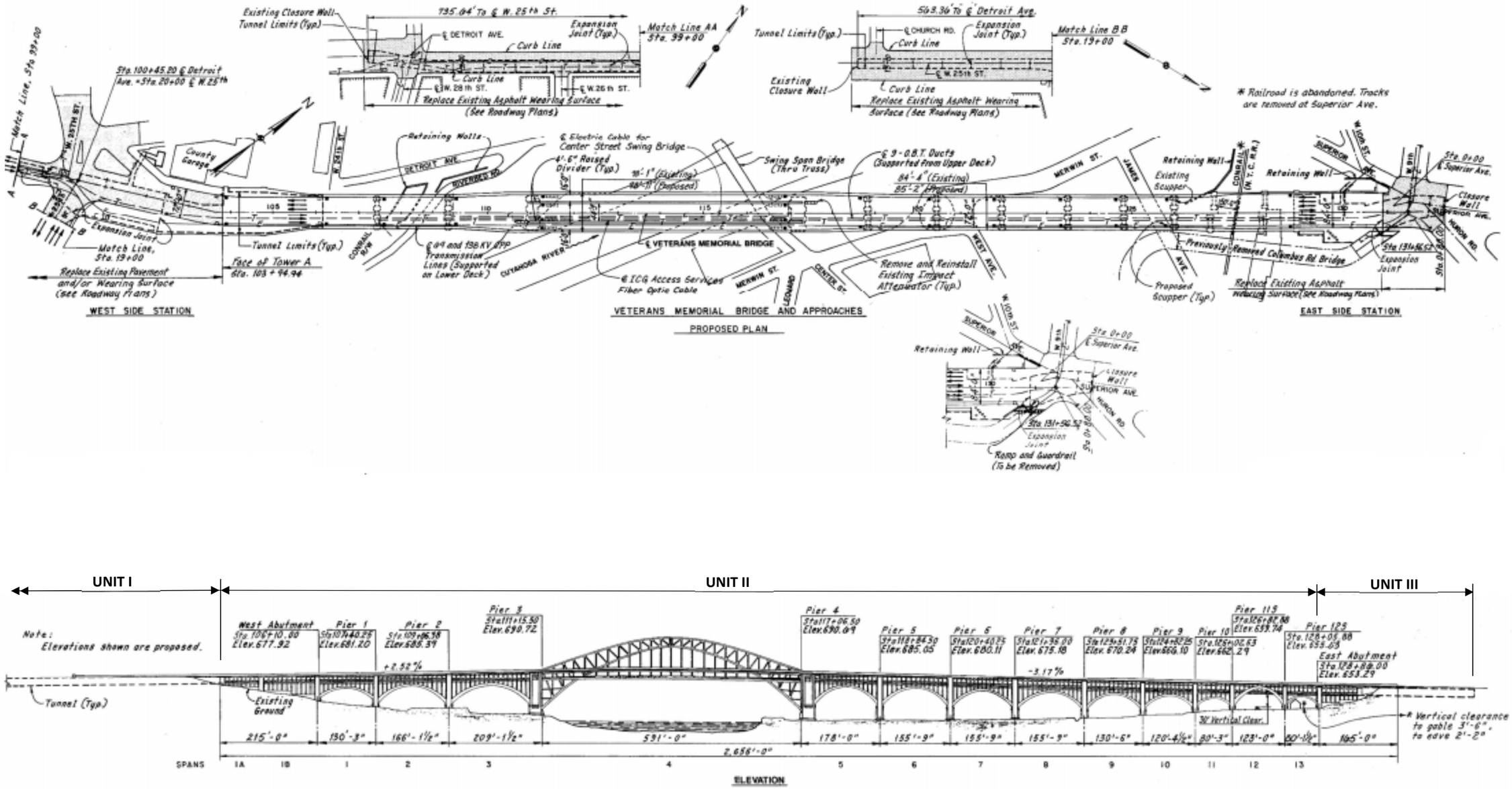
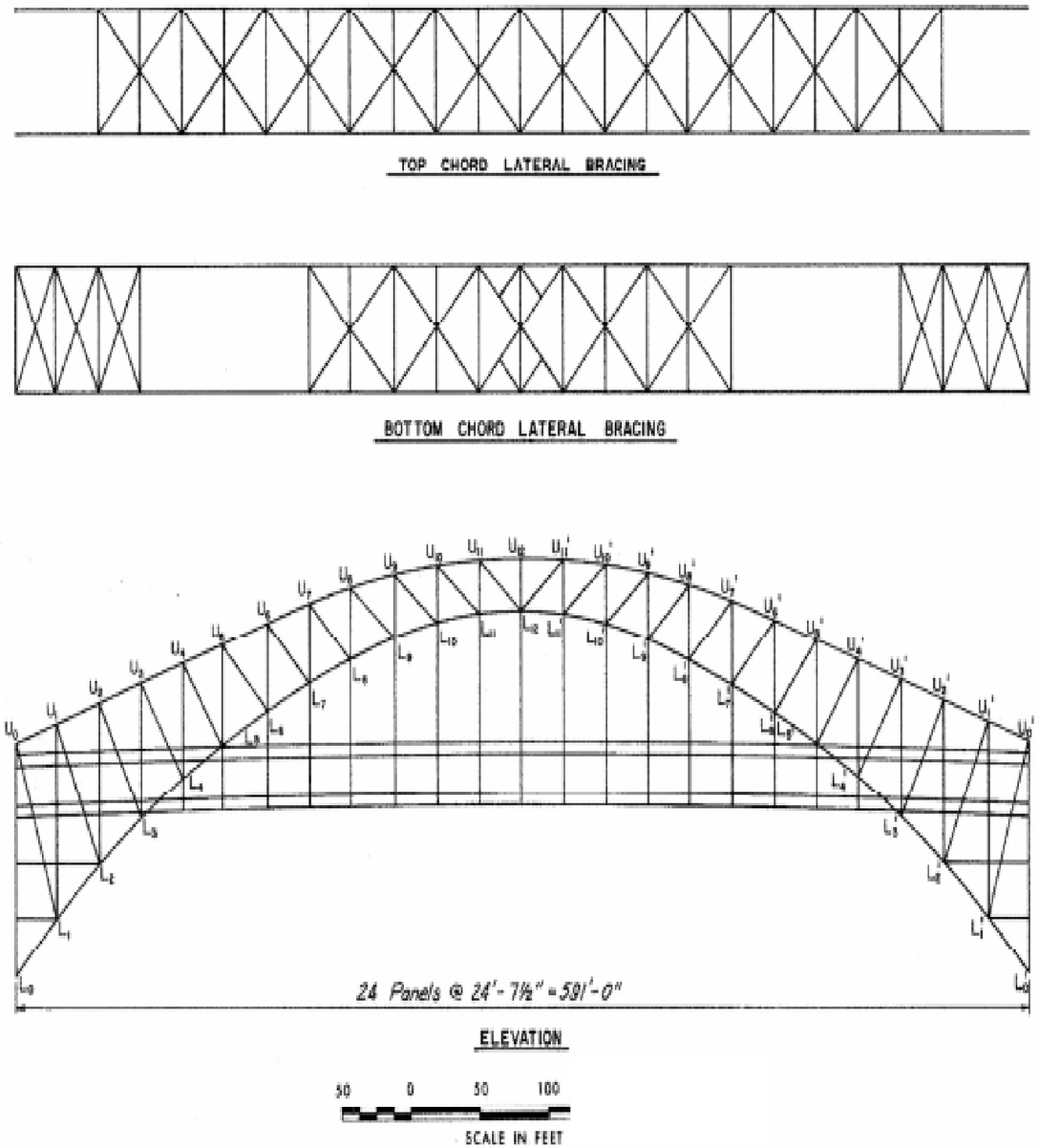


FIGURE 1: PLAN AND ELEVATION VIEW



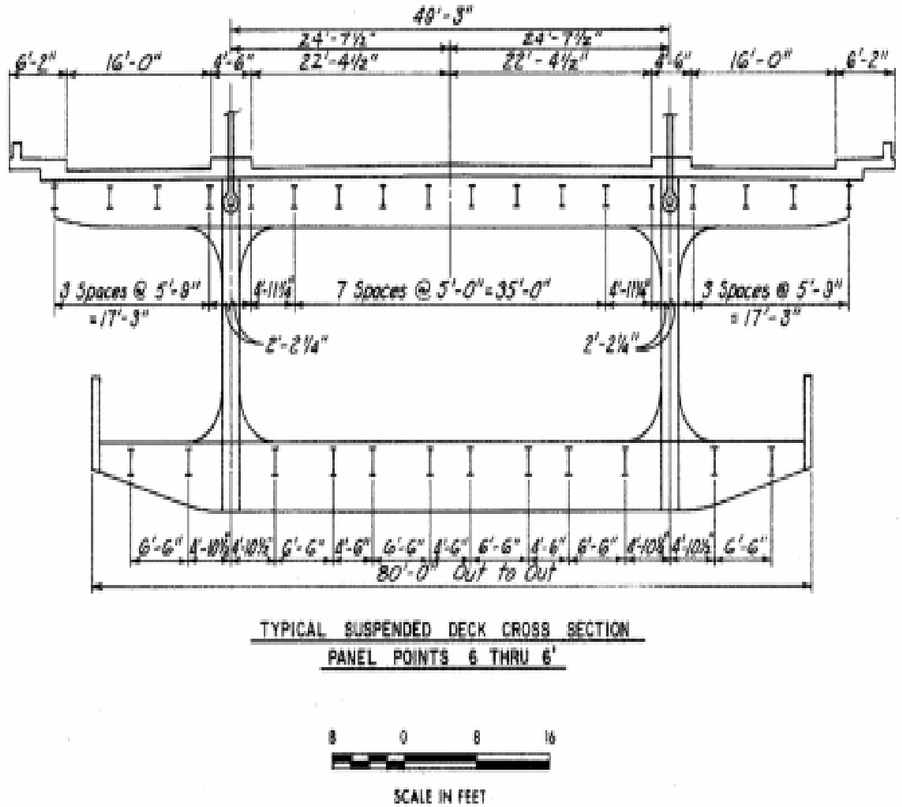


FIGURE 2: SPAN 4 NOMENCLATURE

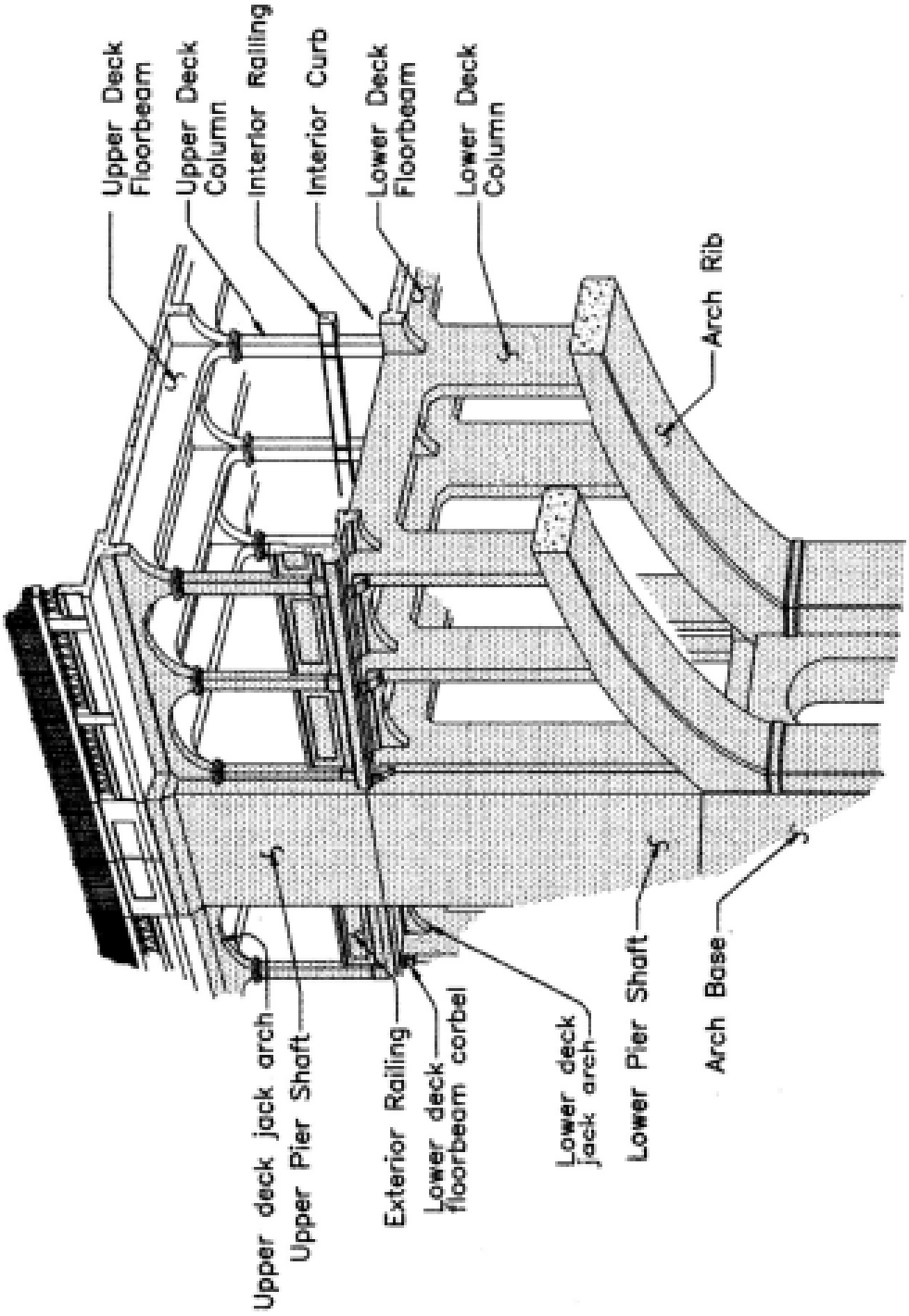


Figure 3: Upper and Lower Deck Nomenclature, Concrete Arch Spans

Structure Typical Photos

West End of Bridge, Looking East

East End of Bridge, Looking West

Main Truss Span (Span 4), Looking Southwest

South Elevation of Bridge, Looking Northeast

North Elevation of Bridge, Looking Southwest

View of Span 4 Maintenance Deck, Looking West

Construction and Maintenance History

The following is a summary of significant events in the history of the Detroit-Superior bridge:

- 1914-1917: Construction of the Detroit-Superior High Line Bridge
- November 1917: Bridge opened up to vehicular and pedestrian traffic.
- January 1918: Bridge opened up to streetcar traffic.
- 1953: Streetcar lines abandoned.
- 1967-70 Major Rehabilitation
    - Removal of the original upper deck consisting of four vehicular lanes and two 15-foot wide sidewalks.
    - Strengthening or replacement of all upper deck concrete floorbeams.
    - Span 4: Erection of new steel floorbeam cantilevers.
    - Construction of the new upper deck with six vehicular lanes and two 5-foot wide sidewalks.
- January 18, 1974: Bridge was added to the National Register of Historic Places
- November 11, 1989: Bridge was renamed the Veterans Memorial Bridge.
- 1995-97 Major Rehabilitation
    - Replacement of the upper and lower deck floors.
    - Replacement of select upper and lower concrete floorbeams, columns, jack arches and pier shafts.
    - Application of epoxy-urethane or non-epoxy sealer to most exposed concrete surfaces.
    - Span 4: Replacement of all steel hangers, Panel Points 6 through 6'.
    - Span 4: Replacement of upper deck and lower deck Floorbeams 5 through 5' and the corresponding stringers.
    - Painting of all steel superstructure components.
    - Installation of new drainage system.
    - Installation of architectural lighting.
- 2003 North Sidewalk Linear Park Conversion.
    - Conversion of vehicular traffic to two westbound and one eastbound lane between the steel trusses and one eastbound lane on the Span 4 south cantilever.
    - Widening of the north sidewalk with longitudinal trench drainage.
    - Installation of public art and benches along the modified north sidewalk.
- 2014-2018
    - Span 1A through Span 13: Patching deficient upper deck wearing surface areas.
    - Patch deficient concrete super and substructure components in West Station, Detroit Avenue Tunnel, West 25th Street Tunnel and Spans 1-3 and 5-13. (Note: In Spans 1-3 and 5-13, the patching below the lower deck was later restricted to areas adjacent to and over public areas.)
    - Span 4: Zone painting of primary and secondary truss members between upper and lower decks.

  - Installed hanger caps at hanger opening in upper deck, Panel Points 6 through 6'.
  - Repaired spalled wearing surface in Span 9.
  - Drain pipe cleanout for pedestrian tunnels in the west and east station. (This task was performed but not successful.)
  - South vehicular eastbound lane converted into bike lane.
- 2019 – 2021
  - Replacement of wearing surface with new micro silica modified concrete overlay.
  - Concrete patching and crack sealing in concrete arch spans and approach tunnels.
  - Fiber wrapping in select locations in concrete arch spans over public areas.

Condition and Element Rating Guidelines

The table below contains the bridge inspection rating matrix established by the Federal Highway Administration (FHWA), and employed by ODOT, using a 0-Failed through 9-Excellent scale. The General Appraisal, Deck, Wearing Surface, Expansion Joint, Superstructure, Protective Coating System, Substructure, Channel and Scour rating will follow these 0 through 9 rating guidelines.

Summary Items (NBIS)	Condition	Defect
9	Excellent	Excellent condition.
8	Very Good	No problems noted.
7	Good	Some minor problems.
6	Satisfactory	Structural elements show minor deterioration.
5	Fair	All primary structural elements are sound but may have minor section loss, crackling, spalling or scour.
4	Poor	Advanced section loss, deterioration, spalling or scour.
3	Serious	Loss of section, deterioration, spalling or scour has seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements, Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure report. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	"Imminent Failure"	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may be put it back in light service.
0	Failed	Out of service – beyond corrective action.

Manual of Bridge Inspection, Ohio Department of Transportation (ODOT), 2014 (with 2017 & 2021 Addendums)
Bridge Inspector's Reference Manual, Federal Highway Administration (FHWA), 2015
Manual for Bridge Element Inspection, 2nd Edition, AASHTO, 2019
National Bridge Inspection Standards, U.S. Department of Transportation, 2004
Inspection of Fracture Critical Bridge Members, U.S. Department of Transportation, 1986

Inspection Findings

Inspection findings are presented below. Findings shown in RED text indicate new findings during the 2022 inspection.

NBI Item N58 – Deck (6, Satisfactory Condition)

The deck is in overall ***Satisfactory*** condition. There are two NBI sub-items under the deck condition:

NBI Item N58.01 – Wearing Surface (8, Very Good Condition)
NBI Item N58.02 – Expansion Joints (6, Satisfactory Condition)

The deck findings and summary of deck conditions for individual deck elements are as follows:

Element 12 – Reinforced Concrete Deck
The reinforced concrete deck is in **Satisfactory** condition. The deck is divided into several sections as detailed below:

Detroit Avenue Tunnel: During the 1995-1997 rehabilitation, a new reinforced concrete slab was placed on top of the original slab. The new slab was designed to support live and dead loads, with the original slab offering no structural support. The top and bottom surfaces for the new slab are not visible and assumed to be in good condition, despite the poor and critical conditions of the original tunnel slab beneath (*Photo 12-1*).

West 25th Street Tunnel: The West 25th Street tunnel ceiling is in satisfactory condition, with areas of saturation, isolated delaminated areas and shallow spalling with exposed reinforcing

West Station: The West Station ceiling is in fair condition and has areas of spalling, cracking and efflorescence, active water infiltration, and exposed reinforcing steel (*Photo 12-2*).

Spans 1A, 1B, and 1 through 13: The upper deck floor in the main spans is in satisfactory condition. There are isolated cracks with some efflorescence, sound and unsound patches, and spalls, some with exposed reinforcing (*Photo 12-3*). There are numerous areas of moisture staining, typically near deck drain locations, some of which have mottling, efflorescence and rust staining (*Photo 12-4*).

East Station: The East Station ceiling is overall in good condition with scattered cracking with efflorescence.

Lower Deck: The lower deck floor is not open to vehicular or pedestrian traffic and is therefore not included as part of the element quantities. The lower deck floor is in good

condition and consists of reinforced concrete with metal stay-in-place forms in Spans 1 through 3, and Spans 5 through 13. In isolated locations, the stay-in-place forms have active corrosion. In Span 4, the lower deck is an open steel grid type in middle section, and fiberglass grid in the exterior sections.

Refer to *Open Spandrel Arch Drawings* in *Appendix C* for specific deficiencies and locations.

	Total Quantity	CS 1	CS 2	CS 3	CS 4
Detroit Ave. Tunnel	17,950 SF	17,950 SF			
West 25th St Tunnel	13,750 SF	12,150 SF	1,000 SF	600 SF	
West Station	37,800 SF	21,800 SF	12,000 SF	4,000 SF	
Spans 1A, 1B, 1-13	232,250 SF	220,438 SF	11,612 SF	200 SF	
East Station	31,150 SF	30,838 SF	312 SF		
Total Structure	332,900 SF	303,176 SF	24,924 SF	4,800 SF	

Element 300 – Strip Seal Expansion Joint

The expansion joints are overall in **Satisfactory** condition. Joints typically have sections with loose debris (*Photo 300-1*). On the sidewalks, there are locations of edge spalls along the joint armor (*Photo 300-2*). There are some scattered areas of active leakage and minor damage to joint armor. At several joints there are areas of tearing seals or seals pulling out of retainers (*Photos 300-1 and 300-3*). At Joint 1A, there is are two sections of broken intermittent fillet welds in the joint armor in the eastbound lanes (*Photo 300-4*). Refer to Table 1 for joint measurements and Table 2 in *Appendix B* for specific deficiencies.

Total Quantity	CS 1	CS 2	CS 3	CS 4
2,579 LF	1,479 LF	1,000 LF	100 LF	

Element 330 – Metal Bridge Railing

The median railings are in **Good** condition. The median railings are located along the edges of the roadway in Span 4 to protect the truss and hangers from vehicle impact.

Total Quantity	CS 1	CS 2	CS 3	CS 4
1,366 LF	1,366 LF			

Element 331 – Reinforced Concrete Bridge Railing
The concrete railings are in **Good** condition. The railings on the north and south side of the bridge consist of a reinforced concrete railing with an aluminum fence on top. All concrete railing is in good condition with minor cracking, staining, and isolated spalling at the joints (*Photo 331-1*). The metal fence has isolated areas of minor damage (*Photo 331-2*). Refer to Table 2 in *Appendix B* for specific deficiencies.

Total Quantity	CS 1	CS 2	CS 3	CS 4
5,312 LF	5,158 LF	150 LF	4 LF	

Element 510 – Wearing Surface
The wearing surface is in **Very Good** condition. In Spans 1A – 13 and the East Station, the wearing surface is a micro silica modified concrete, which was placed in 2019. There are locations of map cracking in the concrete wearing surface (*Photo 510-1*), and one area of concrete patching that is beginning to break apart (*Photo 510-2).* Above the Detroit Avenue Tunnel, West 25th Street Tunnel and West Station, the wearing surface is asphalt. This asphalt has areas of transverse and map cracking (*Photo 510-3*).

	Total Quantity	CS 1	CS 2	CS 3	CS 4
Concrete	177,255 SF	168,355 SF	8,900 SF		
Asphalt	69,500 SF	66,025 SF	3,475 SF		
Total Structure	246,755 SF	234,380 SF	12,375 SF		

Element 815 – Drainage
The deck drainage is in **Fair** condition. The West Abutment south downspout is completely clogged at the base of the catch basin. The Pier 1 downspout is completely clogged at the base of the catch basin and is disconnecting at a coupler above the catch basin (*Photo 815-1*). At Pier 3, the south downspout is disconnected at the base of the pier, allowing drainage on the pier face (*Photo 815-2*). At Piers 5, 6, 7 and 9, some of the catch basins and covers show signs of movement or damage. The north sidewalk longitudinal trench drains are filled with debris and active vegetation growth, and are not functioning (*Photo 815-3*). Some of the scupper inlets are fully or partially clogged (*Photo*

815-4). At Pier 5 on the North Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck, allowing roadway drainage onto the maintenance deck. Refer to Table 2 in *Appendix B*, and Refer to *Table 7* in *Appendix B* and *Substructure Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
28 EA	18 EA	6 EA	2 EA	2 EA

Curb/Sidewalk
The concrete curb and sidewalk are in **Satisfactory** condition. The curbs and sidewalks have areas of cracking, delamination, and spalling (*Photos CS-1 to CS-2*). The steel curb plates have widespread surface corrosion. Refer to Table 2 in *Appendix B* for specific deficiencies.

NBI Item N59 – Superstructure (5, Fair Condition)

The superstructure is in ***Fair*** condition. There is an NBI sub-item under the substructure condition:

NBI Item N59.01 – Protective Coating System (6, Satisfactory Condition)

The protective coating system is in ***Satisfactory*** condition.

The superstructure findings and summaries of conditions for individual items are as follows:

<u>Concrete Superstructure</u>

Element 110 - Reinforced Concrete Beam
The beams are in overall **Fair** condition. This element consists of the longitudinal beams in the Detroit Avenue Tunnel, West 25th Street Tunnel, and West Station. The concrete beams have delaminations, efflorescence, and some areas of spalling with exposed reinforcing (*Photo 110-1*). Refer to Table 7 in *Appendix B* for specific deficiencies.

Total Quantity	CS 1	CS 2	CS 3	CS 4
7,394 LF	6,094 LF	1,100 LF	200 LF	

Element 144 – Reinforced Concrete Arch

The concrete arches are in **Fair** condition. This element encompasses the concrete arches and arch columns (*Photo 144-1*). The concrete arches in Spans 5 through 10, Span 13 and portions of Span 3 were patched, crack injected and then wrapped on the underside with FRP to prevent future spalling (*Photo 144-2*). Select columns were also patched. The concrete arches and columns that were not repaired typically have areas of cracking, delamination, poor patching and spalling with and without exposed reinforcing (*Photos 144-3 to 144-6*). The concrete jack arches connecting the columns below the upper and maintenance decks have spalls with exposed reinforcing steel, cracks, and delaminated areas (*Photo 144-7*).

Refer to *Open Spandrel Arch Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
8,040 LF	6,7400 LF	1,200 LF	100 LF	

Element 155 – Reinforced Concrete Floor Beam

The concrete floorbeams in Spans 1A, 1B, 1 through 3, and Spans 5 through 13 are in **Satisfactory** condition. The floorbeams have isolated spalls with and without exposed reinforcing, cracking, delaminations, and areas of poor patching (*Photos 155-1 to 155-4*). The lower deck floorbeams tend to be in worse condition than the upper deck floorbeams, however they do not support traffic loading. The structural corbels are included in the rating of this element and exhibit similar defects as the rest of the floorbeams. The lower deck floorbeams in the East Station have the bottom mat of reinforcing steel exposed and numerous shear stirrups have complete section loss (*Photo 155-5*). This deterioration has changed little since the 1980s, but they carry no substantial live load. As part of the most recent rehabilitation, the undersides of lower deck floorbeams in Spans 5 through 10, 13 and portions of Span 3 were fiber wrapped after patching, to prevent future spalling (*Photo 155-6*).

Refer to the *Floor System Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
33,543 LF	27,543 LF	5,000 LF	1000 LF	

Steel Superstructure (Span 4)

The load bearing components (web plates and flange angles) of the primary truss members and gusset plates are composed of nickel steel, an early high strength steel also known for its corrosion resistant properties. The original hangers, also composed of nickel steel, were replaced with 50 ksi low carbon steel. All lacing member components of the primary truss members, upper and lower deck floorbeams, lateral and longitudinal bracing and sway bracing are composed of 30 ksi carbon steel.

Element 113 – Steel Stringer

The stringers are in **Satisfactory** condition. There are 18 lines of stringers in the upper deck and 12 in the lower deck. The upper deck stringers have shear studs welded to the top flange providing composite action with the deck. The upper and lower deck stringers in Panels 4, 5, 5', and 4' were replaced in 1995. The upper deck stringers have some areas of active corrosion and pitting at the ends. The original curb stringers of Lines E and N have areas of painted over pitting and some corrosion holes, with some active corrosion throughout their length (*Photo 113-1*). Stringer P, from panel point 4' to 2', has areas of active corrosion with advanced section loss of the bottom flange and lower portion of the web (*Photos 113-2 to 113-3*). These areas of deterioration were first noted during the 2012 inspection, and section loss has progressed at a slow rate since that time.

The lower deck is not open to vehicular or pedestrian traffic; the stringers are therefore not included as part of the element quantities. The stringers supporting the steel grid deck are in good condition. Stringers D, E, I and J, which support only their own dead load, have areas of painted over advanced section loss and perforations at the floorbeams and saddle bearings. Stringer K, which supports the south fiberglass pedestrian deck, has similar locations of advanced section loss (*Photo 113-4*). The rest of the stringers supporting the outer pedestrian fiberglass grid deck are in satisfactory condition.

Refer to Tables 3 & 4 in *Appendix B* and *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
10,638 LF	10,238 LF	250 LF	150 LF	

Element 120 – Steel Truss

The steel truss is overall in **Satisfactory** condition. There are areas of pack rust, pitting, surface corrosion, and rivet head loss, which are worse at and below the upper deck (*Photos 120-1 to 120-4*). Advanced section loss and perforations, many of which have been cleaned and painted over, are present in the batten plates and lacing bars (*Photos 120-5 to 120-6*). At the eyebar connections, there are areas of painted over and

reactivated pitting in the web plates (*Photo 120-7*). Refer to T*russ Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
1182 LF	490 LF	500 LF	192 LF	

Element 152 – Steel Floor Beam
The steel floorbeams are in **Satisfactory** condition. The floorbeams typically have painted over pitting and section loss near the deck openings at the truss lines and deck joints (*Photo 152-1*). In these areas, there are some web perforations, with repair plates welded in place at some of the perforation locations (*Photos 152-1 to 152-4*). Floorbeams 0 and 0' have widespread painted over and active corrosion holes in transverse stiffeners and bottom flange due to joint leakage (Photo 152-1). Active surface corrosion is present due to ongoing water infiltration at the deck openings.

The lower deck is not open to vehicular or pedestrian traffic; the floor beams are therefore not included as part of the element quantities. On lower deck Floorbeams 10, 12 and 11' through 6', there are cracks along the field weld of the stiffening repair plates to the top flange at the north truss lines (*Photo 152-5*). Some of the cracks have increased in length from the 2021 Inspection.

Refer to Tables 3 & 4 in *Appendix B* and *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
3,925 LF	3,475 LF	250 LF	200 LF	

Element 161 – Steel Pin & Hanger Assembly
The pins, hangers and hinges are in **Good** condition with no significant deficiencies noted. Minor painted over pitting was noted on some eye-bars below the upper deck (*Photo 161-1*). There is active corrosion on some of the hangers above the previous zonal painting. Refer to Tables 3 & 4 in *Appendix B* and *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
30 EA	27 EA	3 EA		

Element 162 – Steel Gusset Plates
The truss gusset plates are in **Fair** condition. The gusset plates typically have areas of active surface corrosion. The lower chord gusset plates below the upper deck typically have painted over pitting and reactivating corrosion along the top of the lower chord (*Photos 162-1 to 162-2*). In other some locations, the gusset plates have areas of pitting and rivet head loss. Refer to *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
100 EA	20 EA	47 EA	33 EA	

Lateral Bracing & Sway Bracing
The lateral bracing and sway bracing is in **Satisfactory** condition with isolated areas of active surface corrosion, pack rust, and advanced section loss including perforations (*Photo BR-1*). Refer to *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Element 313 – Fixed Bearing
The bearings are in **Fair** condition with some pack rust around the pins, and surface corrosion noted on the interior faces of all four bearing castings (*Photo 313-1*). The non-structural bearing pin cover plates have cracks up to 7 inches long at L0 and L0' on both trusses (*Photo 313-2*). The north pin cover at L0 on the north truss has broken off (*Photo 313-3*). There is advanced section loss of some of the anchor bolt and nuts (*Photo 313-4*).

Between the deck underside and the top of the transverse floorbeams over Piers 11 & 12, there are 3" H concrete pedestals with galvanized steel plates sitting on top and between each pedestal. In several locations, these plates are missing and no longer support the deck underside, or are have varying displacements from the bearing pedestal (*Photo 313-5*).

Refer to *Truss Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
4 EA		4 EA		

Item 515 – Steel Protective Coating
The protective coating system (PCS) is in **Satisfactory** condition. Areas of corrosion, peeling and failed paint are present on the main truss members below the lower deck (*Photo 515-1*). The structural steel between the upper and lower decks was repainted in 2014-2015 and is in good condition. The protective coating system above the upper deck has surface corrosion with minor rust staining.

Total Quantity	CS 1	CS 2	CS 3	CS 4
214,850 SF	190,340 SF	13,780 SF	10,130 SF	600 SF

Fatigue Prone Details
The fatigue prone details are in **Fair** condition. Stiffening retrofit plates welded to the top flange of the lower deck floorbeams at the truss lines are classified as Category E fatigue details. Cracks in the fillet welds are present at several locations. Refer to *Element 152 – Steel Floor Beam* above for additional details on crack locations and growth.

NBI Item N60 – Substructure (6, Satisfactory Condition)

The substructure is in overall **Satisfactory** condition.

The substructure findings and summary of conditions for individual items are as follows:

Element 205 – Reinforced Concrete Column
The pier columns are in **Satisfactory** condition. This item includes the main span pier columns, columns in Spans 1A and 1B, and the columns in the subway tunnels and stations. The main span pier columns have areas of map cracking, failing patching, and delaminations (*Photos 205-1 to 205-2*). There are also a few areas of minor spalling with exposed reinforcing. The decorative arches above these columns have areas of map cracking, failing patching, delamination and spalling with exposed reinforcing. The remaining columns have areas of failing patching, delamination, and spalling with and without exposed reinforcing (*Photos 205-3 to 205-4*).

The decorative towers on the north and south faces of the piers typically have widespread cracking, delamination and spalling with and without exposed reinforcing (*Photo 205-5*). The south towers at Piers 5 through 7 are leaning away from bridge, with gaps up to 2¼-in between the top of the tower and the outside face of the upper jack arches (*Photo 205-6*). Detailed measurements of the gaps between these towers and the adjacent bridge features are given *Table 5* in *Appendix B*. No change was noted between the current measurements and those taken during the 2021 inspection.

Refer to *Table 7* in *Appendix B* and *Substructure Drawings* in *Appendix C* for specific deficiencies and locations.

	Total Quantity	CS 1	CS 2	CS 3	CS 4
Main Span Piers	40 EA	25 EA	15 EA		
Spans 1A & 1B	108 EA	33 EA	20 EA	55 EA	
Tunnels & Stations	365 EA	300 EA	20 EA	45 EA	
Total Structure	513 EA	358 EA	55 EA	100 EA	

Element 210 – Reinforced Concrete Pier Wall

The pier walls at Piers 1, 3 and 4 are in **Satisfactory** condition. The west face of Pier 1 is primarily covered by fill. The exposed portions of the pier walls have areas of map cracking and delamination (*Photo 210-1*). Piers 3 and 4 are located adjacent to the Cuyahoga River. The portion of Pier 3 that is exposed to the channel has widespread areas of deep abrasion and numerous spalls (*Photo 210-2*). Piers 3 and 4 are cellular type structures, which are open on their Span 3 and 5 faces, respectively. The interiors faces of the walls have areas of delamination and spalling with exposed reinforcing (*Photo 210-3*). Refer to *Substructure Drawings* in *Appendix C* for specific deficiencies and locations.

Total Quantity	CS 1	CS 2	CS 3	CS 4
200 LF	100 LF	50 LF	50 LF	

Element 215 – Reinforced Concrete Abutment

The abutment walls are in **Satisfactory** condition. The abutment walls consist of the West and East Abutments and the walls of the West Station, East Station, Detroit Avenue Tunnel and West 25th Street Tunnel. The abutments have areas of cracking with minor moisture staining, delamination and some spalling (*Photo 215-1*). Some staining appears to be superficial due to leaking deck joints above. In the tunnels, the lower 1-ft to 2-ft of the walls have widespread shallow spalling with exposed reinforcing (*Photo 215-2*). The

portions of the walls in the tunnels above these areas were repaired as part of the most recent rehabilitation.

Total Quantity	CS 1	CS 2	CS 3	CS 4
3,459 LF	3,059 LF	200 LF	200 LF	

Element 830 – Abutment Backwall
The backwalls are in **Good** condition. The backwalls consist of the closure panels at the ends of the West 25th Street Tunnel, Detroit Avenue Tunnel, and East Station.

Total Quantity	CS 1	CS 2	CS 3	CS 4
263 LF	263 LF			

Wingwalls
The wingwalls are in **Poor** condition. The wingwalls along Spans 1A and 1B and the East and West Stations have cracking and spalling with exposed reinforcement throughout (*Photo WW-1*). Refer to *Substructure Drawings* in *Appendix C* for specific deficiencies and locations.

Tower B South
A section of the rear abutment, south wingwall at Tower B has through cracks in the wall and associated footing, and the tower and cracked section of the wall are leaning to the south (*Photo WW-2*). It has continued to show incremental movement over the past 10+ years. On the interior, the top of the tower is spalled and cracked due to contact with the soffit of the upper level sidewalk. Crack gages have been placed at several locations to monitor the movement of the section. Crack gauges located at the base of Tower B are cracked and slightly displaced. New gauges should be installed to ensure an accurate record of the tower rotation is maintained. Refer to Table 6 in *Appendix B* for detailed defect drawings and crack gage measurements.

West and East Abutment Chambers
The chambers below Spans 1A and 1B on the west approach and below the East Station were inspected, however, they are not included in any of the quantities within this report. Horizontal, vertical, diagonal and map cracking with efflorescence and moisture staining are present throughout all cells (*Photo AC-1*). Areas of delaminations and spalling with exposed reinforcing are present in scattered locations. The floors are typically covered in dirt and construction debris. In the west chamber, there is heavy cracking around south Tower B (see discussion above for more details), and a second area of significant

cracking at the north end of cells 2S through 6S. Crack gauges have been installed to track developments at both of these areas.

Water Infiltration
Standing water was noted in the pedestrian tunnel under the West Station. In the east abutment chamber, most of the lower cells are filled with standing water. The pedestrian tunnel under the East Station is also filled with standing water.

Slope Protection
The slope protection is in **Satisfactory** condition, with some areas of erosion and sliding material noted.

NBI Item N61 –Channel (6, Satisfactory Condition)

The Channel is in ***Good*** condition. There is an NBI sub-item under the Channel condition:

NBI Item N61.01.01 – Scour (7, Good Condition)

The bridge scour is in ***Good*** condition.

The channel findings and summary of conditions for individual items are as follows:

Alignment
The alignment is in **Good** condition. The channel is skewed with respect to the piers, but this is an as-built condition (*Photos CH-1 to CH-2*).

Protection
The channel protection is in **Satisfactory** condition with only minor deficiencies. The west bank is vegetated with some dumped rock channel protection. The east bank is protected by a sheet pile wall.

Hydraulic Openings
The hydraulic opening is in **Good** condition with no major constrictions associated with the bridge.

Navigation Lights
The navigation lights are in **Poor** condition. None of the upstream lights were functioning at the time of inspection. On the Downstream side, the center and west lights were not functioning. No damage was noted to the light fixtures.

Scour
The scour is in **Good** condition. An underwater bridge inspection was performed on July 8, 2020. No areas of exposed foundation or significant scour holes were found in the inspection.

Approaches

The approaches are in **Satisfactory** condition.

The approach findings and summary of conditions for individual items are as follows:

Approach Wearing Surface
The approach wearing surfaces are in **Satisfactory** condition. There are some areas of transverse and map cracking.

Embankment
The approach embankments are in **Fair** condition. The embankment under Spans 1 through 3 has several slope depressions (*Photo APR-1*). This embankment was primarily loose soil placed over demolition debris. Beneath this fill are two concrete struts between Pier 2 and 3 used to maintain stability during construction. The south strut is preventing portions of the fill from sliding into the Cuyahoga River. This embankment is being monitored with slope inclinometers maintained by ODOT District 12. The embankment on the south side of Spans 1, 1A and 1B were cleared and partially graded since the 2021 inspection.

The embankment along the south side of Spans 1A and 1B has significant erosion for the full length. At the west end of the erosion, there is a 15' diameter x 4' deep erosion ditch around a manhole (*Photo APR-2*). An erosion ditch extends from the manhole towards the east typically 3' W x 2' D. This erosion is relatively unchanged from the 2021 inspection. Tower B South, which is in this area, is leaning due to slope instability, as previously discussed.

Refer to *Substructure Drawings* in *Appendix C* for specific deficiencies and locations.

Guardrail
The approach guardrails are in **Good** condition with some minor impact scrapes in the concrete rail.

Security Items

There are locations where the structure and structure right-of-way can be accessed by non-bridge personnel. The fence which encloses the area under Span 1 and along the south sides of Spans 1A and 1B is accessible due to an unlocked gate on the southeast end of Pier 1, and two locations where holes have been cut into the fence on the south side of Spans 1A & 1B. Due to these openings, there are multiple homeless encampments within the fenced in area. Preventative access steel mesh installed outside Span 1A near Tower A to prevent access has failed. Security fencing installed around Piers 2 and 3 can easily be surpassed, and there is evidence of a homeless encampment inside of Pier 3.

A chain link enclosure for the Center Street Bridge operator's vehicle on the west side of Pier 4 allows vandals to climb the fencing cover to access the Span 4 truss. From here

the vandals have vandalized Pier 4 and have access to the truss lower chord and potentially the lower deck.

Signs & Utilities

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

Utilities
The utilities are in **Satisfactory** condition. The lower deck telephone junction chambers and supports are corroded due to roadway drainage infiltrating through the manhole above. At Pier 5 on the North Side, in Span 6 on the South Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck. A utility line mounted below the top deck in the south bay is sagging and making contact with the maintenance deck in several locations (*Photo UT-1*). There is a partially detached electric junction box cover on the south concrete rail in Span 1A (*Photo UT-2*).

Lighting
The lighting on the bridge is in **Fair** condition. Architectural light pole bases on the north sidewalk in Spans 4, 5, 8 and 11 have cracked and are broken (*Photo UT-3*). Three of the architectural lights on the north sidewalk, and numerous of the taller, cobra style roadway lights are not functioning. All the exterior pier shaft light brackets have paint failure and corrosion with minor section loss present (Photo UT-4). Many of the architectural lights attached to the lower deck fascia are not functioning, and several are visually broken (*Photo UT-5*).

Recommendations

The General Appraisal and Operating Status for the Veterans Memorial/Detroit Superior Bridge over the Cuyahoga River is in overall **5A, Fair** condition. The superstructure components are the governing element for this condition rating.

The following items are recommended by Palmer Engineering:

Immediate:

- Clean and paint areas of active corrosion on the steel truss.
- Clean and repair clogged and/or damaged drainage system components.
- Repair areas of deteriorated concrete at the arches.
- Repair and clean areas of the deteriorated substructure concrete.
- Determine a permanent repair to correct or stabilize the Tower B rotation.
- Replace the strip seal at the Pier 10 Joint.
- Reset or Replace strip seals at Pier 4 West, 6, and 8.
- Repair the broken welds on Joint 1A armor.
- Repair the navigation lights that are not functioning.
- Replace missing electric junction box cover on the south concrete rail in Span 1A.
- Repair the embankment in Spans 1A.
- Secure all access points to the structure, and remove the homeless encampments from Span 1 and Pier 3.

Routine:

- Monitor areas of concrete deterioration that could cause damage to vehicular and pedestrian traffic.
- Clean the expansion joints.
- Look into feasibility of draining the flooded areas of the east and west stations to gain access and perform a thorough inspection.
- Continue to monitor the rotation of the tower shafts.
- Repair non-functioning architectural lighting.

APPENDIX A – INSPECTION PHOTOS

DECK PHOTOS

Photo 12-1 – Detroit Ave Tunnel, Typical Spalling of Non-structural Deck

Photo 12-2 – West Station, Typical Scattered Deck Spalling with Saturation and Efflorescence

Photo 12-3 – Main Spans, Typical Scattered Deck Spalling with Exposed Reinforcing

Photo 12-4 – Main Spans, Deck Saturation with Mottling and Efflorescence

Photo 12-5 – View of Deck from Maintenance Deck, Span 4, Center Section

Photo 300-1 – Joint 8, Debris Impaction and Section of Seal Pulling out of Retainer

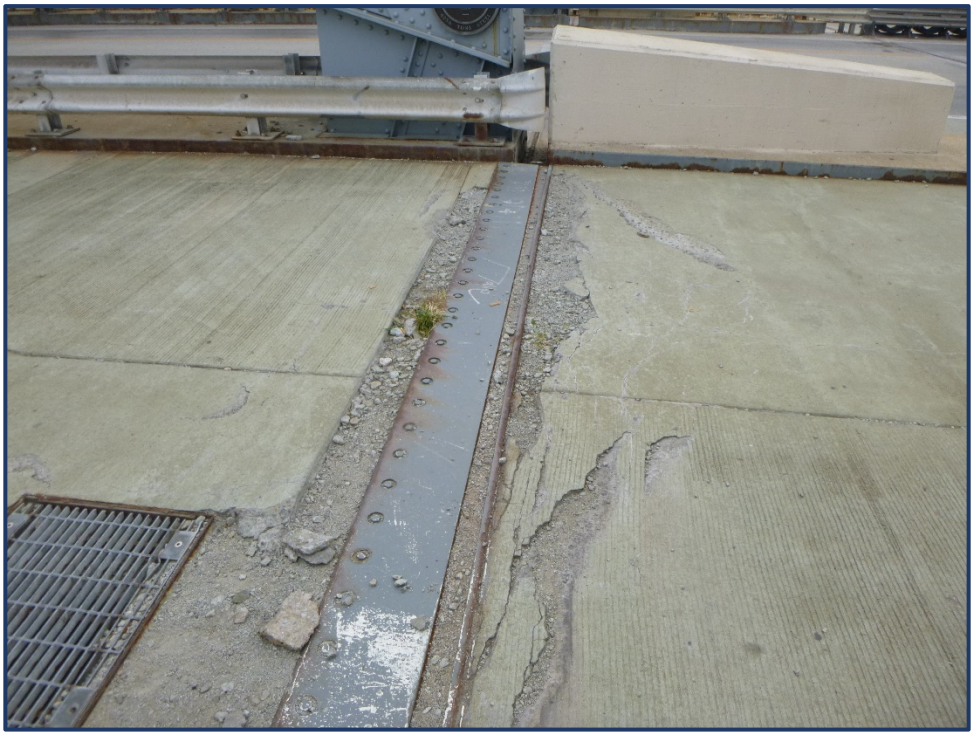


Photo 300-2 – Joint in Span 4 at PP5, Spalling and Cracking of Header at North Sidewalk Expansion Joint

Photo 300-3 – Pier 10 Joint, Section of Seal Tearing

Photo 300-4 Joint 1A, Section of Broken Intermittent Fillet Welds in Joint Armor

Photo 331-1 – South Rail, Typical Spalling at Deck Joints

Photo 331-2 – South Rail Fence, Area of Damage

Photo 510-1 – Map Cracking in Wearing Surface

Photo 510-2 – Area of Concrete Patching in Wearing Surface

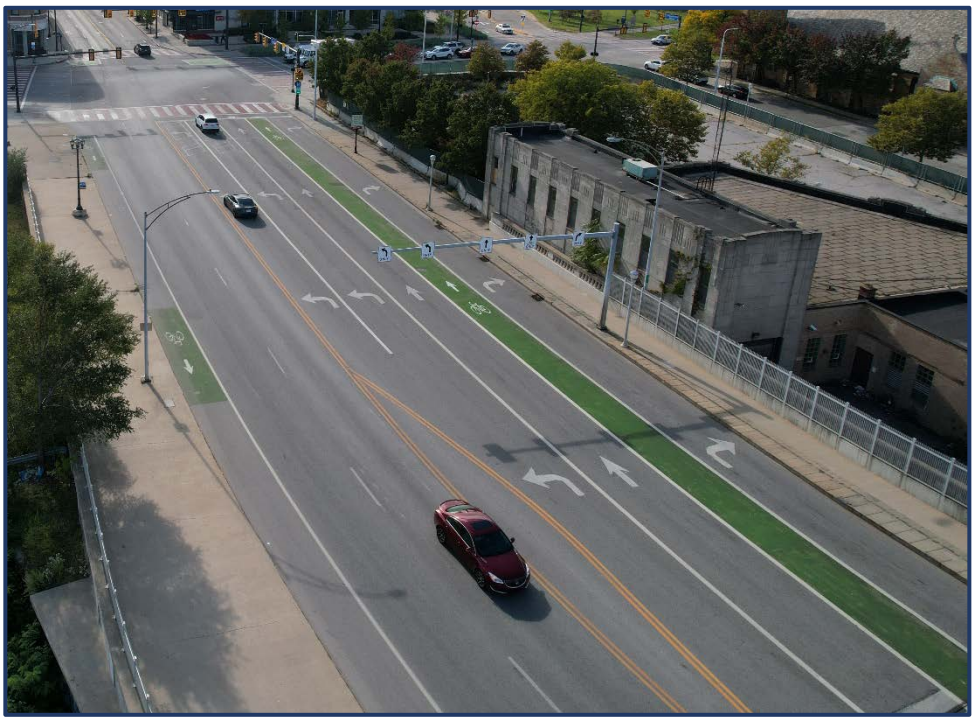


Photo 510-3 – West Station, Areas of Cracking in Wearing Surface

Photo 815-1 –Pier 1, East Face, South Downspout Fully Clogged at Catch Basin and Disconnected at Outlet Section

Photo 815-2 – Pier 3, South Downspout Disconnected at Outlet

Photo 815-3 – North Sidewalk Longitudinal Drain, Typical Clogging with Debris and Vegetation Growth

Photo 815-4 – Span 1, South Curb Scupper Inlet Fully Clogged with Debris

Photo CS-1 – South Sidewalk, Typical Edge Spalling

Photo CS-2 – Span 4 North Sidewalk, Spalling, Delamination and Cracking along Longitudinal Drain

SUPERSTRUCTURE PHOTOS

Photo 110-1 – West Station, Spalling of Concrete Beam

Photo 144-1 – Span 5 Reinforced Concrete Arches

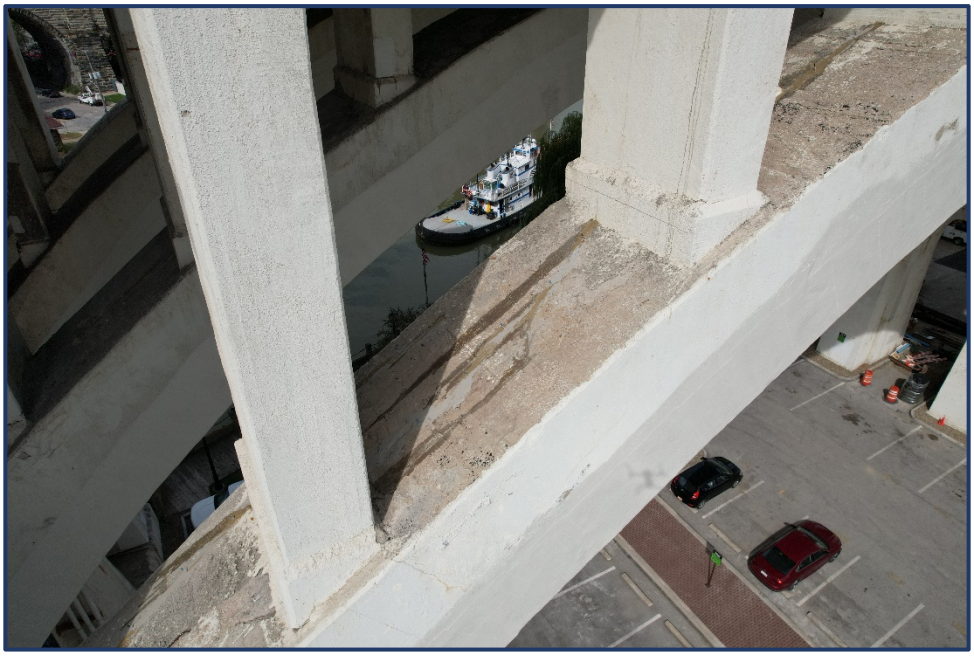


Photo 144-2 – Span 5, South Exterior Arch, Sealed Cracks on Top of Arch, with FRP on Underside

Photo 144-3 – Span 11, North Exterior Arch, Map Cracking and Delamination of Arch Rib

Photo 144-4 – Span 3, South Exterior Arch, Spall with Exposed Reinforcing

Photo 144-5 – Span 8, South Interior Arch, Spalling with Exposed Reinforcing of Arch Column

Photo 144-6 – Span 6, South Interior Arch, Spalling of Arch Column

Photo 144-7 – Span 12, North Exterior Arch, Spalling with Exposed Reinforcing of Jack Arch

Photo 155-1 – Span 2, Lower Deck Floorbeam, South Bay, Delamination and Spalling with Exposed Reinforcing

Photo 155-2 – Span 12, Widespread Cracking, Delamination and Spalling of Lower Deck Floorbeams

Photo 155-3 – Span 3, Upper Deck FB 3, Center Bay, Spalling and Delamination

Photo 155-4 – Span 3, Upper Deck FB 11, South Bay, Spalling and Delamination

Photo 155-5 – East Abutment Chamber Floorbeams, Typical Spalling with Deteriorated Reinforcing

Photo 155-6 – Span 13, FRP on Underside of Lower Deck Floorbeams

Photo 113-1 – Span 4, Upper Deck Stinger E, Bay 2-3, Painted over Section Loss and Hole in Bottom Flange at FB3

Photo 113-2 – Span 4, Upper Deck Stinger P, Bay 4'-3', Active Section Loss with Holes in Web and Bottom Flange

Photo 113-3 – Span 4, Upper Deck Stinger P, Bay 3'-2', Active Section Loss with Small Holes in Bottom Flange

Photo 113-4 – Span 4, Lower Deck Stringer K at FB3', Painted over Perforations

Photo 120-1 – Span 4, North Elevation of Truss

Photo 120-2 – Span 4, North Truss, U12-U11', Active Pack Rust between Web Plate and Flange Angles.

Photo 120-3 – Span 4, South Truss, U2''-L2', Active Corrosion extending down from Upper Deck

Photo 120-4 – Span 4, North Truss, L5-L6, Active Corrosion at Lateral Bracing

Photo 120-5 – Span 4, South Truss, L0-L1, Active Section Loss and Corrosion Hole in Lacing Bar

Photo 120-6 – Span 4, North Truss, U1-L2, Perforations in Batten Plate, with Reactivating Corrosion

Photo 120-7– Span 4, South Truss, L11, Reactivating Pitting around Hanger Pin

Photo 152-1 – Span 4, Upper FBs, Typical Painted over Pitting and Pack Rust at Deck Opening

Photo 152-2 – Span 4, Upper FB8', Corrosion Holes in Web, N. of Stringer E

Photo 152-3 – Span 4, Lower FB10 at South Truss, Reactivating Painted Over Section Loss in Top Flange and Stiffeners

Photo 152-4 – Span 4, Upper FB0, Painted over Pitting, and Perforations to Transverse Stiffeners

Photo 152-5 – Span 4, Lower FB9', North End, West Face, Crack in Top Flange Stiffener Retrofit

Photo 161-1 – Span 4, North Truss, Hanger Connection at Upper FB8', Painted over Pitting around Pin

Photo 162-1 – Span 4, North Truss, L1 Gusset Plates, Active Pitting along L1-L2

Photo 162-2 – Span 4, North Truss, L3 South Gusset Plate, Active Pitting & Pack Rust

Photo BR-1 – Active Corrosion and Pack Rust on Sway Bracing Members

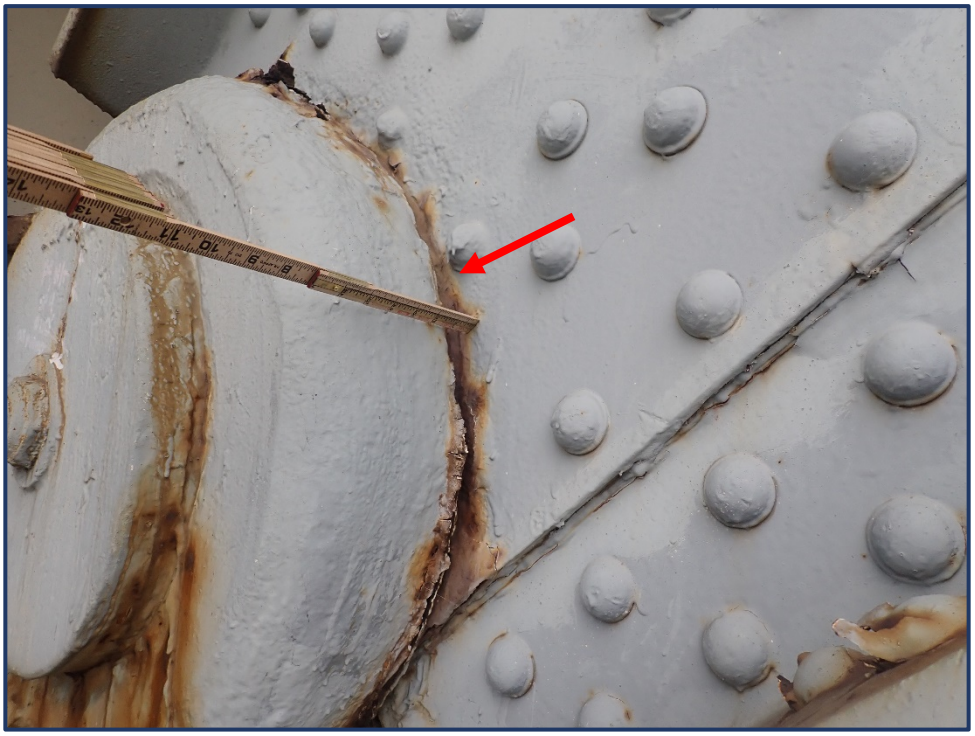


Photo 313-1 – Span 4, North Truss, L0' Bearing, Pack Rust Around Pin

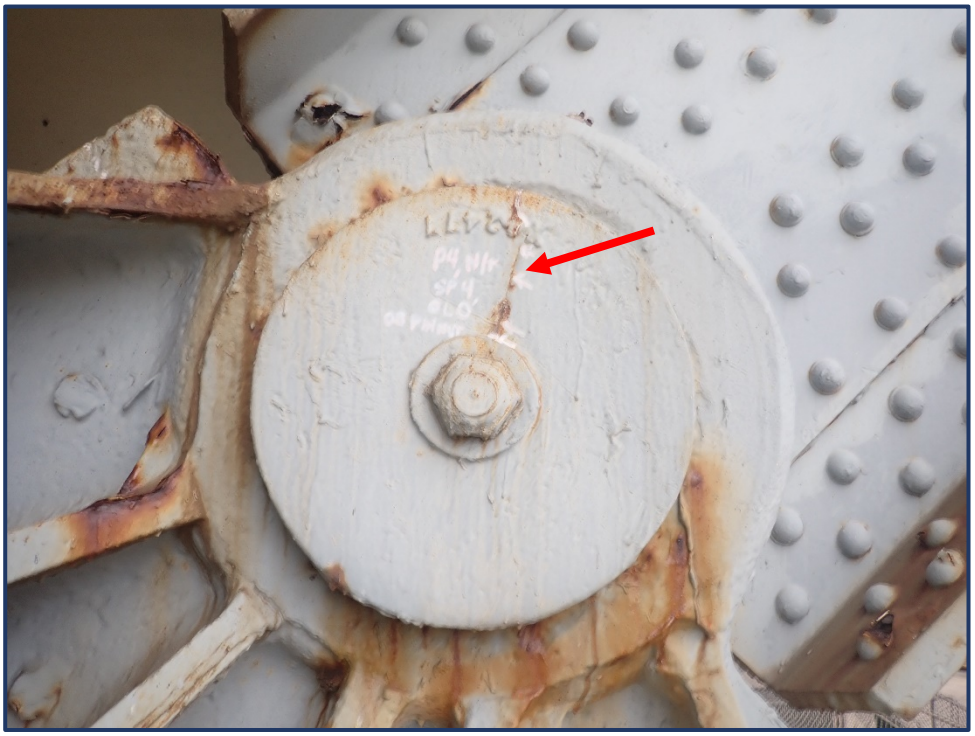


Photo 313-2 – Span 4, North Truss, L0' Bearing, Crack in North Pin Cover Plate

Photo 313-3 – Span 4, North Truss, L0 Bearing, Missing Pin Cover Plate

Photo 313-4 – Span 4, North Truss, L0' Bearing, Anchor Bolt & Nut Section Loss

Photo 313-5 – Pier 11, Slab/Floorbeam Bearing Plates between Ribs B & C, Shifting/Missing Bearing Plates

Photo 515-1 – Span 4, Peeling Paint and Surface Corrosion Below Upper Deck

SUBSTRUCTURE PHOTOS

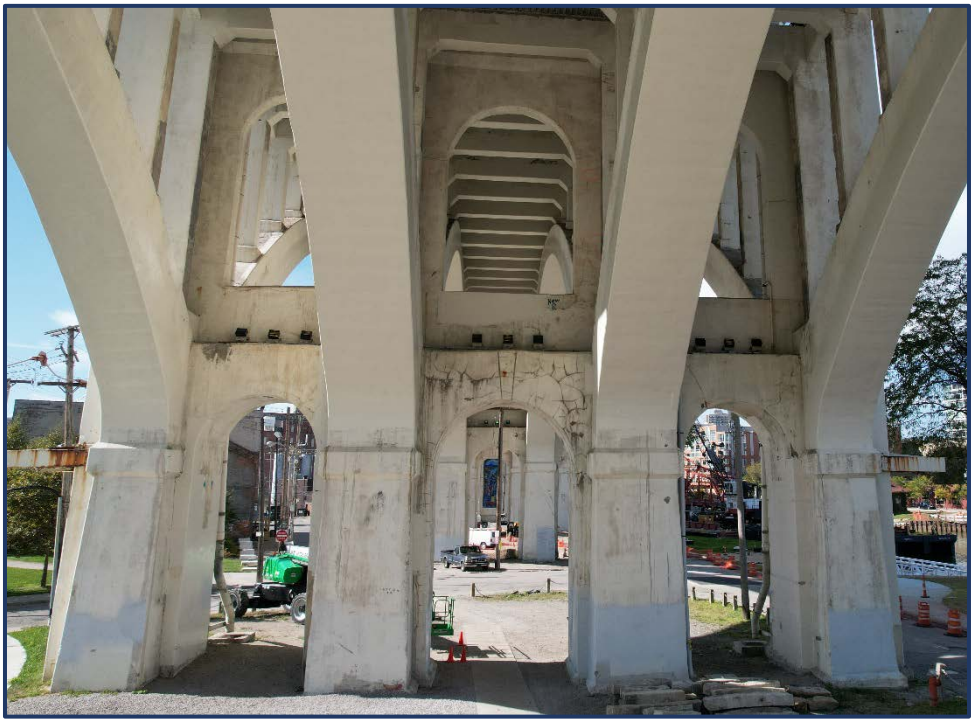


Photo 205-1 – Pier 8, West Face, Typical Patching and Cracking

Photo 205-2 – Pier 6, East Face, Cracking of North Column

Photo 205-3 – Span 1A, Typical Column Spalling with Exposed Reinforcing

Photo 205-4 – West Station, Column Spalling with Exposed Reinforcing

Photo 205-5 – Pier 10, South Tower, Widespread Delamination and Spalling with Exposed Reinforcing

Photo 205-6 – Pier 6, South Tower Leaning Away from Bridge at Top

Photo 210-1 – Pier 4, East Face, Typical Map Cracking in Lower Portion

Photo 210-2 – Pier 3, Southeast Corner, Spalling and Delamination at Waterline

Photo 210-3 – Pier 4, Typical Spalling of Interior Face of Pier Walls

Photo 215-1 – West Station, Spalling with Exposed Reinforcing on Walls

Photo 215-2 – Detroit Ave. Tunnel, Typical Spalling on Lower Portions of Walls

Photo WW-1 – West Abutment South Wingwall, Areas of Cracking

Photo WW-2 – West Abutment Chamber, Crack Through Wall at Tower B

Photo AC-1 – West Abutment Chamber, Typical Cracking with Efflorescence

CHANNEL PHOTOS

Photo CH-1 – Upstream Channel, Looking North

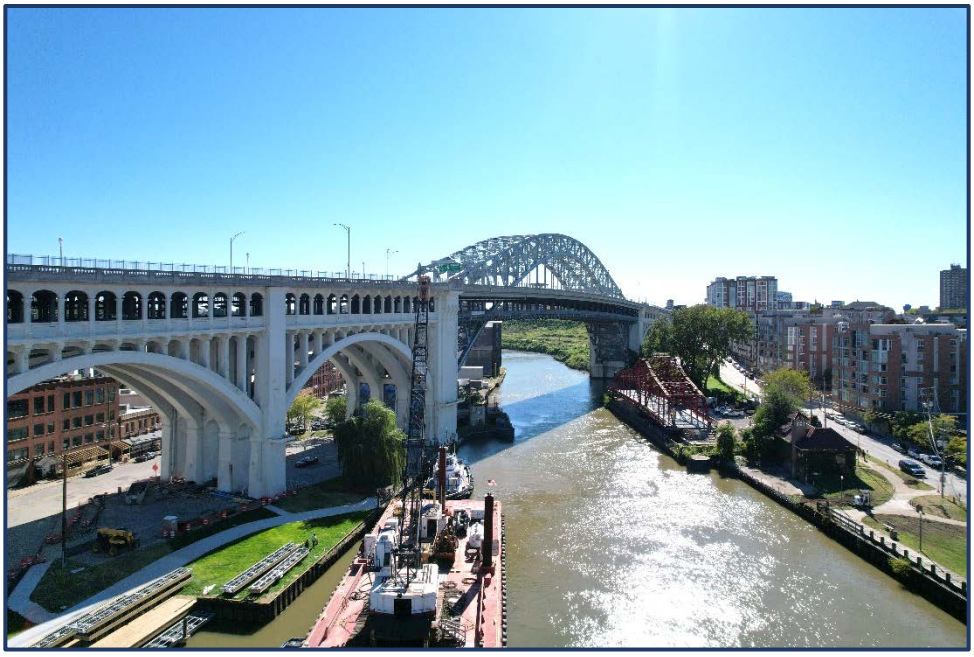


Photo CH-2 – Downstream Channel, Looking South

APPROACH PHOTOS

Photo APR-1 – Erosion of Embankment on South Side Span 3

Photo APR-2 – Erosion Channel with Debris on South Side of Span 1A

UTILITY PHOTOS

Photo UT-1 – Sagging Utility Line on Maintenance Deck

Photo UT-2 – Partially Detached Electric Junction Box Cover, South Railing, Span 1A

Photo UT-3 – Broken Light Pole Base Cover on North Sidewalk

Photo UT-4 – Typical Corrosion and Minor Section Loss on Tower Light Brackets

Photo UT-5 – Broken Architectural Lights, Span 8 North Fascia

APPENDIX B – DETAILED INSPECTION FINDING TABLES

Table 1: Strip Seal Joint Measurements						
Date:	**2022**			**2021**		
	Temperature: 60°F			**Temperature: 70°F**		
Joint Location	**Joint opening measurements**			**Joint opening measurements**		
	Left side	**Center**	**Right Side**	**Left side**	**Center**	**Right Side**
Tower A	1-5/8''	1/2"	1-1/8"	1-3/4"	3/8"	1-1/4"
Tower B	1-3/4"	2-1/8''	2-3/8''	1-7/8"	1-7/8"	2-1/4"
West Abutment	1-3/4''	1-7/8''	2-1/2''	1-5/8"	1-3/4"	2-1/8"
Pier 1	1-7/8''	1-3/4''	2"	1-3/8"	1-1/2"	2"
Pier 2	1-3/4''	1-3/4''	2"	1-1/2"	1-5/8"	1-7/8"
Pier 3 West	2-1/8''	2-1/4''	2-1/2''	1-7/8"	2"	2-1/4"
Pier 3 East	1-1/2''	1-5/8''	1-3/4''	1-1/8"	1-1/8"	1-1/2"
Span 4 at PP5	1-3/4''	1-3/8''	2-1/8''	1-1/2"	1-3/8"	2"
Span 4 at PP5'	1-7/8''	1-3/4''	2"	1-7/8"	1-5/8"	2"
Pier 4 West	1-1/2''	1-1/2''	1-3/4''	1-1/2"	1-1/4"	1-5/8"
Pier 4 East	2-1/2''	2-3/8''	2-5/8''	2-3/8"	2-1/4"	2-3/8"
Pier 5	1-3/4''	1-3/4''	1-3/4''	1-1/2"	1-1/2"	1-7/8"
Pier 6	1-7/8''	1-5/8''	2"	1-3/4"	1-5/8"	2"
Pier 7	2"	1-7/8''	2-1/8''	1-3/4"	1-5/8"	2"
Pier 8	2"	2"	2-1/4''	1-7/8"	1-7/8"	2-1/8"
Pier 9	1-7/8''	1-3/4''	2"	1-3/4"	1-3/4"	2"
Pier 10	1-7/8''	2"	2-1/4''	1-3/4"	1-7/8"	2-1/8"
Pier 11	2-1/4''	1-7/8''	2-1/4''	2"	1-7/8"	2"
Pier 12	2-1/4''	2"	2"	2"	2"	2-3/8"
East Abutment	1-3/4''	1-1/2''	1-3/4''	1-5/8"	1-5/8"	1-3/4"

* Measurements taken between face of armor

Table 2: Top of Deck Deficiencies		
Unit	**Span**	**Defect Description**
South Sidewalk	1A	Sidewalk has a 4’ L x 4” W x 1” D spall.
Joint	1A	Joint between the west approach and Span 1A is nearly closed in the center and open in the shoulders. There is a 2' long section and another section 8' long of broken intermittent field welds on the joint armor in the eastbound lane.
Joint	1A	Joint between Spans 1A and 1B has up to 1/8" D gouges in the north half of the joint armor.
Concrete Railing	1A	South railing at Tower A has 7/8" vertical misalignment.
Lighting	1A	Broken pull box cover on the south rail.
Concrete Railing	1B	South railing at Tower B has 1/2" vertical misalignment.
Drainage	1	South shoulder near the West Abutment has a clogged scupper.
Joint	3	1' L section of joint out of retainer at Pier 3 East.
South Sidewalk	3	8' L x 9" W crack and delamination in the sidewalk near Pier 3 West.
North Sidewalk	4	1.5' L x 14" W x 2" D spall in the sidewalk at the Pier 3 west joint.
Curb	4	Random delaminations along the curbs, full length of span.
Concrete Railing	4	North and south concrete railing have spalls up to 2’-0” H x 9” W x 4” D along the joint where the utility conduits are exposed.
North Sidewalk	4	FW x up to 3' L spalling and delaminated concrete on both sides on the sidewalk joint header at the Pier 3 east joint.
North Sidewalk	4	Sidewalk has intermittent spalling over FL x 2' W x up to 1- 1/2” D with cracking and delamination typical along the longitudinal drain. Longitudinal drains are fully clogged.
North Sidewalk	4	Intermittent spalling and cracking along either side of joint at Panel Point 5’ in the north sidewalk up to 1/2” D.
North Sidewalk	4	Spalling and cracks along either side of joint at Panel Point 5 in the sidewalk FW x up to 1/8” D.
Curb	4	Typical spalling in Right Truss curb up to 3” D.
South Sidewalk	4	5' L x 6" W x 2" D spall in sidewalk at Panel Point 2.
South Sidewalk	4	2’-7” L x 6” W x up to 2” D spall in sidewalk at Panel Point 5.
South Sidewalk	4	2’-4” L x 8” W x 2” D spall in curb at Panel Point 8.
South Sidewalk	4	2’-5” L x 6” W x 1-1/2” D spall in sidewalk at Panel Point 9.
South Sidewalk	4	2' L x 7” W x 2” D spall in sidewalk at Panel Point 10.

Table 2: Top of Deck Deficiencies		
Unit	**Span**	**Defect Description**
South Sidewalk	4	2’ L x 19” W x 2” D spall in sidewalk at Panel Point 10'.
South Sidewalk	4	8' L x Full Width Delamination on sidewalk at Panel Point 4'.
South Sidewalk	4	2’-8” L x 7” W x 1-1/2” D spall in sidewalk at Panel Point 1'.
South Sidewalk	4	2’-4” L x 6” W x 2” D spall in sidewalk at Panel Point 1'.
Joint	4	At Joint 4W, there is 1 LF of leakage in the EB lane.
Lighting	4	Base of light pole is broken along the north sidewalk, located 50' west of Pier 4.
Lighting	Pier 4	Base of light pole on north sidewalk over Pier 4 is broken.
North Sidewalk	Pier 4	3'-0" L x 13" W x 1-1/2" D spall in the sidewalk near the pier 4 east joint.
Vandal Protection Fence	5	South vandal protection fence, top of rail is bent outward 2' L.
Joint	6	2 LF of minor leakage in WB lane at Pier 6 Joint.
North Sidewalk	6	5' L x 13" W x 2" D spall in the North sidewalk.
Deck	7	A patch in the WB lanes at Joint 7 has spalled 16" L x 2.5' W.
South Sidewalk	7	2' L x 8" W - 1-1/2" D spall in sidewalk.
South Sidewalk	7	2'-4" L x 6" W x 1-1/2" D spall in sidewalk.
South Sidewalk	7	15' L x 25' W delamination in the sidewalk.
Vandal Protection Fence	7	South vandal protection fence has damage over a 4’ Length.
Drainage	7	There is a missing drain cover on the longitudinal drain near Pier 6.
South Sidewalk	Pier 7	15' L x 4' W delamination with edge spalling in the sidewalk.
Joint	8	A 4' L section of the joint is pulling out of the retainer in the EB lanes at Pier 8, and a 3' L section is pulling out in the WB lanes.
Vandal Protection Fence	8	South vandal protection fence has collision damage over a 6’ L section (entire single section) with one cracked/broken main vertical.
Lighting	8	Decorative base of light pole on north sidewalk is broken.

Table 2: Top of Deck Deficiencies		
Unit	**Span**	**Defect Description**
Curb	9	2’-8” L x 7” W x 1-1/2” D spall in south sidewalk at top of curb.
Joint	10	4' L section of torn joint seal in EB Lanes
Vandal Protection Fence	10	South vandal protection fence has impact damage over a 2’ Length.
South Sidewalk	11	24" L x 8" W x 1" D spall at curb.
Lighting	11	Base of light pole on north sidewalk is broken.
South Sidewalk	12	2'-9" L x 6" W x 2"D spall in the sidewalk.
Deck	All	Widespread hairline map and transverse cracking in the deck.
Longitudinal Drains	All	Longitudinal Drains in North Sidewalk are fully are partially clogged almost entire length.
Concrete Railing	All	Scattered vertical cracks with leakage.
Joint	All	Debris is in the joints for 75% of their length.
Joint	West App.	Full width crack in the approach end of the joint armor at the roadway centerline.

TABLE 3: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR NORTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	UD	TYP. FB0 - FB5, FB5' - FB0'	The top flange between Stringers "D" and "E" typically has 1/16" - 1/8" painted over section loss and bolt head loss.
FB	UD	TYP. FB6 - FB6'	Typical 1/8" painted over section loss on the lower portion of the pin stiffeners.
FB	UD	FB0	Painted over section loss and corrosion holes to the north knee brace for the upper deck floorbeam. The east face of the web has 1/16" D painted over pitting for 5' on either side of the north truss. From Midspan to North Truss: 1/16" D painted over pitting to the bottom flange. The lower 9" of west face of web has 1/8" D painted over section loss. The lower 9" of the transverse stiffeners have up to 100% section loss. On North Cantilever: 1/16" D painted over pitting to the flange and lower 9" of the west face of the web with scattered pinholes to the transverse stiffeners. The west face of the web has 1/8" D painted over section loss for 5' L adjacent to truss.
FB	LD	FB0	There are large perforations and areas of up to 100% section loss on the top and bottom angles on the west and east faces of the north end of the floorbeam cantilever. There are areas of active corrosion and up to 1/8" D pitting on the floorbeam web at this location on the west face of the floorbeam cantilever web. There are corrosion holes in the transverse stiffeners at the north cantilever measuring 6" H x Full Width. The rivets and bolts have 50-75% section loss at the north end of the floorbeam cantilever.
Stringer	UD	PP0-1	On the north bottom flange of Stringer "E" for adjacent to PP1, there is 1/8" D x 2.5' L painted over section loss with 1 small corrosion hole.
FB	LD	FB1	There is a corrosion hole in the bottom flange of the north cantilever.
Stringer	UD	PP1-2	On the web and flanges of Stringer "E" adjacent to FB2, there is 1/16" D x 12' L painteed over section loss.
FB	UD	FB2	On the east web and bottom flange, there is 1.16" D painted over pitting on the lower half of the web that extends 4' south of the truss and 2.5' north of the truss.
FB	LD	FB2	1/8" Painted over section loss in west web face above the bracing connection. Corrosion holes present in east bottom flange.
Stringer	UD	PP2-3	Several small corrosion holes in the bottom north flange of Stringer "E", a 5" L x 2" W corrosion hole on the bottom flange of Stringer "E" near FB3, and one small corrosion hole in the web near FB3. There is 1/16" D painted over pitting on the bottom flange and lower 8" of the web.
Stringer	UD	PP3-4	1/16" D painted over pitting to the bottom flange and lower 6" of the web for full length.
Eyebar	LD	FB4	Bottom head of east eye bar has up to 3/16” D painted over pitting around the pin. Stiffening plates on floorbeam web behind the eyebar head have 18" H x 20" W corrosion holes on the west and east faces.
FB	UD	FB6	The west face of the web at the Stringer "E" north flange has an area of painted over section loss 20" L x up to 4" H x 3/8" D. A repair plate has been placed on the east face of the web.
FB	UD	FB7	The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.

TABLE 3: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR NORTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	LD	FB7	Painted over section loss with corrosion holes in the top and bottom east flanges at the hanger.
FB	UD	FB8	The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.
FB	UD	FB9	The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.
Stringer	UD	PP9-10	Painted over pitting up to 1/16" D on all surfaces for full length, some reactivating.
FB	UD	FB10	There is a 4” W x 1-1/8” H hole in the floorbeam web north of Stringer "E", and a 8” W x 1.5” H hole in the floorbeam web south of Stringer "E". The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.
FB	LD	FB10	9-5/8” L x 1-11/16" W crack along the weld of stiffening plate welded to floorbeam top flange, east face of floorbeam at L10.
Stringer	UD	PP11-12	Painted over pitting 1/16" D on bottom of flange and lower 6" of web for full length.
FB	UD	FB12	7-1/4” W x 4” H corrosion hole in the floorbeam web north of Stringer "E", and a 9” W x 1” H hole in the floorbeam web south of Stringer "E".
FB	LD	FB12	6-7/8" L crack on the top flange stiffener plate on the west face.
FB	UD	FB11'	3-1/2” W x 2-1/2” H hole in the floorbeam web north of Stringer "E", and a 1” W x 2” H hole in the floorbeam web south of Stringer "E".
FB	LD	FB11'	5-5/8” crack along weld of stiffening plate welded to floorbeam top flange, west face of floorbeam.
FB	UD	FB10'	There is a 7” W x 2-1/4” H and a 1-1/2” diameter corrosion hole in the floorbeam web north of Stringer "E", and a 7” W x 1-1/4” H hole in the floorbeam web south of Stringer "E". The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.
FB	LD	FB10'	2-5/8” long longitudinal crack and a 1- 7/8” long transverse crack along weld of stiffening plate welded to floorbeam top flange, west face of floorbeam. The top and bottom flanges have several up to 1" dia. corrosion holes near the truss.
Stringer	UD	PP10'-9'	Painted over pitting 1/16" D on bottom of flange and lower 6" of web for full length.
FB	LD	FB9'	3-3/4" crack on the top flange stiffener plate on the west face. The west bottom flange has 100% section loss for 10" L on both sides of truss.
Stringer	UD	PP9'-8'	Painted over pitting 1/16" D on bottom of flange and lower 6" of web for full length.
FB	UD	FB8'	The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical. There are two corrosion holes in the floorbeam web north of Stringer "E" measuring 5-1/2" W x 3" H and 1/2" W x 4" H which are connected by a narrow area of near-100% section loss, with adjacent 1/4" D painted over pitting. There is a 20" W x 2" H corrosion hole in the floorbeam web south of Stringer "E". There is a 1-3/4" tear in the stiffener between Stringers "F" & "G" due to construction damage.

TABLE 3: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR NORTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	LD	FB8'	3" crack in the top flange stiffener plate weld on the west face of the floorbeam adjacent to the end of the north knee brace due to section loss and corrosion. There is up to 5/16" D painted over section loss to the floorbeam web and flanges near the north truss. There is a 5" L x 2" H corrosion hole in the web along the top of the bottom flange on the north side of the truss. There is one 1-1/2" Dia. hole in the west bottom flange below the first interior stringer, and a 3" H x Full Width hole in the bottom of the transverse stiffener. South of the north truss, there are 7 rivet heads that have up to 100% section loss between the west bottom flange and the bottom flange cover plate. Adjacent strusts and lateral bracing members and connection plates have numerous perforations, up to 4" dia.
FB	UD	FB7'	On the west face of the floorbeam web, 3" W x 3" H x 1/4" D painted over section loss north of Stringer "E" and 4" W x 7" H x 1/4" D painted over section loss south of Stringer "E". On the east face of the floorbeam web, 3" W x 2.5" H x 1/4" D painted over section loss north of Stringer "E", and 3.5" W x 3" H x 1/4" D painted over section loss south of Stringer "E".
FB	LD	FB7'	There are five cracks in the welds between the East top flanges of the floorbeam and the welded retrofit angle: 4-5/8", 5-5/8", 2", and 5/8" cracks along the east edge; 3" crack along the north edge. There are two cracks in the welds between the West top flanges of the floorbeam and the welded retrofit angle: 2.5" crack along the west edge; 4" crack along the north edge. These cracks are due to advanced section loss of the retrofit angle. Up to 1/4" D pitting in the top of the east bottom flanges at the north truss. 2' H X 2' W area of average 1/4" D painted pitting with two up to 1" dia. corrosion holes in the web of the floorbeam between the strut and stringer, west face. There are three 1" Dia, perforations in the west bottom flange between the north truss and the first interior stringer. The west face of the bottom flange cover plate near the north truss has 4 rivet heads with 100% section loss, and 10 rivet heads with 50-75% section loss. The north end of the knee brace has a 15" L x 5" H corrosion hole along the top of the floorbeam.
Stringer	UD	PP7'-6'	Painted over pitting 1/16" D on bottom of flange and lower 6" of web for full length.
FB	UD	FB6'	Up to 1/8" D painted over pitting on the west eyebar face around the lower portion of the pin. The floorbeam web has 1/8" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical, and a pinhole in this area. The west face of the floorbeam web below the north flange of Stringer "E" has painted over section loss 5/16" D x 10.5" H x up to 3.5" W. There is also a 6-1/2" L x 1-1/2" H corrosion hole in the floorbeam web north of Stringer "E".
FB	LD	FB6'	The floorbeam has active corrosion and 1/16" D pitting on the top and bottom flanges between the north and south trusses. There are welded repair plates on the web at the north truss. On one of these, there is a 10" L cracked perimeter along the weld to the floorbeam top flange, west face of floorbeam due to 100% section loss of the repair plate. 2-11/16" L paint crack in the vertical weld to the knee brace. At the north truss, the web and flanges have 1/8" to 3/16" D painted over pitting. The north cantilever is in a similar condition and has isolated areas of active corrosion. Bottom flanges adjacent to the truss have small perforations up to 1" dia.
FB	UD	FB4'	Painted over corrosion holes (up to 3" Dia.) in the web just south of the north truss with 1/8" D painted over pitting below the upper deck lateral bracing gusset plate.

TABLE 3: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR NORTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	LD	FB4'	The floorbeam web has painted over pitting up to 1/4" D, worst around the stringers, eyebar connection, and lateral bracing, with isolated pitting on the welded repair plate. The west eyebar head has painted over pitting 1/8" to 3/16" D for 6" L around the nut. Additional web plates behind the eyebar have up to 100% section loss in the bottom half. The north cantilever has small areas of 100% section loss in the bottom flange and transverse stiffener base. Isolated areas of active corrosion with minor laminate rust in the bottom flanges and web along the bottom flanges. The west bottom flange is missing for 15" L on the south side of the truss with up to 90% loss of rivet heads in outstanding leg between the truss and center of the deck. The east eyebar head has isolated painted over pitting up to 1/16" D. The pin behind the eyebar has laminate rust up to 3/16" T with associated pitting 1/16" to 1/8" D (some active). The web plates behind the pin have up to 3/8" painted over pitting with 100% section loss. The east bottom flange on the south side of the truss is missing for 24" L. There are numerous painted over corrosion holes within the bottom flange of the floorbeam adjacent to the sway bracing connection. Areas of reactivated surface corrosion were noted throughout the top and bottom flanges. The sway bracing on the east side also has reactivated surface corrosion in the end 6'.
Stringer	UD	PP4'-3'	Painted over pitting 1/16" D on bottom of flange and lower 6" of web for full length.
SWAY	LD	LD3'	The majority of the original steel components at the lower deck connection above L3' have areas of painted over pitting with corrosion holes and knife edging.
FB	LD	FB3'	The north floorbeam cantilever web and bottom flanges have up to 5/16" D pitting with a 1/4" dia. perforation in the web and a 5" L x 1" W perforation in the west bottom flange. There is a 4" dia. corrosion hole in the west bottom flange of the floorbeam below Stringer "E". In the north catwalk framing, the south stringer at the west face of FB 3' has a 4" L x 3" W perforation in the web and a 8" L x 3" W perforation in the bottom flange.
FB	UB	FB2'	The floorbeam web has 1/16" D painted over section loss for half height, extending from the vertical to the first stiffener south of the vertical.
FB	LD	FB2'	There is 5/16" D painted over pitting with a 1" Dia. hole in the west face of the floorbeam web just south of the north truss along the stringer. There is 100% section loss to the top flange angles over 2' L area with loss of 9 consecutive rivet heads in the same location. Bolts for the lateral bracing connection have up to 50% section loss. At the north cantilever: The bottom and top flanges on both faces have isolated corrosion holes up to 6" L; The transverse stiffener on the west bottom flange has a 1" Dia. corrosion hole; The webs have up to 1/4" D painted over section loss around connections and along horizontal surfaces; The webs have welded repair plates below the walkway; Internal diaphragms between knee braces have isolated 100% section loss and the horizontal diaphragm is nearly gone; Sidewalk stringer has areas of 100% section loss at the connection to the floorbeam.
FB	LD	FB1'	At the north cantilever: There is a 1" Dia. corrosion hole in the north end of the west bottom flange with up to 3/16" D pitting throughout the bottom flange and the bottom of the web, and up to 75% section loss to 3 rivets; The cantilever end plate has up to 1" Dia. perforations with pitting; The bottom batten plate at the north end has pack rust, pitting, and perforations. At the Level 3 Strut: The south connection plate on the east face for the Level 3 horizontal strut has a 3" Dia. perforation with multiple other perforations at the L1'-U1' connection. The strut has several up to 2" dia. perforations, and the top and bottom batten plates have up to 1-1/4" perforations. The south strut connection plate to the west face has 5" L x 4" H area of 100% section loss in the top corner. At the north catwalk: The south bottom bracing connection plate for the catwalk has a 10" L x 1" W perforation.

TABLE 3: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR NORTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	UD	FB0'	The floorbeam has typically up to 1/8" D painted over pitting throughout the bottom flange angles and cover plates near the north truss line and throughout the north cantilever for lower 8" of web. Several transverse stiffeners on the east face of the floorbeam have up to 6" H x Full Width areas of 100% painted over section loss.
FB	LD	FB0'	The lower deck floorbeam has typical painted over pitting up to 1/8" D. Below the center deck, there is isolated painted over pitting with negligible section loss on the west face. At the north canilever: There is 100% section loss to the west bottom flange over a 6' length with some reactivating corrosion; The west and east floorbeam top flanges adjacent to the L0'N - U0'N vertical has up to 100% painted over section loss for a 3' length; The east floorbeam bottom flange has up to 100% section loss over an 8' length with active corrosion, and both bottom flanges have other isolated corrosion holes; The north end of the floorbeam has multiple perforations in the web (one 6" Dia. and one 12" L x 3" H in west web, three 4" Dia. in east web, and numerous up to 1" Dia. in both webs); One high-strength bolt is missing in the top flange. At the north Level 3 strut: Active corrosion with areas of 100% section loss up to 4" L x 2" W area present in the angles and lacing bars; The north vertical connection plate at L0'-U1' has 100% section loss on top of the strut.

TABLE 4: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR SOUTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	UD	TYP. FB6-6'	The transverse stiffeners on the north and south sides of the eyebars have up to 100% section loss at the top and bottom with advanced section loss of the stiffening plate between these.
FB	UD	Typ.	From truss to first transverse stiffener north, 1/16" D painted over pitting on web for half height. Missing rivets between Stringers "K" and "L" bottom flange in scattered locations.
Stringer	UD	Typ.	Stringer "P" has 1/16" D painted over pitting in the bottom flange and lower 6" of the web for full length.
FB	UD	FB0	Exterior and interior west knee braces have 18” L x up to 4” W areas of painted over corrosion holes. The west knee brace web plates also have up to 18” H x 12” W L-shaped painted over corrosion holes in the upper corners. From midspan to end of cantilever, there is 1/16" painted over pitting on the bottom flange and lower 8" of the west web with some corrosion holes in the transverse stiffener.
FB	LD	FB0	End 3’ of the web has painted over corrosion holes.
Stringer	UD	PP0-1	2" L x 1" W corrosion hole in Stringer "P". For the first 4' L at U0, there is 1/8" D painted over pitting on all surfaces. On the remainder of the stringer, there is 1/16" D painted over pitting on the bottom flange and lower 6" of the web.
FB	UD	FB1	Broken bolt on the southwest knee brace.
FB	UD	FB2	Near midspan, 5' L section of 1/16" D painted over section loss to the bottom flange angles and lower 8" of the web.
FB	LD	L2	The south diagonal floorbeam support has four 1-1/2" D holes over a 6" D area in the web near the L2 connection. Bottom flanges have areas of 100% section loss x Full W x 20" L. Internal diaphragm plate between lateral bracing connection plates has widespread corrosion holes (nearly gone.)
Stringer	UD	PP2-3	Stringer "P" has 1/16" D painted over pitting in the bottom flange and lower 6" of the web for half length from FB2.
FB	LD	FB3	The east face bottom flange at the L3 connection has a 10” L x 4” W hole.
Stringer	LD	PP3-4	Stringer "Q" east of FB3 has a 12” L x 3” H area of painted over pitting with a 6” L x 3” H corrosion hole in the bottom of the web. The north bottom flange has a 10” L x 4” W corrosion hole at the end.
Eyebar	LD	LD4	UD4-LD4 east eyebar has up to 1/4” D painted over pitting along the south half of the pin nut for 2” W.
FB	UD	FB6	Damaged rivet and missing nut between Stringers "N" and "O" top flange, east side.
FB	LD	FB7	Up to 2" dia. corrosion holes in both top flanges. Up to 6" L x 2" H corrosion holes in knee brace webs. Full width x 12" L 100% section loss to the top flange cover plate.
FB	LD	FB8	The east bottom flange has a 6" x 6" corrosion hole on the south side of the south truss with up to 100% section loss on 8 adjacent bottom flange vertical leg rivet heads. The east floorbeam bottom flange has an 8" L x up to 1" W painted over corrosion hole north and south of Stringer "Q". There are small holes in the ends of the knee braces over the floorbeam.

TABLE 4: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR SOUTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
Stringer	UD	PP8-9	Stringer "P" has 1/16" painted over pitting on bottom flange and lower 6" of web, extends 8' from FB 8.
Hanger	LD	LD9	LD9 has painted over corrosion holes above the floorbeam top flange in the outstanding legs of all 4 stiffeners (2" W x 5" H) and the knee brace web (8" L x 3" H). There is advanced section loss with a 1/2" Dia. hole in the web. The east bottom flange is gone for 15" L on each side of the truss. The west bottom flange has a 4" Dia. hole in the south side. Two bolts on the south knee brace angle have sheared.
Stringer	LD	PP9-10	Stringer "Q" west of FB10 has a 12" L x 2" W painted over hole at the end of both south and north top flanges.
FB	LD	FB10	There is a 1" L x 1/2" H corrosion hole in the web on the north side of the south truss. There are corrosion holes up to 6" L at the ends of the knee brace webs over the floorbeam. There is a 15" L x 2" W corrosion hole along the edge of the east top flange south of the south truss.
Stringer	LD	PP10-11	Stringer "Q" east of FB10 has a 12" L x 2" W painted over hole at the end of both south and north top flanges. Stringer "Q" west of FB11 has a 12" L x 3" W painted over corrosion hole at the end of both south and north top flanges.
FB	LD	FB11	There is a 3" downward impact deformation on the east face of the longitudinal strut top connection plate. The east bottom flange is gone for 30" L on the north side of the south truss, and an 8" L x 3" W portion is gone on the south side of the truss. The west bottom flange has several corrosion holes up to 3" x 1-1/2" on the south side of the truss.
Stringer	LD	PP11-12	Stringer "Q" west of FB12 has a 12" L x 1" W painted over corrosion hole at the end of both south and north top flanges.
FB	LD	FB12	The northeast stiffener at the south truss has a painted over 3"-Dia. corrosion hole.
Vertical Hanger	LD	LD12	LD12-UD12 has painted over corrosion holes between the flanges and a 2" Dia. corrosion hole in the northwest flange 4' below the upper floorbeam bottom flanges.
Stringer	LD	PP12-11'	Stringer "Q" east of FB12 has a 12" L x 1" W painted over corrosion hole at the end of both south and north top flanges. Stringer "Q" west of FB11' has a 12" L x 3" W painted over corrosion hole at the end of both south and north top flanges.
FB	LD	FB11'	The east bottom flanges are gone on the north (30" L) and south (12" L) sides of the south truss. The east top flange has several corrosion holes up to 4" Dia. over a 15" length on the south side of the south truss. There is up to 90% rivet head loss in the top flange cover plate.
Stringer	LD	PP11'-10'	Stringer "R" east of FB11' has a 12" L x 2" H area of pitting with a 2" Dia. painted over corrosion hole on the web
FB	LD	FB10'	The east bottom flange on the south side of the south truss has several 1/2" Dia. corrosion holes. The web has painted over pitting up to 1/4" D near the truss. Numerous rivet heads on the west bottom flange on the north side of the south truss have up to 75% section loss.
Stringer	LD	PP10'-9'	Stringer "Q" at FB10' on the east face has a 12" L x 2" W painted over corrosion hole at the end of both south and north top flanges.

TABLE 4: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR SOUTH TRUSS

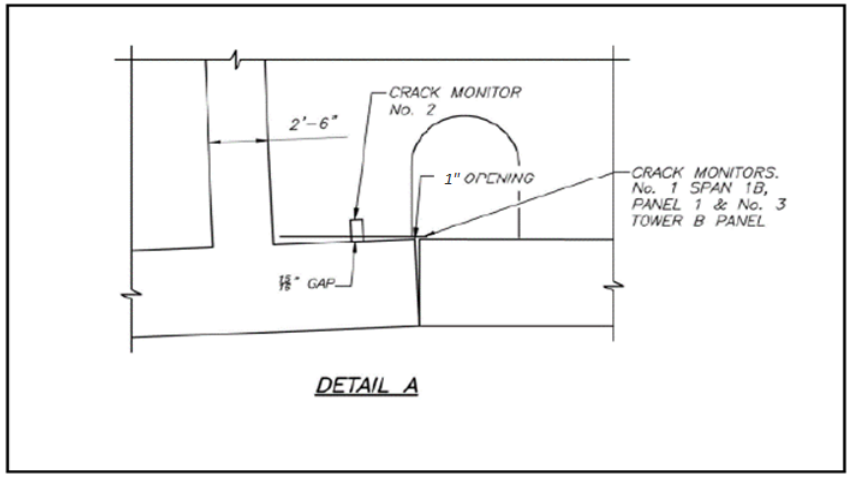
Member Type	Upper/ Lower Deck	Member	Deficiency
FB	LD	FB9'	The west bottom flange on the north side of the south truss is gone for 20" L. The adjacent transverse stiffener has 100% section loss for the bottom 6". There is isolated painted over pitting on the flanges and webs up to 3/16" D.
Stringer	LD	PP9'-8'	Stringer "Q", west face of FB8' has a 6" L x 3" W painted over corrosion hole on the south top flange.
FB	LD	FB8'	There are two 1" Dia. corrosion holes in the floorbeam web on the north side of the south truss. The web and flanges have isolated painted over pitting (typ. up to 3/16" D) near the south truss. There is a 12" Dia. corrosion hole in the top flange cover plate.
Stringer	LD	PP8'-7'	The east face of FB8' has a 1" L x 1/2" W painted over corrosion hole on the north top flange. Stringer "Q" west of FB7' has 5" L x 1" W painted over corrosion holes on both north and south top flanges.
FB	LD	FB7'	There is a 14" long section of the west bottom flange that is missing in the south cantilever. A 5" L x 1" H corrosion hole is present in the floorbeam web of the north side of the south truss. There is 100% section loss at the base of the stiffener below the adjacent stringer. There is a 10" L x 8" W hole in the top flange cover plate.
Stringer	LD	PP7'-6'	Stringer "Q" east of FB7' has 5" L x 1" W painted over corrosion holes on both north and south top flanges. Stringer "P" has a corrosion hole on the south flange east of FB7'.
FB	LD	FB6'	There is a 1" Dia. corrosion hole in the web on the north side of the south truss, and isolated painted over pitting up to 1/8" D. There are corrosion holes 4" in diameter in the bottom flanges.
FB	UD	FB4'	The east face, south of truss, has full height x up to 4" W x 1/8" painted over section loss.
FB	LD	FB4'	Corrosion hole in the east top flange behind the hanger eyebar 3" W x 1" L. Up to 1/8" D painted over pitting to the web behind the eyebar.
Eyebar	LD	FB4'	The eyebar heads have 1/16" D painted over pitting around the full perimeter of the pin nut.
Stringer	UD	PP4'-3'	At Stringer "P": Beginning 4' from FB4, 14' L section of active corrosion due to deck leakage; Beginning 6' from FB4, advanced section loss for 5' L with complete perforations of lower 4" the web; South bottom flange has 4" H x half width, accounting for 75% loss of the bottom south flange; Above the web perforations and on the bottom north flange, 1/16" D section loss.
Stringer	LD	PP4'-3'	The stringer to floorbeam bearings on the west side of the floorbeam have painted over pack rust, missing anchor bolts and corrosion holes. This note is typical at the south truss. Stringer "N" vibrates under live load due to 100% section loss of the bottom flange. There is no connection of the stringer to the bearing assembly. The lower floorbeam bottom flange below has a 6" corrosion hole. Stringer "Q" has a 4' section of 1/8" section loss reactivating on the bottom flange.

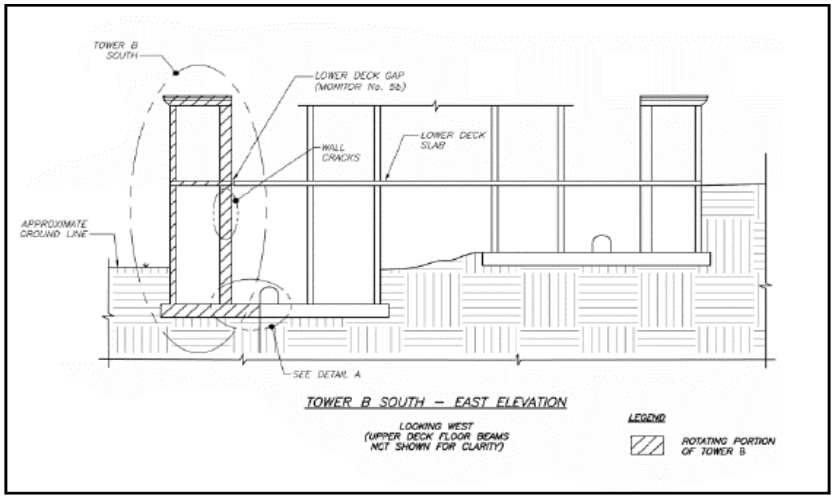
TABLE 4: FLOORBEAM DEFICIENCIES IN UPPER & LOWER DECK NEAR SOUTH TRUSS			
Member Type	**Upper/ Lower Deck**	**Member**	**Deficiency**
FB	LD	FB3'	There are multiple corrosion holes up to 6" Dia. in the east bottom flange of the south cantilever.
Bracing	LD	LD3'	Typical corrosion holes along the bottom 6” portions of vertical bracing connections to floorbeam flanges at the vertical connection
Sway Bracing	LD	LD3'	The majority of the original steel components at the lower deck connection above L3’ have areas of painted over pitting with corrosion holes and knife edging.
Stringer	UD	LD3'-2'	At Stringer "P": Beginning 7.5' from FB3', active corrosion extending 12' L; Beginning 13' from FB3', 3' L section has 1/8" D x 4" H section loss of south web face, and 1/4" D section loss of the south bottom flange with 2 small perforations - at one perforation, average south bottom flange loss is 50%.
FB	LD	FB2'	The web has 3/16" D painted over pitting around the strut connection, and isolated corrosion holes up to 12" L x 4" W in the bottom flanges. There is a 3" W x 1" H active corrosion hole in the web between Stringers "M" and "N". Interior diaphragms between webs are mostly gone.
FB	UD	FB1'	The upper knee braces at the vertical connection have 100% section loss and/or knife-edging in the webs and flanges.
FB	LD	FB1'	Heavy loss to the floorbeam bottom flange angles with up to 2"-Dia. corrosion holes and painted over pitting up to 1/8" D between trusses. Up to 1"-Dia. corrosion holes in the Stringer "N" bearing stiffener.
FB	UD	FB0'	There is a 1/4" painted over section loss with one 3/4" Dia. corrosion hole north of the south truss in the web between the lateral bracing connection plates. Transverse stiffeners have widespread corrosion holes and section loss north of the south truss on the east face. The upper knee braces at the vertical connection have 100% section loss and/or knife-edging in the webs and flanges. The east bottom flange and lower 8" of the web have 1/8" D painted over section loss.
FB	LD	FB0'	The floorbeam webs and bottom flanges have widespread painted over pitting (typ. up to 1/8" D) with numerous corrosion holes in the top and bottom flanges in the south cantilever, including an 8' long section just south of the truss where the flanges are mostly gone.

Table 5: Upper South Pier Shaft Rotation Measurements										
Date	Location									
	5*		5 at Lower Deck**		6*		6 at Lower Deck**		7*	
	East Side	West Side	East Side	West Side	East Side	West Side	East Side	West Side	East Side	West Side
2018	14-11/16"	15-1/8"			16"	16"			15"	14-13/16"
2019	14-11/16"	15-1/8"	0"	0"	16-1/8"	16-1/8"	13/16"	1"	15"	14-13/16"
2020	14-11/16"	15-1/8"	0"	0"	16-1/8"	16-1/8"	13/16"	1"	15"	14-13/16"
2021	14-11/16"	15-1/8"	0"	0"	16-1/8"	16-1/4"	3/4"	1"	15"	14-13/16"
2022	14-11/16"	15-1/8"	0"	0"	16-1/4"	16-1/4"	3/4"	1"	15-1/16"	14-13-16"

* Measurements taken 3' above approximate top of strut wall.
** Measurements taken 6" from east and west edges of the shafts.

Table 6: Crack Gage Measurements - Tower B South								
Date	No. 5B Tower B at Lower Deck		No. 1		No. 2		No. 3	
	V (mm)	H (mm)	V (mm)	H (mm)	V (mm)	H (mm)	V (mm)	H (mm)
5/17/07	---	---						
4/16/13	---	---						
10/3/14	6.0	2.0						
8/16/15	8.0	2.0						
9/14/16	11.0	2.0						
11/27/17								
10/22/18								
11/18/19					4.8	2.0		
10/22/20			4.0	1.0	5.0	1.0	0.5	5.0
10/29/21			4.8	1.2	6.0	0.3	0.5	7.0
10/31/22			5.0	1.2	6.5	0.0	0.5	8.0





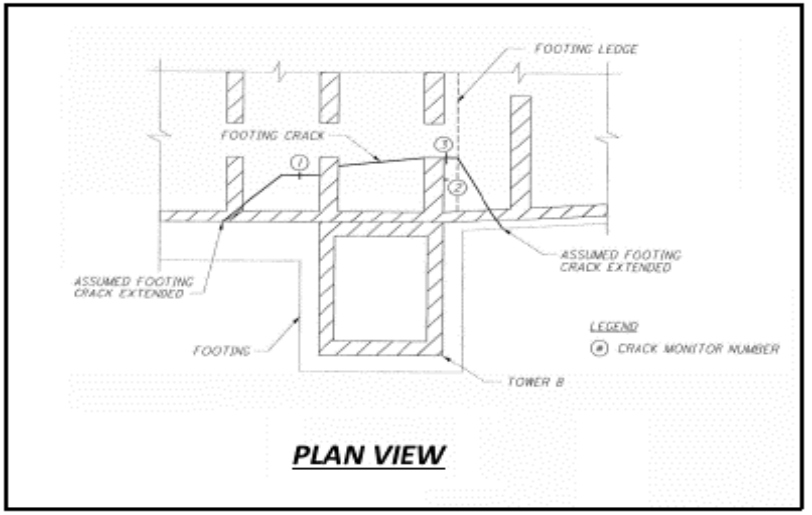
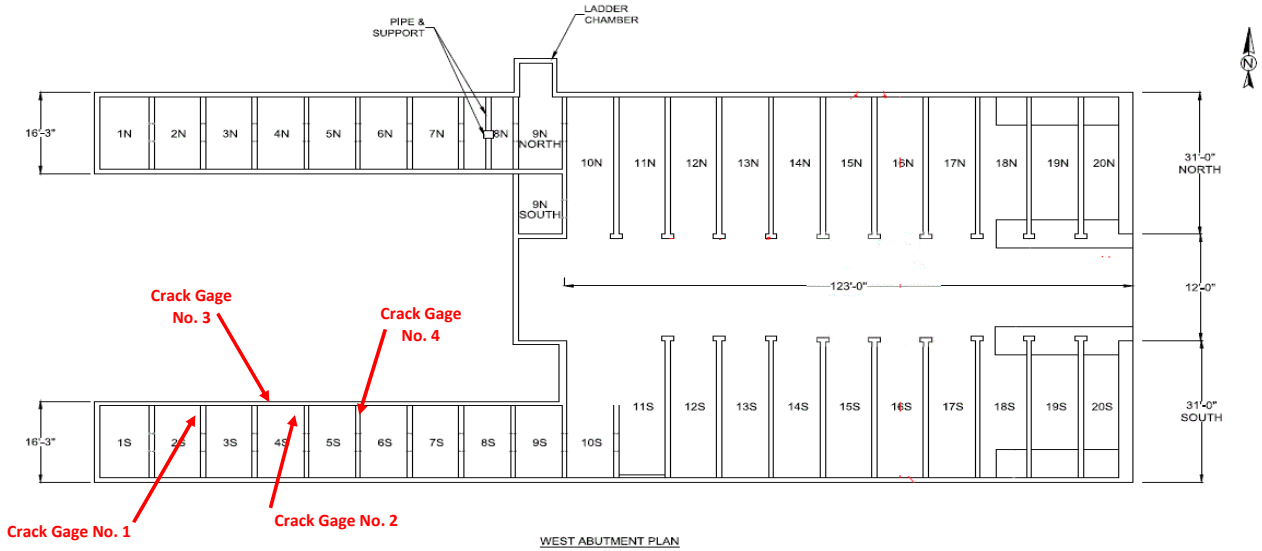


Table 6: Crack Gage Measurements - Span 1A Cellular Construction South Wall								
Date	No. 1		No. 2		No. 3		No. 4	
	V (mm)	H (mm)	V (mm)	H (mm)	V (mm)	H (mm)	V (mm)	H (mm)
5/17/07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4/16/13	2.0	1.0	2.5	0.3	0.0	0.0	0.8	0.2
10/3/14	2.3	1.0	3.0	0.6	0.0	0.0	0.8	0.2
8/16/15	2.8	1.1	4.5	0.8	0.0	0.0	0.9	0.5
9/14/16	3.0	1.1	4.8	0.8	0.0	0.0	1.0	0.5
11/27/17								
10/22/18							1.1	1.0
11/18/19							1.3	1.0
10/22/20					0.0	0.0	1.5	1.0
10/29/21	6.0	1.3	6.0	1.0	0.0	0.00	1.5	1.0
10/31/22	6.0	2.0	6.0	1.0			1.5	1.0



WEST ABUTMENT PLAN

Table 7: West Station - Columns and Jack Arches				
Member Type	**Column Row**	**Column #**	**Face**	**Defect Description**
Column	A	2	E	Delaminated and spalled with exposed reinforcing (6 SF total).
Jack Arch	A	2-3	N	Spalled with exposed reinforcing (8 SF).
Wall	A	2-3	N	Spalled with exposed reinforcing (24 SF).
Column	A	3	W	Delamination on west face (1 SF).
Column	A	4	N, W	Delamination on north and west faces (8 SF).
Column	A	6	NE	Northeast corner, east face delaminated / spalled with exposed reinforcing (10 SF total).
Jack Arch	A	6-7	N	Spalled with exposed reinforcing (4 SF).
Column	A	8	N	North face of column delaminated for full height (15 SF).
Column	A	9	NW	Delaminated (4 SF).
Column	A	11	N, E	Whole north face and east face delaminated for full height (30 SF).
Column	A	12	N, E	East face has spall with exposed reinforcing (6 SF). North face is delaminated (15 SF).
Column	A	13	NW	Northwest corner spalled with exposed reinforcing, up to 3" D (3 SF).
Column	A	17	ALL	Spalls with exposed reinforcing and delamination, also incomplete repair (24 SF total).
Column	A	18	NW	Northwest corner of column, full height x 6" wide delamination (4 SF).
Jack Arch	A	17-19	N	North face of A17-A19 jack arches spalled with exposed reinforcing (18 SF) and delaminated (8 SF).
Column	A	19	NW	Delaminated (4 SF).
Column	A	20	N,E	North face has spall with exposed reinforcing (4 SF). East face has spall / incomplete repair with exposed reinforcing (2 SF).
Wall	A	21-22	S	West wall has 4' x full height spall with exposed reinforcing. At A22, lower 3' x 3' delamination and spall with exposed reinforcing.
Wall	A	22-23	S	12' x full height of wall spalled with exposed reinforcing.
Wall	A	23-24	S	Delaminated and spalled with exposed reinforcing (24 SF total).
Jack Arch	A	23-24	N	Jack arch, north face, delamination for full length.

Table 7: West Station - Columns and Jack Arches				
Member Type	**Column Row**	**Column #**	**Face**	**Defect Description**
Wall	A	24-25	S	Delaminated and spalled with exposed reinforcing (8 SF total).
Wall	A	25-26	S	Spalled with exposed reinforcing (3 SF).
Column	A	28	NW	Spalled with exposed reinforcing (1 SF).
Column	A	31	SE	Delaminated (2 SF).
Column	B	4	N, W	Delaminated and spalled with exposed reinforcing (20 SF total).
Jack Arch	B	7-8	S	Jack arch delaminated with rust staining (6 SF).
Column	B	9	SE	Spalled with exposed reinforcing (1 SF).
Column	B	10	S	Spall with exposed reinforcing 4" D (4 SF).
Jack Arch	B	10-11	S	Jack arch spalled with exposed reinforcing (4 SF) and delaminated (2 SF).
Jack Arch	B	12-13	S	Underside of B11-B12 jack arch is delaminated and spalled with exposed reinforcing (6 SF total).
Jack Arch	B	13-14	S	Jack arch delaminated and spalled with exposed reinforcing 3" D (12 SF total).
Jack Arch	B	14-15	S	Jack arch spalled with exposed reinforcing (4 SF) and delaminated (2 SF).
Column	B	15	ALL	Faces spalled with exposed reinforcing (5 SF total).
Column	B	20	N, E, S	Column spalled with exposed reinforcing (6 SF).
Jack Arch	B	20-21	S	Jack arch spalled for 4' near B21, south face (4 SF).
Column	B	21	N	Spalled with exposed reinforcing (1 SF).
Column	B	22	SE	Southeast corner spalled with exposed reinforcing (1 SF).
Column	B	24	S, E	South and east faces spalled with exposed reinforcing 3" D (12 SF).
Column	B	25	SE	Southeast corner spalled with exposed reinforcing 2.5" D (2 SF).
Column	B	28	SE	Southeast corner spalled with exposed reinforcing 2" D (2 SF).
Column	B	29	S, W	South and west faces spalled with exposed reinforcing (4 SF total).

Table 7: West Station - Columns and Jack Arches				
Member Type	**Column Row**	**Column #**	**Face**	**Defect Description**
Column	C	1	E	Spalled with exposed reinforcing (6 SF).
Column	C	3	N, W	Delaminated (6 SF).
Jack Arch	C	4-5	N	Spalled with exposed reinforcing (4 SF).
Jack Arch	C	7-8	N	Delaminated (3 SF).
Column	C	10	N, E	Spall with exposed reinforcing 4" D (12 SF).
Jack Arch	C	10-11	N	Spalled with exposed reinforcing (4 SF).
Column	C	12	NE	Spall with exposed reinforcing 4" D (12 SF).
Column	C	15	ALL	Faces spalled with exposed reinforcing (12 SF total).
Jack Arch	C	14-15	ALL	Spalled with exposed reinforcing (16 SF).
Jack Arch	C	15-16	N	Jack arch spalled with exposed reinforcing (4 SF).
Jack Arch	C	16-17	ALL	Jack arch spalled with exposed reinforcing (25 SF).
Column	C	18	S	Southeast corner spalled with exposed reinforcing 2" D (4 SF).
Column	C	20	S	Delaminated (2 SF).
Jack Arch	C	20-21	N, S	Spalled with exposed reinforcing (8 SF).
Column	C	21	S, E	Delaminted (4 SF).
Column	C	22	SE	Spalled with exposed reinforcing (1 SF).
Column	C	23	S, W	Faces spalled with exposed reinforcing 3" D (8 SF total).
Column	C	25	NW	Delaminated and spalled with exposed reinforcing (4 SF total.)
Column	C	29	N, W	North and west faces delaminated with spalls (3 SF total).
Column	C	30	N,W,S	Faces have delamination / spalls (20 SF total).
Column	C	31	NW	Delaminated (2 SF).

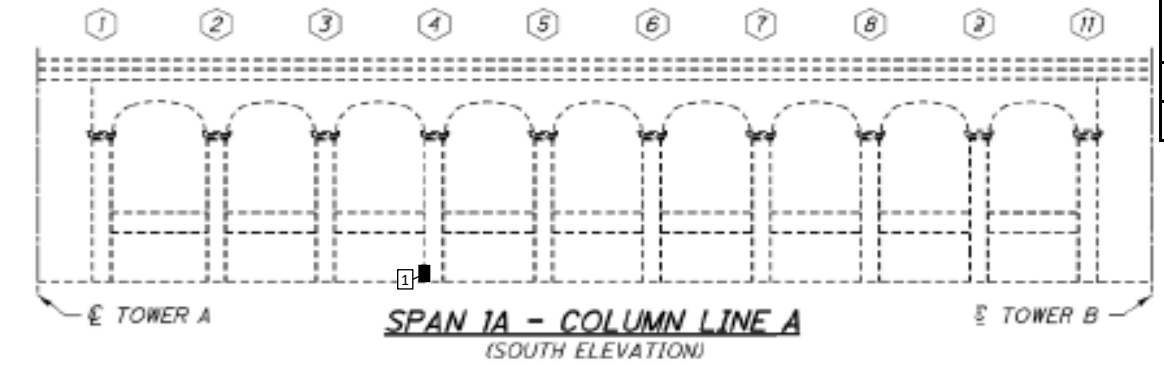
Table 7: West Station - Columns and Jack Arches				
Member Type	**Column Row**	**Column #**	**Face**	**Defect Description**
Jack Arch	D	4	ALL	Jack arch to W. 25th St. Tunnel is delaminted and spalled with exposed dreinforcing (20 SF total).
Column	D	8	N	Delaminted (1 SF).
Jack Arch	D	8-9	S	Delaminated (6 SF).
Column	D	11	NW	Northwest corner delaminated and spalled (6 SF total).
Column	D	12	W	Delaminted (2 SF).
Column	D	13	NW	Northwest corner spalled with exposed reinforcing (6 SF).
Jack Arch	D	14-15	N	Spalled with exposed reinforcing (2 SF).
Column	D	18	N, E	North and east faces delaminated and spalled with exposed reinforcing, (8 SF total).
Column	D	20	N	Spall with exposed reinforcing (2 SF).
Column	D	24	N, W, S	Delaminated and spalled with exposed reinforcing 3" D (8 SF total).
Column	D	25	ALL	Spalled with exposed reinforcing up tp 4" D (8 SF total).
Jack Arch	D	25-26	N, S	Delaminated (8 SF).
Jack Arch	D	26-27	N	Delaminated (8 SF).
Column	D	26	N, S	North and south faces delaminated (8 SF total) and spalled with exposed reinforcing (8 SF total).
Column	D	27	N, S	Delaminated on north and south faces (12 SF total).
Column	D	29	W	Spalled with exposed reinforcing 4" D (2 SF).
Column	D	30	ALL	Delaminated or spalled (12 SF total).
Column	D	31	N	Delaminated and spalled with exposed reinforcing (4 SF total).
Column	E	11	NE	Delaminated (3 SF).
Column	E	23	E	Spalled with exposed reinforcing (1 SF).
Column	E	24	N, E	Spalled with exposed reinforcing (4 SF total).

Table 7: West Station - Columns and Jack Arches				
Member Type	**Column Row**	**Column #**	**Face**	**Defect Description**
Column	E	26	ALL	Spalled with exposed reinforcing (16 SF total).
Column	E	27	N, W, S	Spalled with exposed reinforcing (12 SF).
Column	F	22	E	Spalled with exposed reinforcing (2 SF).
Column	F	24	N	Spalled with exposed reinforcing (4 SF).
Column	F	25	SW	Delaminated (1 SF).
Jack Arch	F	25-26	ALL	Spalled with exposed reinforcing (4 SF).
Wall	F	26-27	N	Spalled with exposed reinforcing (4 SF).
Column	F	27	N, E, S	Delaminated and spalled with exposed reinforcing (6 SF total).
Jack Arch	G	G4-H5	S	Jack arch delaminated and spalled (4 SF total).
Jack Arch	H	4-5	ALL	Delaminated and spalled with exposed reinforcing (8 SF total).

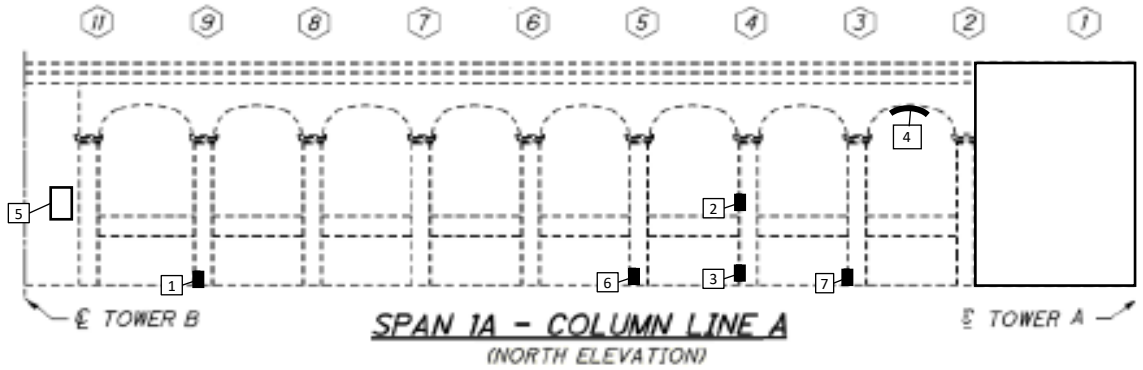
Table 8: West Station - Ceiling Condition States

Col. Row	Col. #	CS2 %	CS3 %	Col. Row	Col. #	CS2 %	CS3 %	Col. Row	Col. #	CS2 %	CS3 %	Col. Row	Col. #	CS2 %	CS3 %
A - W	2 - 3	75	5	A - B	25 - 26	20	5	H - D	3 - 4	20	10	D - E	21 - 22	25	
A - W	3 - 4	50	5	A - B	26 - 27	20	20	H - D	4 - 5	50	15	D - E	22 - 23	25	
A - W	4 - 5	50		A - B	27 - 28	10	10	H - D	5 - 6	50	12	D - E	23 - 24	25	5
A - W	5 - 6	50		A - B	28 - 29	20	50	H - D	6 - 7	30	20	D - E	24 - 25	25	1
A - W	6 - 7	25	75	A - B	29 - 30	5	5	C - D	7 - 8	25	10	D - E	25 - 26	25	25
A - W	7 - 8	75		A - B	30 - 31	10	10	C - D	8 - 9	50	10	D - E	26 - 27	20	10
A - W	8 - 9	50	10	B - C	1 - 2			C - D	9 - 10	80		D - E	27 - 28	20	5
A - W	9 - 10	60	40	B - C	2 - 3	80	10	C - D	10 - 11	25	10	D - E	28 - 29	20	
A - W	10 - 11	25	5	B - C	3 - 4	60	20	C - D	11 - 12	50	25	D - E	29 - 30	10	
A - W	11 - 12	25	25	B - C	4 - 5	50	20	C - D	12 - 13	10	5	D - E	30 - 31	5	
A - W	12 - 13	30	5	B - C	5 - 6	25	10	C - D	13 - 14	60	20	E - W	6 - 7	75	5
A - W	13 - 14	20	50	B - C	6 - 7	25	5	C - D	14 - 15	50	5	E - W	7 - 8	75	5
A - W	14 - 15	50	30	B - C	7 - 8	20	30	C - D	15 - 16	80	20	E - W	8 - 9	50	
A - W	15 - 16	70	10	B - C	8 - 9	50	25	C - D	16 - 17	60	10	E - W	9 - 10	50	
A - W	16 - 17	30	30	B - C	9 - 10	95	5	C - D	17 - 18	75		E - W	10 - 11	50	50
A - W	17 - 18	30		B - C	10 - 11	50	10	C - D	18 - 19	60	5	E - W	11 - 12	50	20
A - W	18 - 19	30	30	B - C	11 - 12	50	50	C - D	19 - 20	50	5	E - W	12 - 13	50	20
A - W	19 - 20	50	10	B - C	12 - 13	50	5	C - D	20 - 21	20		E - W	13 - 14	50	10
A - W	20 - 21	50	10	B - C	13 - 14	50	30	C - D	21 - 22	50	5	E - W	14 - 15	50	10
A - B	1 - 2			B - C	14 - 15	60		C - D	22 - 23	50	5	E - W	15 - 16	50	10
A - B	2 - 3	50	25	B - C	15 - 16	70	30	C - D	23 - 24	30	5	E - W	16 - 17	50	
A - B	3 - 4	60	25	B - C	16 - 17	60	5	C - D	24 - 25	50	10	E - W	17 - 18	50	10
A - B	4 - 5	50	20	B - C	17 - 18	50		C - D	25 - 26	50	20	E - W	18 - 19	50	10
A - B	5 - 6	20	10	B - C	18 - 19	60	5	C - D	26 - 27	40	20	E - W	19 - 20	25	50
A - B	6 - 7	50	10	B - C	19 - 20	50	10	C - D	27 - 28	25	25	E - W	20 - 21	50	30
A - B	7 - 8	25	50	B - C	20 - 21	10		C - D	28 - 29	50	20	E - F	21 - 22	25	
A - B	8 - 9	60	20	B - C	21 - 22	25	1	C - D	29 - 30	50	50	E - F	22 - 23	50	
A - B	9 - 10	50	5	B - C	22 - 23	60	10	C - D	30 - 31	50	50	E - F	23 - 24	50	
A - B	10 - 11	25	5	B - C	23 - 24	95	5	D/T - E	4 - 6			E - F	24 - 25	50	5
A - B	11 - 12	50	50	B - C	24 - 25	50	30	D - E	4 - 6	50	20	E - F	25 - 26	25	
A - B	12 - 13	60	20	B - C	25 - 26	20	10	D - E	6 - 7	50	20	E - F	26 - 27	25	
A - B	13 - 14	50	20	B - C	26 - 27	30	30	D - E	7 - 8	50		E - F	27 - 28	25	
A - B	14 - 15	50	20	B - C	27 - 28	30	30	D - E	8 - 9	75	25	E - F	28 - 29	5	
A - B	15 - 16	50	10	B - C	28 - 29	65	35	D - E	9 - 10	80	20	E - F	29 - 30	5	
A - B	16 - 17	20	10	B - C	29 - 30	50	20	D - E	10 - 11	25	10	E - F	30 - 31		
A - B	17 - 18	5		B - C	30 - 31	50	20	D - E	11 - 12	25	75	F - W	21 - 22		
A - B	18 - 19	10	10	C - G	2 - 3	90	10	D - E	12 - 13	50	20	F - W	22 - 23	50	
A - B	19 - 20	20	10	C - G	3 - 4	80		D - E	13 - 14	20	40	F - W	23 - 24	50	
A - B	20 - 21	10	10	C - G/H	4 - 5	50	5	D - E	14 - 15	50	10	F - W	24 - 25	50	
A - B	21 - 22	5		C - H	5 - 6	75		D - E	15 - 16	50	20	F - W	25 - 26	25	
A - B	22 - 23	5	5	C - H	6 - 7		100	D - E	16 - 17	30	5	F - W	26 - 27	30	
A - B	23 - 24	5		G - H	2 - 3	25	25	D - E	17 - 18	25		F - W	27 - 28	10	
A - B	24 - 25	25	25	G - H	3 - 4	50	1	D - E	18 - 19	50	5	F - W	28 - 29		
Note:				G - H	4 - 5	50		D - E	19 - 20	50	5	F - W	29 - 30		
"W" = Wall				H/T - D	3 - 4			D - E	20 - 21	25		F - W	30 - 31		
"T" = W. 25th Street Tunnel															

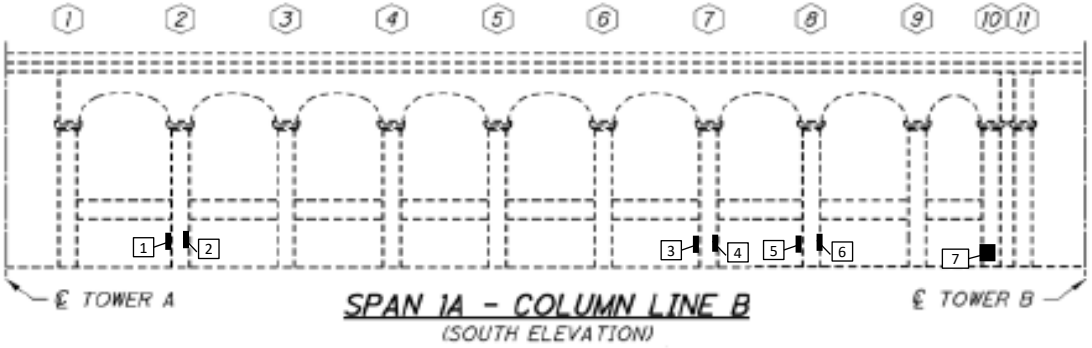
APPENDIX C – OPEN SPANDREL ARCH, TRUSS, FLOOR SYSTEM, AND SUBSTRUCTURE DRAWINGS AND DEFICIENCIES



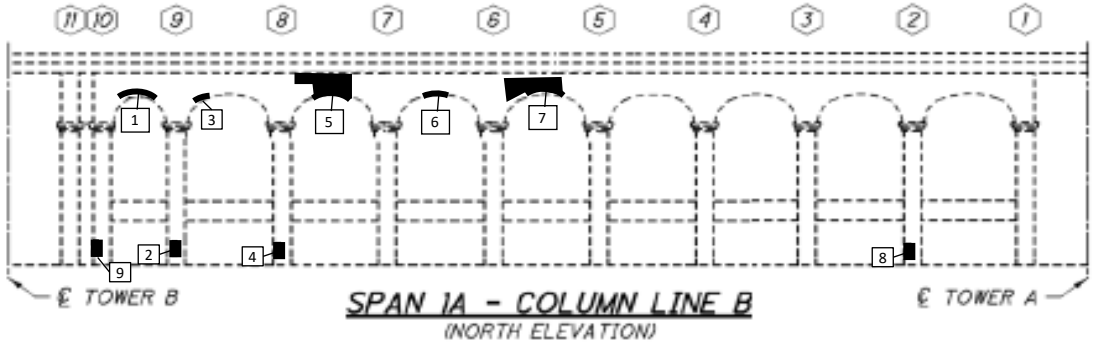
SPAN 1A - COLUMN LINE A (SOUTH ELEV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 2.5" D - 1 SF



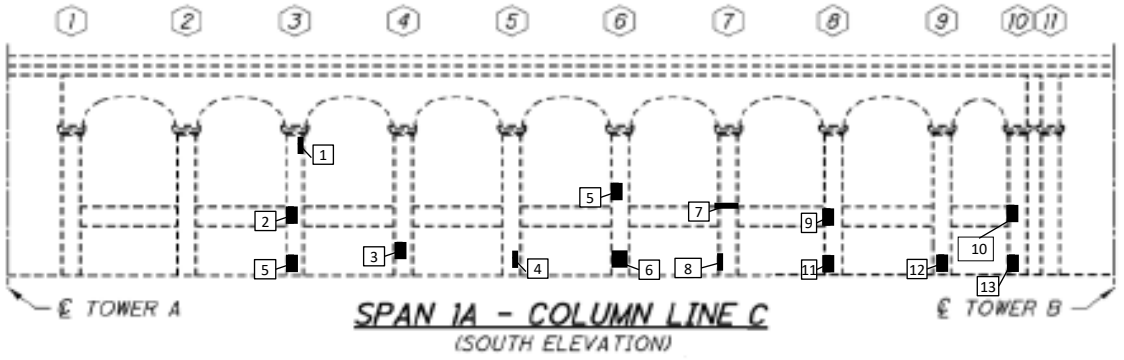
SPAN 1A - COLUMN LINE A (NORTH ELEV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 1.5" D. Adv. section loss on exposed ties w/ 1 broken - 7 SF
2	Delamination - 5 SF
3	Delamination/Spall w/ exp. Reinf. - 4 SF
4	Delamination - 1 SF
5	Delamination - 4 SF
6	Delamination/Spall w/ exp. Reinf. - 2 SF
7	Delamination - 2 SF

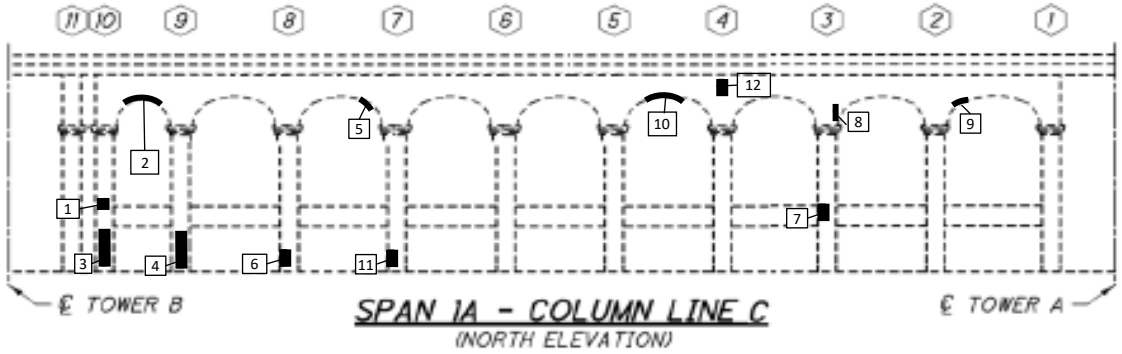


SPAN 1A - COLUMN LINE B (SOUTH ELEV.) DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Spall w/ exp. Reinf., 1.5" D - 1 SF
4	Spall w/ exp. Reinf., 1.5" D - 1 SF
5	Spall w/ exp. Reinf., 2" D - 1 SF
6	Spall w/ exp. Reinf., 2" D - 1 SF
7	Delam./Spall w/ exp. Reinf., 1.5" D - 3 SF



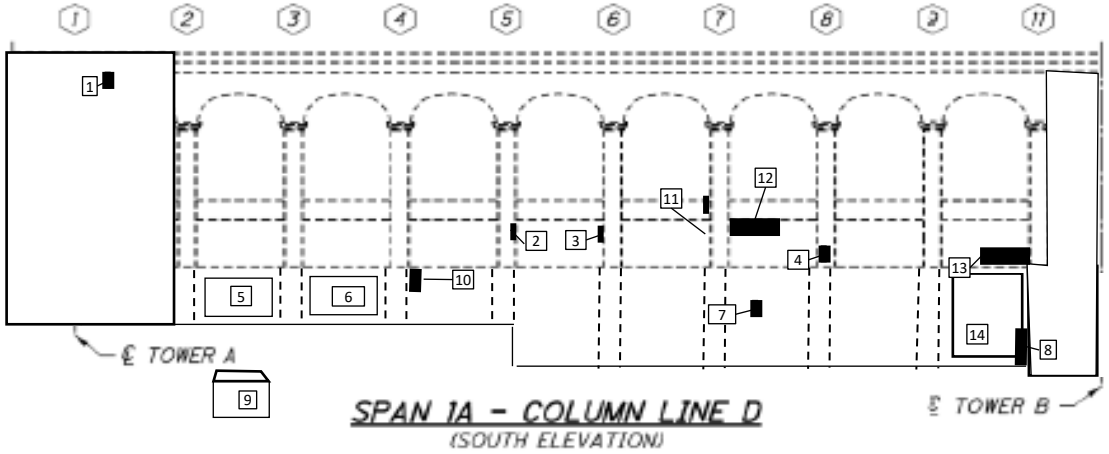
SPAN 1A - COLUMN LINE B (NORTH ELEV.) DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 8 SF
3	Spall - 1 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf. - 8 SF
6	Delamination - 1 SF
7	Delamination - 18 SF w/ Spall - 1 SF
8	Delamination - 2 SF
9	Delamination - 2 SF





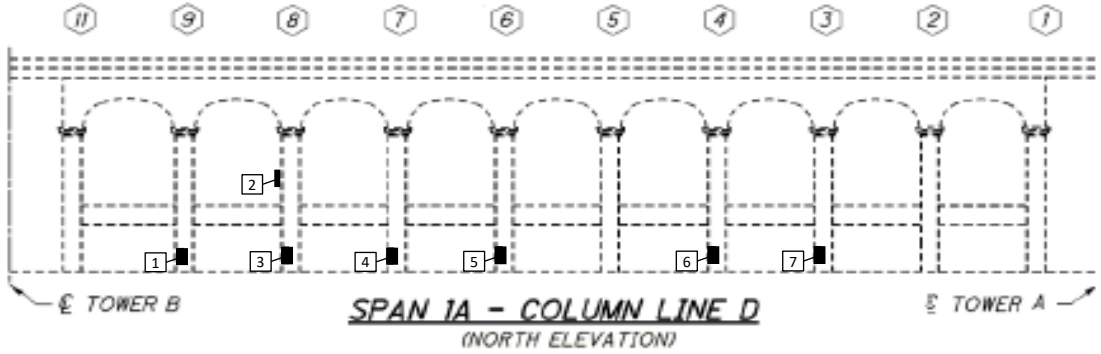
SPAN 1A - COLUMN LINE C (SOUTH ELEV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delamination - 2 SF
3	Delamination - 3 SF
4	Delam./Spall w/ exp. Reinf. - 6 SF
5	Spall with exp. Reinf. - 2 SF
6	Delam./Spall w/ exp. Reinf., 2.5" D - 10 SF
7	Spall w/ exp. Reinf. - 1 SF
8	Delamination - 2 SF
9	Spall w/ exp. Reinf. - 1 SF
10	Spall w/ exp. Reinf. - 1 SF
11	Spall w/ exp. Reinf., 2.5" D - 4 SF
12	Delam./Spall w/ exp. Reinf. - 9 SF
13	Delamination - 10 SF

SPAN 1A - COLUMN LINE C (NORTH ELEV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delam. and Spall w/ exp. Reinf. - 8 SF
3	Spall w/ exp. Reinf., 2" D - 2 SF
4	Delam./Spall w/ exp. Reinf. - 9 SF
5	Delamination - 2 SF
6	Spall w/ exp. Reinf., 2" D - 3 SF
7	Delam./Edge Spall with exp. Reinf. - 2 SF
8	Delamination - 2 SF
9	Delamination - 1 SF
10	Spall w/ exp. Reinf. - 1 SF
11	Delamination - 2 SF
12	Delamination - 1 SF



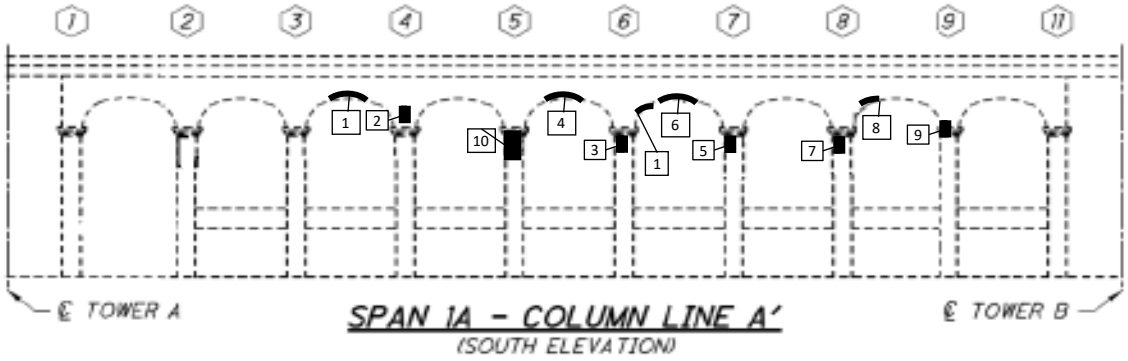
SPAN 1A - COLUMN LINE D
(SOUTH ELEVATION)

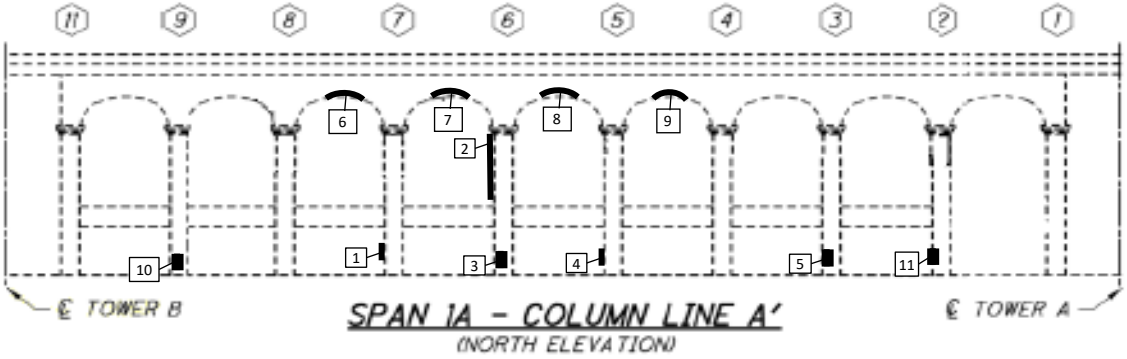
SPAN 1A - COLUMN LINE D (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Face of cap has a 1'-4" W x Full H x 6" D spall
2	Delamination - 8 SF
3	Delam. w/ Spall w/ exp. Reinf. - 6 SF
4	Delamination - 4 SF
5	Delam. - 42 SF w/ Spall w/ exp. Reinf. - 16 SF
6	Delamination - 24 SF
7	Delamination - 7 SF
8	Spall, 8" D - 5 SF
9	Embankment along the south side of Span 1A has signficant erosion for the full length. At the west end, there is a 15' Diameter x 4' D erosion ditch around the manhole. An erosion ditch extends from the manhole towards the east typ. 3' W x 2' D.
10	Delamination - 4 SF
11	Delamination - 2 SF
12	Delamination - 12 SF
13	Spall w/ exp. Reinf. 1"D - 12 SF
14	Delamination - 40 SF



SPAN 1A - COLUMN LINE D
(NORTH ELEVATION)

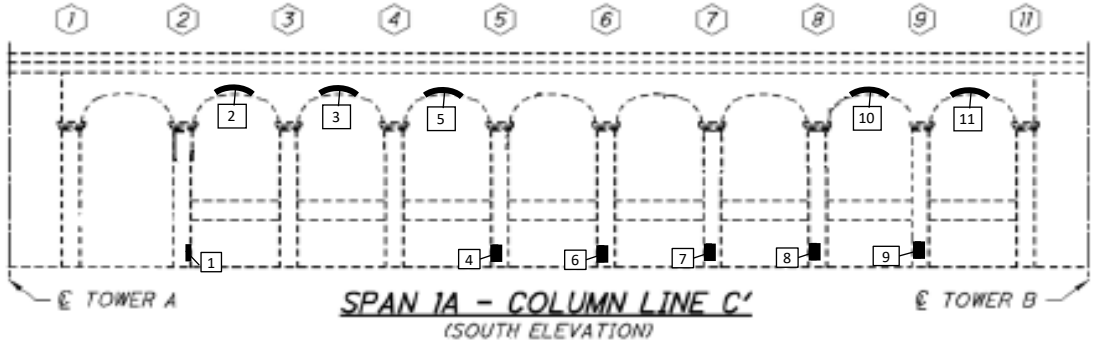
SPAN 1A - COLUMN LINE D (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf, 1.5" D - 7 SF
2	Delamination - 1 SF
3	Spall w/ exp. Reinf - 6 SF
4	Spall w/ exp. Reinf., 1.5" D - 6 SF
5	Delam. w/ Spall w/ exp. Reinf., 2.5" D - 4 SF
6	Delam. w/ Spall w/ exp. Reinf., 2.5" D - 8 SF
7	Delamination - 6 SF

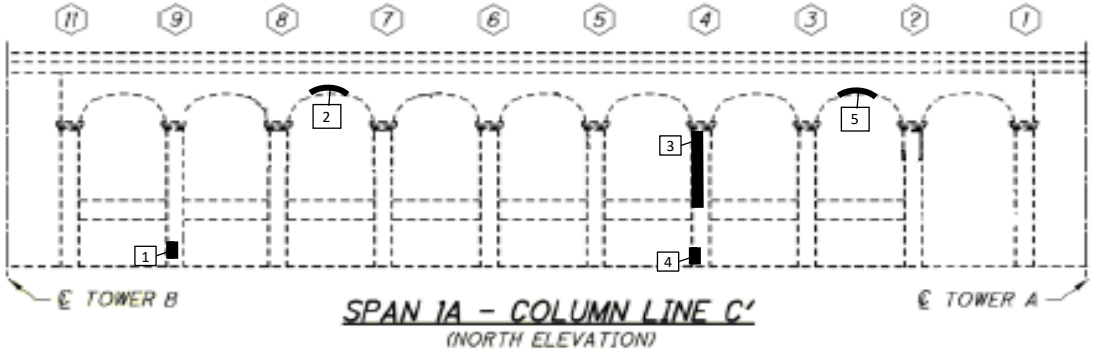




SPAN 1A - COLUMN LINE A' (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 4 SF
3	Spall w/ exp. Reinf., 3" D - 3 SF
4	Delam. w/ Spall w/ exp. Reinf. - 6 SF
5	Spall w/ exp. Reinf., 4" D - 8 SF
6	Spall w/ exp. Reinf. - 4 SF
7	Spall w/ exp. Reinf., 4" D - 6 SF
8	Delam. w/ edge spalls - 4 SF
9	Delamination - 2 SF
10	Spall w/ exp. Reinf., 3" D - 6 SF
11	Delamination - 1 SF

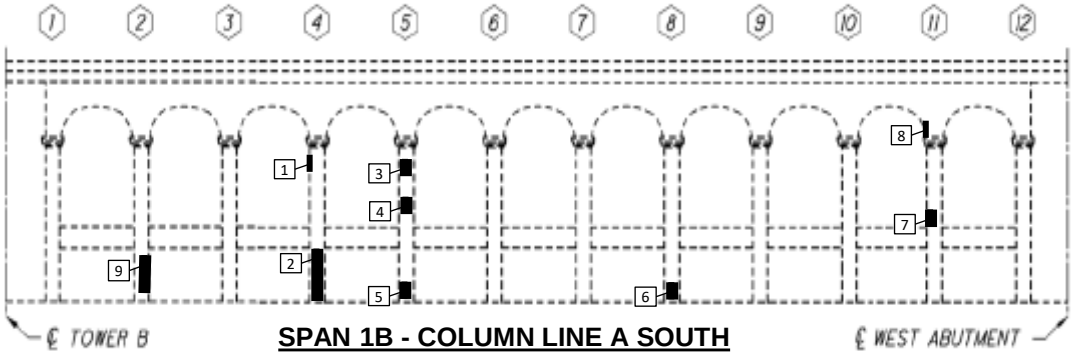
SPAN 1A - COLUMN LINE A' (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 6 SF
2	Delamination - 5 SF
3	Delaminaiton - 3 SF
4	Delam. w/ Spall w/ exp. Reinf. - 2 SF
5	Delamination - 1 SF
6	Spall w/ exp. Reinf. - 6 SF
7	Spall w/ exp. Reinf. - 3 SF
8	Spall w/ exp. Reinf. - 3 SF
9	Spall w/ exp. Reinf. - 6 SF
10	Delamination - 3 SF
11	Spall w/ exp. Reinf., 2" D - 2 SF



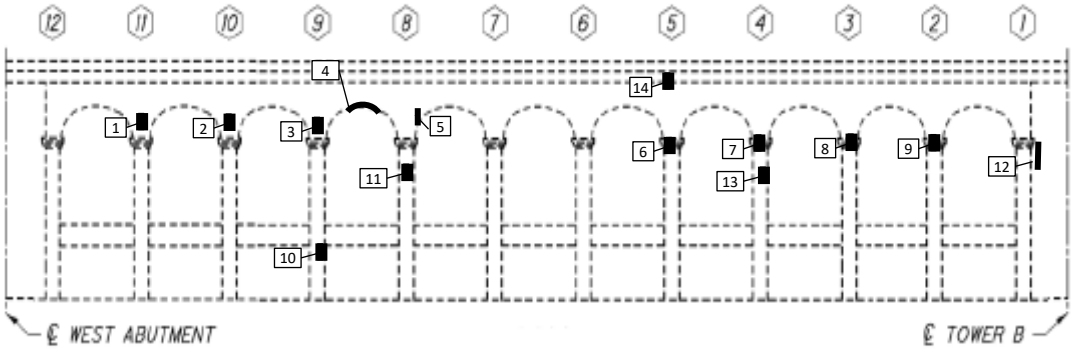


SPAN 1A - COLUMN LINE C' (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 2.5" D - 2 SF
2	Spall w/ exp. Reinf. - 6 SF
3	Spall w/ exp. Reinf. - 2 SF
4	Spall w/ exp. Reinf., 2" D - 4 SF
5	Spall w/ exp. Reinf. - 4 SF
6	Spall w/ exp. Reinf., 2" D - 3 SF
7	Spall w/ exp. Reinf., 3" D - 4 SF
8	Delamination - 4 SF
9	Delamination - 4 SF
10	Spall w/ exp. Reinf. - 3 SF
11	Spall w/ exp. Reinf. - 3 SF

SPAN 1A - COLUMN LINE C' (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 6 SF
2	Delamination - 1 SF
3	Delam. w/ Spall w/ exp. Reinf., 1.5" D - 17 SF
4	Delamination - 2 SF
5	Delamination - 2 SF



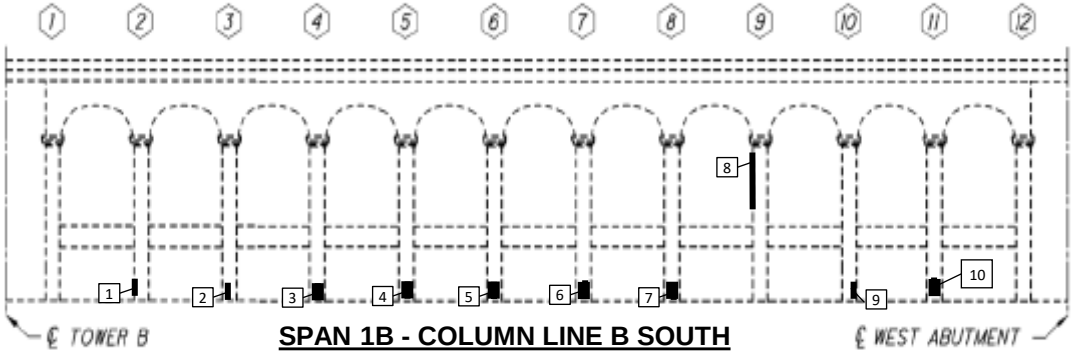
SPAN 1B - COLUMN LINE A SOUTH ELEVATION



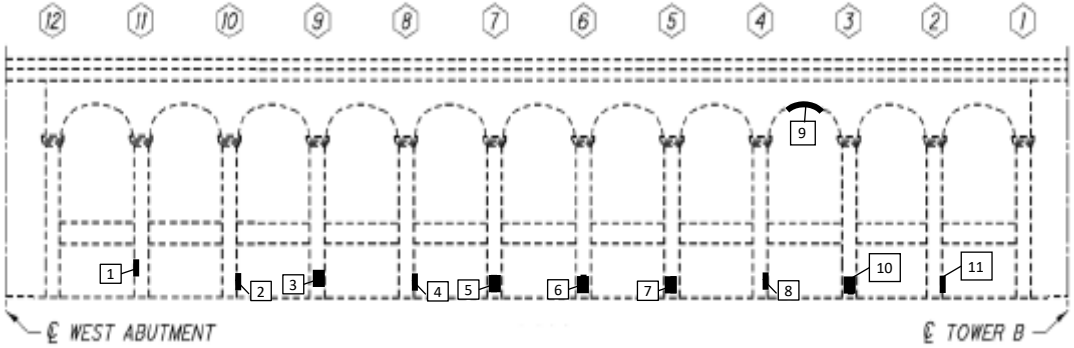
SPAN 1B - COLUMN LINE A NORTH ELEVATION

SPAN 1B - COLUMN LINE A (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Delam. w/ Spall w/ exp. Reinf. - 8 SF
3	Delamination - 4 SF
4	Delam. w/ Spall w/ exp. Reinf. - 2 SF
5	Delam. w/ Spall w/ exp. Reinf. - 8 SF
6	Delamination - 5 SF
7	Delam. w/ Spall w/ exp. Reinf. - 4 SF
8	Delamination - 2 SF
9	Delamination - 4 SF

SPAN 1B - COLUMN LINE A (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Spall w/ exp. Reinf. - 1 SF (on bracket)
3	Delam. w/ Spall w/ exp. Reinf. - 2 SF (on bracket)
4	Delamination - 1 SF
5	Delam. w/ Spall w/ exp. Reinf. - 2 SF
6	Delamination - 2 SF
7	Spall w/ exp. Reinf. - 1 SF
8	Delam. - 2 SF (underside of bracket)
9	Spall w/ exp. Reinf. - 1 SF, 3" D
10	Spall w/ exp. Reinf. - 1 SF
11	Delamination - 1 SF
12	Spall w/exp. Reinf. 3 SF, 4" D
13	Delamination - 1 SF
14	Delamination - 1 SF (on bracket)



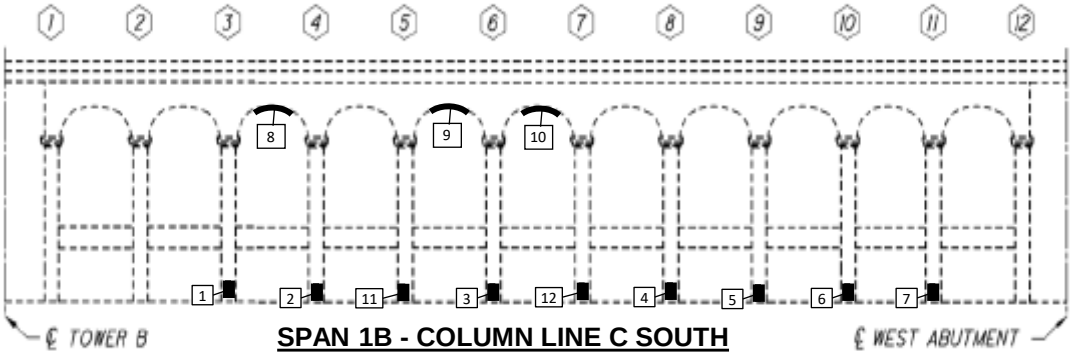
SPAN 1B - COLUMN LINE B SOUTH ELEVATION



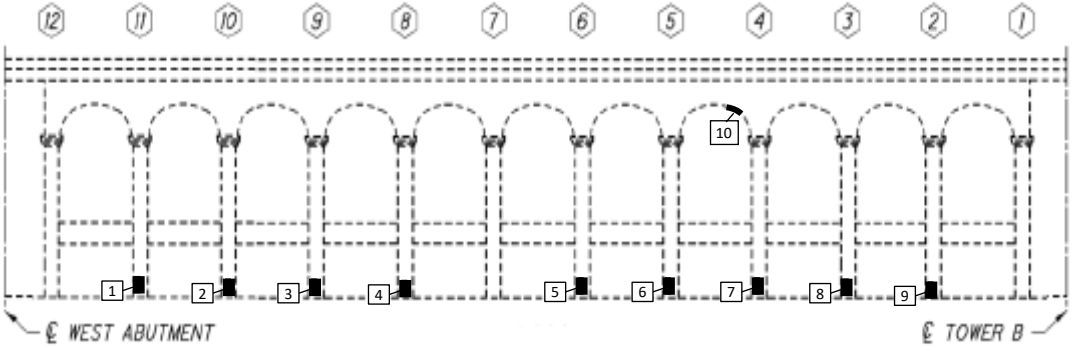
SPAN 1B - COLUMN LINE B NORTH ELEVATION

SPAN 1B - COLUMN LINE B (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Delam. w/ Spall w/ exp. Reinf. - 4 SF
2	Delam. w/ Spall w/ exp. Reinf. - 4 SF
3	Delamination - 2 SF
4	Delamination - 4 SF
5	Spall w/ exp. Reinf., 2" D - 4 SF
6	Delam. w/ Spall w/ exp. Reinf. - 3 SF
7	Delamination - 6 SF
8	Delamination - 3 SF
9	Spall w/ exp. Reinf. - 2 SF
10	Delamination - 4 SF

SPAN 1B - COLUMN LINE B (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 3 SF
2	Delam. w/ Spall w/ exp. Reinf. - 4 SF
3	Spall w/ exp. Reinf., 3" D - 5 SF
4	Delamination - 6 SF
5	Delamination - 4 SF
6	Spall w/ exp. Reinf., 2.5" D - 3 SF
7	Spall w/ exp. Reinf., 2" D - 4 SF
8	Delam. w/ Spall w/ exp. Reinf. - 4 SF
9	Delamination - 3 SF
10	Spall w/ exp. Reinf., 2.5" D - 6 SF
11	Spall w/ exp. Reinf., 4" D - 2 SF



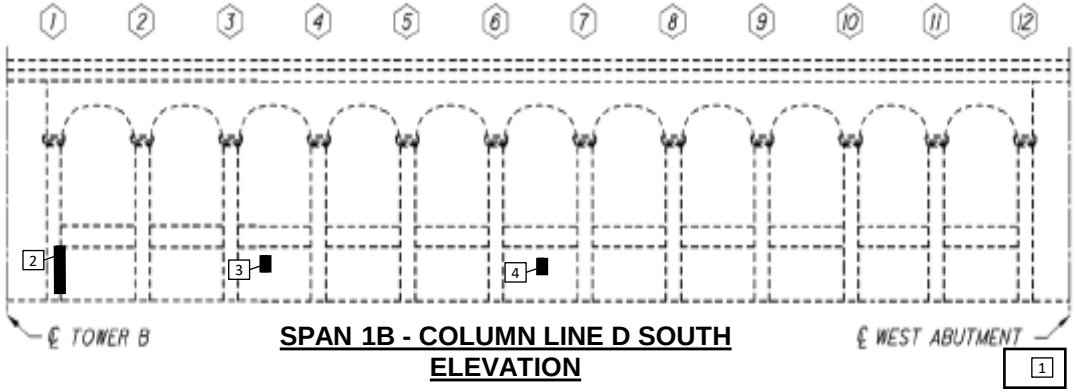
SPAN 1B - COLUMN LINE C SOUTH ELEVATION



SPAN 1B - COLUMN LINE C NORTH ELEVATION

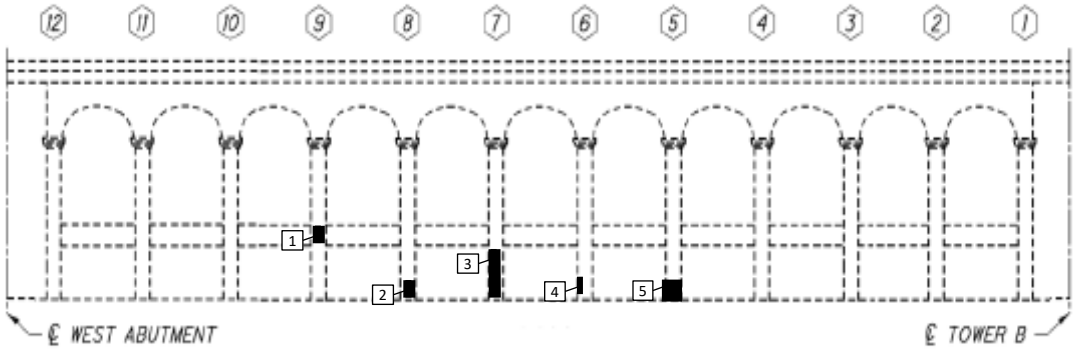
SPAN 1B - COLUMN LINE C (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 4 SF
2	Delam. w/ Spall w/ exp. Reinf. - 5 SF
3	Delam. w/ Spall w/ exp. Reinf. - 6 SF
4	Delamination - 4 SF
5	Delam. w/ Spall w/ exp. Reinf. - 6 SF
6	Delamination - 6 SF
7	Spall w/ exp. Reinf. - 2 SF
8	Delamination - 2 SF
9	Delamination - 2 SF
10	Delam. w/ Spall w/ exp. Reinf. - 4 SF
11	Delamination - 4 SF
12	Delamination - 2 SF

SPAN 1B - COLUMN LINE C (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination - 6 SF
2	Delamination - 4 SF
3	Delamination - 4 SF
4	Delamination - 4 SF
5	Delam. w/ Spall w/ exp. Reinf. - 4 SF
6	Delamination - 6 SF
7	Delamination - 2 SF
8	Delam. w/ Spall w/ exp. Reinf. - 4 SF
9	Delamination - 4 SF
10	Spall - 1 SF



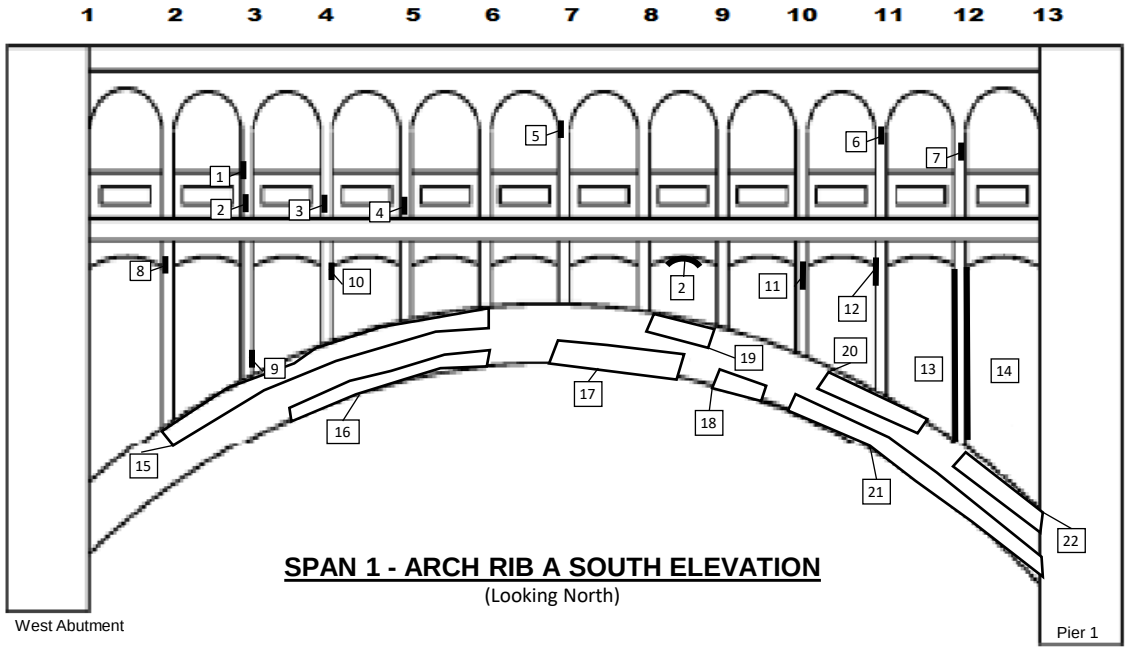
SPAN 1B - COLUMN LINE D SOUTH ELEVATION

SPAN 1B - COLUMN LINE D (SOUTH ELV.) DEFICIENCIES	
#	Defect
1	Delamination and spalling - 60 SF
2	Entire column is broken away from wall.
3	Delamination - 2 SF
4	Delamination - 1 SF

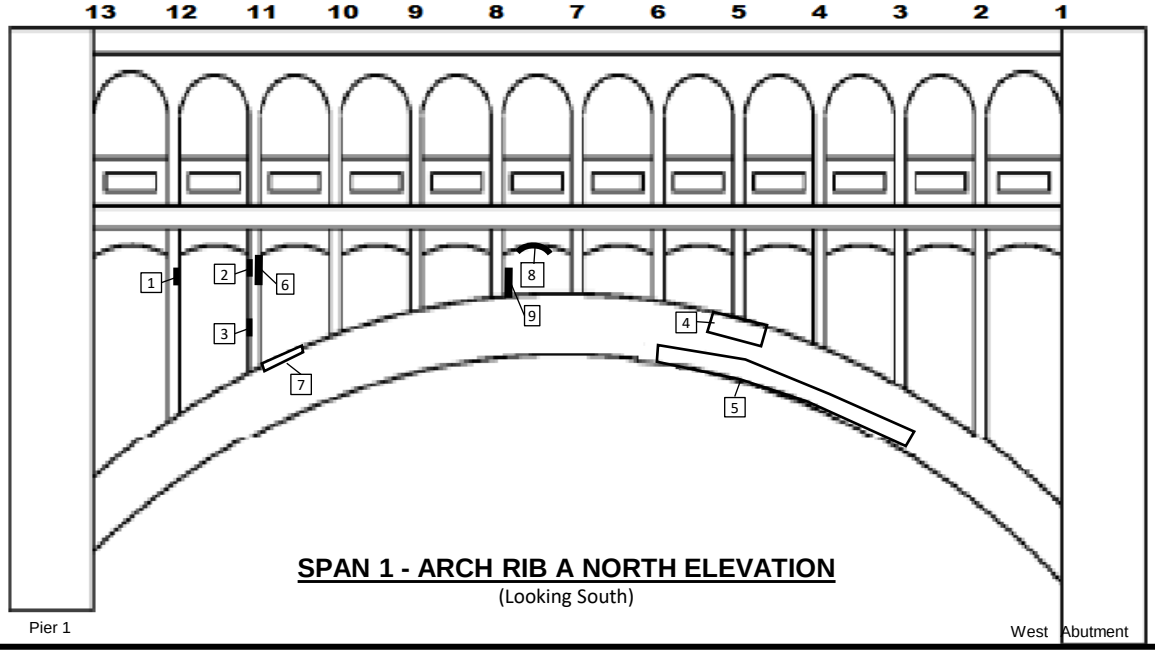


SPAN 1B - COLUMN LINE D NORTH ELEVATION

SPAN 1B - COLUMN LINE D (NORTH ELV.) DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Spall w/ exp. Reinf., 2" D - 4 SF
3	Spall w/ exp. Reinf. - 8 SF
4	Spall w/ exp. Reinf. - 1 SF
5	Delamination - 6 SF



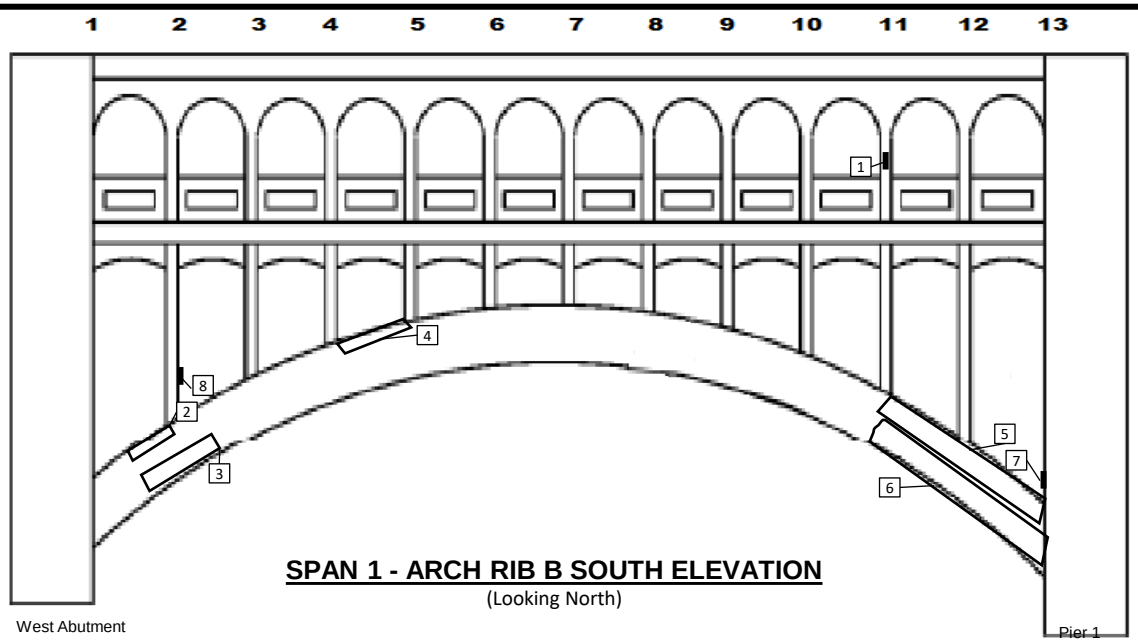
SPAN 1 - ARCH RIB A SOUTH ELEVATION
(Looking North)



SPAN 1 - ARCH RIB A NORTH ELEVATION
(Looking South)

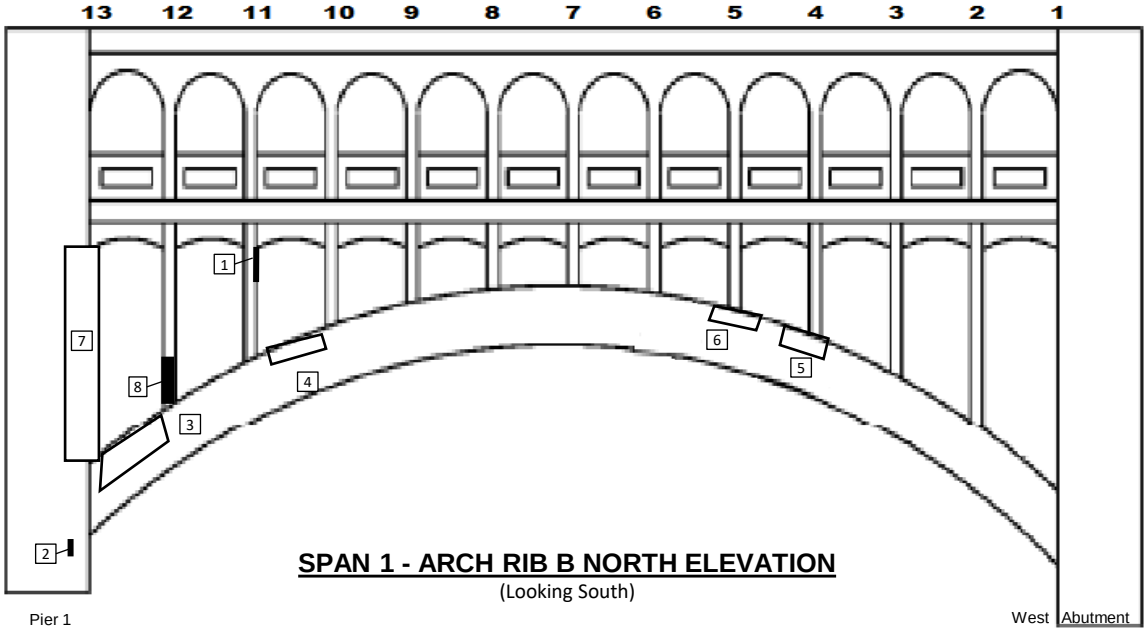
SPAN 1 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall, 1.5" D - 1 SF
2	Delamination - 3 SF
3	Delam. w/ Spall w/ exp. Reinf., 1" D - 3 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf., 1" D - 1 SF
6	Delamination - 1 SF
7	Delamination - 2 SF
8	Delamination - 8 SF
9	Delamination - 2 SF
10	Delamination - 3 SF
11	Delamination - 6 SF
12	Delamination - 3 SF
13	Delamination 1' W x FH - 15 SF
14	Delamination 1' W x FH - 15 SF
15	Delamination w/ map cracking - 40' L x 1.5' H
16	Delamination - 20' L x 1' H
17	Delamination - 18' L x 1.5' H
18	Delamination - 8' L x 1.5' H
19	Delamination - 8' L x 1.5' H
20	Delamination w/ map cracking - 8' L x 2' H
21	Delamination w/ map cracking - 40' L x 1.5' H
22	Delamination - 12' L x 2' H
23	Delamination - 4 SF

SPAN 1 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 4 SF
2	Spall - 4 SF
3	Spall - 6 SF
4	Delamination w/ map cracking - 12' L x 2' H
5	Delamination w/ map cracking - 30' L x 1.5' H
6	Delamination - 6 SF
7	Delamination - 2' x 6"
8	Delamination - 2 SF
9	Delamination - 1 SF



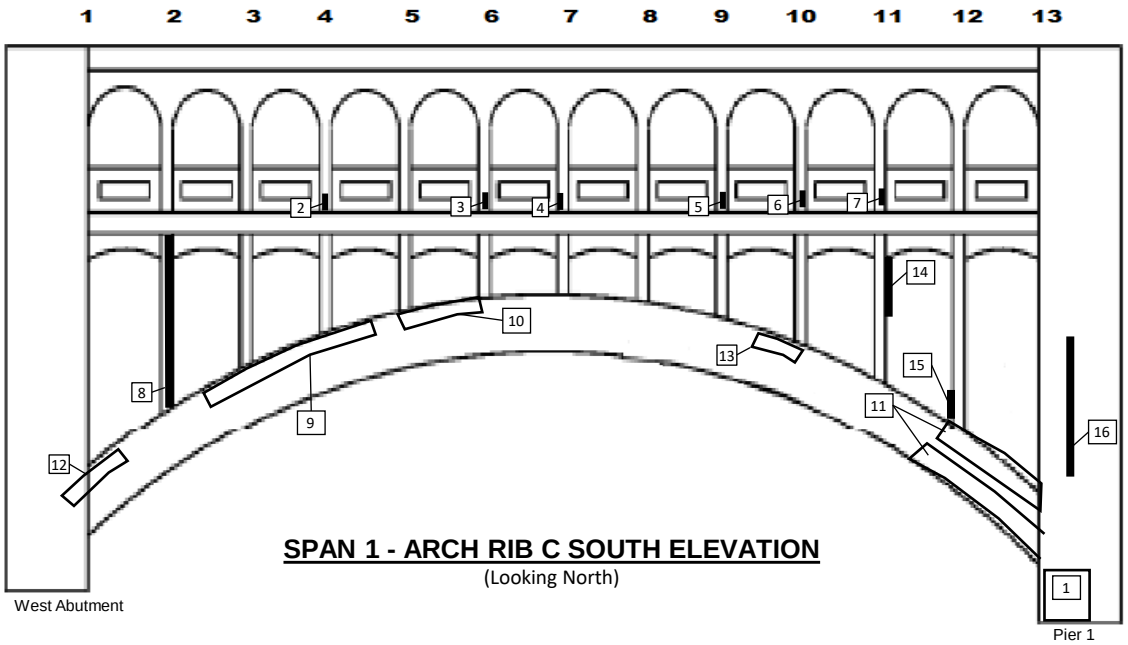
SPAN 1 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 1 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination - 1' L x 1' H
3	Delamination - 3' L x 2' H
4	Delamination - 4' L x 1' H
5	Delamination - 25' L x 1.5' H
6	Delamination - 20' L x 1.5' H
7	Delamination - 3 SF
8	Spall w/ exp. Reinf. - 1 SF

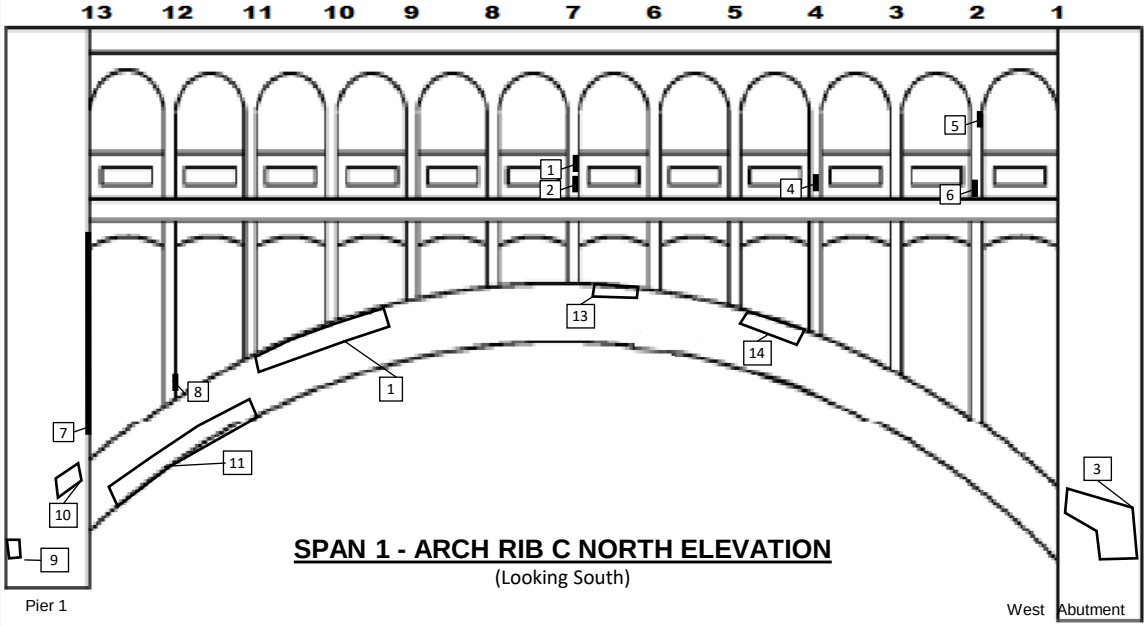


SPAN 1 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 1 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination - 2 SF
3	Map Cracking - 10' L x 1' H
4	Delamination - 8 SF
5	Delamination - 5' L x 1' H
6	Delamination - 2' L x 1' H
7	Delam. - FH and extends 1' back each face - 40 SF
8	Delamination - 2 SF



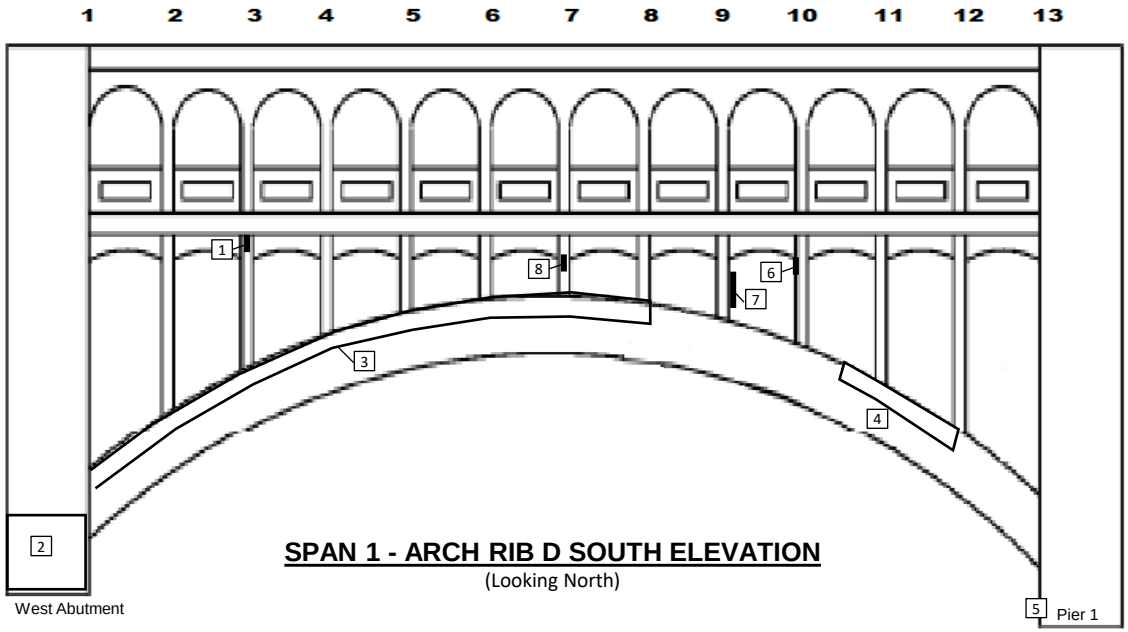
SPAN 1 - ARCH RIB C SOUTH ELEVATION
(Looking North)



SPAN 1 - ARCH RIB C NORTH ELEVATION
(Looking South)

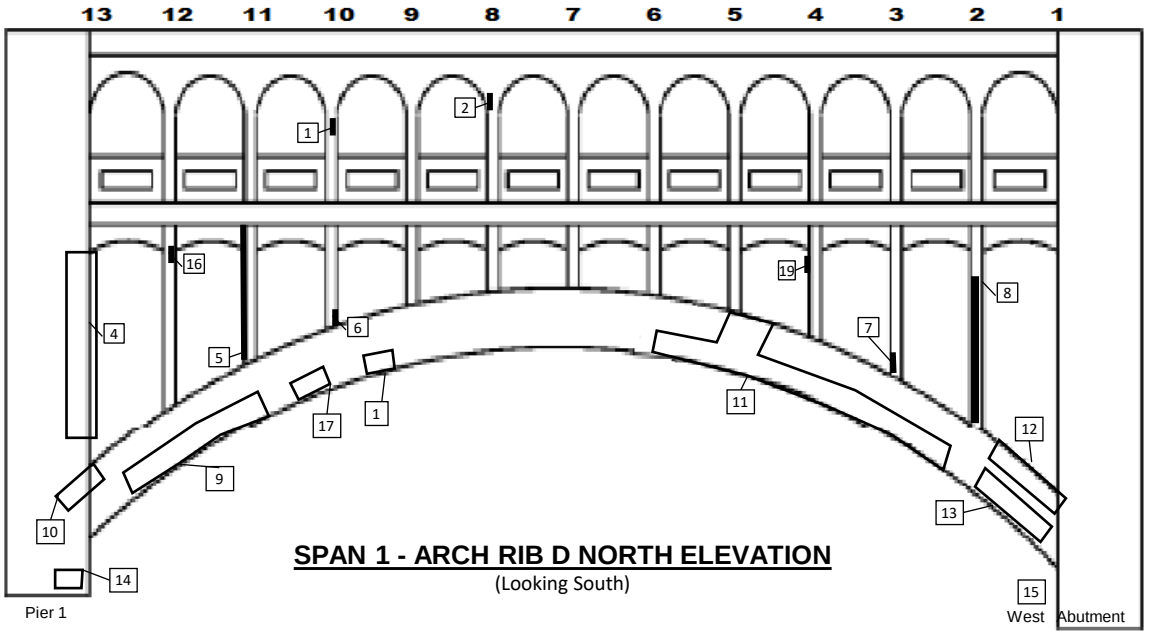
SPAN 1 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 12 SF
2	Delamination - 15 SF
3	Delam. w/ Spall w/ exp. Reinf. - 1 SF
4	Delamination - 1 SF
5	Delamination - 1 SF
6	Delamination - 2 SF
7	Delamination - 2 SF
8	Delamination - 24 SF
9	Delam. and Spall w/ exp. Reinf - 25' L x 1' H
10	Delamination - 10' L x 1' H
11	Map cracking, top and bottom. - 15 LF
12	Delamination - 5' L x 1' H
13	Delamination - 4' L x 1' H
14	Delamination - 3 SF
15	Delamination - 2 SF
16	Delamination - 10 SF

SPAN 1 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 1 SF
3	Delamination - 6' L x 2' H
4	Delamination - 3 SF
5	Delamination - 4 SF
6	Delamination - 4 SF
7	Delamination - 20 SF
8	Delamination - 2 SF
9	Delamination - 3' L x 3' H
10	Delamination - 5' L x 1' H
11	Delamination - 14' L x 1' H
12	Delamination - 20' L x 1' H
13	Delamination - 4' L x 0.5' H
14	Delamination - 6' L x FW on top.



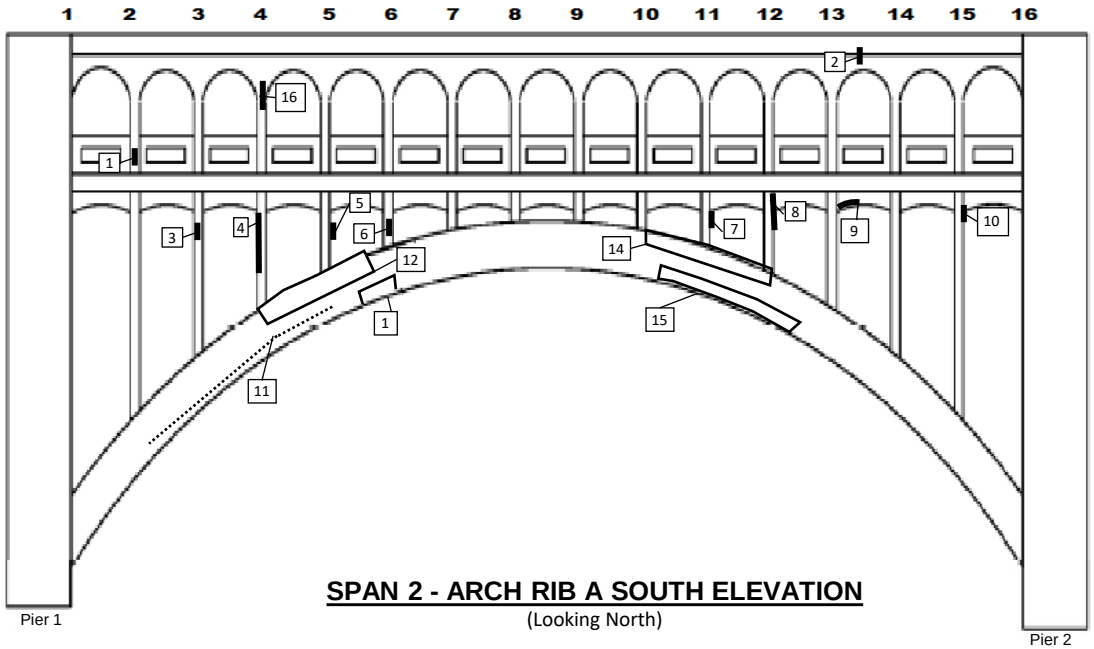
SPAN 1 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 1 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Spall, 3" D @ base of abutment - 48 SF
3	Delamination - 80' L x 1' H
4	Delamination - 15' L x 1' H
5	Slope inclinometer 15' from pier column



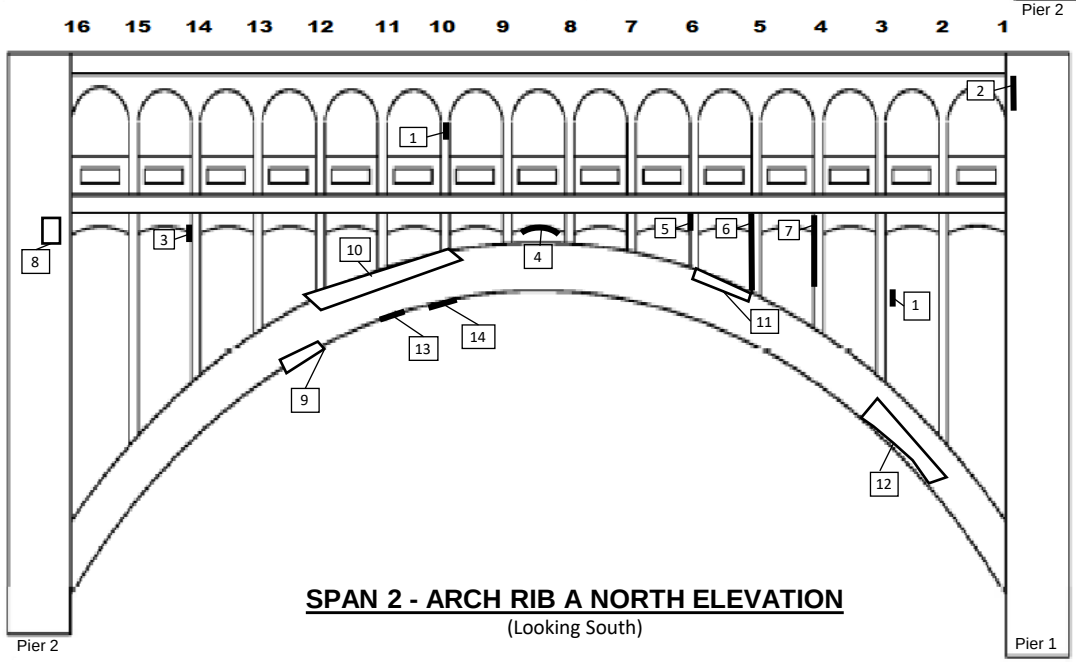
SPAN 1 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 1 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Spall, 1" D - 1 SF
3	Delamination - 6 SF
4	Delamination - 40 SF
5	Delamination - 8 SF
6	Delamination - 5 SF
7	Delamination - 1 SF
8	Delamination - 8 SF
9	Delamination w/ map cracking - 15' L x 1' H
10	Delamination - 4' L x 1' H
11	Delamination w/ map cracking - 30' L (80 SF)
12	Delamination w/ map cracking - 12' L x 2' H
13	Delamination - 8' L x 1' H
14	Delamination - 8 SF
15	Downspout and scupper 100% clogged
16	Delamination - 2 SF
17	Delamination - 4' L x 1' H
18	Delamination - 5' L x 1' H
19	Delamination - 2 SF



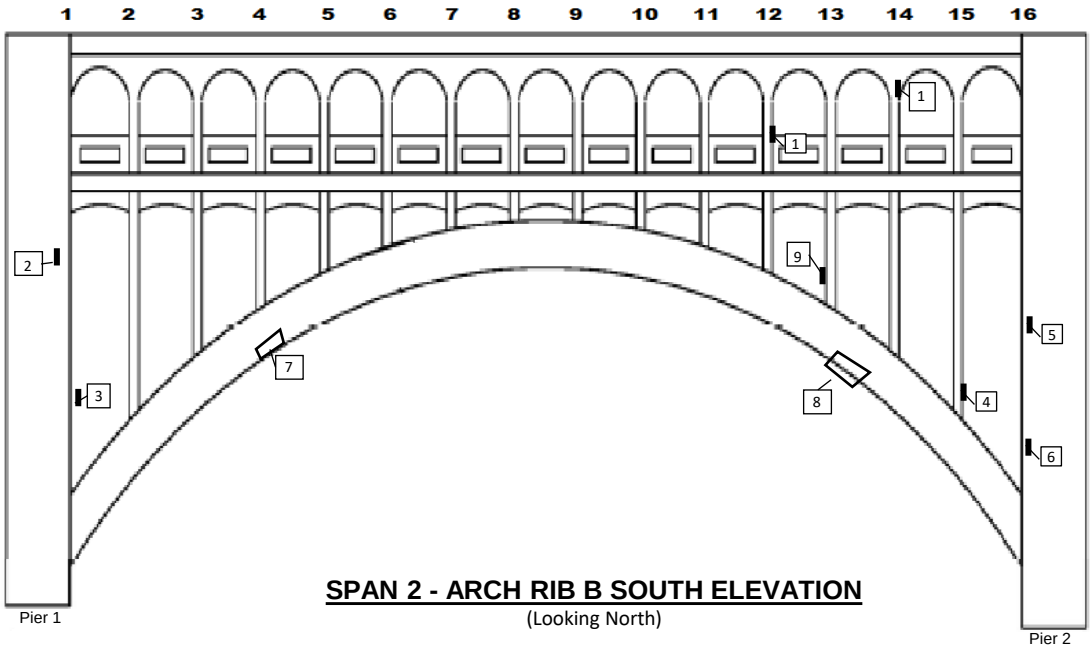
SPAN 2 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 1 - ARCH RIB A SOUTH ELEV. DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination - 5 SF
3	Spall w/ exp. Reinf. - 6 SF
4	Spall w/ exp. Reinf. - 14 SF
5	Delamination - 2 SF
6	Delamination - 6 SF
7	Delamination - 1 SF
8	Delam w/ Spall w/ exp. Reinf. - 8 SF
9	Delamination w/ Spall w/ exp. Reinf. - 12 SF
10	Delamination - 3 SF
11	Up to 1/8" W crack, 25' L
12	Delamination - 12' L x 1' W
13	Delamination - 6' L x 1' W
14	Delamination w/ Map Cracking - 15' L x 1' W
15	Delamination w/ Map Cracking - 14' L x 2' H
16	Delamination - 6 SF



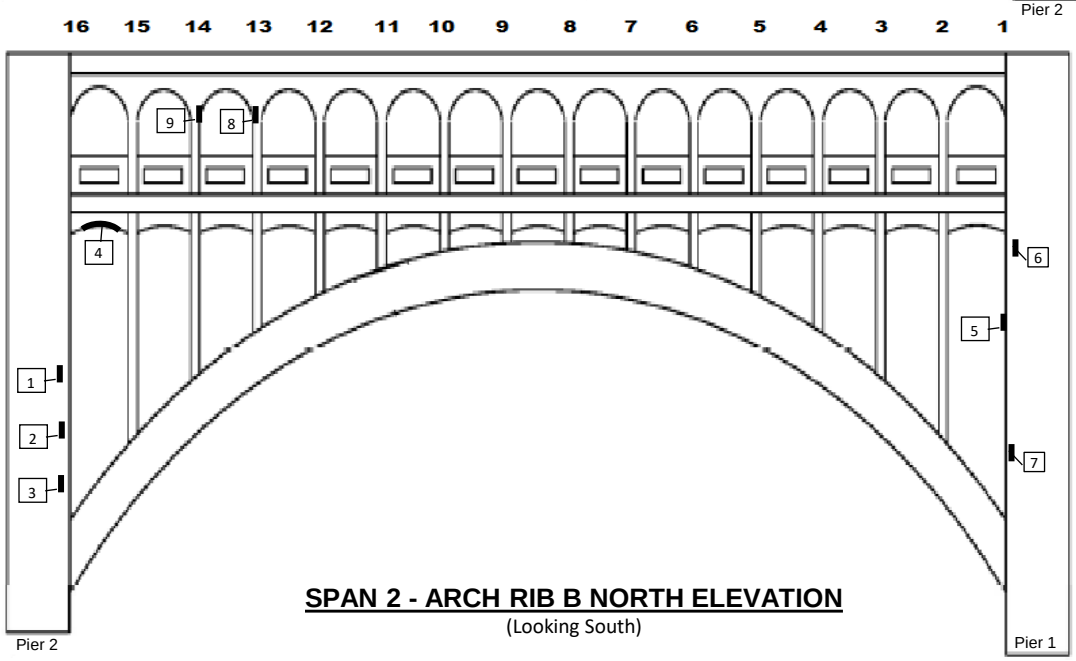
SPAN 2 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 1 - ARCH RIB A NORTH ELEV. DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delamination (on pier tower) - 4 SF
3	Delamination - 4 SF
4	Delamination - 5 SF
5	Delamination - 2 SF
6	Delamination - 4 SF
7	Delamination - 6 SF
8	Delamination - 2 SF
9	Delamination (underside of arch) - 4' L x 1' W
10	Delam. w/ Spall w/ exp. Reinf. - 20' L x 1' W
11	Delamination - 6' L x 0.5' W
12	Delamination w/ Spall - 10' L x 1' W
13	Delamintion - 3' L x 0.5' W
14	Delamination - 3' L x 0.5' W
15	Delamination - 1 SF



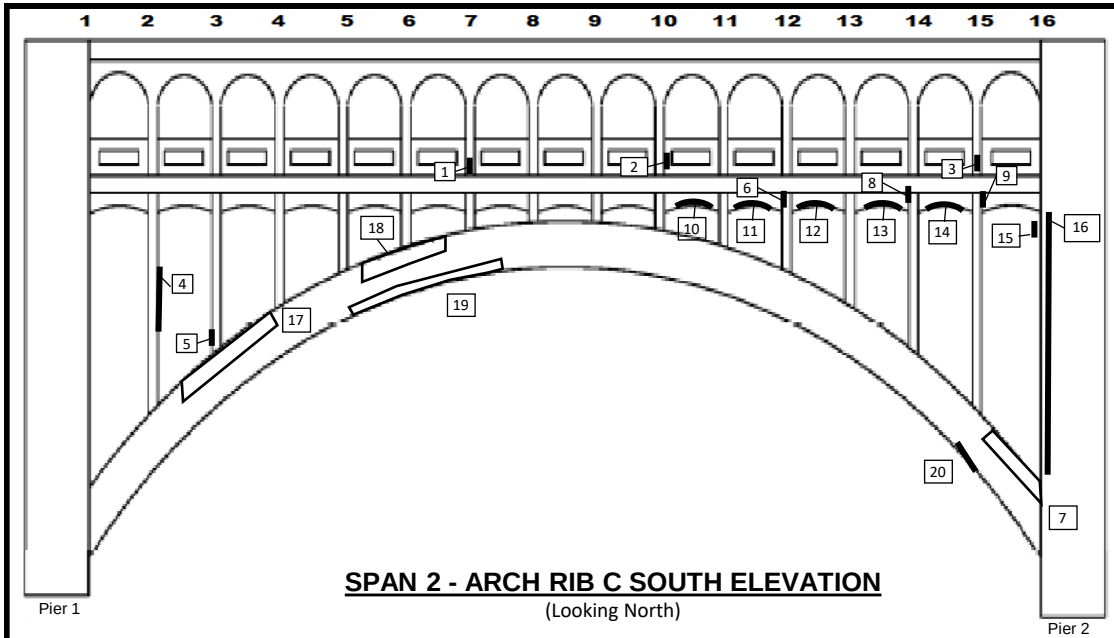
SPAN 2 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 2 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall, 1.5" D - 1 SF
2	Delamination - 6 SF
3	Delamination - 4 SF
4	Delamination - 2 SF
5	Delamination - 14 SF
6	Delamination - 2 SF
7	Spall w/ exp. Reinf. - 2 SF
8	Delamination - 8 SF
9	Spall w/ exp. Reinf. - 2 SF
10	Delamination - 1 SF

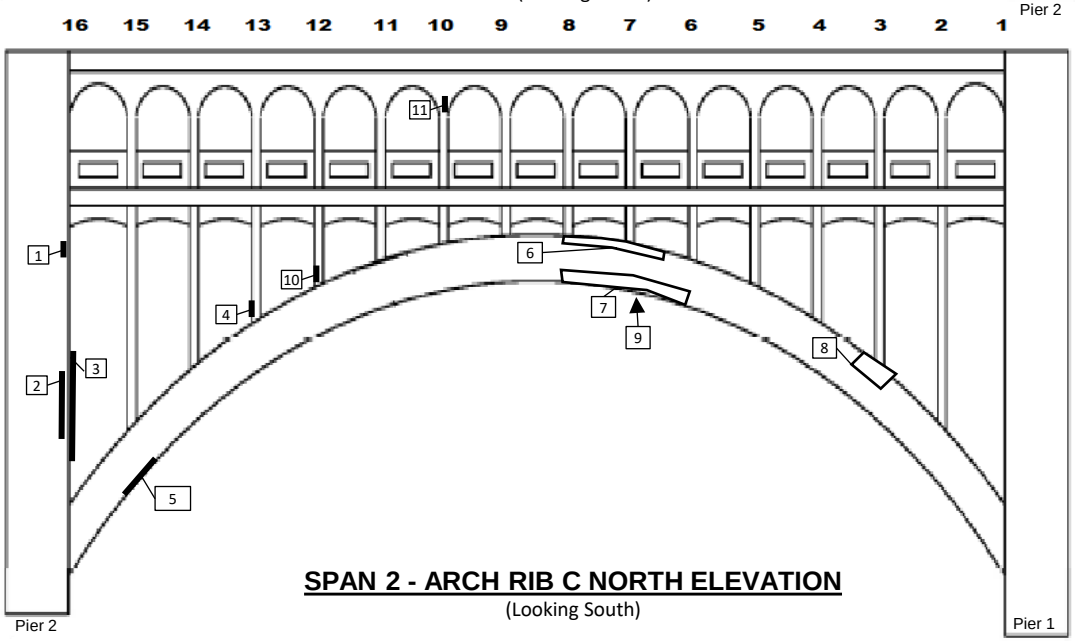


SPAN 2 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 2 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 4 SF
2	Spall w/ exp. Reinf. - 4 SF
3	Delamination - 12 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf. - 5 SF
6	Delamination - 6 SF
7	Delamination - 3 SF
8	Spall w/ exp. Reinf. - 1 SF
9	Delamination - 6 SF



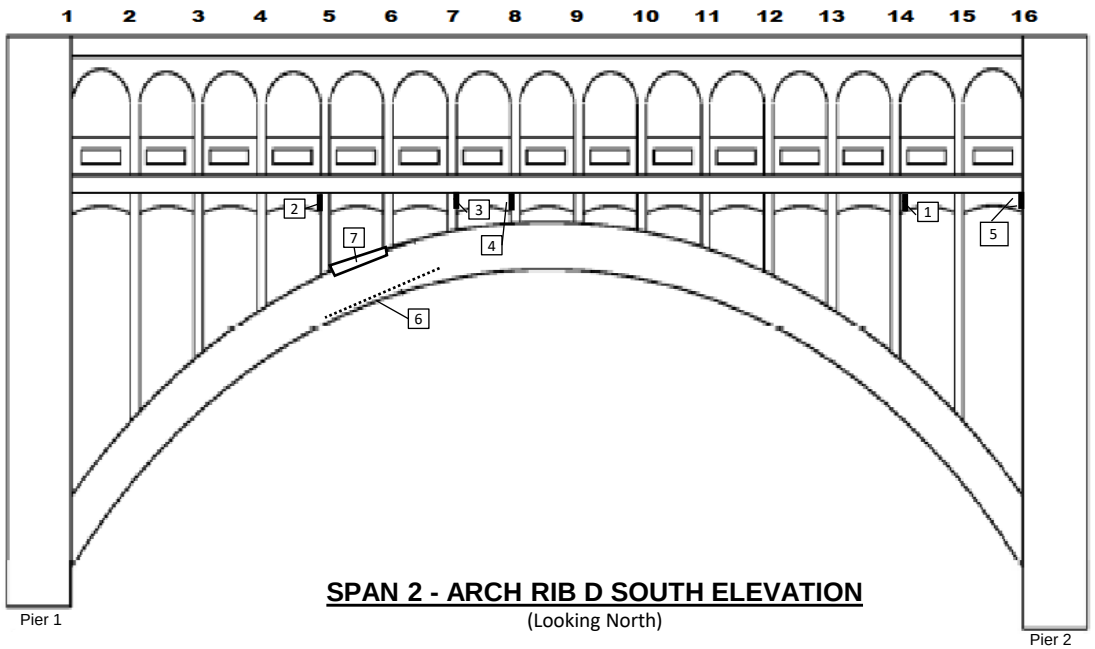
SPAN 2 - ARCH RIB C SOUTH ELEVATION
(Looking North)



SPAN 2 - ARCH RIB C NORTH ELEVATION
(Looking South)

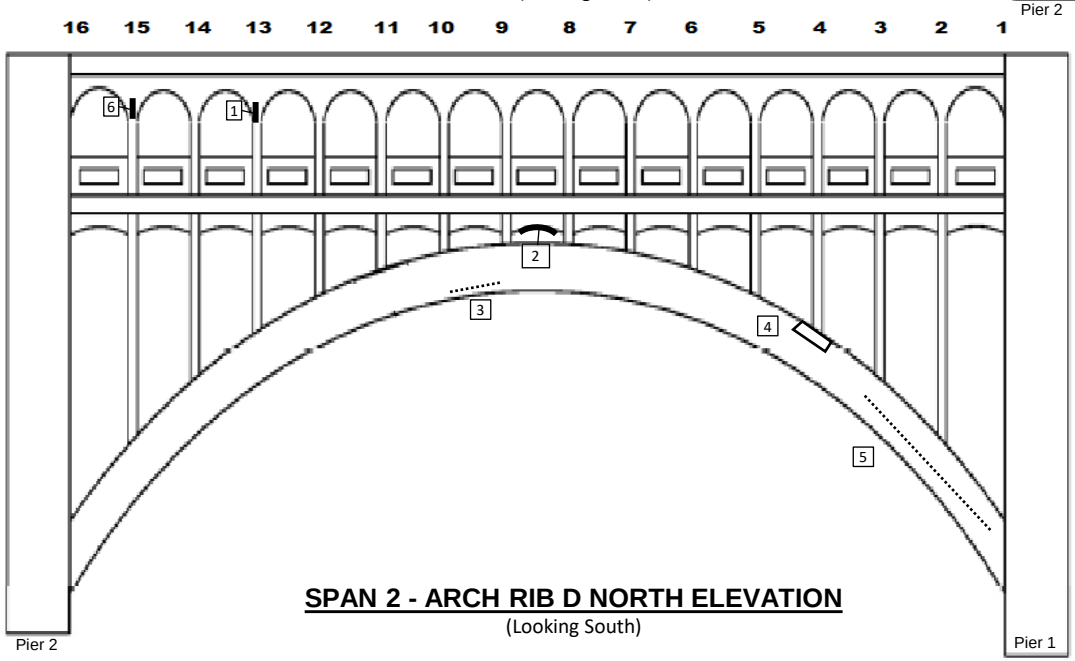
SPAN 2 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delam. w/ Spall w/ exp. Reinf. - 2 SF
3	Delam. w/ Spall - 6 SF
4	Delamination - 8 SF
5	Delamination - 1 SF
6	Spall w/ exp. Reinf. - 2 SF
7	Delamination - 6 SF
8	Delamination - 4 SF
9	Delamination - 3 SF
10	Delam. w/ Spall w/ exp. Reinf. - 2 SF
11	Delamination - 3 SF
12	Delamination (underside) - 5 SF
13	Delamination - 2 SF
14	Delamination - 4 SF
15	Delamination - 5 SF
16	Delamination - 30 SF
17	Delamination - 15' L x 1' W
18	Delamination - 14' L x 1' W
19	Delamination w/ 1/8" W crack - 15' L x 1' W
20	Delamination (underside of arch) - 2' L x 2' W

SPAN 2 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 12 SF
2	Delamination - 20 SF
3	Delamination - 35 SF
4	Spall w/ exp. Reinf. - 2 SF
5	Delamination (underside of arch) - 4' L x 1' W
6	Delamination - 10' L x 1' W
7	Delamination - 6' L x 1' W
8	Delamination - 4' L x 1' W
9	Delamination (underside of arch) - 5' L x 1' W
10	Spall w/ exp. Reinf. - 1 SF
11	Delamination - 1 SF



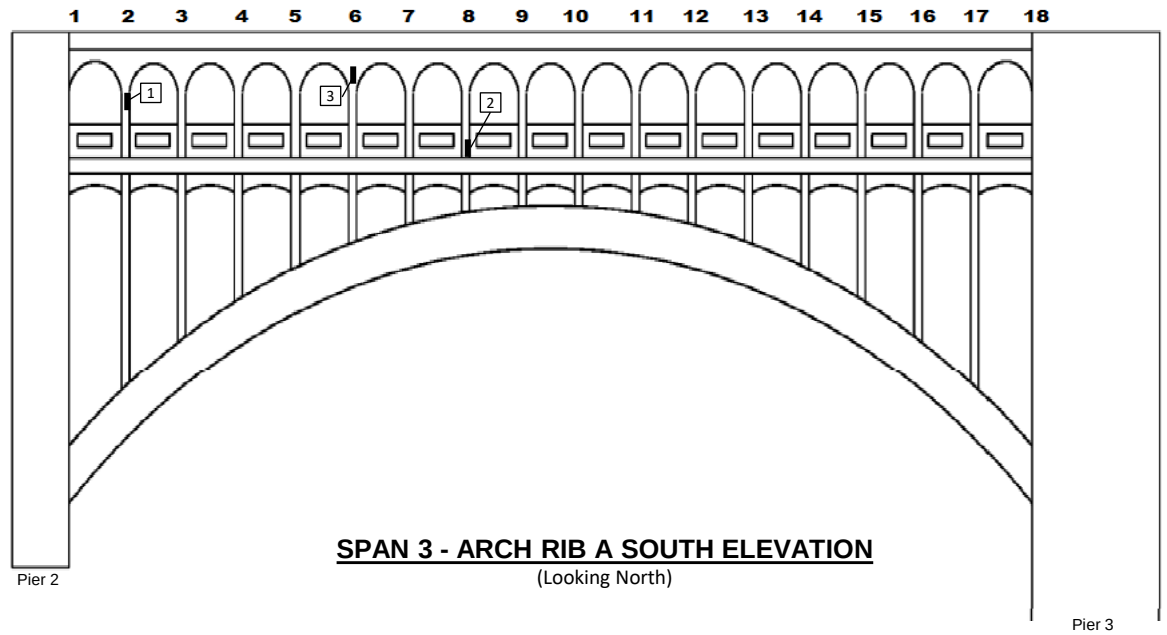
SPAN 2 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 2 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delam. w/ Spall w/ exp. Reinf. - 2 SF
3	Delamination - 1 SF
4	Delamination - 1 SF
5	Delamination w/ Spall w/ exp. Reinf. - 9 SF
6	1/16" W Crack - 15 LF
7	Delamination - 5' L x 1' W



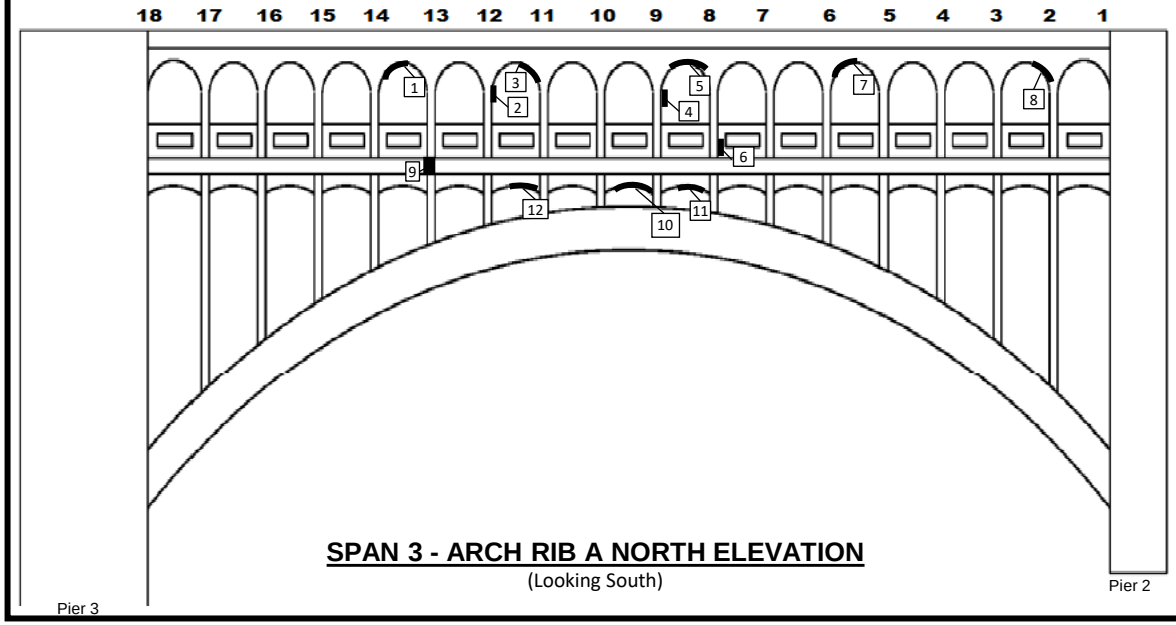
SPAN 2 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 2 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 6" D - 1 SF
2	Delamination - 6 SF
3	1/16" W Crack - 6 LF
4	Delamination - 3' L x 1' W
5	1/16" W Crack - 25 LF
6	Delamination - 2 SF



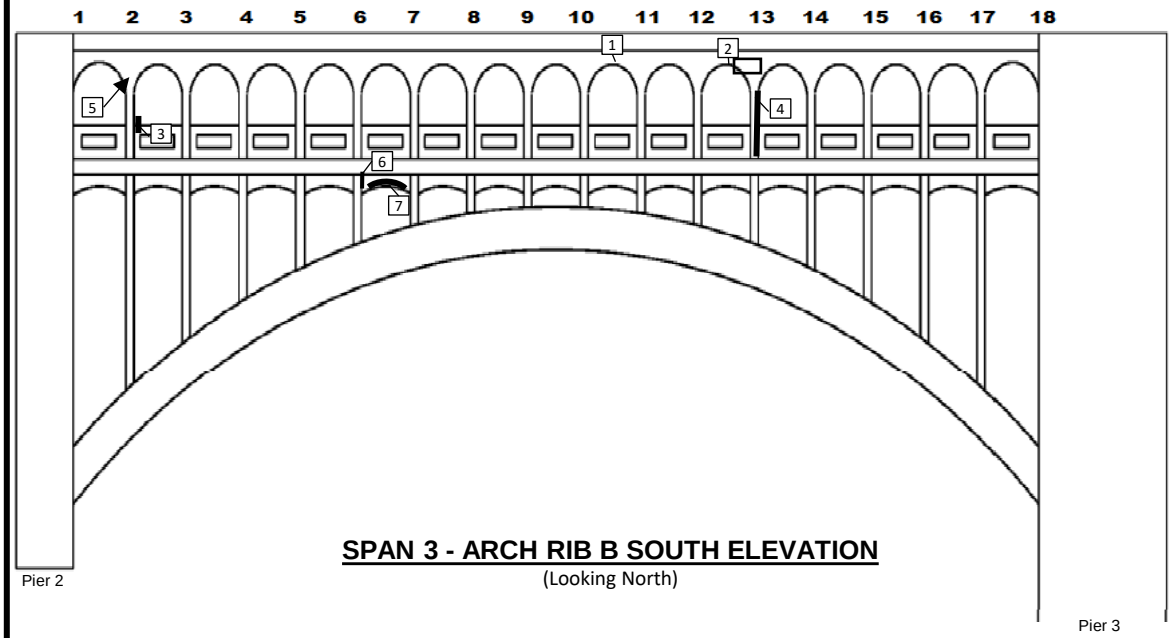
SPAN 3 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 3 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 6 SF
3	Delamination - 4 SF



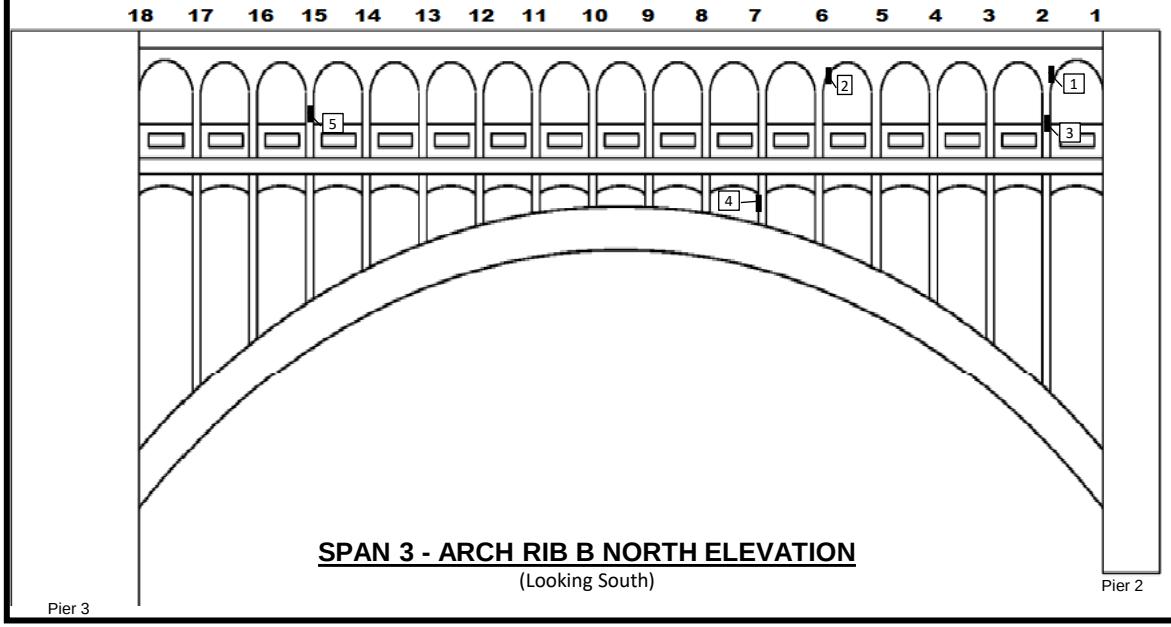
SPAN 3 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 3 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 6 SF
3	Delamination - 2 SF
4	Delamination - 2 SF
5	Delamination - 8 SF
6	Delamination - 2 SF
7	Delamination - 8 SF
8	Delamination - 1 SF
9	Broken lighting fixture
10	Delamination - 4 SF
11	Delamination - 4 SF
12	Delamination - 2 SF



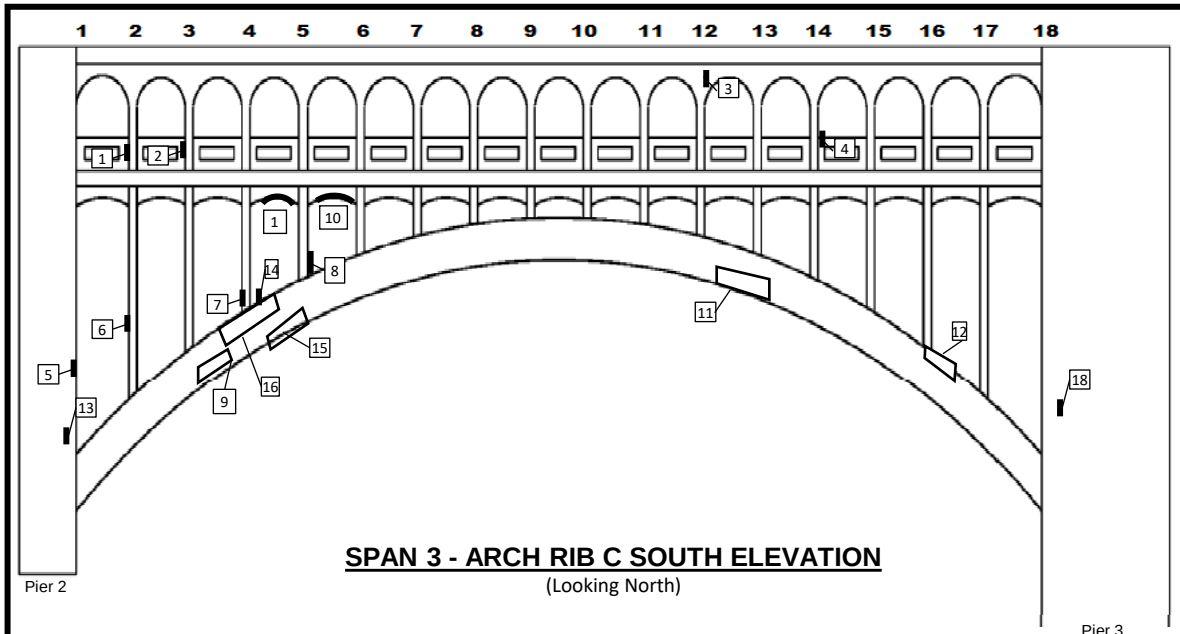
SPAN 3 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 3 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Jack arch is cracked w/efflorescence
2	Delamination - 6 SF
3	Delamination - 3 SF
4	Delamination - 10 SF
5	Delamination - 2 SF
6	Spall - 1 SF
7	Delamination - 2 SF



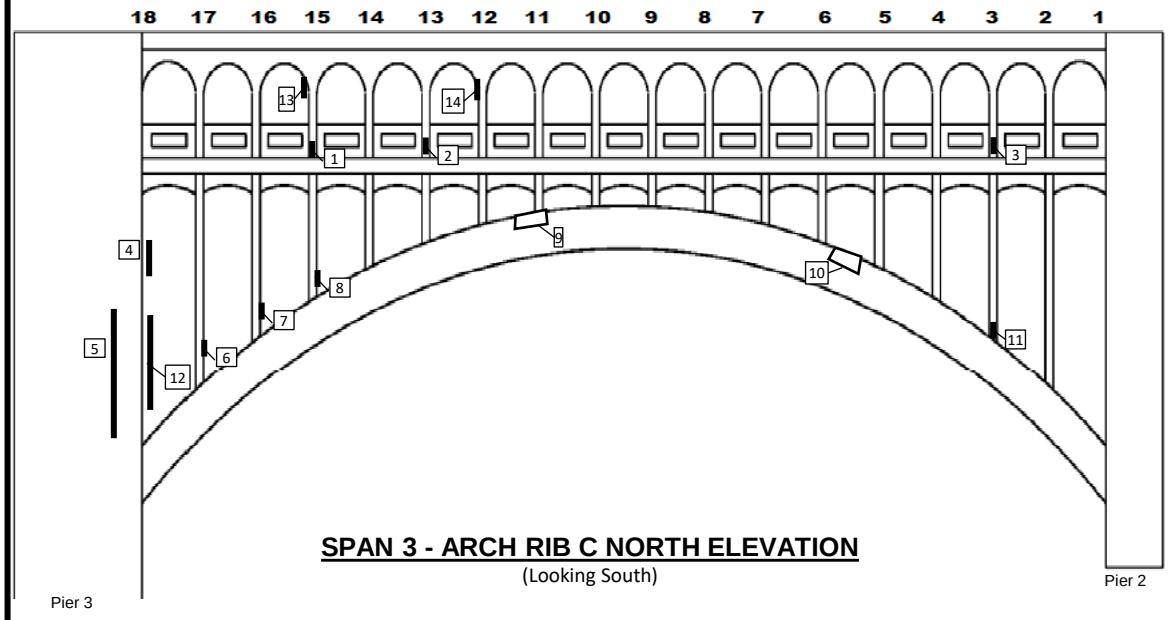
SPAN 3 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 3 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Delamination - 1 SF
3	Spall, 2" D - 1 SF
4	Delamination - 2 SF
5	Delamination - 1 SF



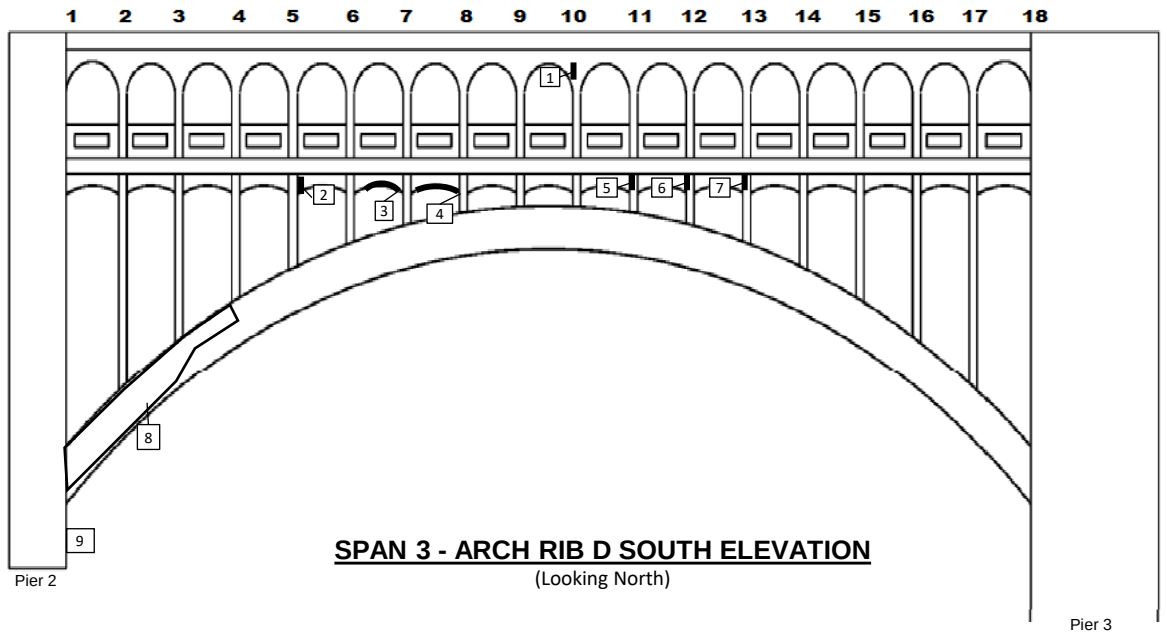
SPAN 3 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 3 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delam. w/ Spall, 3" D - 2 SF
2	Delamination - 4 SF
3	Spall w/ exp. Reinf., 3" D - 2 SF
4	Spall, 2.5" D - 1 SF
5	Delamination - 2 SF
6	Delamination - 4 SF
7	Delamination - 2 SF
8	Delamination - 2 SF
9	Delamination - 4' L x 1' W
10	Delamination - 4 SF
11	Delamination - 10' L x 1' W
12	Delamination - 4 SF
13	Delamination - 2 SF
14	Delamination - 1 SF
15	Delamination - 4' L x 1'W
16	Delamination - 10' L x 1'W
17	Delamination - 2 SF
18	Delamination - 2 SF



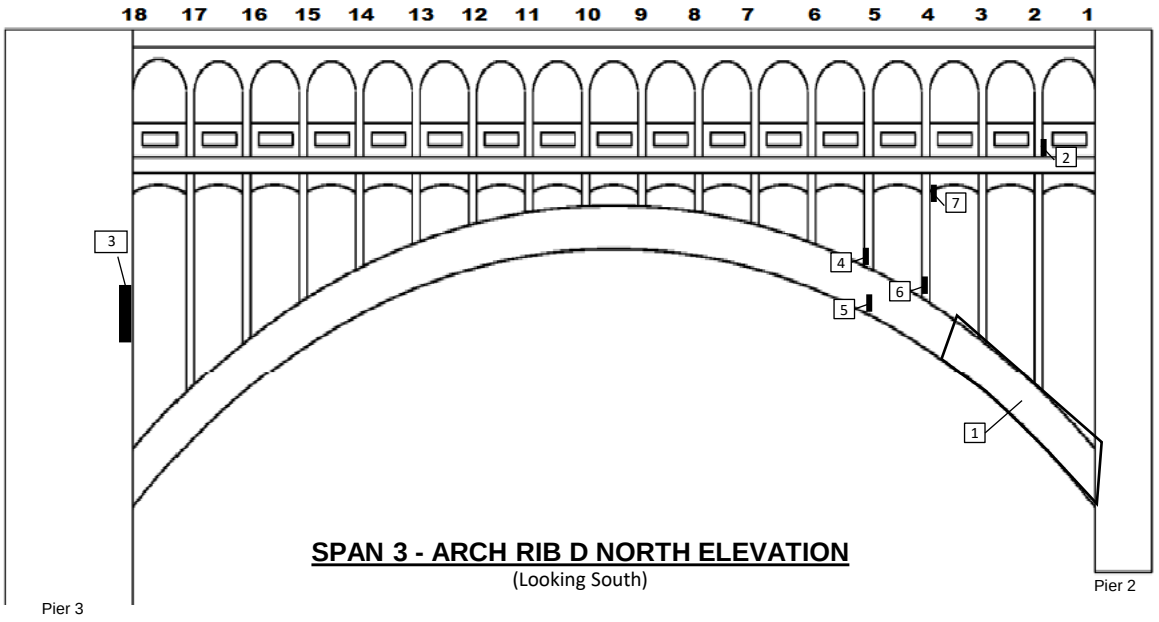
SPAN 3 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 3 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 3 SF
3	Delamination - 1 SF
4	Corner delamination - 5 SF
5	Corner delamination - 20 SF
6	Delamination - 2 SF
7	Delamination - 1 SF
8	Delamination - 1 SF
9	Spall w/ exp. Reinf. - 2 SF
10	Delamination - 1 SF
11	Delamination - 2 SF
12	Corner delamination - 15 SF
13	Delamination - 2 SF
14	Delamination - 1 SF



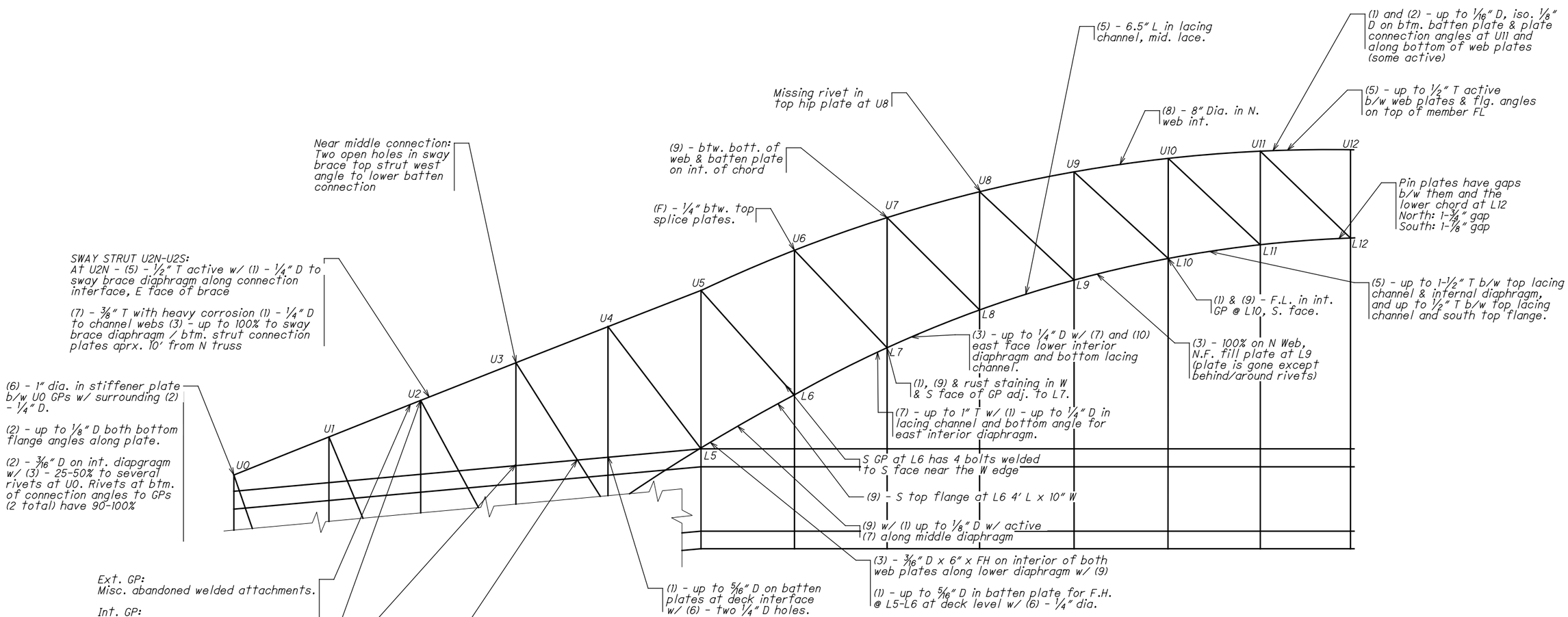
SPAN 3 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 3 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination - 3 SF
3	Spall w/ exp. Reinf. - 8 SF
4	Delam. w/ Spall - 16 SF
5	Delamination - 4 SF
6	Delamination - 4 SF
7	Delamination - 6 SF
8	Delamination - 30' L x Var. H. (132 SF total)
9	10" diameter tree growing against bottomside of arch



SPAN 3 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 3 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Map Cracking w/ moisture staining and some delamination - 24' L
2	Delamination - 2 SF
3	Delamination - 5 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf., 2" D - 3' L x 1' W
6	Delamination - 2 SF
7	Delamination - 6 SF



NORTH TRUSS ELEVATION

(ABOVE DECK)

TYPICAL NOTES

(A) - Bottom sway strut angles and connection plates typ. have areas of paint failure with (9). Worst for typ. 6' - 8' L near middle of strut.

(B) - Small areas of (9) and paint failure typ. on truss.

(C) - Typ. (9) with (7) and (1) - up to 1/4" D at bottom bracing channel and bottom angle for interior diaphragm at L.C. interior diaphragms.

(D) - (5) - 1" T b/w top channel lacing and middle interior diaphragm.

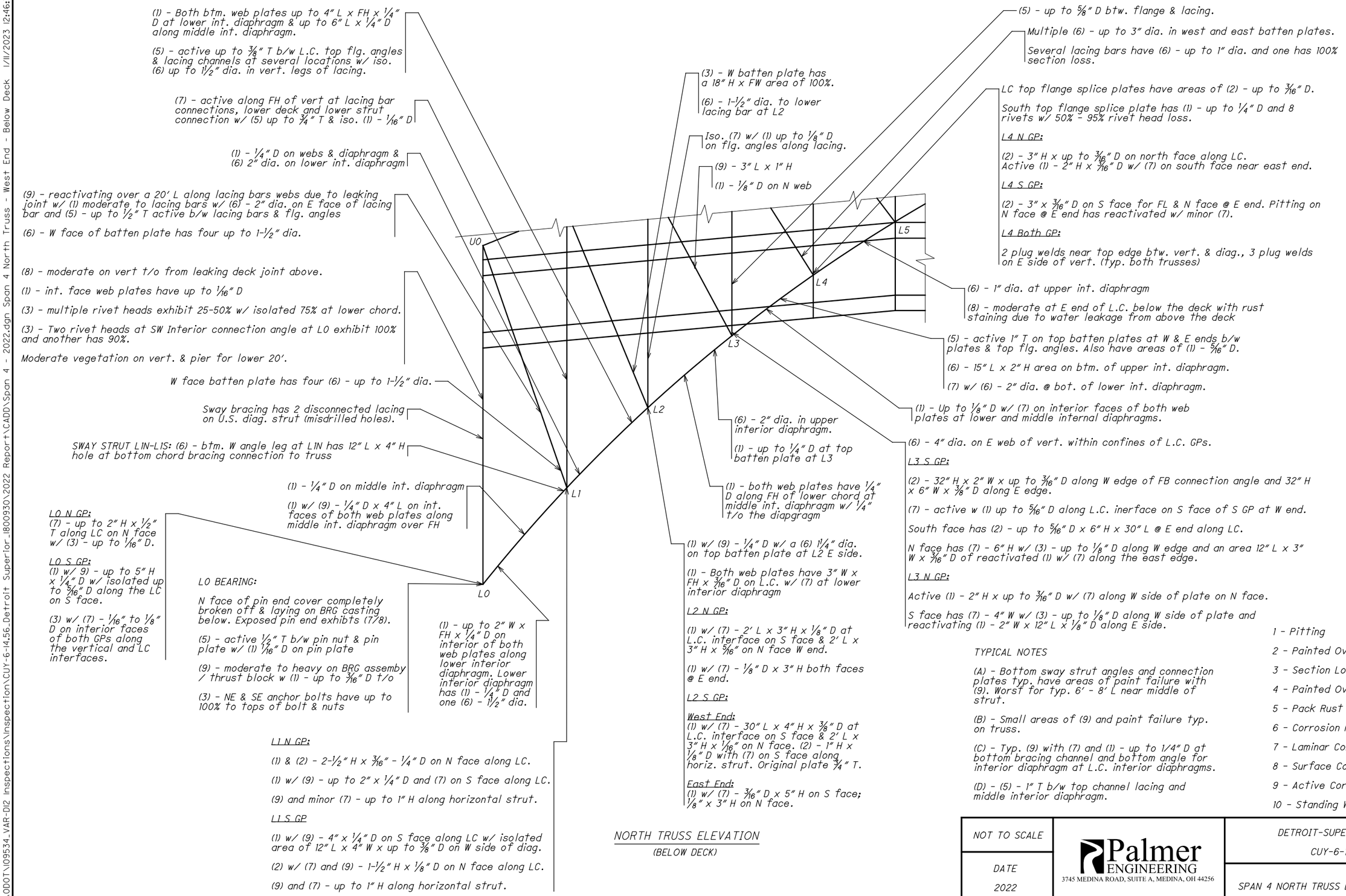
(E) - Isolated lacing channels have minor impact deformations in their flanges.

(F) - Isolated active (5) - up to 3/8" b/w sway bracing components and/or connections.

(G) - (9) around base of hangar block pass thru in deck.

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion
10 - Standing Water

NOT TO SCALE	Palmer ENGINEERING 3745 MEDINA ROAD, SUITE A, MEDINA, OH 44256	DETROIT-SUPERIOR BRIDGE CUY-6-14.56
DATE 2022	SPAN 4 NORTH TRUSS ELEVATION	PAGE C-1



(1) - Both btm. web plates up to 4" L x FH x 1/4" D at lower int. diaphragm & up to 6" L x 1/4" D along middle int. diaphragm.

(5) - active up to 3/8" T b/w L.C. top flg. angles & lacing channels at several locations w/ iso. (6) up to 1½" dia. in vert. legs of lacing.

(7) - active along FH of vert at lacing bar connections, lower deck and lower strut connection w/ (5) up to 3/4" T & iso. (1) - 1/16" D

(1) - 1/4" D on webs & diaphragm & (6) 2" dia. on lower int. diaphragm

(9) - reactivating over a 20' L along lacing bars webs due to leaking joint w/ (1) moderate to lacing bars w/ (6) - 2" dia. on E face of lacing bar and (5) - up to ½" T active b/w lacing bars & flg. angles

(6) - W face of batten plate has four up to 1-½" dia.

(8) - moderate on vert t/o from leaking deck joint above.

(1) - int. face web plates have up to 1/16" D

(3) - multiple rivet heads exhibit 25-50% w/ isolated 75% at lower chord.

(3) - Two rivet heads at SW Interior connection angle at L0 exhibit 100% and another has 90%.

Moderate vegetation on vert. & pier for lower 20'.

W face batten plate has four (6) - up to 1-½" dia.

Sway bracing has 2 disconnected lacing on U.S. diag. strut (misdrilled holes).

SWAY STRUT L1N-L1S: (6) - btm. W angle leg at L1N has 12" L x 4" H hole at bottom chord bracing connection to truss

(1) - 1/4" D on middle int. diaphragm

(1) w/ (9) - 1/4" D x 4" L on int. faces of both web plates along middle int. diaphragm over FH

L0 N GP:
(7) - up to 2" H x ½" T along LC on N face w/ (3) - up to 1/16" D.

L0 S GP:
(1) w/ 9) - up to 5" H x 1/4" D w/ isolated up to 5/16" D along the LC on S face.

(3) w/ (7) - 1/16" to 1/8" D on interior faces of both GPs along the vertical and LC interfaces.

L0 BEARING:

N face of pin end cover completely broken off & laying on BRG casting below. Exposed pin end exhibts (7/8).

(5) - active ½" T b/w pin nut & pin plate w/ (1) 1/16" D on pin plate

(9) - moderate to heavy on BRG assemby / thrust block w (1) - up to 3/16" D t/o

(3) - NE & SE anchor bolts have up to 100% to tops of bolt & nuts

(1) - up to 2" W x FH x 1/4" D on interior of both web plates along lower interior diaphragm. Lower interior diaphragm has (1) - 1/4" D and one (6) - 1½" dia.

L1 N GP:

(1) & (2) - 2-½" H x 3/16" - 1/4" D on N face along LC.

(1) w/ (9) - up to 2" x 1/4" D and (7) on S face along LC.

(9) and minor (7) - up to 1" H along horizontal strut.

L1 S GP

(1) w/ (9) - 4" x 1/4" D on S face along LC w/ isolated area of 12" L x 4" W x up to 3/8" D on W side of diag.

(2) w/ (7) and (9) - 1-½" H x 1/8" D on N face along LC.

(9) and (7) - up to 1" H along horizontal strut.

(3) - W batten plate has a 18" H x FW area of 100%.

(6) - 1-1/2" dia. to lower lacing bar at L2

Iso. (7) w/ (1) up to 1/8" D on flg. angles along lacing.

(9) - 3" L x 1" H

(1) - 1/8" D on N web

(6) - 2" dia. in upper interior diaphragm.

(1) - up to 1/4" D at top batten plate at L3

(1) - both web plates have 1/4" D along FH of lower chord at middle int. diaphragm w/ 1/4" t/o the diapgragm

(1) w/ (9) - 1/4" D w/ a (6) 1¼" dia. on top batten plate at L2 E side.

(1) - Both web plates have 3" W x FH x 3/16" D on L.C. w/ (7) at lower interior diaphragm

L2 N GP:

(1) w/ (7) - 2' L x 3" H x 1/8" D at L.C. interface on S face & 2' L x 3" H x 5/16" on N face W end.

(1) w/ (7) - 1/8" D x 3" H both faces @ E end.

L2 S GP:

West End:
(1) w/ (7) - 30" L x 4" H x 3/8" D at L.C. interface on S face & 2' L x 3" H x 1/16" on N face. (2) - 1" H x 1/8" D with (7) on S face along horiz. strut. Original plate 3/4" T.

East End:
(1) w/ (7) - 3/16" D x 5" H on S face; 1/8" x 3" H on N face.

(5) - up to 5/8" D btw. flange & lacing.

Multiple (6) - up to 3" dia. in west and east batten plates.

Several lacing bars have (6) - up to 1" dia. and one has 100% section loss.

LC top flange splice plates have areas of (2) - up to 3/16" D.

South top flange splice plate has (1) - up to 1/4" D and 8 rivets w/ 50% - 95% rivet head loss.

L4 N GP:

(2) - 3" H x up to 3/16" D on north face along LC.
Active (1) - 2" H x 1/16" D w/ (7) on south face near east end.

L4 S GP:

(2) - 3" x 3/16" D on S face for FL & N face @ E end. Pitting on N face @ E end has reactivated w/ minor (7).

L4 Both GP:

2 plug welds near top edge btw. vert. & diag., 3 plug welds on E side of vert. (typ. both trusses)

(6) - 1" dia. at upper int. diaphragm

(8) - moderate at E end of L.C. below the deck with rust staining due to water leakage from above the deck

(5) - active 1" T on top batten plates at W & E ends b/w plates & top flg. angles. Also have areas of (1) - 5/16" D.

(6) - 15" L x 2" H area on btm. of upper int. diaphragm.

(7) w/ (6) - 2" dia. @ bot. of lower int. diaphragm.

(1) - Up to 1/8" D w/ (7) on interior faces of both web plates at lower and middle internal diaphragms.

(6) - 4" dia. on E web of vert. within confines of L.C. GPs.

L3 S GP:

(2) - 32" H x 2" W x up to 3/16" D along W edge of FB connection angle and 32" H x 6" W x 3/8" D along E edge.

(7) - active w (1) up to 5/16" D along L.C. inerface on S face of S GP at W end.

South face has (2) - up to 5/16" D x 6" H x 30" L @ E end along LC.

N face has (7) - 6" H w/ (3) - up to 1/8" D along W edge and an area 12" L x 3" W x 3/16" D of reactivated (1) w/ (7) along the east edge.

L3 N GP:

Active (1) - 2" H x up to 3/16" D w/ (7) along W side of plate on N face.

S face has (7) - 4" W w/ (3) - up to 1/8" D along W side of plate and reactivating (1) - 2" W x 12" L x 1/8" D along E side.

TYPICAL NOTES

(A) - Bottom sway strut angles and connection plates typ. have areas of paint failure with (9). Worst for typ. 6' - 8' L near middle of strut.

(B) - Small areas of (9) and paint failure typ. on truss.

(C) - Typ. (9) with (7) and (1) - up to 1/4" D at bottom bracing channel and bottom angle for interior diaphragm at L.C. interior diaphragms.

(D) - (5) - 1" T b/w top channel lacing and middle interior diaphragm.

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion
10 - Standing Water

NORTH TRUSS ELEVATION
(BELOW DECK)

NOT TO SCALE

DATE
2022

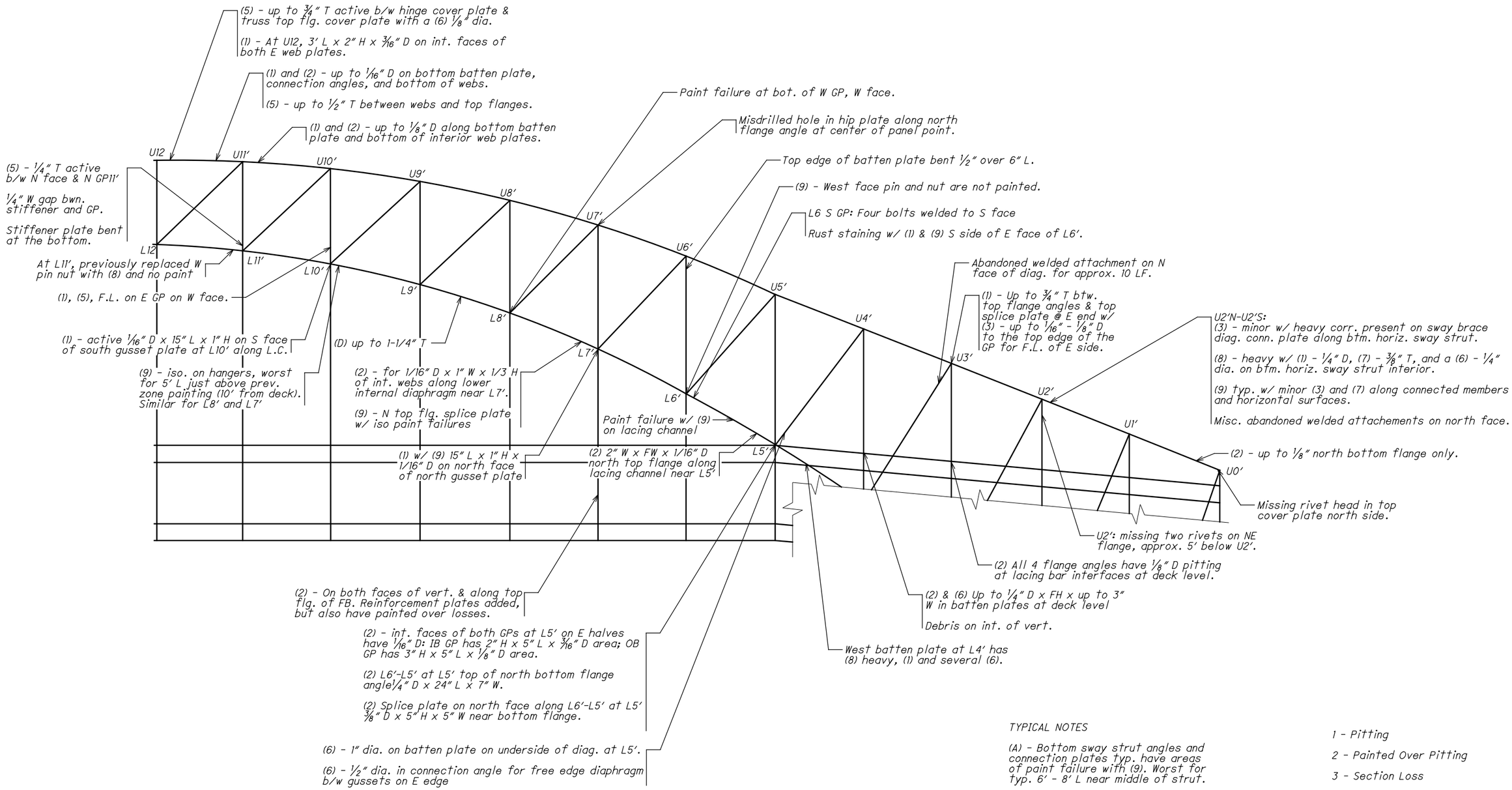
Palmer ENGINEERING
3745 MEDINA ROAD, SUITE A, MEDINA, OH 44256

DETROIT-SUPERIOR BRIDGE
CUY-6-14.56

SPAN 4 NORTH TRUSS ELEVATION

PAGE
C-2

J:\ODOT\109534_VAR-DI2 Inspections\Inspection\CUY-6-14.56_Detroit Superior_1800930\2022 Report\CADD\Span 4 - 2022.dgn Span 4 North Truss - West End - Below Deck 1/11/2023 12:46:31 PM adam-l



NORTH TRUSS ELEVATION
(ABOVE DECK)

TYPICAL NOTES

(A) - Bottom sway strut angles and connection plates typ. have areas of paint failure with (9). Worst for typ. 6' - 8' L near middle of strut.

(B) - Small areas of (9) and paint failure typ. on truss.

(C) - Typ. (9) with (7) and (1) - up to 1/4" D at bottom bracing channel and bottom angle for interior diaphragm at L.C. interior diaphragms.

(D) - (5) - 1" T b/w top channel lacing and middle interior diaphragm.

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

NOT TO SCALE	Palmer ENGINEERING 3745 MEDINA ROAD, SUITE A, MEDINA, OH 44256	DETROIT-SUPERIOR BRIDGE CUY-6-14.56
DATE 2022		SPAN 4 NORTH TRUSS ELEVATION — PAGE C-3

(1) - 3" W x up to ⅛" D on both web plates along height of middle int. diaphragm w/ (7).

(1) - middle & W end interior diaphragms have 5/16" D w/ (6) - 2" dia.

(1) & (2) - top batten plates at W and E ends up to ⅜" D.

(6) - up to 6" dia. on top and bottom batten plates at L4' w/ (6) - up to 1" dia. in lacing bars.

(2) - within vert. web plates at eyebar connection, & ¼" D on vert. batten plates w/ a (6) - ¼" dia.

(1) - W & E top batten plates have up to ¼" D at L4'.

(8) - moderate for a 6' L at west end of L.C. where water from deck drains

L3'-U3' AT L3':
(2) - 15" H x ⅛" D over a 15" L on both web plates. Six rivets per plate have between 50-90% head loss.
(1 & 6) - bottom two lacing bars on N & S faces.
(1) - flg. angles at lacing bar connection have ⅛" D

Two (6) in bottom batten plate - 8" H x 6" W and 2" dia.; One (6) in top batten plate - 12" W x 7" H

(3) - two lacing bars missing and/or broken due to s.l. at L2'.

(2) - 2" W x FH x ⅛" D interior faces of both web plates at middle internal diaphragm.

L2'-L1' at L2':
(1) - 5/16" D in top batten plate w/ welded repair plate. One lacing channel has (6) - 2" dia., and another has 1" dia.

L1'S-L2'N near L2'N:
Lateral brace member w/ (1) - up to ¼" D on flange angles, areas of moderate (9) at connecting elements, and one lacing bar w/ (3) - 75% due to (6).

L2'N-L2'S:
West bottom flange angle of sway strut has heavy (9) w/ (7) - up to ¾" T and (3) - up to ¼" D along length.

L2' N Gusset Plate:
North face - (1) 5/16" D x 5" H x FL at lower chord.
South face - (1) 3/16" D x 3" H along lower chord east half.

L2' S Gusset Plate:
South Face:
(1) - up to ⅛" D x 1" H along horizontal strut, east end.
(1) - up to ¼" D x 3" H along lower chord.
Freckling up to 1/16" D t/o.

L2'-L3':
(1) w/ (9) - ⅛" D x FH x up to 4" H at lower interior diaphragm, worst at bottom.

L2'-L3':
(1) - up to ¼" D w/ (6) one 1"-dia in the top batten plate.
(1) - up to ¼" D w/ (6) - 2"-dia. in the east end internal diaphragm.

Lower chord top flange splice plates on top face of top flanges have (2) - up to ¼" D w/ (3) - 50% - 90% to multiple rivet heads.

Bottom flange angles for lower chord adjacent to splice angles have (1) - up to ¼" D on their horizontal legs.

(2) - ¼" on top flange angles along W side of splice.

L4' N Gusset Plate:
Both faces:
(2) - up to 3/16" D x 4" H along lower chord.

L4' S Gusset Plate:
Both faces:
(2) - up to ¼" D (iso. 5/16" - ⅜" D on S face) x 4" H along lower chord.
(As little as ¼" T remaining at ends).

L3' N Gusset Plate:
Both faces:
East end - (7) - up to ¼" T along lower chord.
West end - (2) - up to 3/16" D x 3" H along lower chord.
(S face reactivating)

L3' S Gusset Plate:
Both faces:
East end - (7) w/ (3) - up to ⅛" T. As little as ¼" T remaining @ worst location.
North face:
West end - (1) - 3/16" D x 5" H along lower chord
South face:
West end - (2) - 5/16" D x 5" H (iso. up to 12" H) along lower chord.

(6) - 6" dia. in diaphragm plate in middle of L.C. & moderate (8) FH w/ (1) - ⅛" D x FH x 3" W on interior of both web plates.

(6) - 6" dia. in diaphragm plate in middle of L.C. & moderate (8) FH w/ (1) - ⅛" D x FH x 3" W on interior of both web plates.

Iso. (3) - up to 100% in top lacing channel legs.

L1' N Gusset Plate N Face:
(1) w/ (9) - 3/16" D x up to 2" H along lower chord.
Original thickness - ¾" T.

L1' N Gusset Plate S Face:
(1) w/ (9) - 3/16" D x up to 1½" H at east end along lower chord.
(1) w/ (9) - ¼" D x up to 2¼" H at west end along lower chord.
Freckled up to ¼" dia. x 1/16" D (mostly painted over) throughout.

L1' S Gusset Plate N Face:
(1) w/ (9) - 3/16" D x up to 3" H at east end along lower chord.
(1) w/ (9) - ¼" D x up to 2½" H at west end along lower chord

L1' S Gusset Plate S Face:
(1) w/ (9) - ¼" D x up to 4" H along lower chord.
Original thickness - ¾" T.
Freckled up to ¼" dia. x 1/16" D (mostly painted over) throughout.

(1) w/ (9) - FH x 3" W x up to ⅛" D on the interior face of both web plates along lower interior diaphragm.

L1'S - L1'N: Moderate (9) and paint failure on W bottom flange angle over length.

L2' - L1' @ L1': Top batten plate has (1) - up to 5/16" D. Interior diaphragm has several (6) - up to 1" dia. w/ (1).

(6) - 10" L x 2" W and 2" L x ½" H in upper interior diaphragm.

L1' - L0' at L1': Top batten plate w/ (1) - up to 3/16" D

(1) w/ (9) - FH x 2" W x 3/16" D on interior of both LC web plates at middle interior diaphragm w/ (1) - ¼" D on interior diaphragm.

(1) w/ (9) - FH x 1" W x 3/16" D on int. of both LC web plates at lower int. diaphragm w/ (1) - up to ¼" and one (6) - ½" dia. in diaphragm.

(8) w/ (7) - minor to moderate, with paint failure & (1) - 1/16" D to btm. flg. angles & btm. of web plates on interior of L.C. at L0'

Level 3 horiz. strut has numerous (6) in angles & lacing (worst is 4" L x 2" H) and the top portion of N conn. plate to E side of U0'-L1' is gone.

(3) - one lacing bar has 100% w/ two others having (6) 2" dia. & (5) - up to ½" T active at flange connections

(6) - int. diaphragm at L1' has 12" L x 12" W and 2" L x 1" W.

(6) - W batten plate below the deck upper strut has two 12" L x 3" W

(6) - 1" dia. in E face of batten plate at L1'.

(8) - minor, with paint failure & areas of (7), typical on rivets and bolts.

(2) - iso. up to 3/16" D in int. web.

L0'S - L1'N - Lateral bracing from middle to L1'N has moderate (9), active (5) - up to ½" T, and (1) - up to ¼" D on flange angles at connecting elements. Two lacing bars also have (6) - 1" dia.

(7) - At L0', interior faces of both webs have ¼" T w/ (1) up to 1/16" D over a 5' H.

Vertical angles and legs have (1) - up to 3/16" D along GP interface.

(3) - For 36" L, interior of L0'-U0' at L0', SE interior angle at top has one rivet head with 100%, and 2 rivet heads with 90%. NE and NW angles have several rivet heads w/ 50% - 75% near the bearing.

Bottom horizontal sway strut has (8) and paint failure along bottom W flange angle over its length.

L0' S GP:
(2) - 36" L x 3-½" H x up to ¼" D on S face along LC interface.
(7) - ½" T and (1) - up to 1/16" D over an area 36" L x up to 18" H above int. horiz. diaphragm; 16 GP rivet heads in this area have >80% S.L. (12 are at 100% S.L.)

L0' N GP:
(1) - iso. active area FL x 1" H x 1/16" D on N face along LC interface.
(7) - ½" T w/ (1) - 1/16" D over an area 33" L x up to 15" H above int. horiz. diaphragm; 12 GP rivet heads in this area have >60% S.L.

On L0' OB pin cover plate:
6-¾" L crack in OB face & 1-¼" L crack on top.

On L0' IB pin cover plate:
6-¾" L crack in IB face & 1-½" L crack on top

(5) - 1" T active b/w BRG and pin plates at L0'.

(7) - heavy rust flakes (7) debris accumulation on BRG thrust block.

Thrust block exhibts:
moderate (8), (7) - up to 3#8" T, (1) - areas of up to 1#8" D.

(3) w/ (9) - edges of thrust block stiffeners up to 3#8" D

(3) - NW &SW AB nuts 100% to nut and top of AB at L0' and 5% to SE and NE anchor bolt nuts.

L5' L4' L3' L2' L1' L0' U0'

TYPICAL NOTES

(A) - Bottom sway strut angles and connection plates typ. have areas of paint failure with (9). Worst for typ. 6' - 8' L near middle of strut.

(B) - Small areas of (9) and paint failure typ. on truss.

(C) - Typ. (9) with (7) and (1) - up to 1/4" D at bottom bracing channel and bottom angle for interior diaphragm at L.C. interior diaphragms.

(D) - (5) - 1" T b/w top channel lacing and middle interior diaphragm.

(E) - Typ. (9) w/ minor (3) and (7) along connected members and horizontal surfaces.

(F) - Misc. abandoned welded attachments on east face.

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

NORTH TRUSS ELEVATION
(BELOW DECK)

NOT TO SCALE

DATE
2022

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DETROIT-SUPERIOR BRIDGE
CUY-6-14.56

SPAN 4 NORTH TRUSS ELEVATION

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C-4

J:\ODOT\109534_VAR-DI2 Inspections\Inspection\CUY-6-14.56_Detroit Superior_18009301.2022 Report\CADD\Span 4 - 2022.dgn Span 4 Sourth Truss - West End - Above Deck 1/11/2023 12:46:32 PM adam

L10S-L10N BOTTOM SWAY STRUT:
E bot. flange angle, near L10S - one sheared-off top rivet head w/ shank and bottom head still in place.

(2) ¼" D on bot. flange angle w/ (6) - one ¼" dia. at this location.

Near middle:
E bot. flange angle has one missing rivet for lacing.

(1) - Iso. up to 3/16" D x 1" H along bottom of webs at U11.

(5) - up to 1/16" T btw. diag. bot. flange conn. angles & both GP interior faces 1/8" T on top angles).

8" L rolling defect on north top flange.

(5) - ¼" btw. hip plates.

(3) - advanced section loss 18" L x 2½" W x 3/16" D on bottom batten plate at L5 w/ (6) - two holes (6"x3" and 1-½" dia.)

(1) - 1/16" D x ¾" H on both L7 gussets along the L.C. w/ (9) reactivating corrosion.

(9) - light to mod. on pins.

Paint failure on bracing.

(5) - ⅜" btw. top flange and lacing.

(2) - iso. 3/16" D in flange angles above L4 w/ ¼" D (1) and (6) - three ⅜" dia. to north batten plate.

Exterior gusset has misc. abandoned welded attachments. Interior gusset has 4 welded threaded rods.

Portal:
Typical (7) - up to ½" T w/ isolated minor (3) and (5) between components.
(6) - ½"-dia. in bottom batten plate.

(3) w/ (9) - 50% - 75% on 8 rivets on interior face of south web plate at deck level.

(5) - ⅜" T btw. hip plate & top flange.

N bot. flange has one missing rivet head in horiz. leg, top face @ lacing conn.

(9) - with paint failure on S face of S web along btm. flg.

U0 U1 U2 U3 U4 U5 U6 U7 U8 U9 U10 U11 U12

L5 L6 L7 L8 L9 L10 L11 L12

(3) - 100% t/o w/ only small bits around rivets remaining in north and south web fill plates for L9-L10 at L9.

(3) - 50% - 95% on 4 of 6 rivets between middle internal diaphragm and bottom diaphragm angle.

(5) - 1" T active between top lacing and middle interior diaphragm.

(1) - W end of south GP has 1/16" D x 1" H x 42" L w/ (9) along L.C. on IB face.

L12 S pin plate is bent outward 2⅛" due to pack rust at west end; Up to 3/16" T pack rust between S pin plate & pin cap.

L12 N pin plate is bent outward ⅞" due to pack rust at west end.

Top batten plate near L12 w/ one popped-top rivet head

(6) - 3" L x 1" H on bot. edge of S web fill plate on E side of PP11.

(1) - iso. 1/16" D x ¾" H on IB L8 GP along lower chord

Minor impact deformation in SW flange of E vert. (¼" over 8")

(5) - ½" T btw. top flange & web; ¼" T btw. bot. flange & web.

(2) - ⅛" D w/ (9) reactivating corrosion on interior web plates in the bottom 6" H along the lower and middle internal diaphragms.

Paint failure w/ light (8) on eyebars just above zone painting.

(5) w/ (9) - up to ⅜" T between top lacing channels and lower chord top flange for L6-L7.

2" x 2" bracket welded to OB GP btw. vert. & diag.

Misdrilled holes in both N web plates (four ½" dia.)

(2) - U0: S face of S web at plaque for up to 2" W x ¼" D x 20" circumference

(2) - bottom flange angle near U0 (Up to ¼" D at S, up to ⅛" D at N)

Missing lacing rivet at deck level

(6) - one ½"-dia. and one 1¼"-dia. in lacing bars

(5) - up to ¼" T b/w lacing & web plates w/ iso. (1) - ⅛" on flg. angles along lacing

(2) - 3/16" on flgs. along lacing connection

(1) - up to 1/16" D x FW on inside faces of vert. along the floorbeam top flange w/ up to 90% rivet head loss.

(9) - with peeling paint near deck opening in L5.

(2) - 60" L x 1" W x ⅛" D North Gusset Plate, north face

(2) - 15" L x 1" W x ⅛" D North Gusset Plate, south face

(2) - 60" L x 1" W x ⅛" D South Gusset Plate, south face

(1) - ⅛" D x FH x up to 2" W on int. web plates @ lower and mid. int. diaphragms.

(6) - 3" dia. in btm. lacing near L5; ½" dia. in top lacing near L5.

(2) - 48" L x 3" W up to ¼" D top of S btm. flange near L5 on L5-L6; also 1" H on vert. leg of angle w/ 2" dia. x ¼" D to ext. of web splice plate @ W end.

Four bolts welded to IB face of IB L6 GP near the W edge.

(5) - up to 1/16" T btw. IB GP & diag. web.

L6 SWAY BRACING BOTTOM HORIZONTAL STRUT:
(9) w/ (6) - 5" dia. in W knee brace along LC N top flg.

(5) - up to ¾" T btw. horiz strut web & strut diag. conn. plate on W face.

L6 PIN:
(9) - E & W faces of pin and pin nut.

(1) w/ (9) and (5) - top and bottom channel lacing with typ. up to ¼" D section loss at lower chord interface w/ active corrosion and up to ⅜" T pack rust at L5-L6.

(6) - 3½" L x ¾" W in top lacing middle of L5-L6.

SOUTH TRUSS ELEVATION

(ABOVE DECK)

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

TYPICAL NOTES

1. Uphill transverse angles have debris causing pitting and perforations of the diaphragm plates and transverse angles on lower chord between L0 to L5.
2. Typical small locations of paint failure and active surface corrosion throughout with areas of minor (<1/16" D) section loss along connecting elements.
3. Tyical active corrosion and up to ¼" D pitting on interior diaphragm and angles for lower chord members.
4. Isolated active pack rust (typ. ¼" T but up to ⅜" T) between upper chord top flanges and lacing channels.

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(3) - 100% loss on several north face lacing bars.

(2) - iso. 3/16" on flg. angles & web plates on E face w/ (3) - 80% on four rivet heads just below the lower FB

(5) - up to 1/4" T b/w lacing & web plates w/ iso. (1) - 1/8" on flg. angles along lacing

(6) - 6" dia. on E plate.

4" Crack (5/8" Propagation)

4" Paint crack (1/2" Propagation)

4 3/4" Crack (N.C.)

5 3/4" Crack (N.C.)

South Truss L0 Bearing

North Pin Cover Plate
(Not to scale)

(2) - 3/16" on flgs. along lacing

(6) - Three 6" dia. on top batten plate.

(1) - up to 3/16" D x FW on inside faces of vert. along top of the lower FB w/ up to 90% rivet head loss.

(6) - Two 2"-dia. in lower batten plate.

(6) - numerous holes t/o btm. batten plate at L4.

(9) - with peeling paint near deck opening in L5.

(1) - 1/8" D on int. web plates

(6) - 3" dia. in btm. lacing near L5

(9) - w/ peeling paint and failed paint near top

(5) - up to 3/4" T b/w flg. angles & lacing with lacing deformed

(1) - isolated 1/8" to 3/16" along flg. angles at iso. lacing bars

L4 GPs, BOTH:
(2) - up to 3/16" x 2" H x FL on ext. face along L.C., iso. 1/4" D x 2" H x 4" L on int. face along L3L4.
(2) - 3/16" D x 2" H on N & S faces.

Six plug welds, 3 on each half, on each gusset plate.

(2) - 1/4" D on north top flange splice plate.

L3 strut has (6) - F.H. x 1" W on S batten plate @ end btw. angles.

Vertical has (8 & 9)

(5) - up to 1/4" T b/w webs & flanges. 3/4" at lacing bars w/ iso 1/8" D pitting in flg. angles along the lacing

(1) - isolated 1/8" D on the interior web plates (worst near L0)

(1) - Up to 1/8" D on flanges and webs.

(5) - Up to 5/8" T between lacing and flanges.

(1) - 5/16" D x FH, N int. web plate
3/16" D x 12" H on S int. web plate

(5) - up to 1" T b/w batten plates & top flange

(1) - up to 3/16" D on top flg. angles along lacing.

(6) - second top transv. lacing channel from L0 has a 5" H x 3/4" W and a 1/2" dia. Fourth lacing channel from L0 has a 6" L x 2" W

West sway brace connection plate bowed at strut up to 5/8" due to pack rust.

Sway strut has (9) throughout interior faces.

L3, BOTH GPs:
(1) - up to 3/16" D x 2" H along lower chords on ext. faces and (8). (1) - 3/16" D avg. x 2" H on int. faces except S face of N plate along L3-L4, which is 3/8" D x 3" H (1/4" remaining).

L3, IB GP:
(2) - three areas of up to 1/4" D x 3" W x 8" H on N face along W face of the vertical. (Int. clean).
(2) - above L3-L4:
1/4" D x 2" H on S face;
1/4" D x 3" H on N face (1/4" T remaining).

L3, OB GP:
(2) - F.H. x 2" W x 3/16" D on E side along FB cant.
(2) - above L3-L4:
5/16" D x 3" H on S face;
5/16" D x 2" H on N face.

(6) - East face stiffening diaphragm has a 4" dia.

(1) - Up to 1/4" D south top flange splice

LO IB PIN PLATE:
(SEE SKETCH)
There is a 5 3/4" L crack with a 4 3/4" L crack which propagates off of the former crack and extends to the end of the plate. There is also a 3 3/8" L crack extending from the nut at 10:00, and a 4" L paint crack extending from the nut at 1:30.

LO OB PIN PLATE:
has a 7" L vertical crack extending upward from the nut and a 1 1/2" L vertical crack extending downward from the nut. A new crack has formed 1 1/4" L extending from the nut at 9:00.

BEARING:
(8) - moderate to advanced t/o thrust block w/ peeling paint and (7).
(5) - up to 1" T b/w BRG behind pin & L.C; 1/4" T btw. N pin plate & GP.
(3) - 3 of 6 AB nuts in thrust block have 90% (other bolts have 10%)
Heavy debris accumulation on int. & ext.

Cantilever brace:
(1) - 1/4" D in web w/ (6) - four up to 2"-dia.

(1) - N int. web plate has 4" L x Iso. FH x 7/16" D active along int. diaphragm near L2. S int. web plate has 1/4" D at this location.

(5) - up to 1 3/8" T b/w top batten plates & flanges

(6) on bot. lacing

Heavy debris on lower lateral brace / sway conn. plate & strut int.

L1 GPs, BOTH:

(1) - 3/16" D x 2" H x F.L. of GP along LC.
(7) - FL x 3" H x 1/4" D of L0L1 along struts on ext. faces. (1) - 12" L x 2" H x 1/8" D on inside faces along L0L1.
(2) - 3" H x 1/4" D along L1L2 on IB faces and up to 12" on diag. Inside faces along L1-L2 have (1) - (1/8" on N, 1/4" on S)
(2) - 1/4" on south top flange splice plate.
(6) - 2"-dia. on edge stiffening diaphragm on east end.

(3) - 100% btm. lacing channel vert. legs adj. to L.C. web plates

(3) - top batten plate at L1 has 12" W x 3" L x 100% along bot. edge, (6) - 1" dia. and adv. (3) t/o.

(1) - along int. diaphragms:
N int plate: 3" L x FH x 1/4" D
S int plate: 4" L x 1/2H x 1/4" D

(6) - two up to 2"-dia. in int. diaphragm

(2) - up to 1/8" on flanges @ lacing

L2 IB (N) GP:
(1) - 1/8" D top of diagonal, S face
(1) - above L1-L2:
24" L x 2" H x 3/16" D on S face;
30" L x 3" H x 3/8" D on N face.
(1) - above L2-L3:
24" L x 2" H x 3/16" D on N face;
24" L x 3" H x 3/16" D on S face.
(1/4" remaining)

L2 OB (S) GP:
(1) - above L1-L2:
30" L x 4" H x 3/8" D on S face;
4" H x 3/16" D on N face
(active, 1/4" remaining on original 3/4" T over this area).
(1) - above L2-L3:
30" L x 3" H x 5/16" D on S face;
24" L x 2" H x 1/4" D on N face.

(6) - West edge stiffener has 1"-dia. and 4"-dia. holes in N conn. angle

(1) - 1/4" D x 4"L x FH in webs along interior diaphragm.

Top later brace connection plate w/ impact dent 1/4" over 10".

LO N Gusset:
8 rivet heads on the bot. flange & web conn. w/ (3) - up to 90% on UO-LO connection.

North face - (7) w/ (1) - up to 3/16" D x 6"H x 45" L along lower chord.

South face - isolated (1) - 1/16" D along vertical.

LO S gusset:
South face - (7) w/ (1) - up to 1/8" D x 3" H x 60" L along lower chord.

North face - (1) - up to 1/4" D x 2" H x 30" L along diaphragm, and 3/16" D x 6" H x 2" W along vertical.

Sheared bolt on top 3rd lacing channel connection along top flg. Also a fractured bolt in end of batten plate at L0.

(6) - Four small holes up to 1" dia in diaphragm near L1.

Two sheared bolts on top batten plate @ S top flange angle.

SOUTH TRUSS ELEVATION

(BELOW DECK)

Uphill transverse angles have debris causing pitting and perforations of the diaphragm plates and transverse angles on lower chord between L0 to L5.

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

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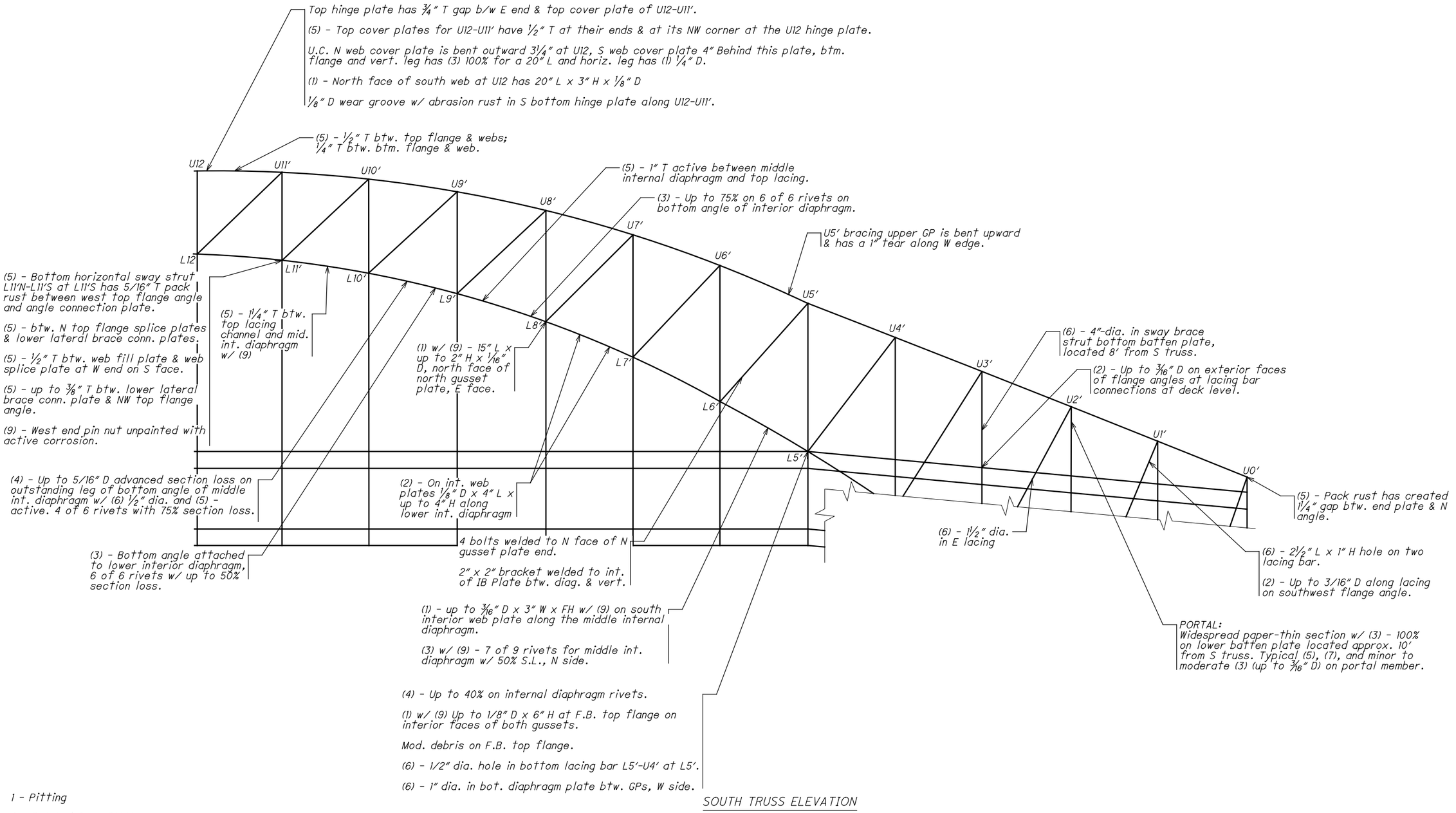

SOUTH TRUSS ELEVATION
(ABOVE DECK)

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

TYPICAL NOTES

1. BOTTOM 2 RIVETS AT DECK LEVEL FOR ALL WEST FLANGE ANGLES HAVE 75% - 90% SECTION LOSS.

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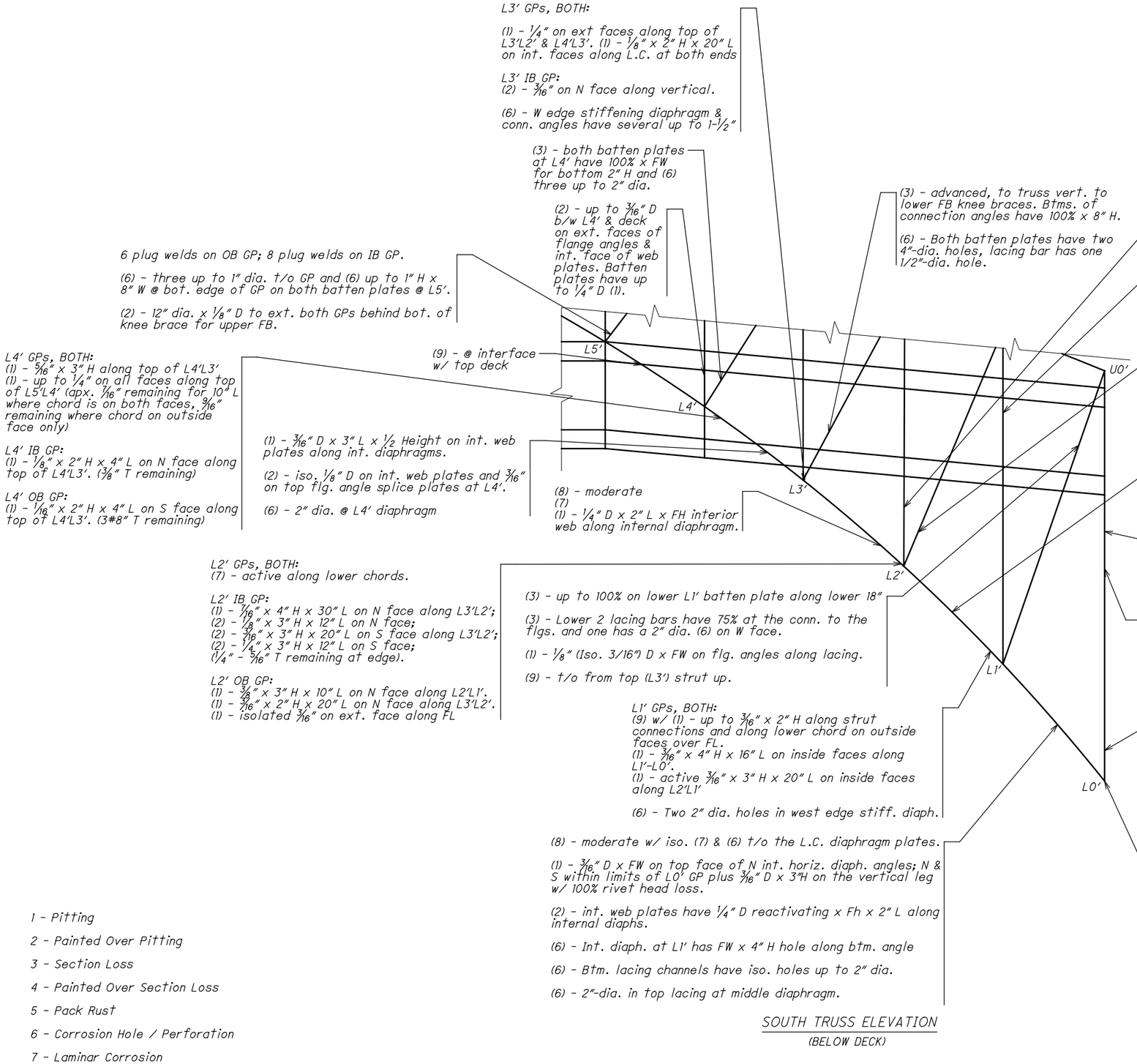

SOUTH TRUSS ELEVATION
(BELOW DECK)

1 - Pitting
2 - Painted Over Pitting
3 - Section Loss
4 - Painted Over Section Loss
5 - Pack Rust
6 - Corrosion Hole / Perforation
7 - Laminar Corrosion
8 - Surface Corrosion
9 - Active Corrosion

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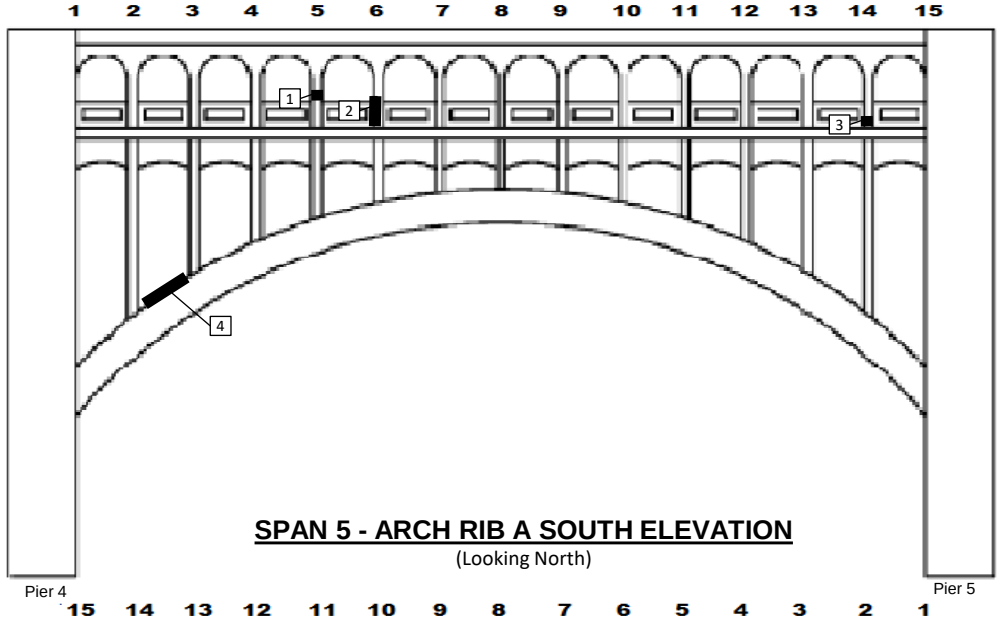
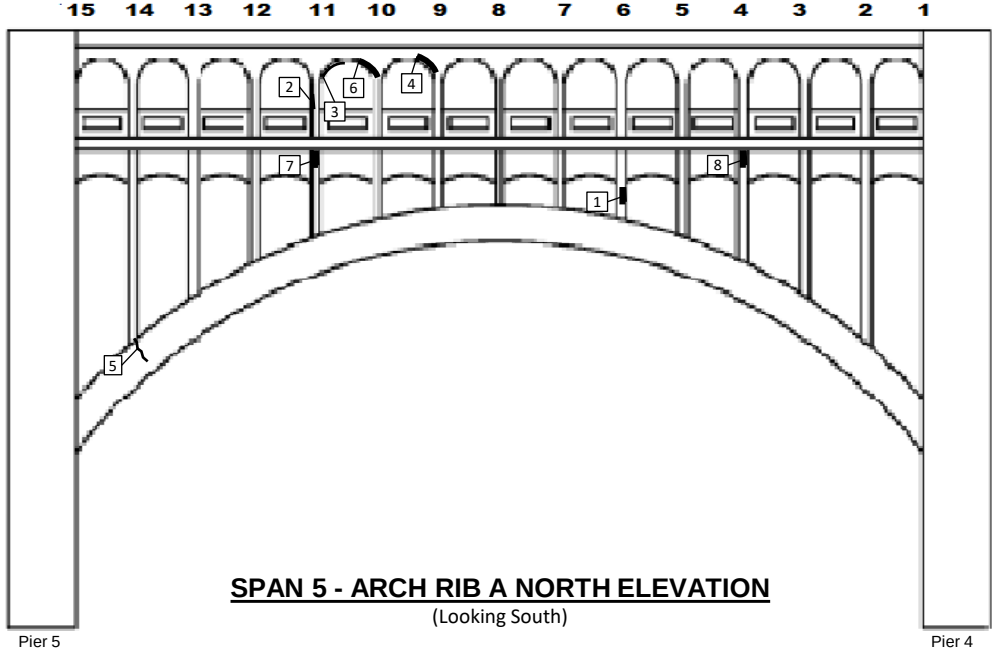


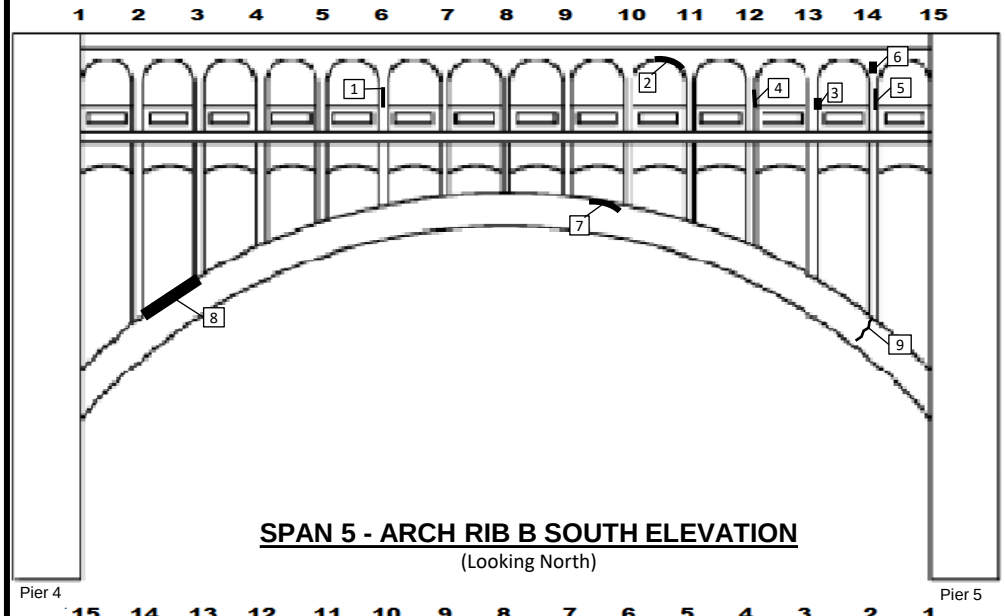
SPAN 5 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 5 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Delamination - 1 SF
3	Delamination - 2 SF
4	1/32" Crack on top of arch - 8 LF



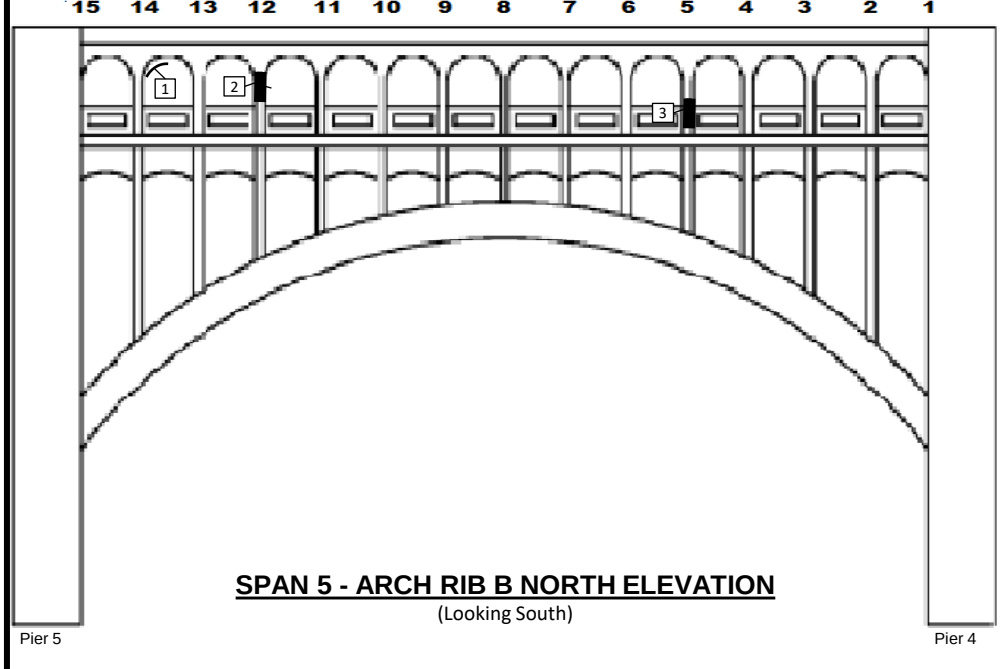
SPAN 5 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 5 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Delamination - 3 SF
4	Delamination - 2 SF
5	Hairline crack - 2 LF
6	Delamination - 1 SF
7	Delamination - 1 SF
8	Delamination - 1 SF



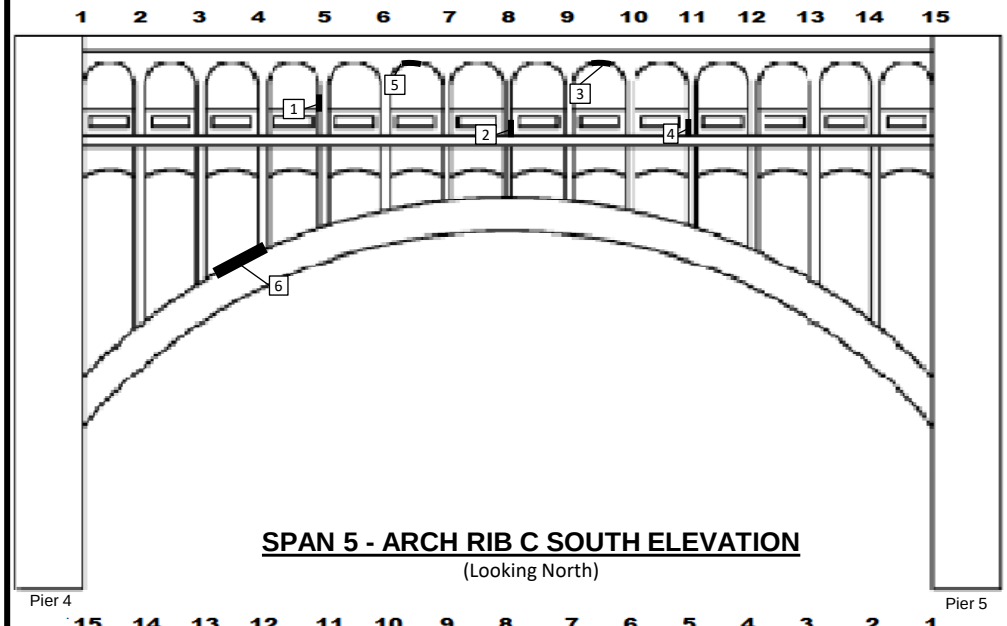
SPAN 5 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 5 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall, 3" D - 1 SF
2	Delamination - 2 SF
3	Delamination - 1 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf., 2" D - 3 SF
6	Delamination - 2 SF
7	Delamination - 5' L x 2.5' W
8	Hairline crack on top of arch - 8 LF
9	Hairline crack - 2 LF



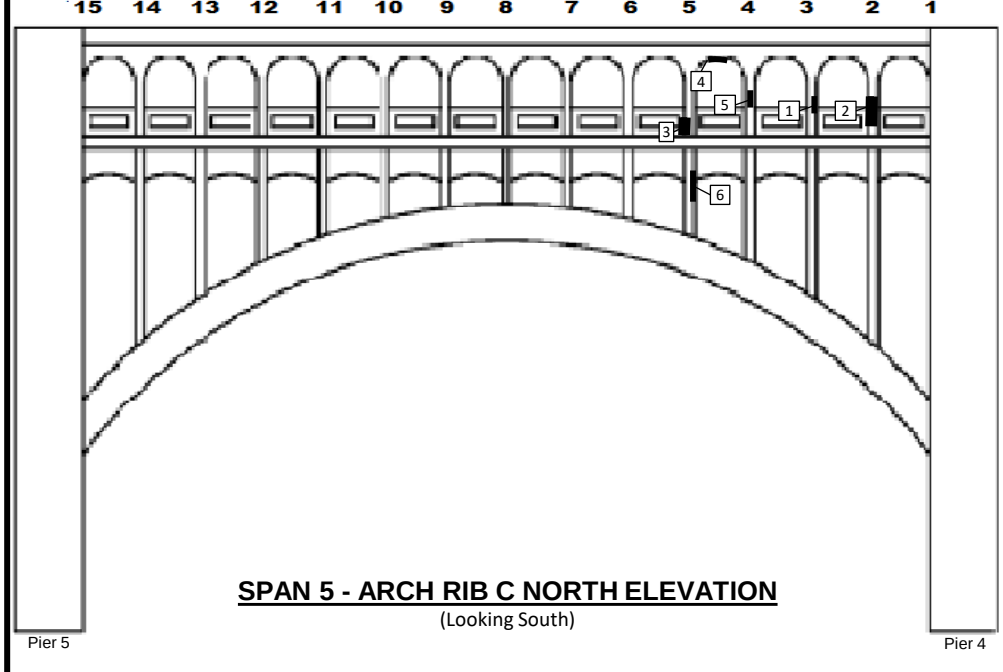
SPAN 5 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 5 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Spall w/ exp. Reinf. - 4 SF
3	Delamination - 3 SF



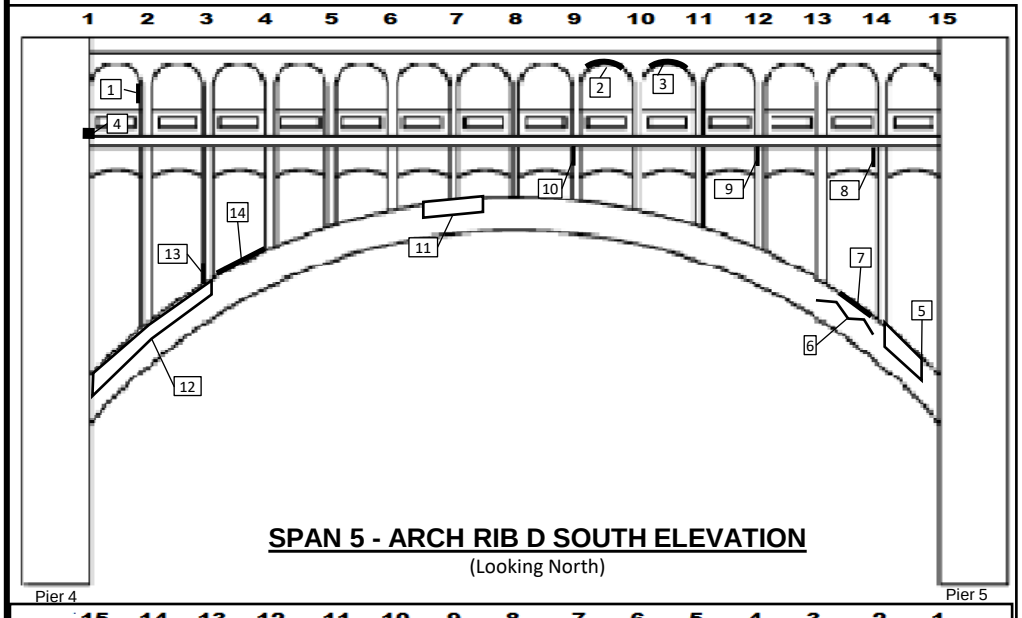
SPAN 5 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 5 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delamination w/ Spall w/ exp. Reinf. - 4 SF
3	Spall w/ exp. Reinf. - 1 SF
4	Delamination - 1 SF
5	Spall w/ exp. Reinf. - 1 SF
6	Delamination - 6' L x 1' H

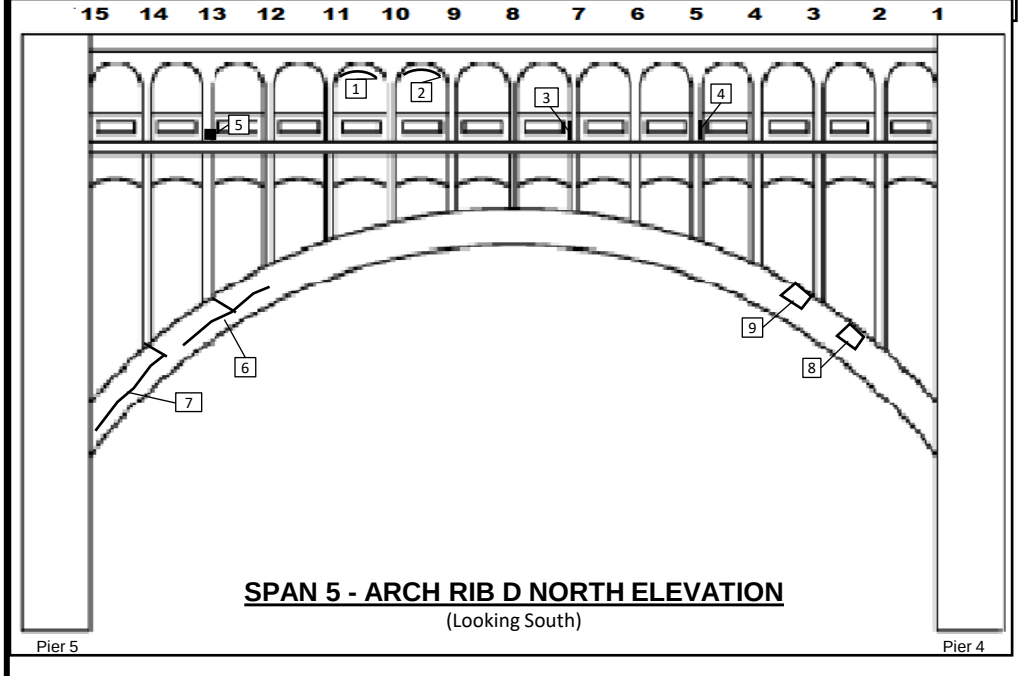


SPAN 5 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 5 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 1" D - 1 SF
2	Spall w/ exp. Reinf., 1.5" D - 1 SF
3	Delamination - 2 SF
4	Delamination - 2 SF
5	Delamination - 2 SF
6	Two Spalls w/ exp. Reinf. - 1 SF total



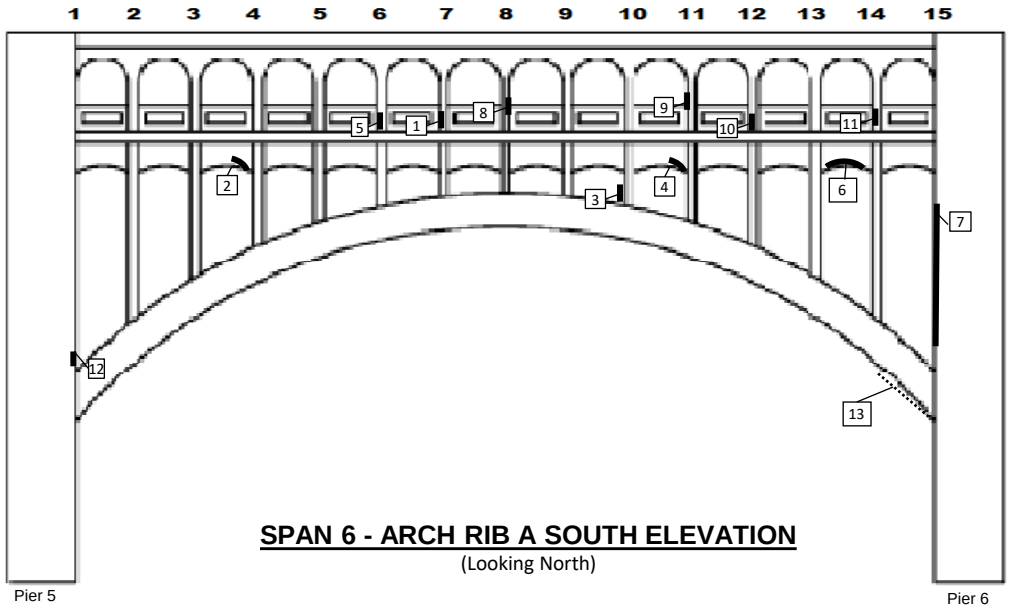
SPAN 5 - ARCH RIB D SOUTH ELEVATION
(Looking North)



SPAN 5 - ARCH RIB D NORTH ELEVATION
(Looking South)

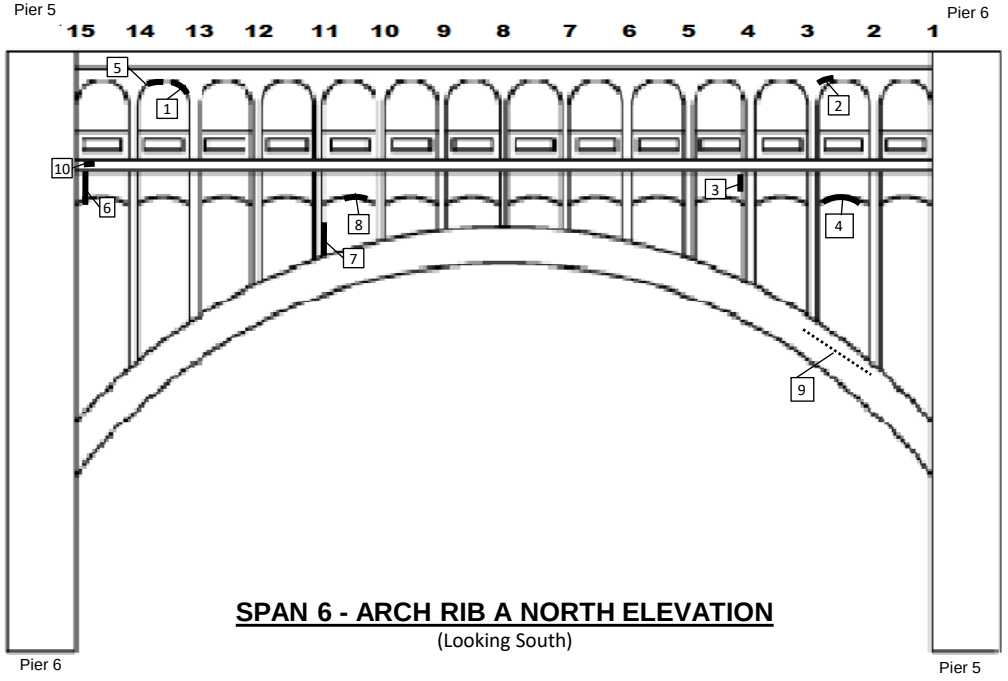
SPAN 5 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 2 SF
3	Delamination - 6 SF
4	Incomplete Repair - 3 SF
5	Map Cracking - 10' L x 3' H
6	1/16" Crack - 10 LF
7	Delamination - 8' L x 2' W
8	Delamination - 1 SF
9	Spalling - 3 SF
10	Delamination - 1 SF
11	Delamination - 6' L x 1' H
12	Vertical hairline cracking spa. @ 3' w/ some map cracking - 20 LF
13	Delamination - 2 SF
14	3/32" crack, appears to be partially filled - 8 LF

SPAN 5 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 6 SF
2	Delamination - 5 SF
3	Delamination - 1 SF
4	Delamination - 3 SF
5	Delamination - 1 SF
6	Hairline cracks, 2' L & 9' L
7	Hairline cracks, 2' L & 9' L
8	Map cracking - 2' L x 3' H
9	Map cracking - 6' L x 2.5' H



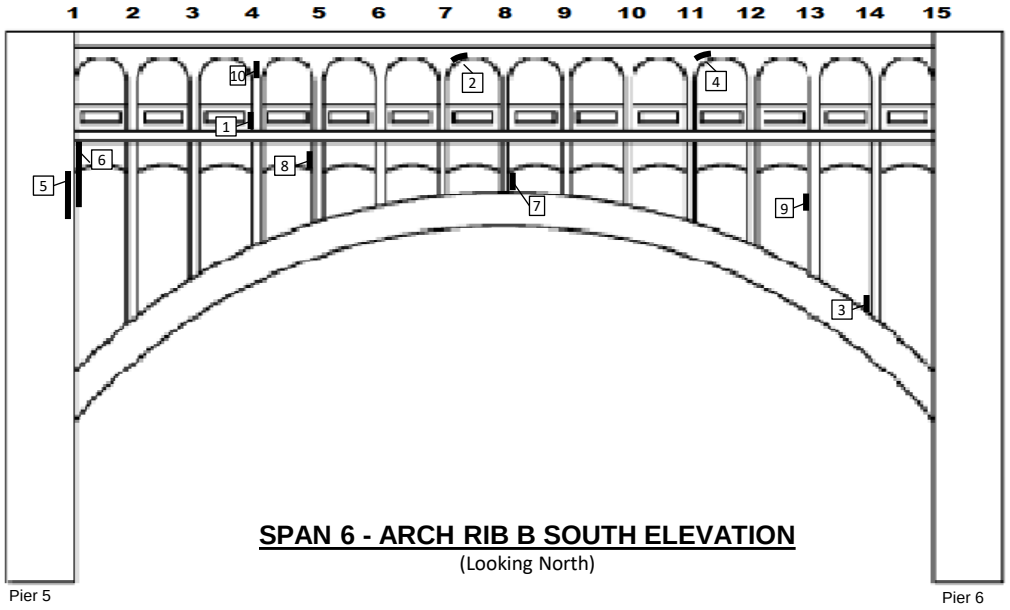
SPAN 6 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 6 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination w/ Spall w/ exp. Reinf. - 5 SF
3	Spall - 4 SF
4	Map Cracking - 2 SF
5	Delamination - 1 SF
6	Delamination - 2 SF
7	Delamination - 20 SF
8	Delamination - 1 SF
9	Delamination - 1 SF
10	Delamination - 1 SF
11	Delamination - 2 SF
12	Spall w/ exp. Reinf. - 1 SF
13	Delamination (underside of arch) - 12 SF



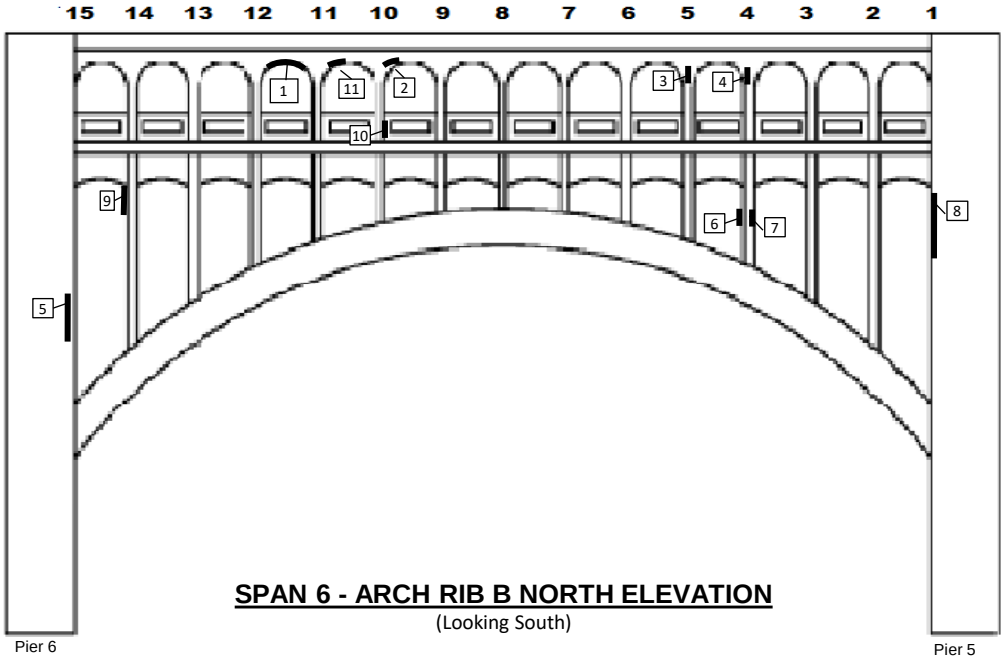
SPAN 6 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 6 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 1 SF
2	Delamination - 1 SF
3	Delamination - 6 SF
4	Delamination - 2 SF
5	Delamination - 1 SF
6	Delamination w/ Spall w/ exp. Reinf. - 3 SF
7	Delamination - 2 SF
8	Delamination - 4 SF
9	1/16" W Crack - 9 LF
10	Spall - 2 SF



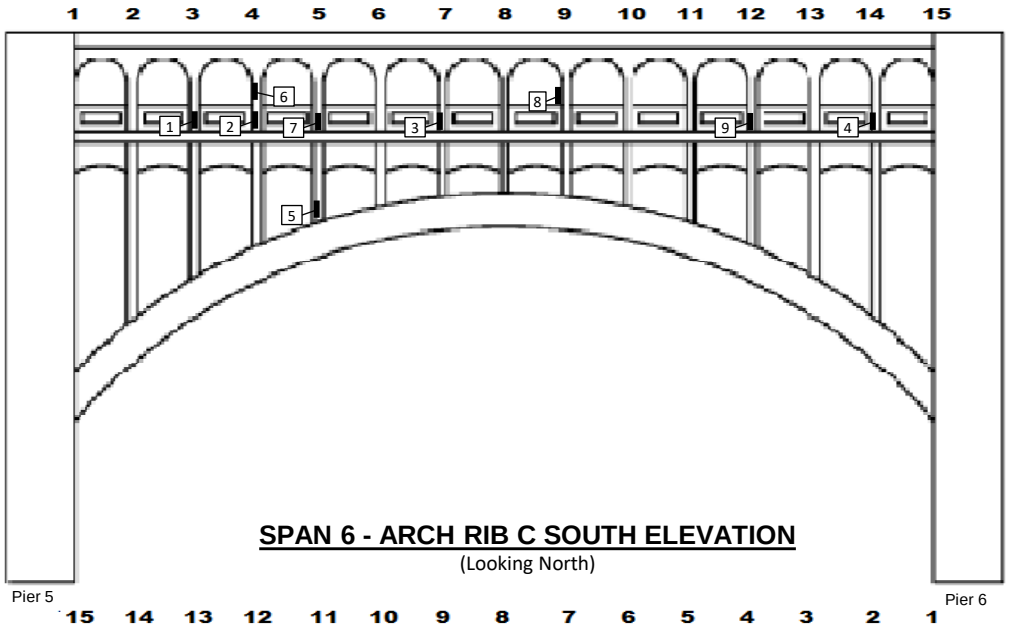
SPAN 6 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 6 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 4 SF
3	Delamination - 1 SF
4	Spall, 4" D - 4 SF
5	Delamination - 16 SF
6	Delamination w/ Spall w/ exp. Reinf. - 20 SF
7	Delamination - 2 SF
8	Delamination - 4 SF
9	Spall w/ exp. Reinf. - 16 SF
10	Delamination - 3 SF



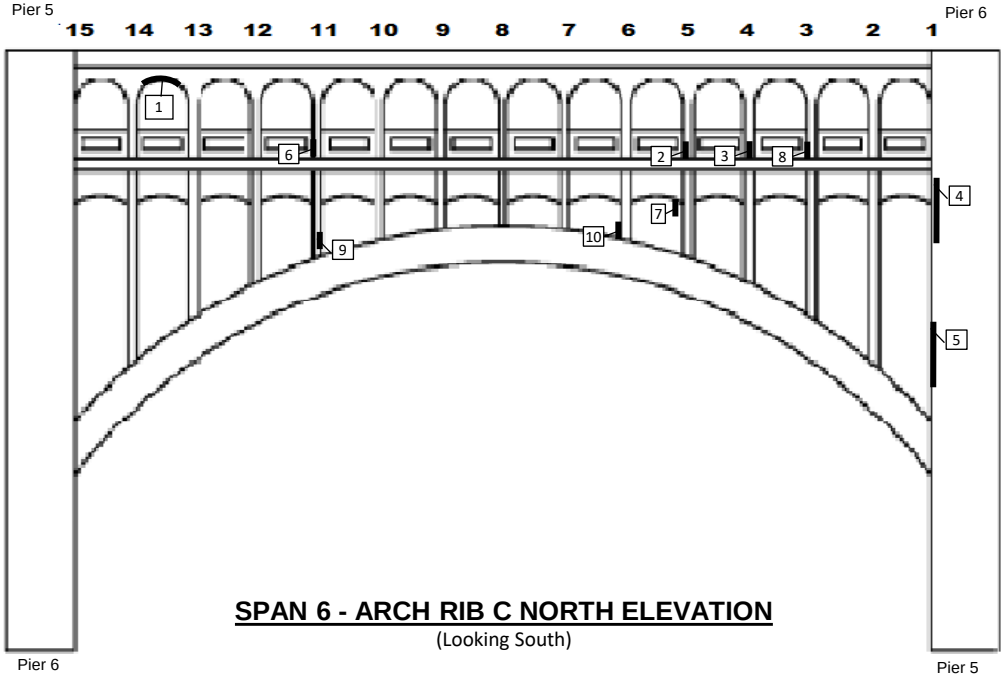
SPAN 6 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 6 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 24 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Delamination - 4 SF
4	Delamination - 2 SF
5	Delamination - 8 SF
6	Delamination - 1 SF
7	Delamination - 1 SF
8	Delamination - 8 SF
9	Spall w/ exp. Reinf. - 2 SF
10	Delamination - 1 SF
11	Delamination - 6 SF



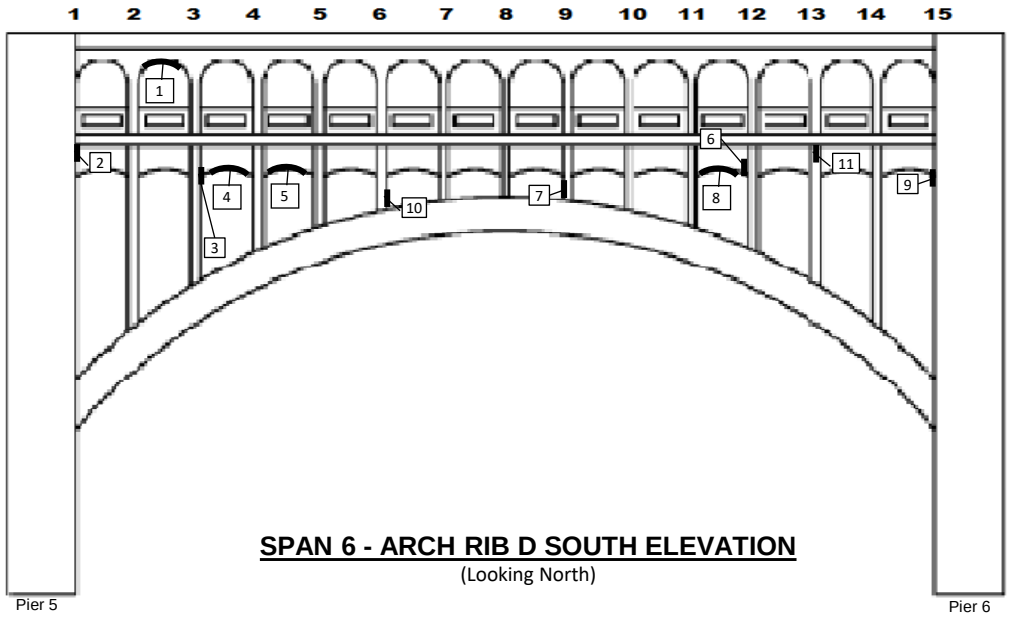
SPAN 6 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 6 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 2" D - 2 SF
2	Spall w/ exp. Reinf., 3" D - 2 SF
	Delamination - 8 SF
3	Spall w/ exp. Reinf., 2" D - 1 SF
4	Delamination - 3 SF
5	Spall w/ exp. Reinf. - 1 SF
6	Delamination - 1 SF
7	Delamination - 4 SF
8	Delamination - 1 SF
9	Delamination - 2 SF

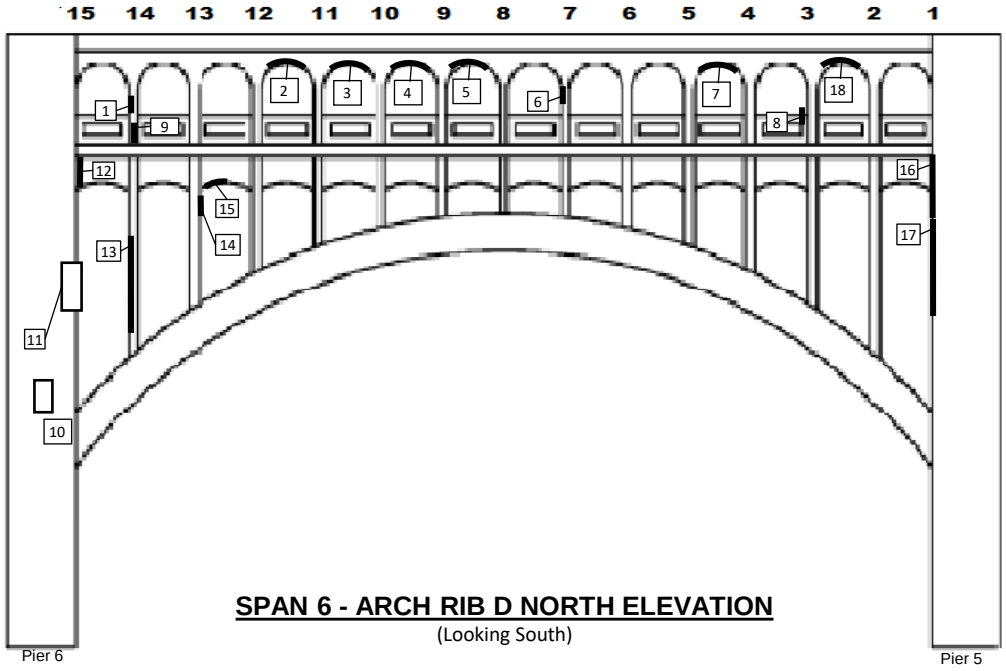


SPAN 6 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 6 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Delamination - 4 SF
4	Spall w/ exp. Reinf. - 10 SF
5	Spall w/ exp. Reinf. - 15 SF
6	Spall w/ exp. Reinf - 1 SF
7	Delamination - 1 SF
8	Delamination - 4 SF
9	Delamination - 1 SF



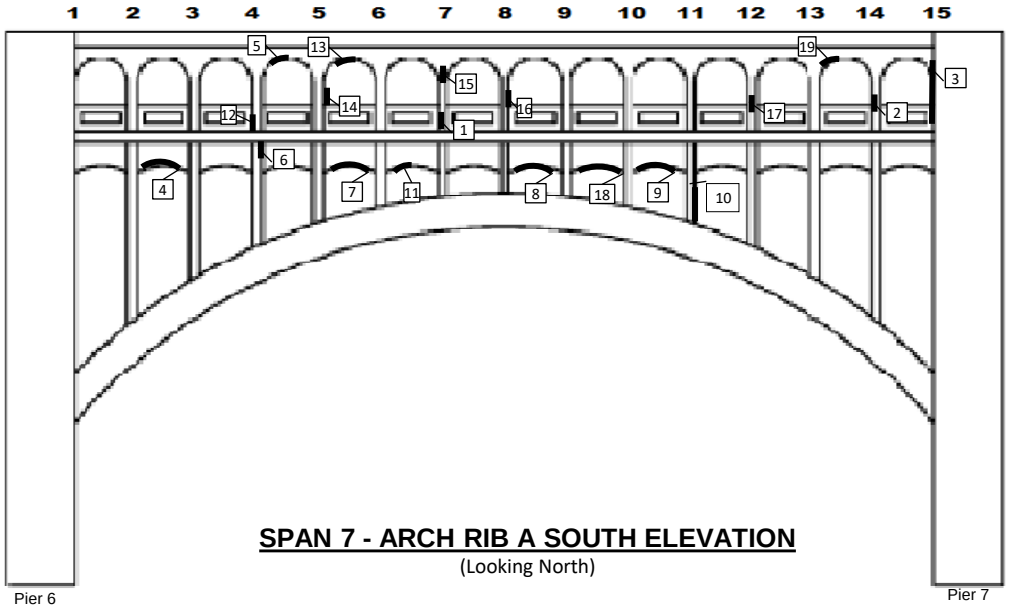
SPAN 6 - ARCH RIB D SOUTH ELEVATION
(Looking North)



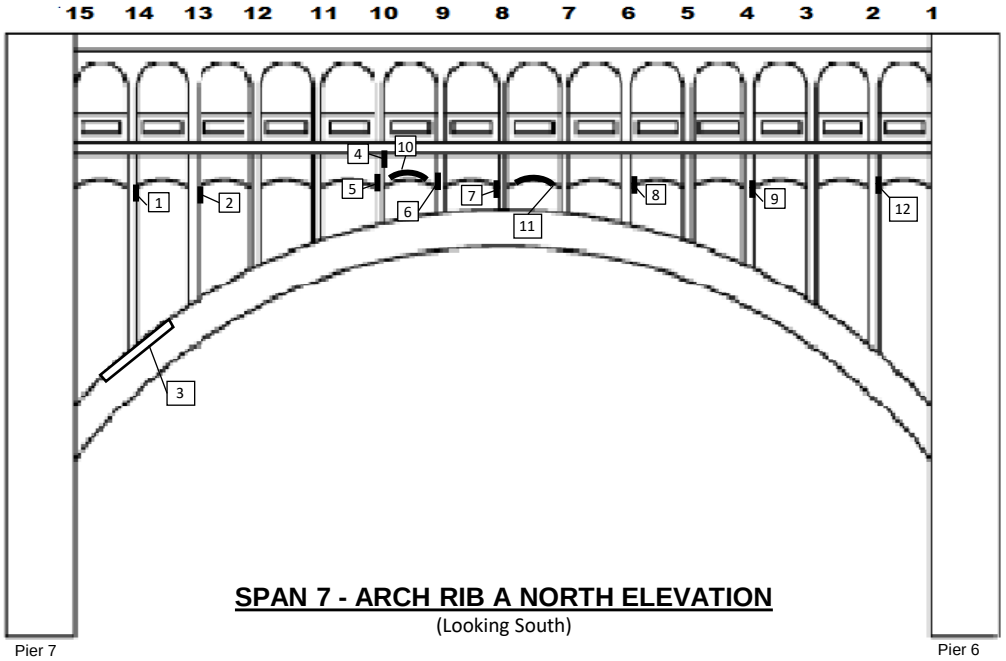
SPAN 6 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 6 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination w/ Spall w/ exp. Reinf., 4" D - 5 SF
3	Spall w/ exp. Reinf. - 1 SF
4	Delamination - 4 SF
5	Delamination - 1 SF
6	Spall - 1 SF
7	Delamination - 1 SF
8	Delamination - 1 SF
9	Delamination - 6 SF
10	Delamination - 1 SF
11	Delamination - 1 SF

SPAN 6 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 2.5" D - 5 SF
2	Delamination - 4 SF
3	Delamination - 10 SF
4	Delamination - 4 SF
5	Delamination - 4 SF
6	Delamination - 5 SF
7	Delamination - 2 SF
8	Delamination - 2 SF
9	Delamination - 1 SF
10	Spall, 4" D - 2 SF
11	Spall w/ exp. Reinf., 3" D - 6 SF
12	Delamination - 4 SF
13	Delamination w/ Spall w/ exp. Reinf. - 8 SF
14	Spall w/ exp. Reinf. - 1 SF
15	Spall w/ exp. Reinf. - 1 SF
16	Spall w/ exp. Reinf., 3" D - 5 SF
17	Delamination - 6 SF
18	Delamination - 6 SF



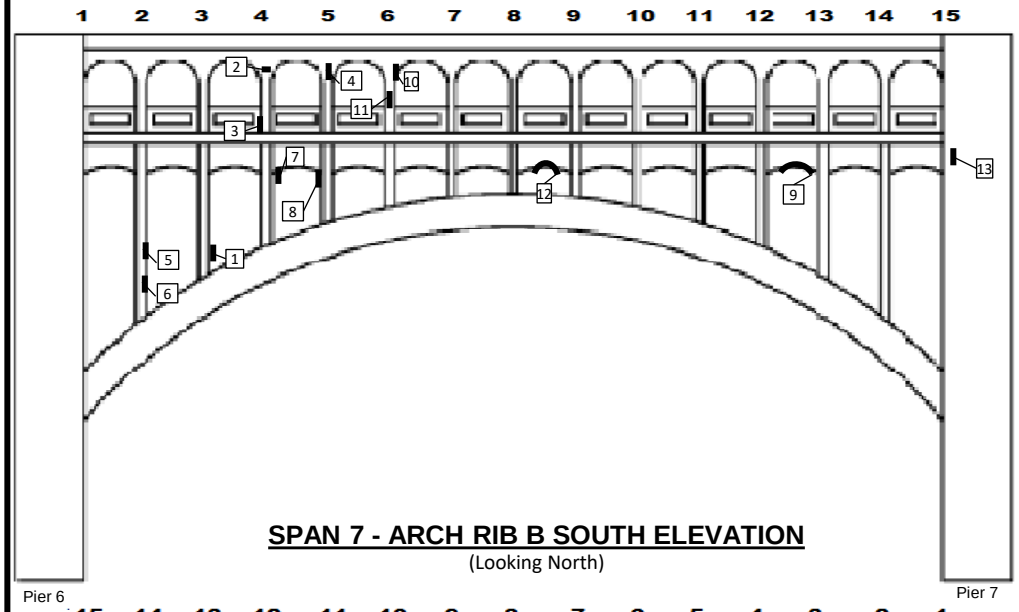
SPAN 7 - ARCH RIB A SOUTH ELEVATION
(Looking North)



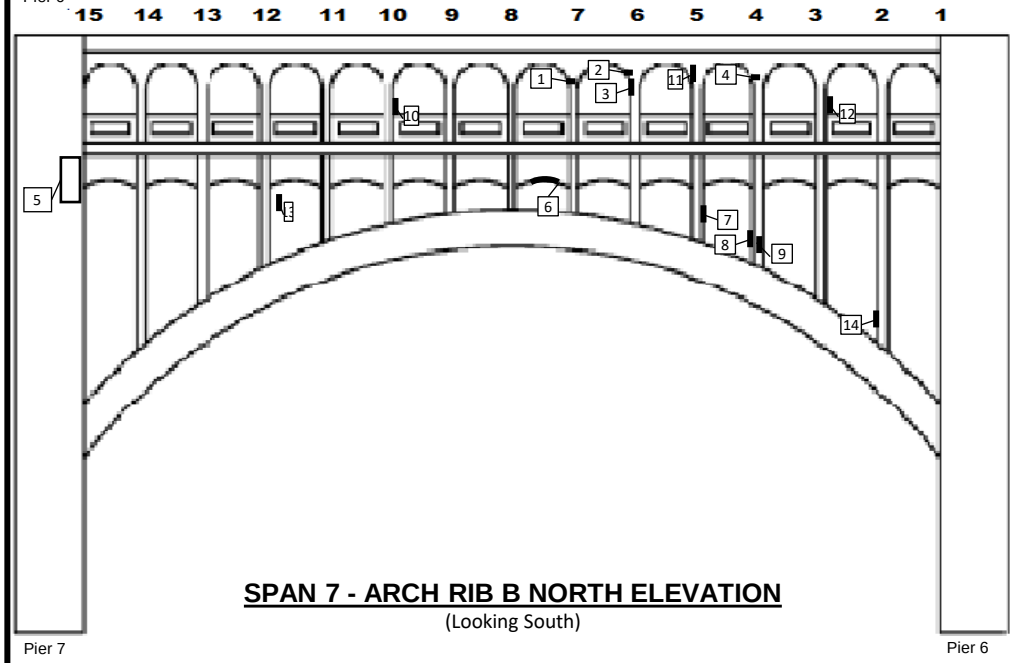
SPAN 7 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 7 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall, 1" D - 1 SF
2	Delamination - 3 SF
3	Delamination w/ 1/4" W crack on edge of delamination (behind drain pipe) - 24 SF
4	Delamination - 4 SF
5	Delamination - 1 SF
6	Delamination - 5 SF
7	Delamination - 3 SF
8	Delamination - 8 SF
9	Delamination w/ Spall w/ exp. Reinf - 6 SF
10	Delamination - 2 SF
11	Delamination - 1 SF
12	Spall w/ exp. Reinf. - 1 SF
13	Spall w/ exp. Reinf. - 1 SF
14	Spall w/ exp. Reinf. - 1 SF
15	Void - 6" x 6" x 6"
16	Delamination - 1 SF
17	Delamination - 1 SF
18	Delamination - 2 SF
19	Delamination - 1 SF

SPAN 7 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf - 2 SF
2	Spall w/ exp. Reinf - 1 SF
3	1/16" W crack - 20 LF
4	Spall w/ exp. Reinf - 1 SF
5	Delamination - 1 SF
6	Spall w/ exp. Reinf - 1 SF
7	Spall w/ exp. Reinf - 1 SF
8	Spall w/ exp. Reinf - 1 SF
9	Delamination - 4 SF
10	Delamination - 6 SF
11	Delamination - 6 SF
12	Spall w/ exp. Reinf. - 1 SF



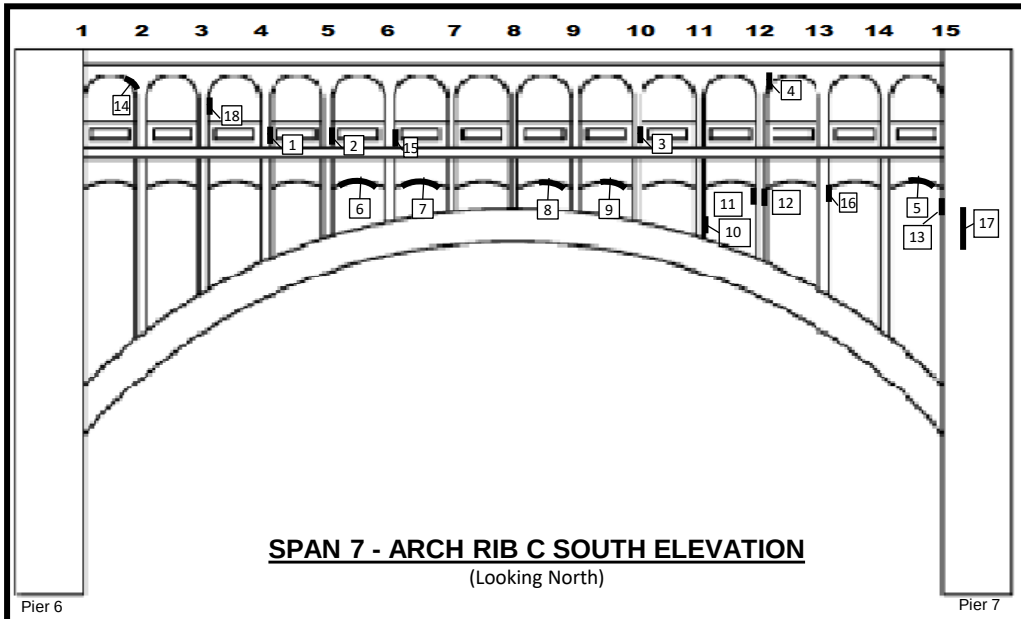
SPAN 7 - ARCH RIB B SOUTH ELEVATION
(Looking North)



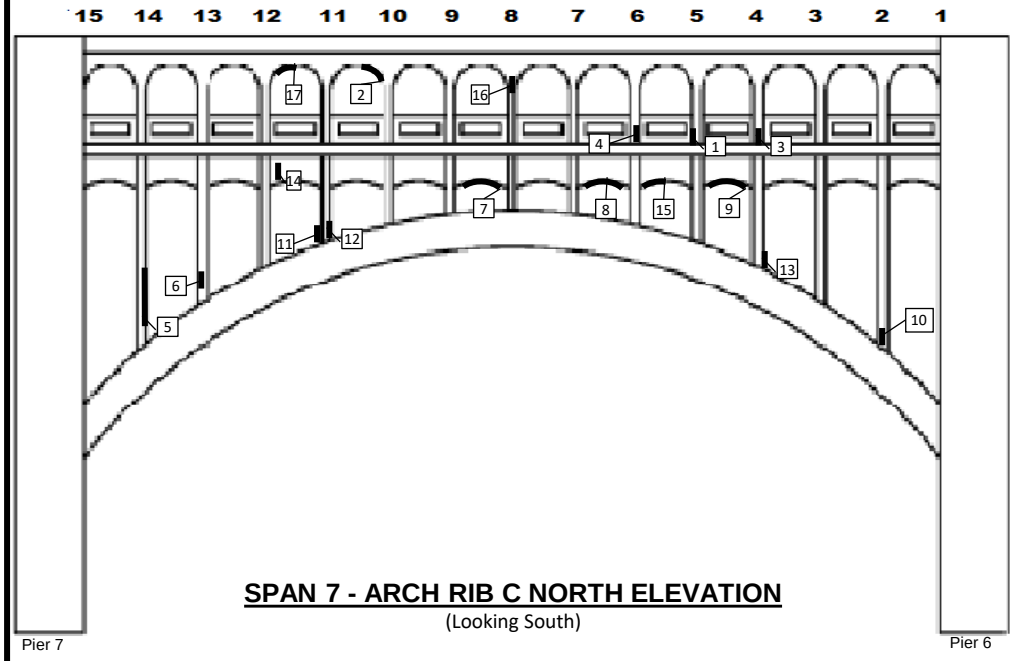
SPAN 7 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 7 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf - 1 SF
2	Delamination - 2 SF
3	Delamination - 3 SF
4	Delamination - 2 SF
5	Spall w/ exp. Reinf - 3 SF
6	Delamination - 1 SF
7	Delamination w/ Spall w/ exp. Reinf - 4 SF
8	Spall w/ exp. Reinf - 2 SF
9	Spall w/ exp. Reinf - 1 SF
10	Delamination - 1 SF
11	Delamination - 1 SF
12	Delamination - 2 SF
13	Delamination - 2 SF

SPAN 7 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall - 2 SF
2	Delamination - 4 SF
3	Delamination - 5 SF
4	Spall - 2 SF
5	Spall (inside face) - 6 SF
6	Spall w/ exp. Reinf - 3 SF
7	Spall w/ exp. Reinf - 3 SF
8	Delamination w/ Spall w/ exp. Reinf. - 5 SF
9	Delamination - 4 SF
10	Delamination - 2 SF
11	Delamination - 2 SF
12	Spall w/ exp. Reinf, 2" D - 6 SF
13	Spall w/ exp. Reinf - 1 SF
14	Spall w/ exp. Reinf - 2 SF



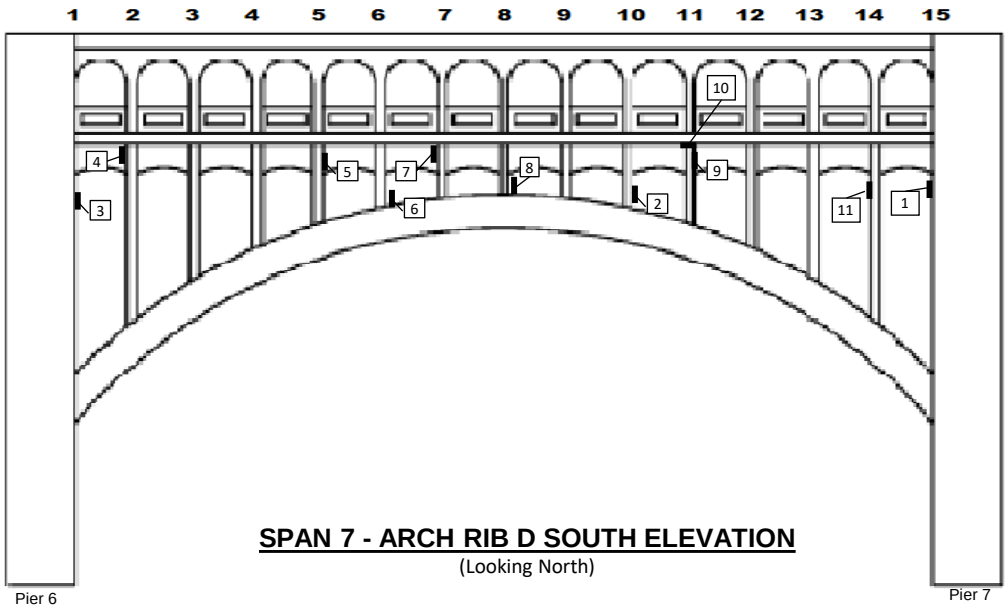
SPAN 7 - ARCH RIB C SOUTH ELEVATION
(Looking North)



SPAN 7 - ARCH RIB C NORTH ELEVATION
(Looking South)

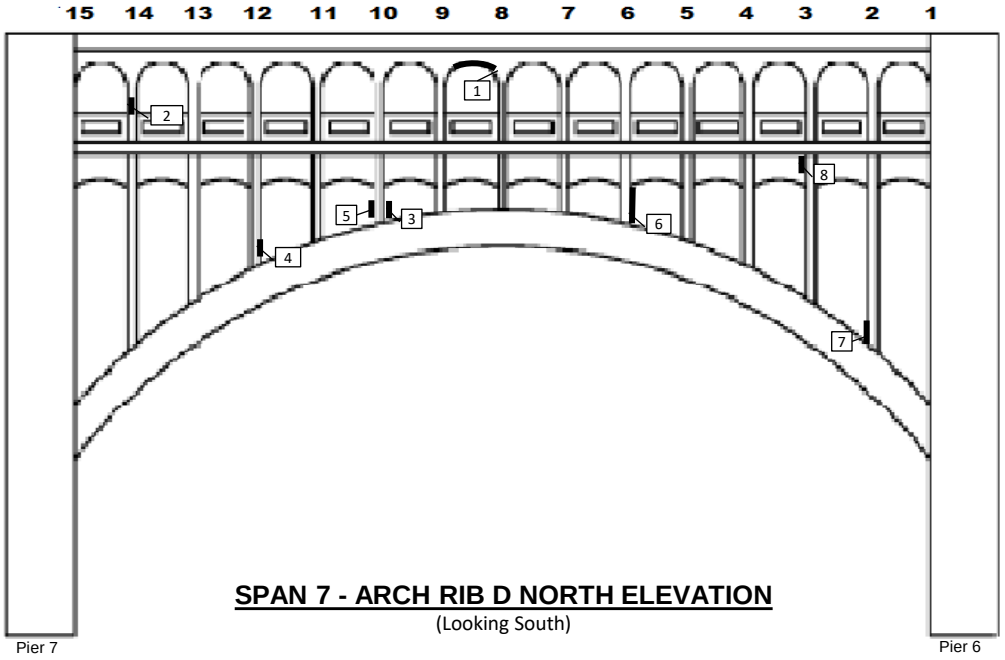
SPAN 7 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination w/ Spall w/ exp. Reinf., 3" D - 5 SF
3	Delamination - 2 SF
4	Spall w/ exp. Reinf., 2" D - 2 SF
5	Delamination - 6 SF
6	Delamination - 6 SF
7	Delamination - 4 SF
8	Delamination - 4 SF
9	Delamination - 4 SF
10	Delamination - 1 SF
11	Delamination - 4 SF
12	Spall w/ exp. Reinf. - 1 SF
13	Delamination - 8 SF
14	Delamination - 2 SF
15	Delamination - 2 SF
16	Delamination - 1 SF
17	Delamination - 2 SF
18	Spall - 2 SF

SPAN 7 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Spall, 3" D - 4 SF
3	Delamination - 2 SF
4	Delamination w/ Spall w/ exp. Reinf., 1.5" D - 2 SF
5	Delamination - 20 SF
6	Delamination - 2 SF
7	Delamination - 10 SF
8	Delamination - 2 SF
9	Delamination - 3 SF
10	Delamination - 3 SF
11	Delamination - 1 SF
12	Delamination - 1 SF
13	Spall w/ exp. Reinf. - 1 SF
14	Delamination - 10 SF
15	Delamination - 2 SF
16	Spall - 1 SF
17	Spall - 1 SF



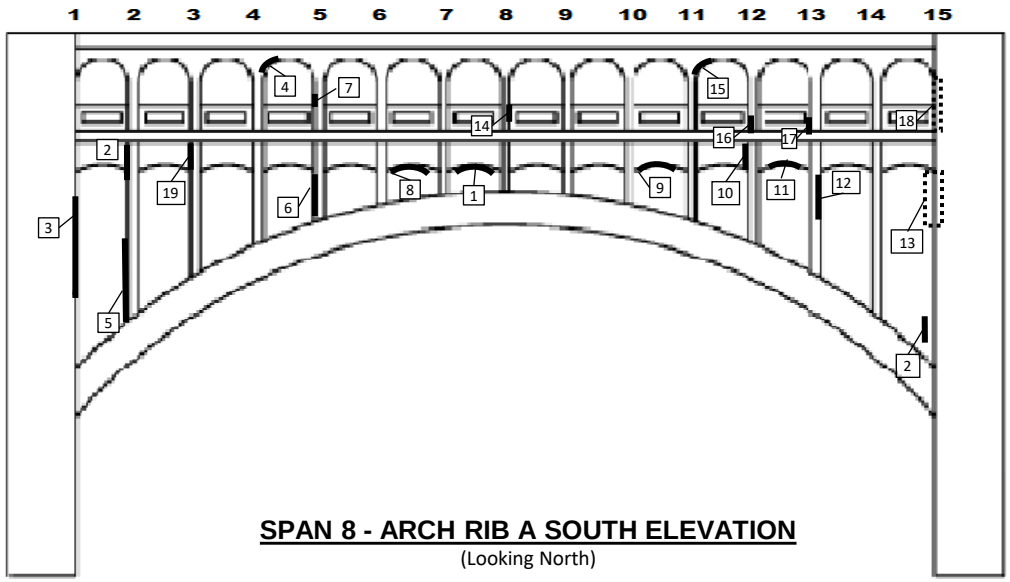
SPAN 7 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 7 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 4 SF
2	Delamination - 1 SF
3	Delamination - 4 SF
4	Delamination w/ Spall w/ exp. Reinf. - 12 SF
5	Delamination - 3 SF
6	Delamination - 2 SF
7	Delamination - 3 SF
8	Spall w/ exp. Reinf - 1 SF
9	Delamination - 3 SF
10	Delamination - 6 SF
11	Delamination - 3 SF

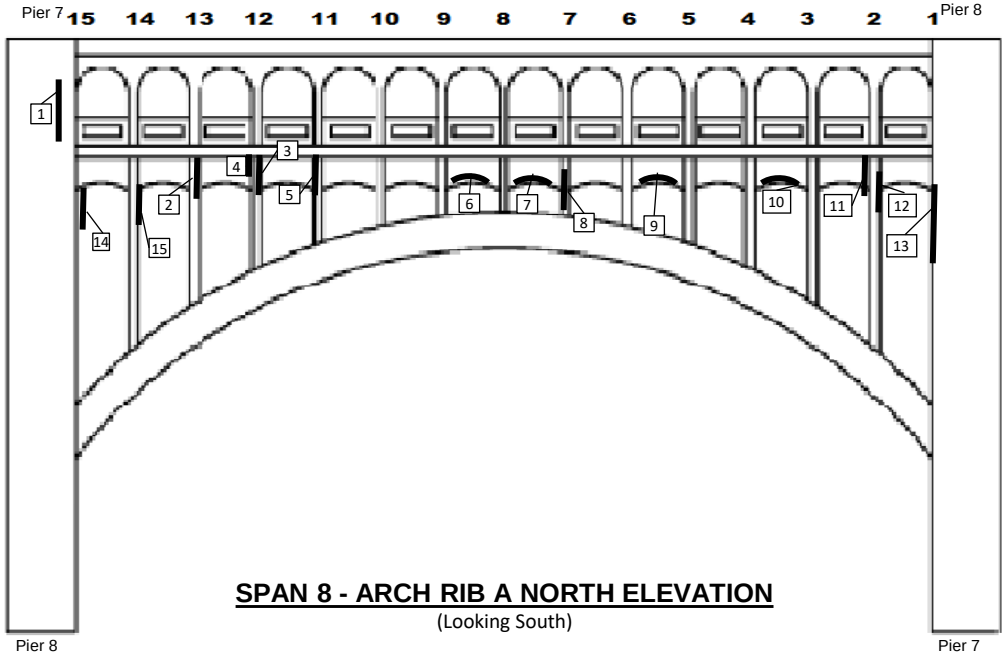


SPAN 7 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 7 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 4 SF
2	Spall w/ exp. Reinf., 2" D - 1 SF
3	Spall w/ exp. Reinf. - 1 SF
4	Delamination - 1 SF
5	Spall w/ exp. Reinf. - 1 SF
6	Delamination - 6 SF
7	Spall w/ exp. Reinf. - 1 SF
8	Delamination - 4 SF



SPAN 8 - ARCH RIB A SOUTH ELEVATION
(Looking North)

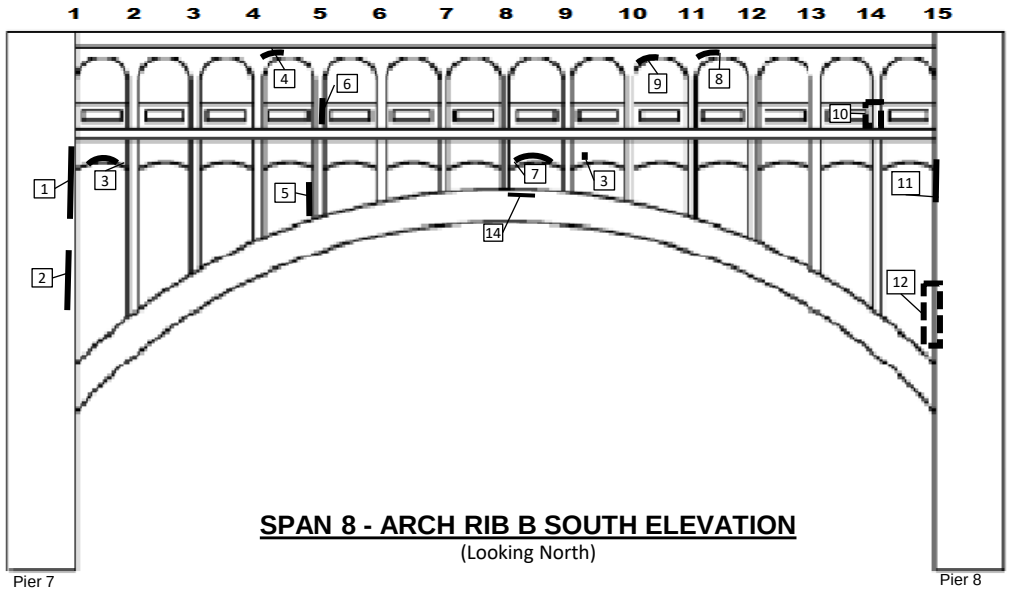


SPAN 8 - ARCH RIB A NORTH ELEVATION
(Looking South)

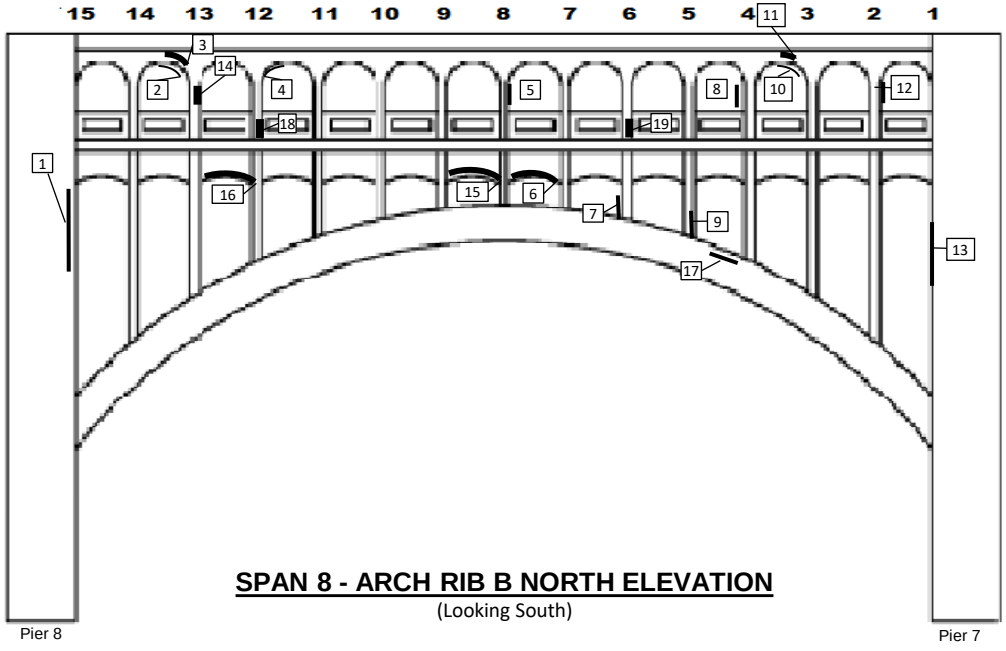
Pier 8 Pier 7

SPAN 8 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination - 4 SF
3	Delamination w/ Spall w/ exp. Reinf. - 12 SF
4	Delamination - 1 SF
5	Delamination w/ Spall w/ exp. Reinf. - 20 SF
6	Delamination - 1 SF
7	Spall, 2.5" D - 1 SF
8	Delamination - 1 SF
9	Delamination - 2 SF
10	Delamination - 9 SF
11	Delamination - 1 SF
12	Delamination - 22 SF
13	Delamination - 20 SF
14	Delamination - 1 SF
15	Delamination - 1 SF
16	Delamination - 1 SF
17	Delamination - 1 SF
18	Delam. (behind drain pipe) w/ 1/8" W crack on edge of delam. - 5 SF
19	Delamination - 1 SF
20	Map Cracking - 8 SF

SPAN 8 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spalling w/ exp. Reinf. - 6 SF
2	Delamination - 3 SF
3	Delamination - 12 SF
4	Spalling w/ exp. Reinf. - 1 SF
5	Delamination - 8 SF
6	Delamination - 4 SF
7	Delamination - 6 SF
8	Delamination - 4 SF
9	Delamination - 3 SF
10	Delamination - 4 SF
11	Delamination - 6 SF
12	Delamination - 6 SF
13	Delamination w/ Spall w/ exp. Reinf. - 8 SF
14	Delamination w/ Spall w/ exp. Reinf. - 4 SF
15	Delamination - 6 SF



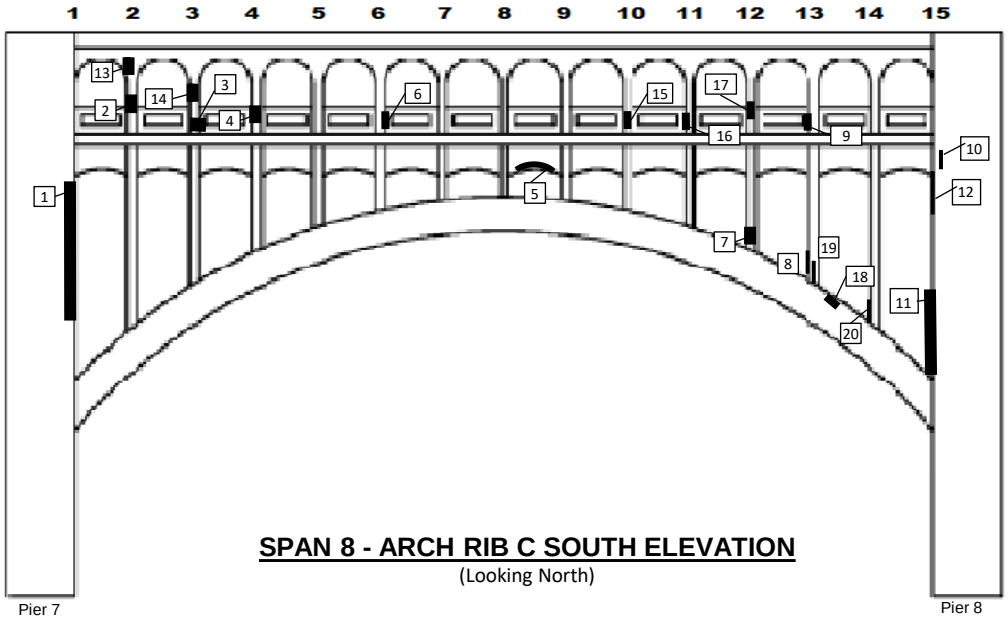
SPAN 8 - ARCH RIB B SOUTH ELEVATION
(Looking North)



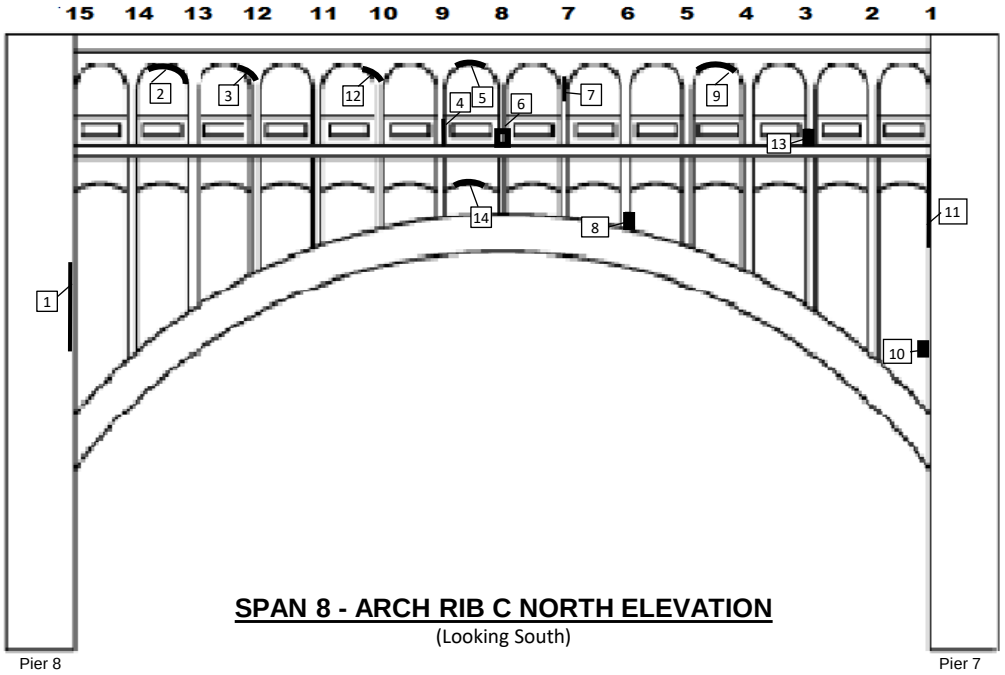
SPAN 8 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 8 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 9 SF
2	Delamination - 8 SF
3	Delamination - 4 SF
4	Spall w/ exp. Reinf., 3" D - 1 SF
5	Spall w/ exp. Reinf. - 2 SF
6	Delamination - 2 SF
7	Spall w/ exp. Reinf. - 5 SF
8	Spall w/ exp. Reinf., 1" D - 1 SF
9	Spall w/ exp. Reinf. - 1 SF
10	Delamination - 6 SF
11	Delamination - 10 SF
12	Delamination w/ Spall w/ exp. Reinf., 3" D - 15 SF
13	Spall w/ exp. Reinf., 2" D - 2 SF
14	Delamination - 4' L x 6" W

SPAN 8 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 16 SF
2	Delamination - 2 SF
3	Delamination - 2 SF
4	Spall w/ exp. Reinf., 5" D - 1 SF
5	Delamination - 3 SF
6	Delamination - 4 SF
7	Delamination - 2 SF
8	Delamination - 5 SF
9	Delamination - 1 SF
10	Delamination - 1 SF
11	Spall w/ exp. Reinf., 1.5" D - 1 SF
12	Spall w/ exp. Reinf., 2" D - 5 SF
13	Delamination - 10 SF
14	Delamination w/ Spall w/ exp. Reinf., 2" D - 4 SF
15	Delamination - 6 SF
16	Delamination - 1 SF
17	Delamination - 3' L x 6" H
18	Delamination - 1 SF
19	Delamination - 2 SF

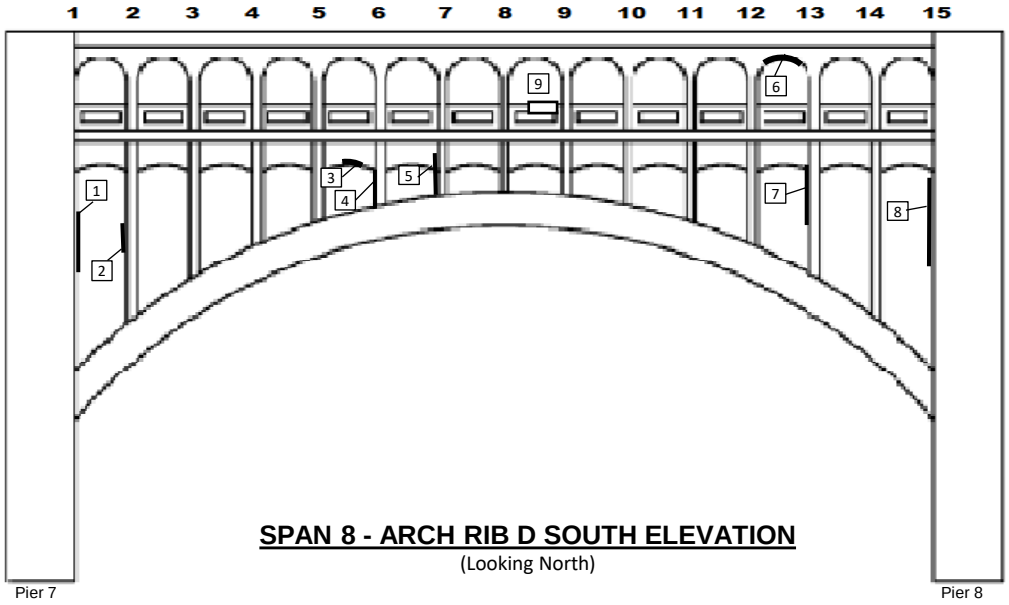


SPAN 8 - ARCH RIB C SOUTH ELEVATION
(Looking North)

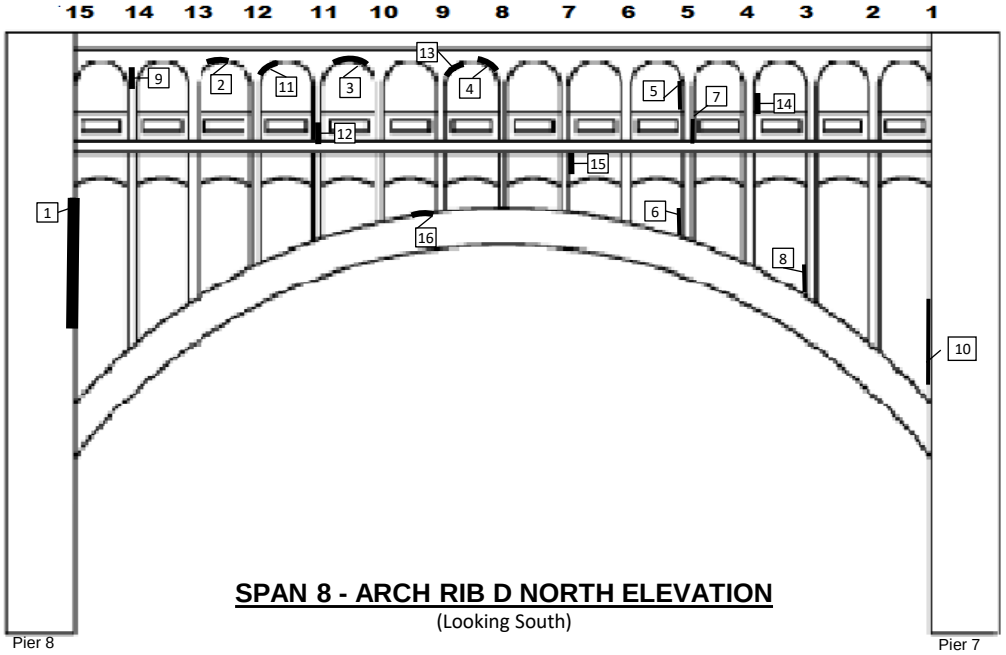


SPAN 8 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 8 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. 30% S.L. of bars at south end. 2 adj. shear stirrups w/ complete S.L. - 175 SF.
2	Delamination w/ Spall w/ exp. Reinf. - 5 SF
3	Delamination - 1 SF
4	Delamination - 3 SF
5	Delamination - 6 SF
6	Delamination w/ Spall w/ exp. Reinf. - 3 SF
7	Spall w/ exp. Reinf., 2" D - 1 SF
8	Delamination - 2 SF
9	Core sample location
10	Spall w/ exp. Reinf. - 1 SF
11	Delamination - 40 SF
12	Delamination - 12 SF
13	Delamination - 1 SF
14	Spall w/ exp. Reinf. - 1 SF
15	Delamination - 2 SF
16	Delamination - 2 SF
17	Delamination w/ Spall w/ exp. Reinf. - 1 SF
18	Spall - 1' L x 1' H
19	Delamination - 1 SF
20	Delamination - 1 SF
SPAN 8 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 15 SF
2	Delamination w/ Spall w/ exp. Reinf., 0.5" D - 4 SF
3	Spall w/ exp. Reinf., 4" D - 1 SF
4	Spall w/ exp. Reinf., 1" D - 1 SF
5	Spall w/ exp. Reinf., 1.5" D - 1 SF
6	Spall - 1 SF
7	Delamination w/ Spall - 2 SF
8	Spall w/ exp. Reinf. - 1 SF
9	Delamination w/ Spall w/ exp. Reinf. - 2 SF
10	Delamination - 4 SF
11	Delam. w/ Spall w/ exp. Reinf., 4" D - 20 SF. 1 exp. Tie w/ 50% S.L. (tie is broken on S face).
12	Delamination w/ Spall - 1 SF
13	Delamination - 1 SF
14	Delamination - 1 SF



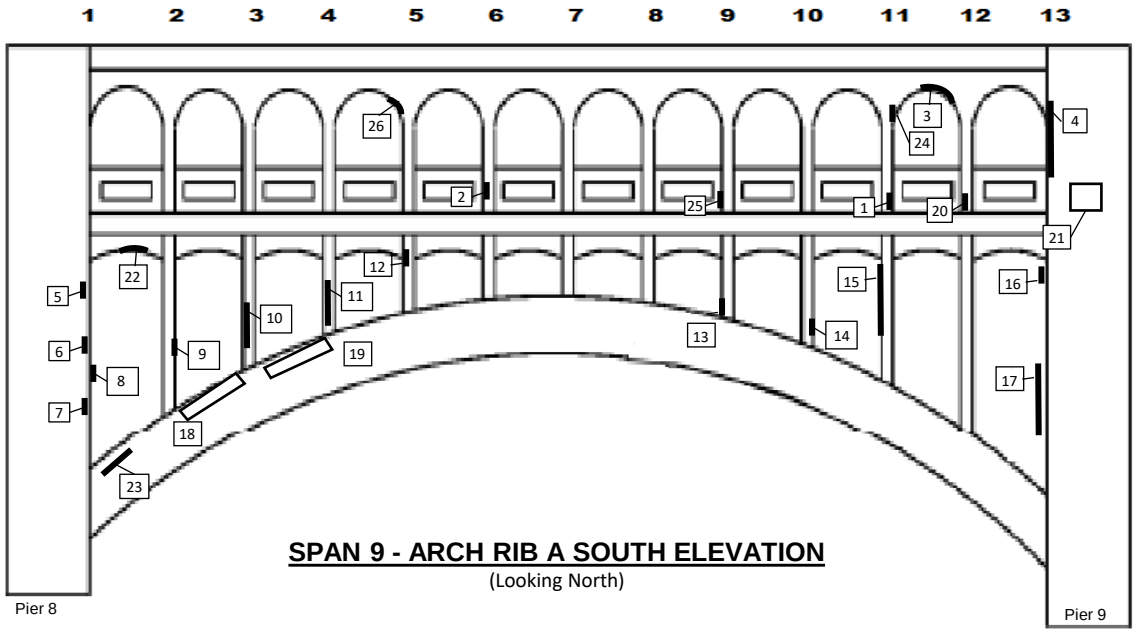
SPAN 8 - ARCH RIB D SOUTH ELEVATION
(Looking North)



SPAN 8 - ARCH RIB D NORTH ELEVATION
(Looking South)

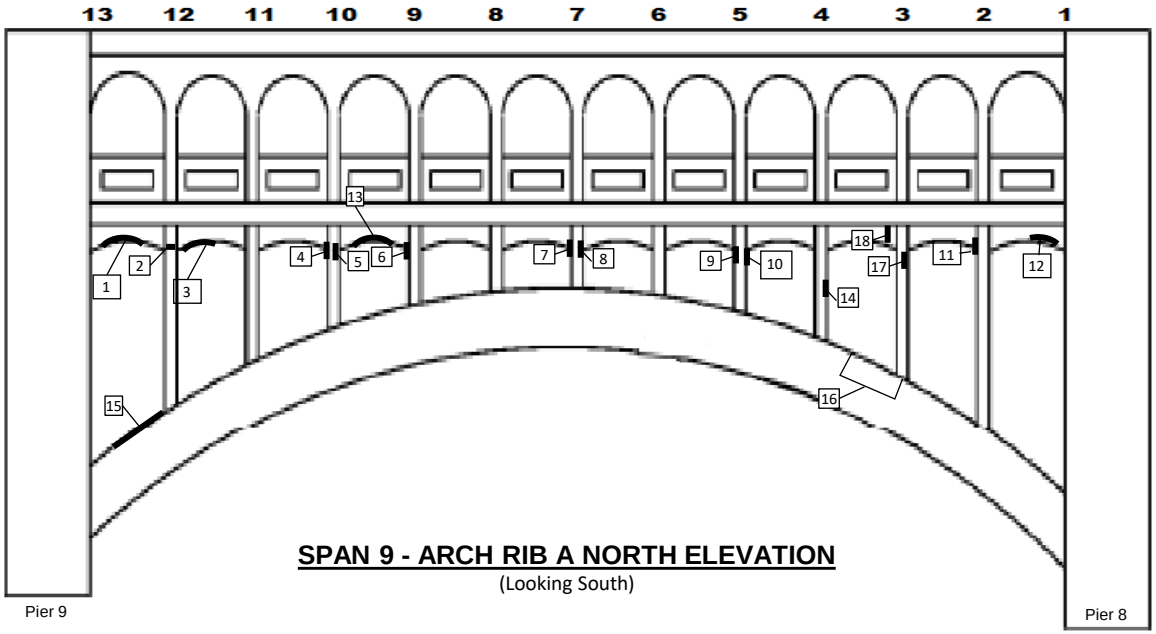
SPAN 8 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 12 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Spall w/ exp. Reinf. - 4 SF
4	Delamination - 12 SF
5	Delamination - 12 SF
6	Delamination - 6 SF
7	Delamination w/ Spall w/ exp. Reinf - 20 SF
8	Delamination w/ some Spalling - 23 SF
9	Spall w/ exp. Reinf. - 1 SF

SPAN 8 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delam. w/ Spall w/ exp. Reinf. w/ minor S.L. - 60 SF
2	Delamination - 3 SF
3	Delamination - 4 SF
4	Delamination - 4 SF
5	Spall w/ exp. Reinf., 1" D - 1 SF
6	Delamination - 1 SF
7	Delamination - 3 SF
8	Delamination - 1 SF
9	Delamination - 2 SF
10	Delamination - 4 SF
11	Spall - 1 SF
12	Delamination - 4 SF
13	Delamination - 1 SF
14	Delamination - 2 SF
15	Delamination - 1 SF
16	Delamination - 2' L x 6" W



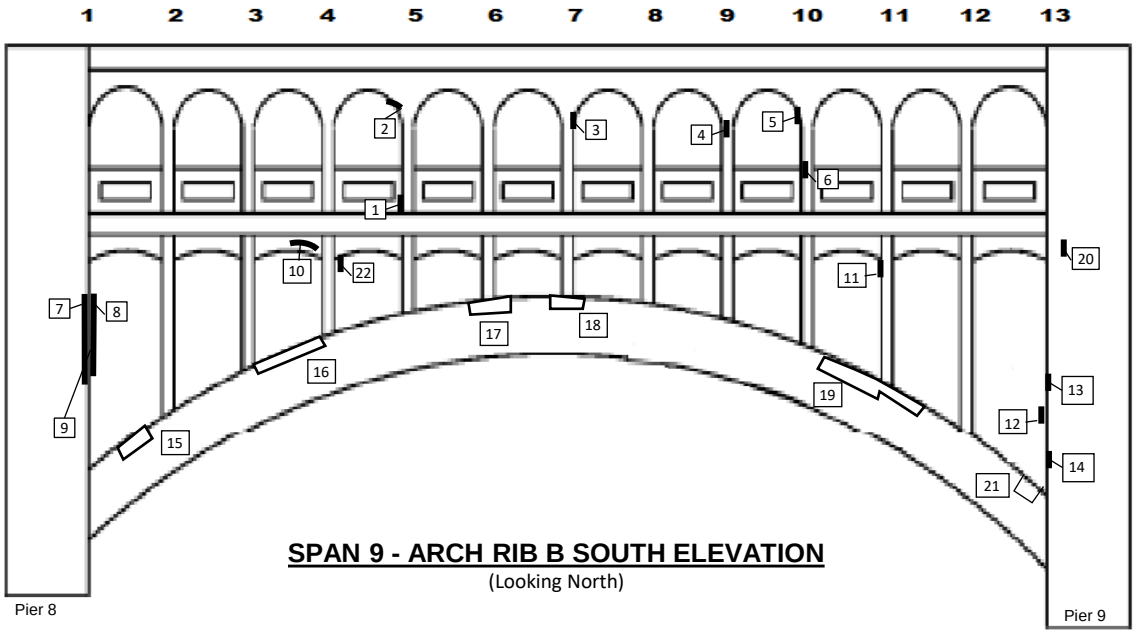
SPAN 9 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 9 - RIB A SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delamination - 1 SF	14	Delamination - 2 SF
2	Spall w/ exp. Reinf., 1" D - 1 SF	15	Delamination - 10 SF
3	Delamination - 8 SF	16	Delamination - 4 SF
4	Delam. (behind drain pipe) w/ up to 1/8" W crack on edge of delam. - 12 SF	17	Delamination - 30 SF
		18	Delamination - 8' L x 2' W
5	Delamination - 14 SF	19	Delaminaiton - 6' L x 2' W
6	Delamination - 5 SF	20	Delamination - 4 SF
7	Delamination - 10 SF	21	Delamination - 4 SF
8	Delamination - 5 SF	22	Delamination - 4 SF
9	Delam. w/ Spall - 4 SF	23	Delamination - 3' L x 1' W
10	Delamination - 50 SF	24	Delamination - 1 SF
11	Delam. w/ Spall w/ exp. Reinf. - 9 SF	25	Delamination - 1 SF
12	Delamination - 2 SF	26	Delamination - 1 SF
13	Delamination - 1 SF		

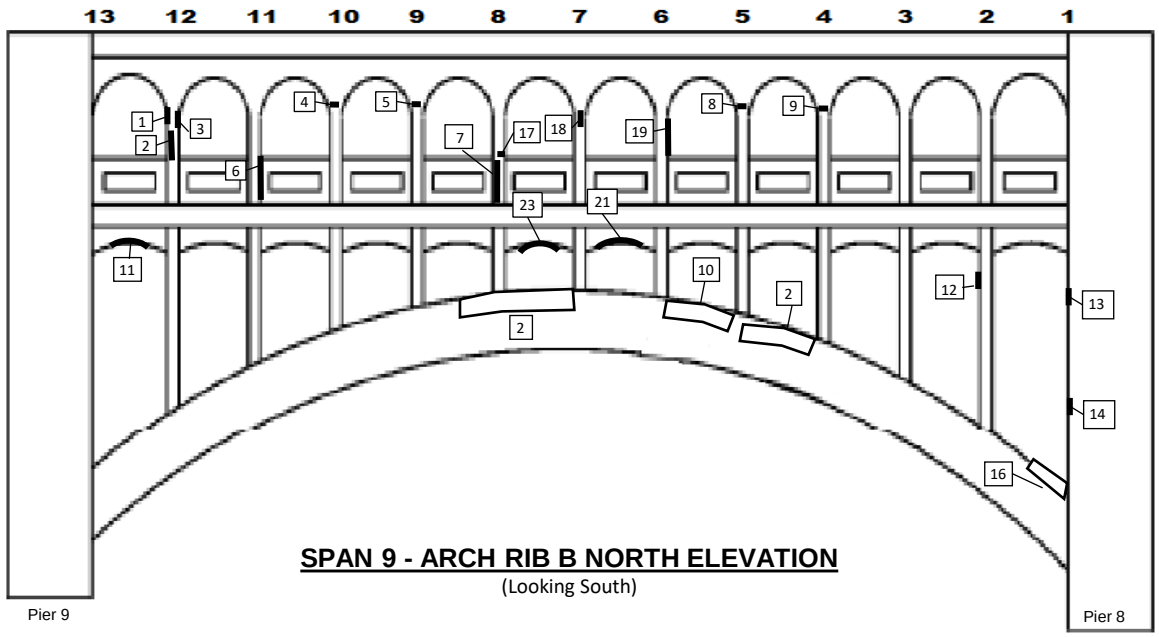


SPAN 9 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 9 - RIB A NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delam. w/ Spall w/ exp. Reinf. - 4 SF	14	Delamination - 9 SF
2	Delam. w/ Spall w/ exp. Reinf. - 4 SF	15	Delamination - 5' L x 3' W
3	Delam. w/ Spall - 2 SF	16	Delamination - 2' L x 6" W
4	Delam. w/ Spall w/ exp. Reinf. - 2 SF	17	Delamination - 1 SF
5	Delamination - 1 SF	18	Delam. w/ Spall w/ exp. Reinf. - 1 SF
6	Spall - 2 SF		
7	Delam. w/ Spall w/ exp. Reinf. - 3 SF		
8	Delam. w/ Spall w/ exp. Reinf. - 2 SF		
9	Delamination - 3 SF		
10	Delamination - 4 SF		
11	Delamination - 4 SF		
12	Delam. w/ Spall w/ exp. Reinf. - 5 SF		
13	Delamination - 1 SF		



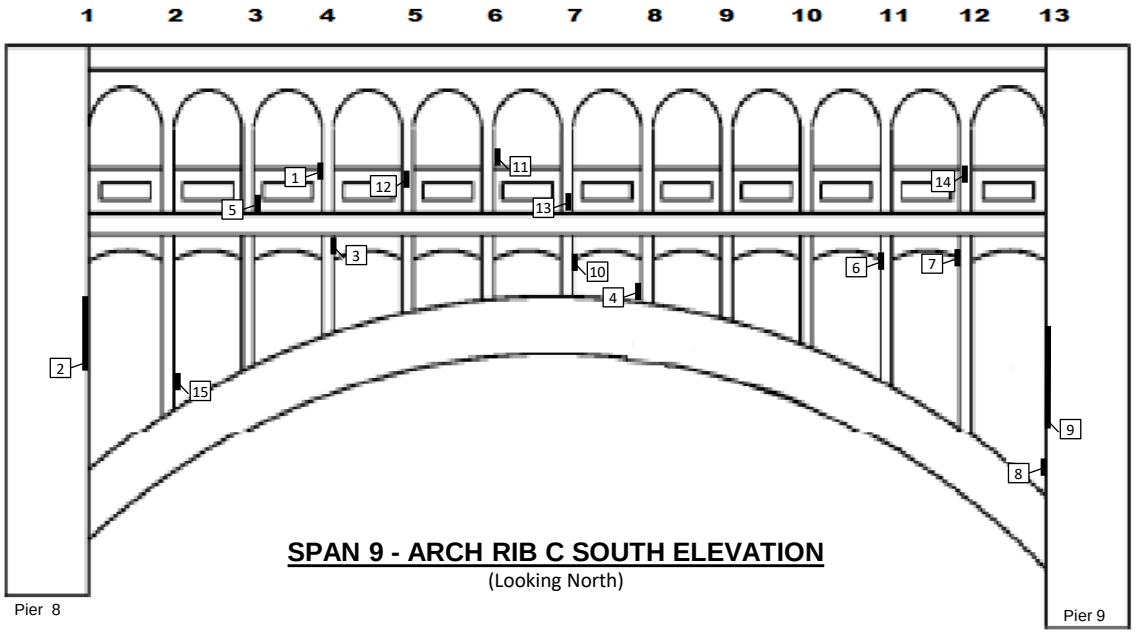
SPAN 9 - ARCH RIB B SOUTH ELEVATION
(Looking North)



SPAN 9 - ARCH RIB B NORTH ELEVATION
(Looking South)

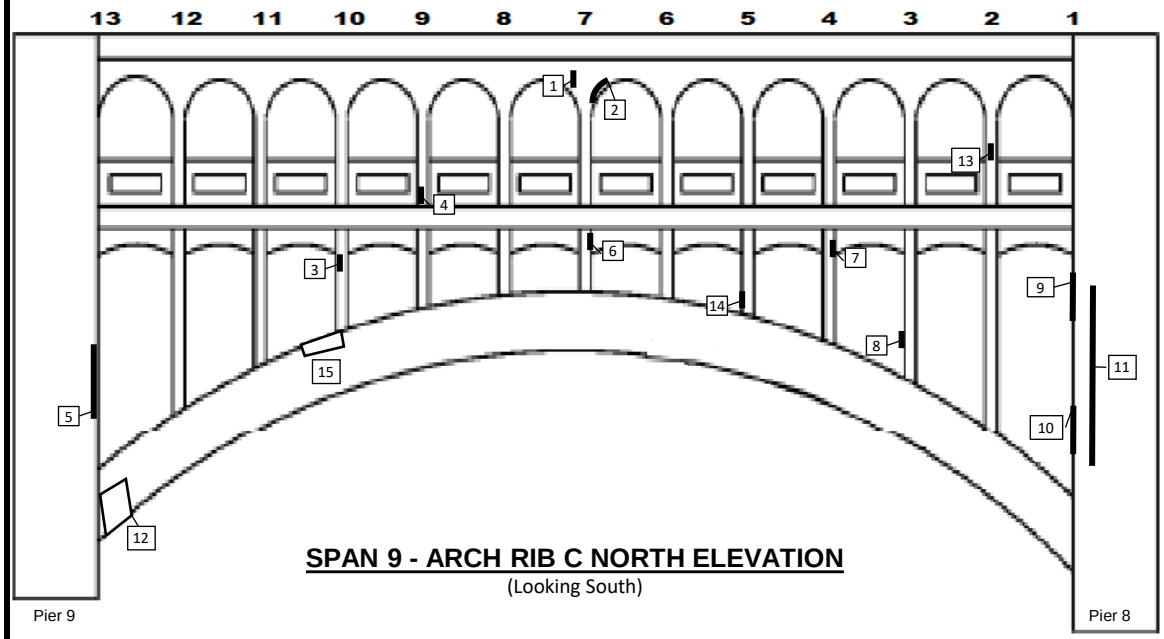
SPAN 9 - RIB B SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall w/ exp. Reinf., 1" D - 1 SF	11	Delamination - 3 SF
2	Spall w/ exp. Reinf., 4" D - 2 SF	12	Delam. w/ Spall w/ exp. Reinf - 4 SF
3	Delam. w/ Spall - 2 SF		
4	Delam. w/ Spall , 3" D & 1/4" crack - 6 SF	13	Delamination - 12 SF
		14	Delamination - 10 SF
5	Delamination - 2 SF	15	Delamination - 2' L x 1' H
6	Delamination - 1 SF	16	Delamination - 8' L x 6" W
7	Delamination - 40 SF (west face of column)	17	Delamination - 3' L x 6" W
		18	Spall w/ exp. Reinf. - 3' L x 6" W
8	Delamination - 28 SF (east face of column)	19	Delamination - 10' L x 1' W
		20	Delamination - 4 SF
9	Delamination - 30 SF (south face of column)	21	Delamination - 3' L x 6" H
		22	Delamination - 1 SF
10	Delam. w/ Spall w/ exp. Reinf. - 3 SF		

SPAN 9 - RIB B NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall w/ exp. Reinf., 1.5" D - 3 SF	13	Delamination - 6 SF
2	Delamination - 4 SF	14	Delamination - 12 SF
3	Delamination - 5 SF	15	Delamination - 2 SF
4	Delamination - 4 SF	16	Delamination - 2' L x 1' W
5	Delamination - 3 SF	17	Spall w/ exp. Reinf., 1" D - 2 SF
6	Delamination - 8 SF	18	Spall w/ exp. Reinf., 1" D - 2 SF
7	Delamination - 8 SF	19	Delamination - 4 SF
8	Delamination - 4 SF	20	Delamination - 3' L x 6" W
9	Delamination - 3 SF	21	Delamination - 2 SF
10	Delamination - 8' L x 1' W	22	Delamination - 10' L x 6" W
11	Delamination - 4 SF	23	Delamination - 4 SF
12	Delamination - 5 SF		



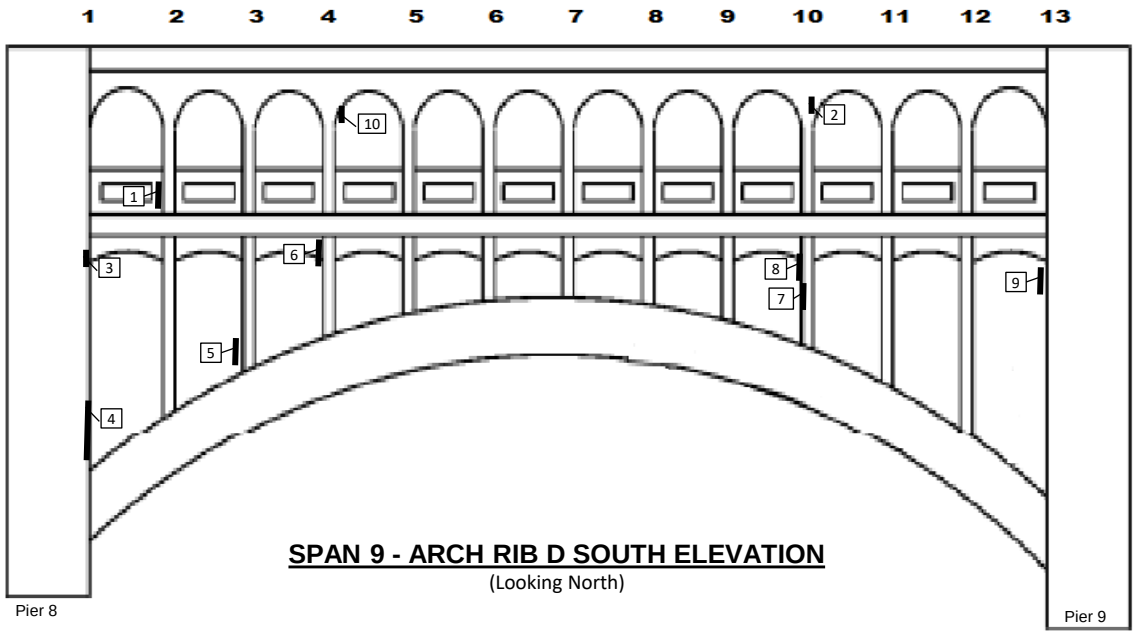
SPAN 9 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 9 - RIB C SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall - 1 SF	13	Delamination - 2 SF
2	Delamination - 24 SF	14	Delamination - 2 SF
3	Spall w/ exp. Reinf. - 2 SF	15	Delamination - 2 SF
4	Delamination - 1 SF		
5	Delamination - 1 SF		
6	Delam. w/ Spall - 3 SF		
7	Delamination - 1 SF		
8	Delamination - 1 SF		
9	Delamination - 20 SF		
10	Delamination - 1 SF		
11	Delamination - 1 SF		
12	Delamination - 1 SF		



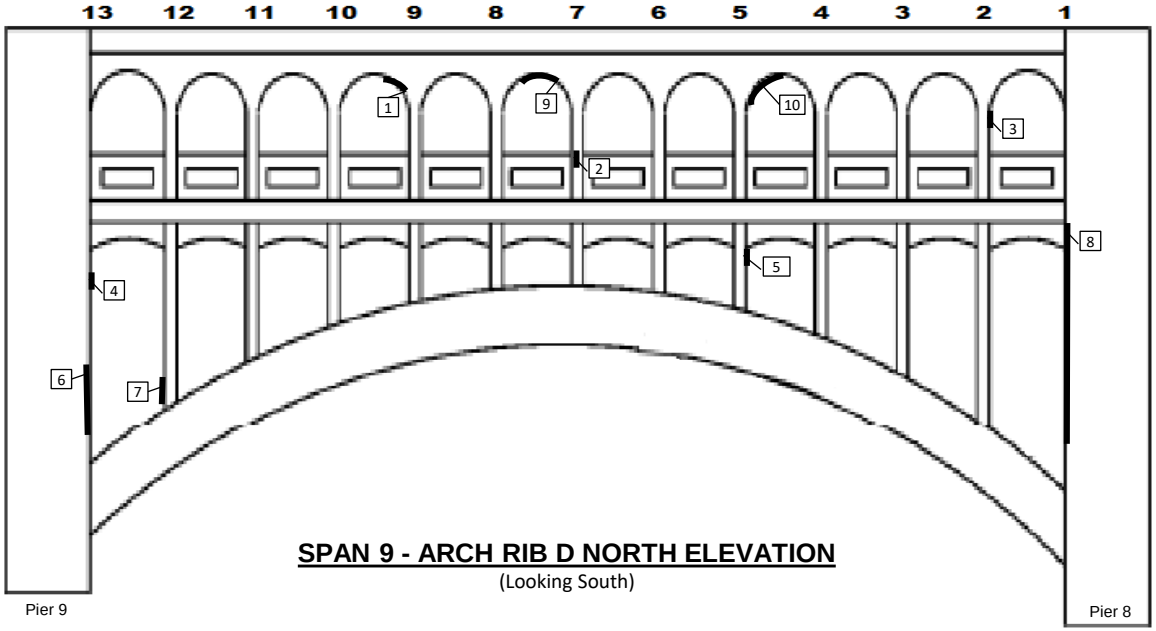
SPAN 9 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 9 - RIB C NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall w/ exp. Reinf., 2" D - 1 SF	13	Delamination - 1 SF
2	Spall w/ exp. Reinf., 2" D - 1 SF	14	Delamination - 1 SF
3	Spall w/ exp. Reinf. - 1 SF	15	Delamination - 3' L x 2' W
4	Delamination - 1 SF		
5	Delamination - 1 SF		
6	Delamination - 4 SF		
7	Delamination - 2 SF		
8	Delamination - 2 SF		
9	Delamination - 12 SF (East face)		
10	Spall w/ exp. Reinf - 4 SF (East face)		
11	Delamination - 40 SF (West face)		
12	Map cracking - 3' L x 3' W		



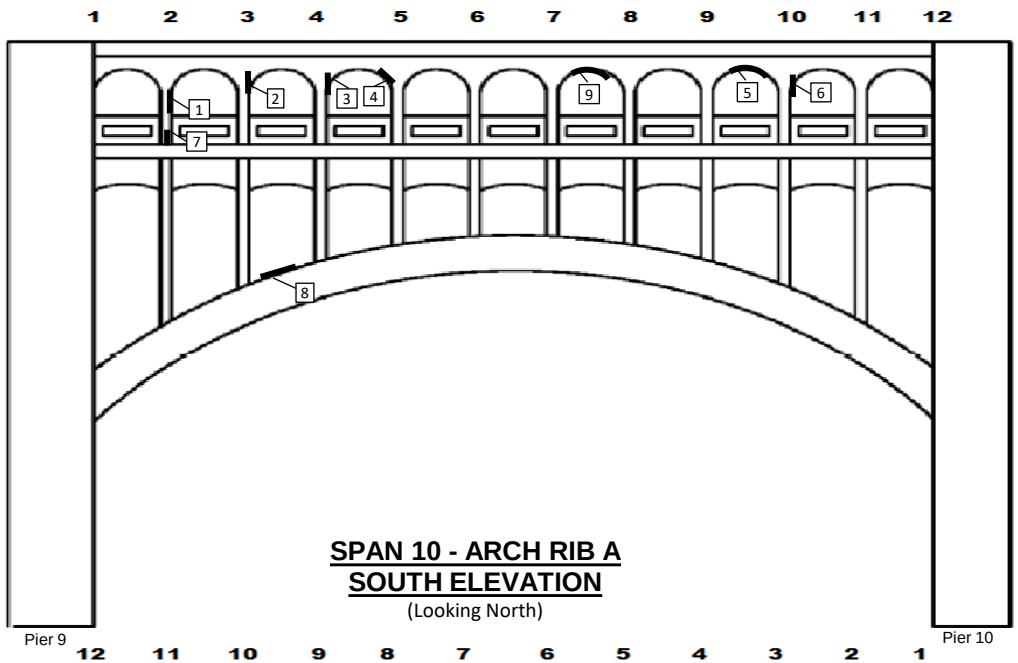
SPAN 9 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 9 - RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Spall w/ exp. Reinf. - 1 SF
3	Delamination - 4 SF
4	Spall w/ exp. Reinf. - 28 SF
5	Delamination - 1 SF
6	Delamination - 5 SF
7	Spall w/ exp. Reinf. (South face) - 1 SF
8	Delamination (West face) - 1 SF
9	Delamination - 6 SF
10	Delamination - 1 SF



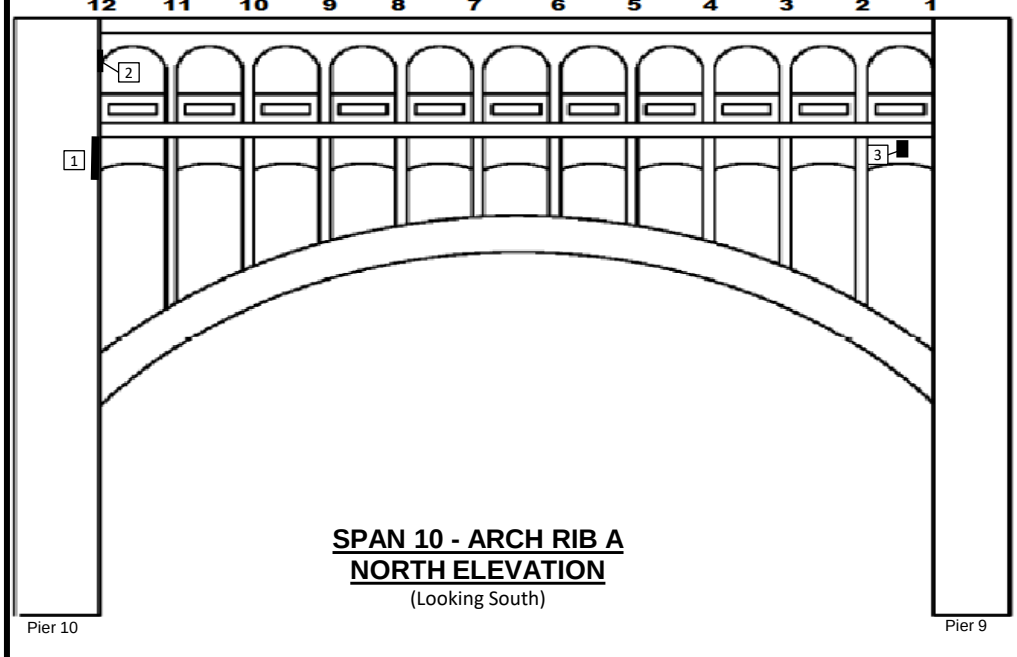
SPAN 9 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 9 - RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 4 SF
2	Delamination - 4 SF
3	Delamination - 3 SF
4	Delamination (North face) - 2 SF
5	Delamination - 1 SF
6	Delamination w/ Spall w/ exp. Reinf. - 15 SF
7	Delamination - 2 SF
8	Delamination - 50 SF
9	Delamination - 1 SF
10	1/16" W through-crack



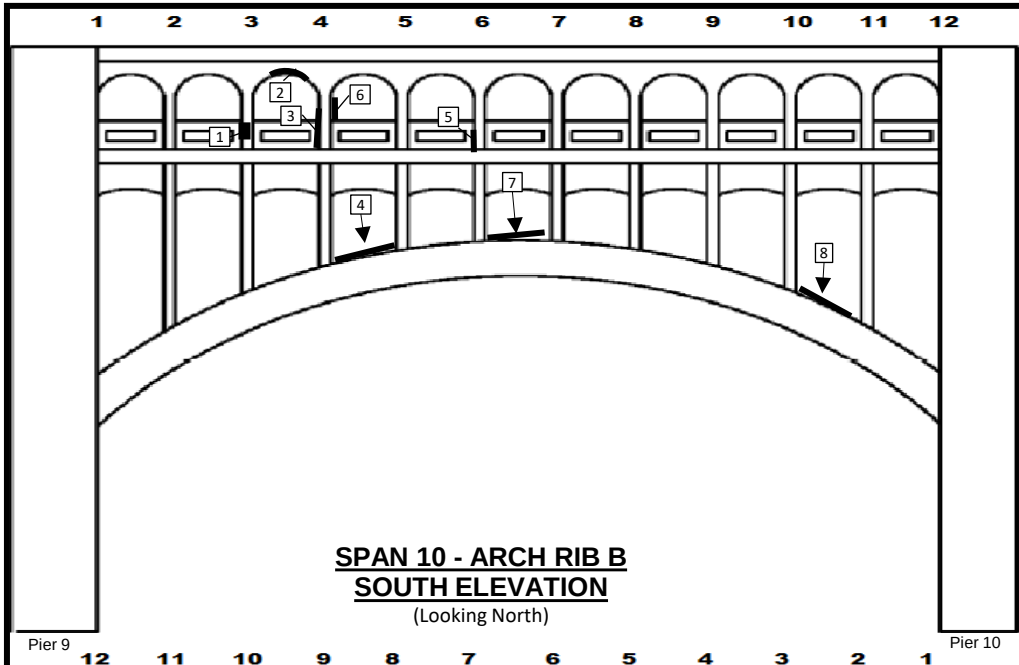
SPAN 10 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 10 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination (Behind Utility Conduit) - 3 SF
2	Delamination - 2 SF
3	Delamination - 10 SF
4	Delamination - 1 SF
5	Delamination - 2 SF
6	Delamination - 3 SF
7	Delamination - 2 SF
8	Delamination - 6' L x 3' W
9	Delamination - 1 SF



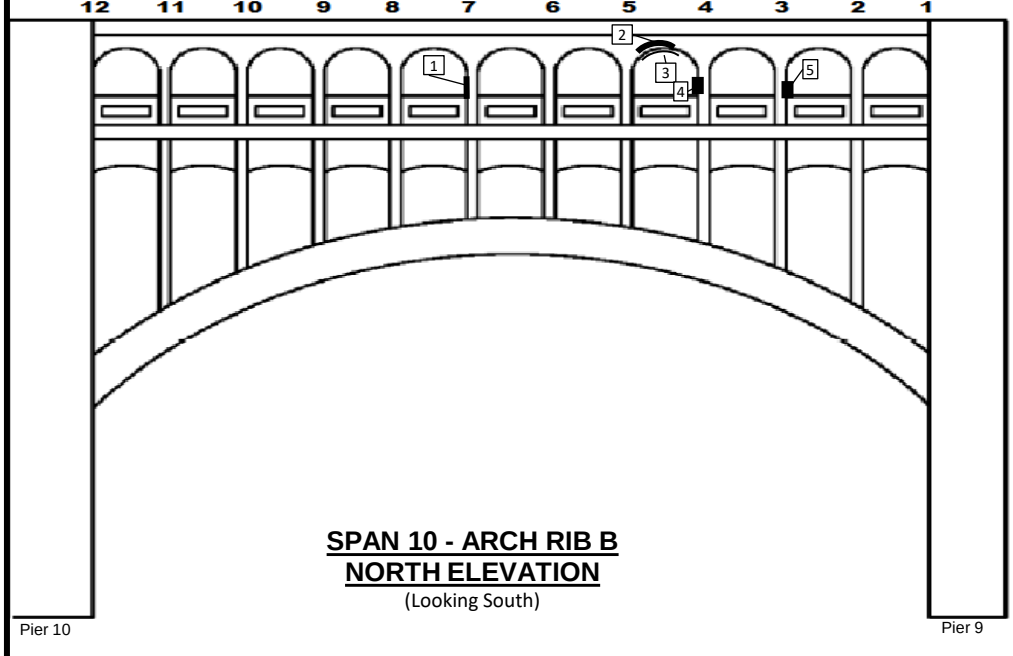
SPAN 10 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 10 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf. - 4 SF
2	Delamination - 3 SF
3	Delamination - 1 SF



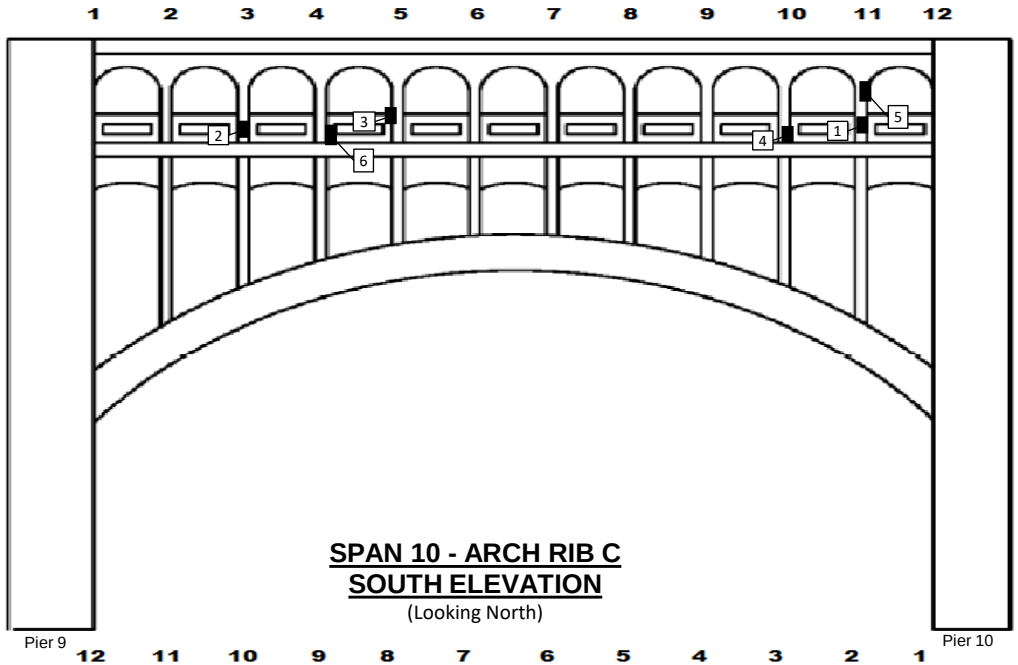
SPAN 10 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 10 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Delamination - 1 SF
3	Delamination - 1 SF
4	Delamination - 4' L x 1.5' W
5	Delamination - 2 SF
6	Delamination - 1 SF
7	Rough Concrete - 20 SF
8	Delamination - 3' L x 4' W



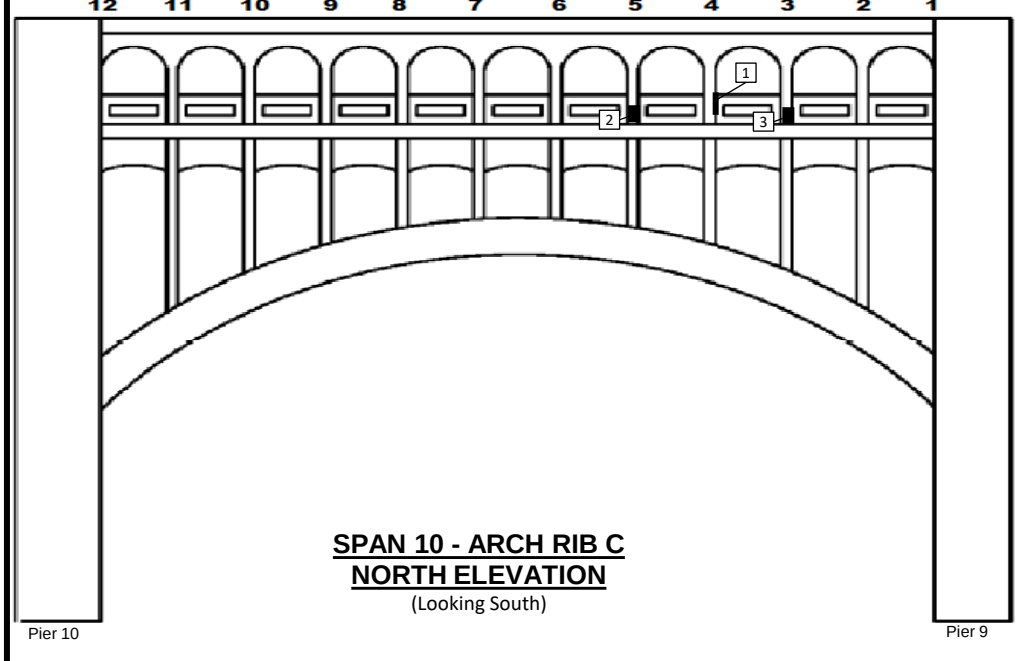
SPAN 10 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 10 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Delamination - 6 SF
3	Delamination - 3 SF
4	Delamination - 2 SF
5	Delamination - 3 SF



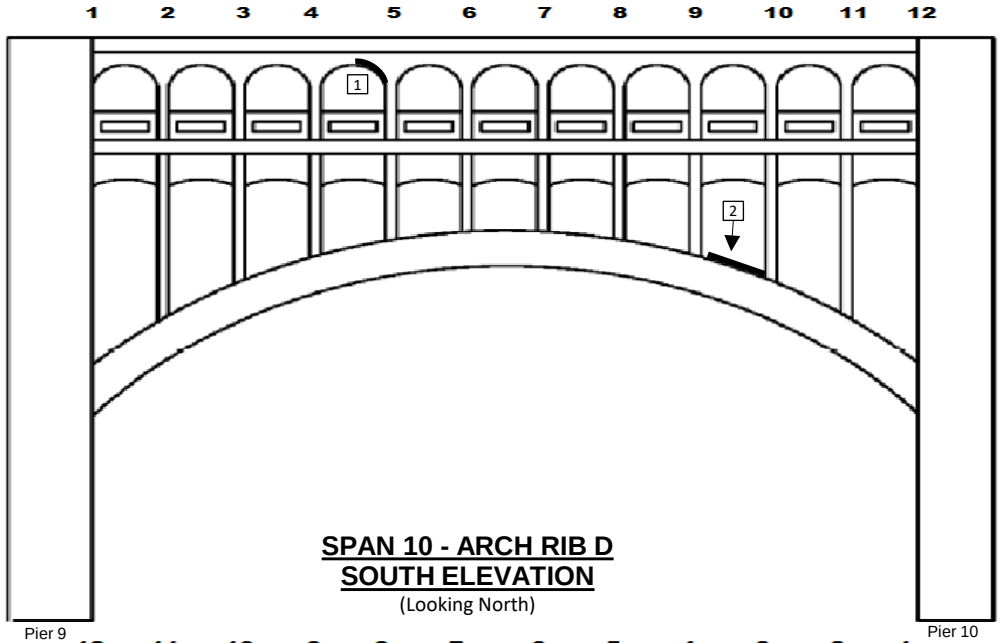
SPAN 10 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 10 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 3 SF
2	Delamination w/ Spall w/ exp. Reinf. - 6 SF
3	Delamination - 1 SF
4	Delamination - 2 SF
5	Delamination - 1 SF
6	Delamination - 3 SF



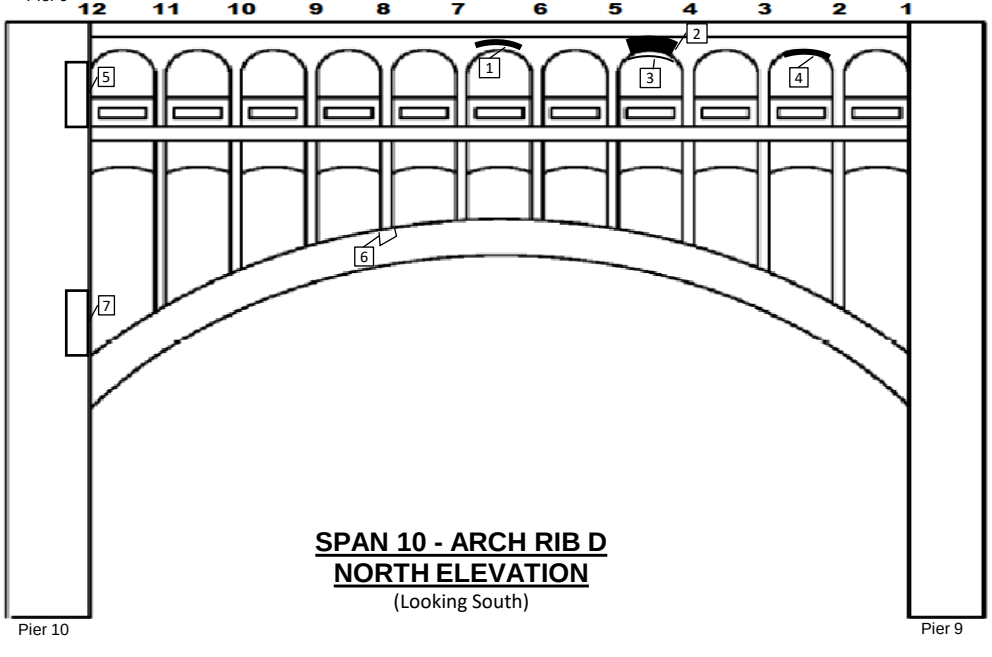
SPAN 10 - ARCH RIB C NORTH ELEVATION
(Looking South)

SPAN 10 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Spall w/ exp. Reinf. - 3 SF
3	Delamination - 2 SF



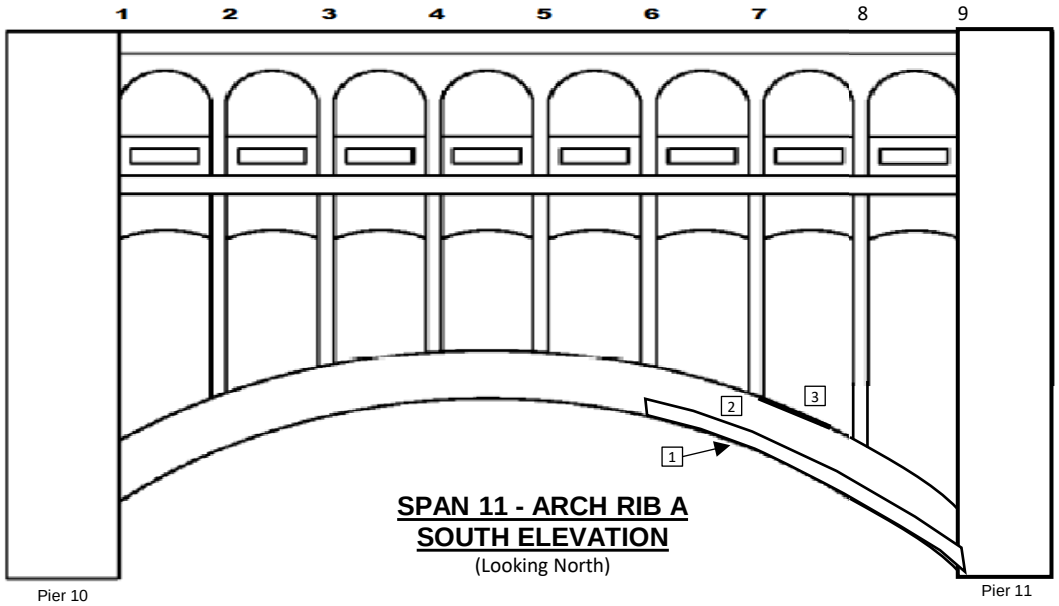
SPAN 10 - ARCH RIB D SOUTH ELEVATION
(Looking North)

SPAN 10 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 6 SF
2	Delamination - 4' L x 3' W



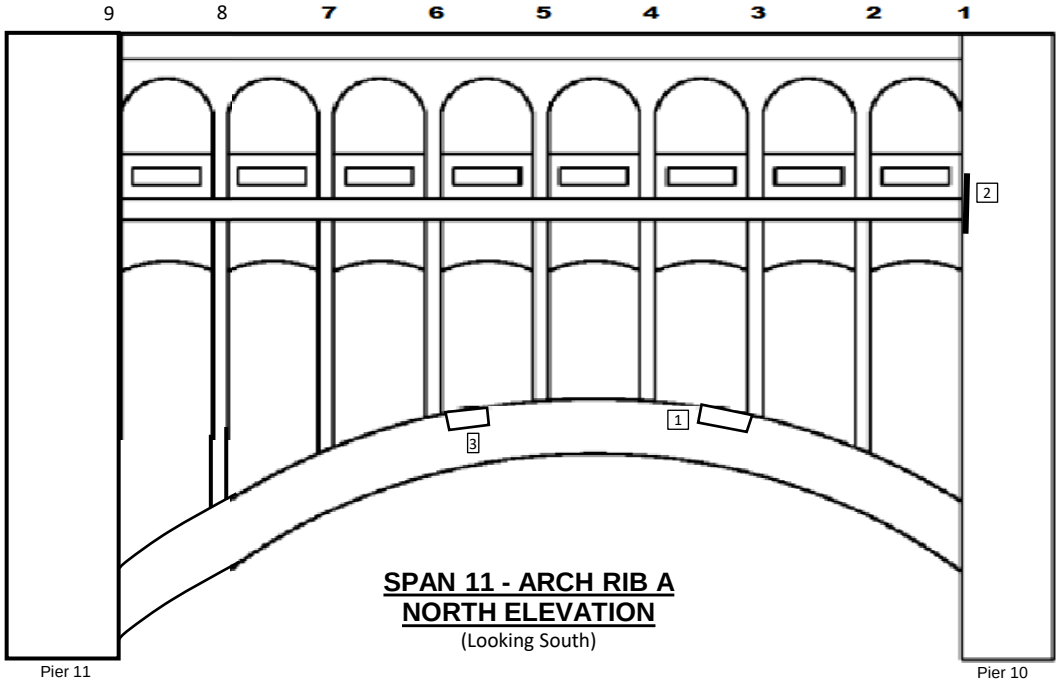
SPAN 10 - ARCH RIB D NORTH ELEVATION
(Looking South)

SPAN 10 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 5 SF
2	Delamination - 24 SF
3	Delamination - 18 SF
4	Delamination - 3 SF
5	Delamination (On tower behind drain pipe) - 45 SF
6	Delamination - 1.5' L x 6" W
7	Delamination - 1 SF



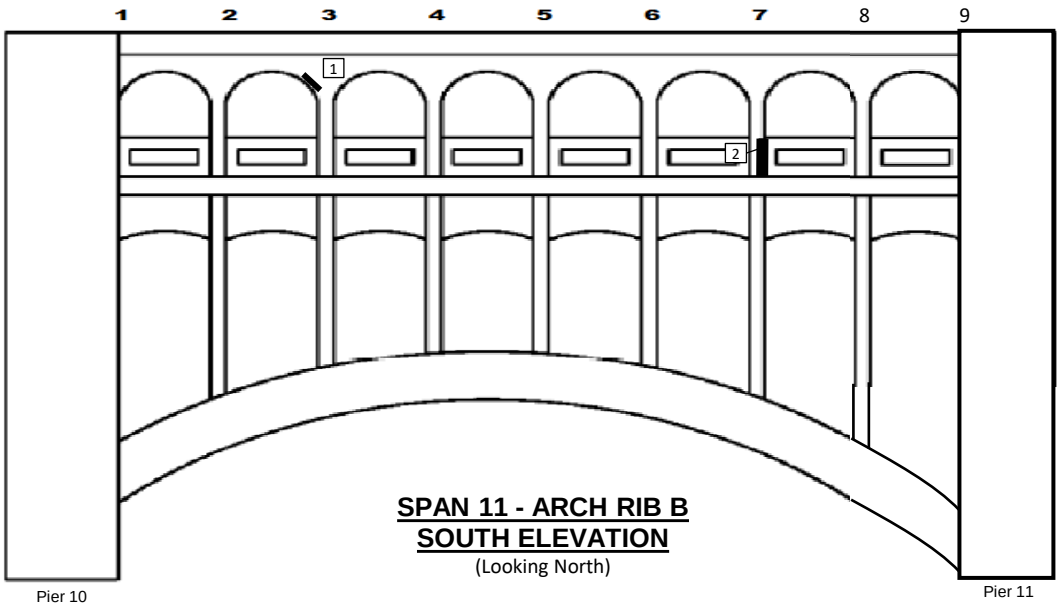
SPAN 11 - ARCH RIB A SOUTH ELEVATION
(Looking North)

SPAN 11 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Crack on south face extending from pier 11 to column 6
2	Delamination with cracking - 60 SF
3	Delamination - 6' L x 1' W



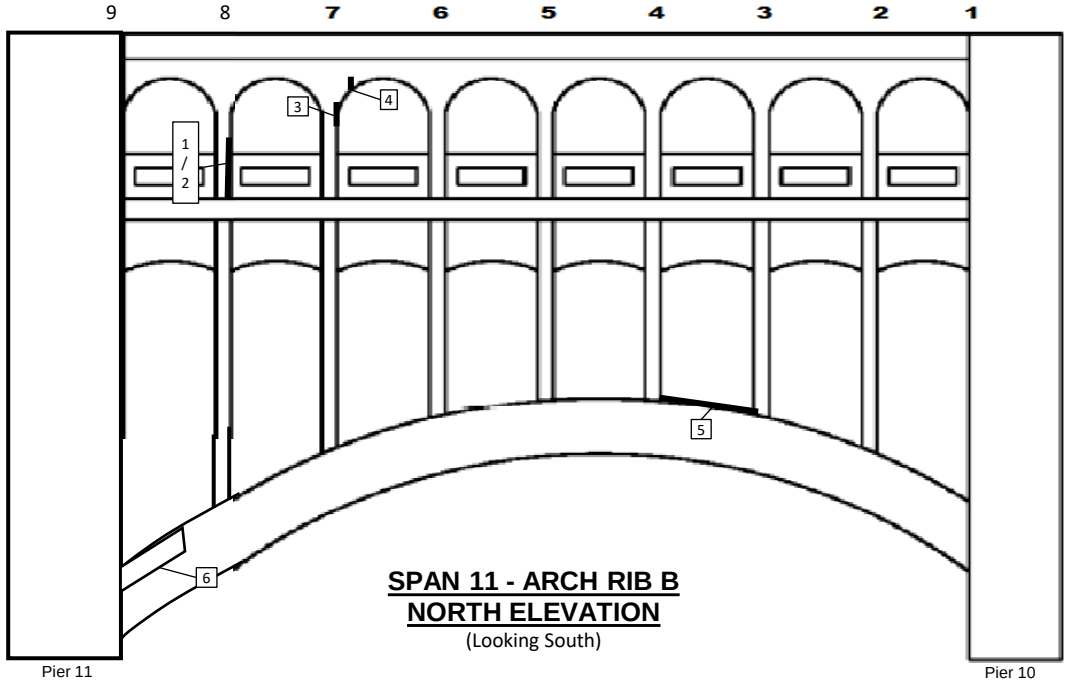
SPAN 11 - ARCH RIB A NORTH ELEVATION
(Looking South)

SPAN 11 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 6' L x 1' W
2	Delamination - 8' L x 1.5' W
3	Delamination - 3' L x 6" H



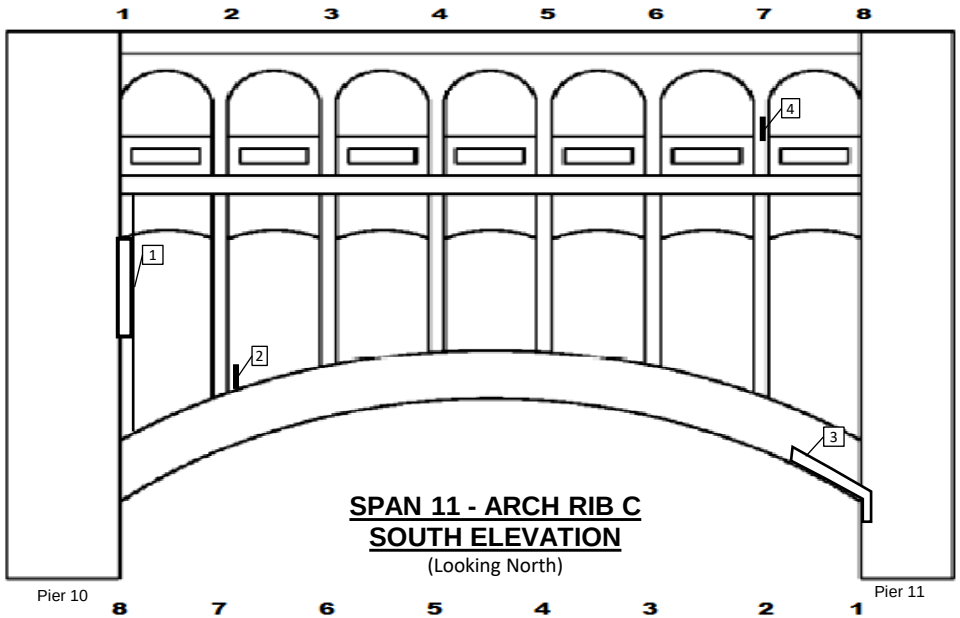
SPAN 11 - ARCH RIB B SOUTH ELEVATION
(Looking North)

SPAN 11 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF
2	Spall w/ exp. Reinf., 3" D - 1 SF



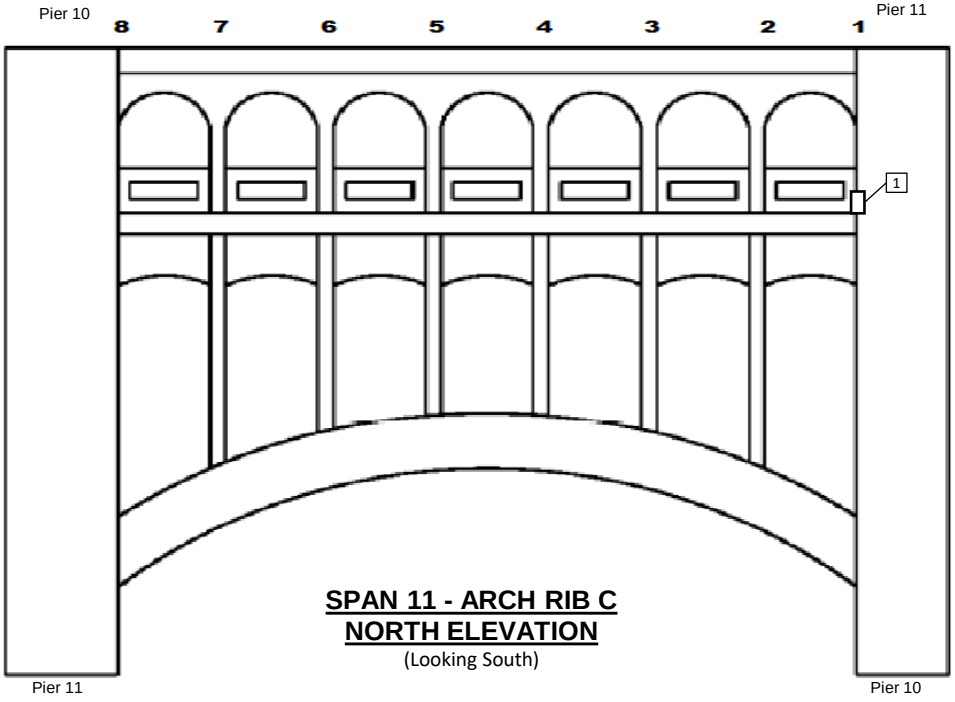
SPAN 11 - ARCH RIB B NORTH ELEVATION
(Looking South)

SPAN 11 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp Reinf., 3" D - 1 SF
2	Delamination - 35 SF
3	Delamination - 3 SF
4	Delam. w/ Spall w/ exp. Reinf., 3" D - 3 SF
5	Delamination - 6' L x 1' W
6	Delamination - 4' L x 1' W



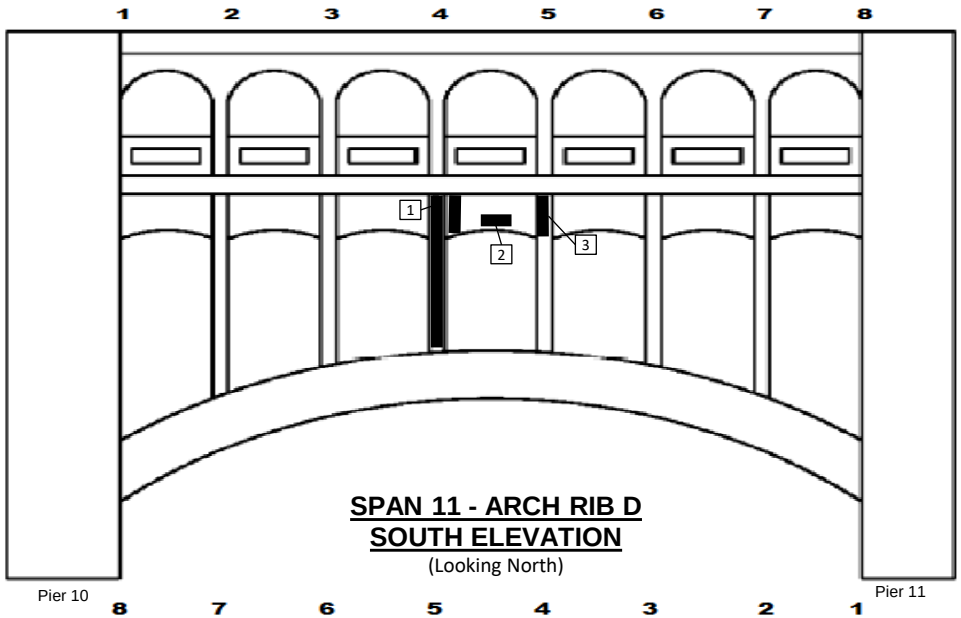
SPAN 11 - ARCH RIB C SOUTH ELEVATION
(Looking North)

SPAN 11 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 8 SF
2	Delamination - 1 SF
3	Delam. w/ rust staining - 6' L x 1' W
4	Delamination - 1 SF

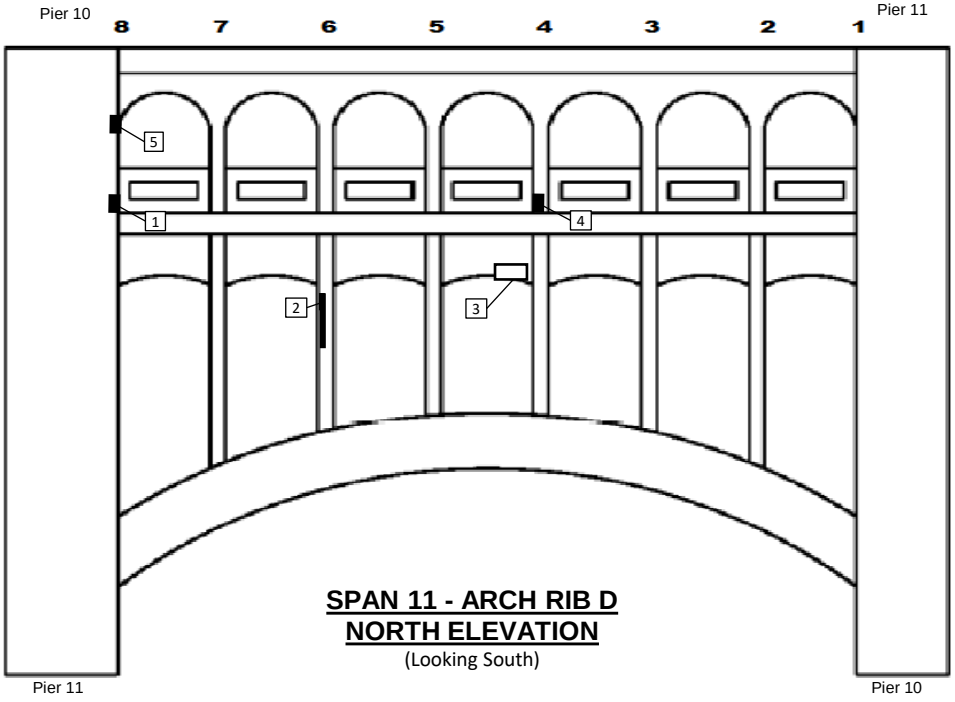


SPAN 11 - ARCH RIB C NORTH ELEVATION
(Looking South)

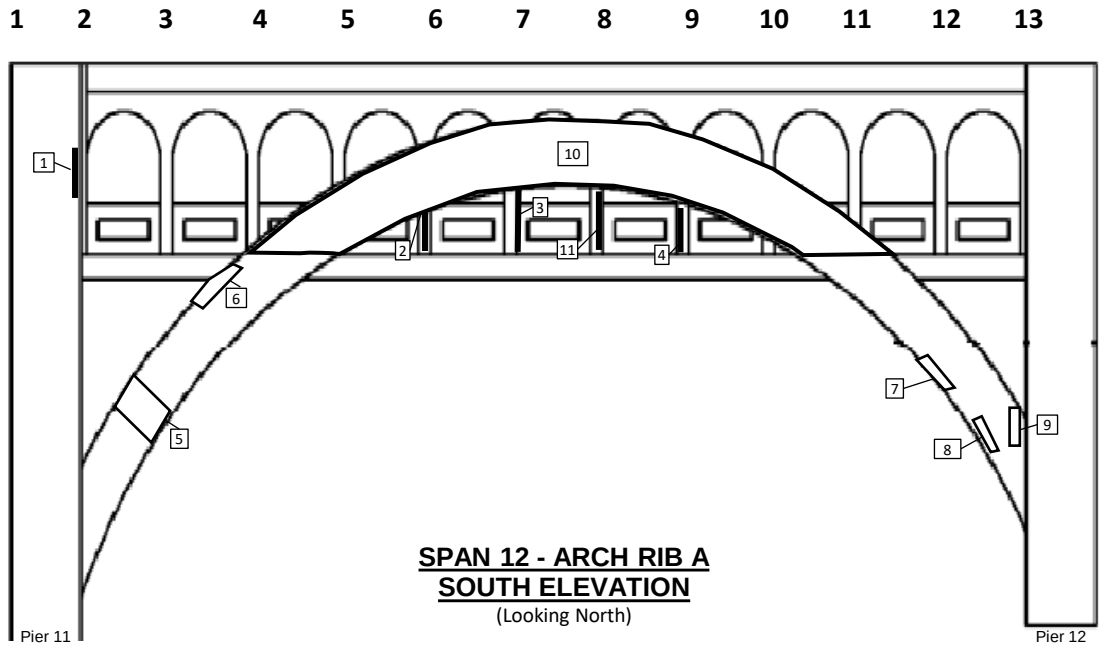
SPAN 11 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Incomplete repair location (no reinf. exp.) - 1 SF



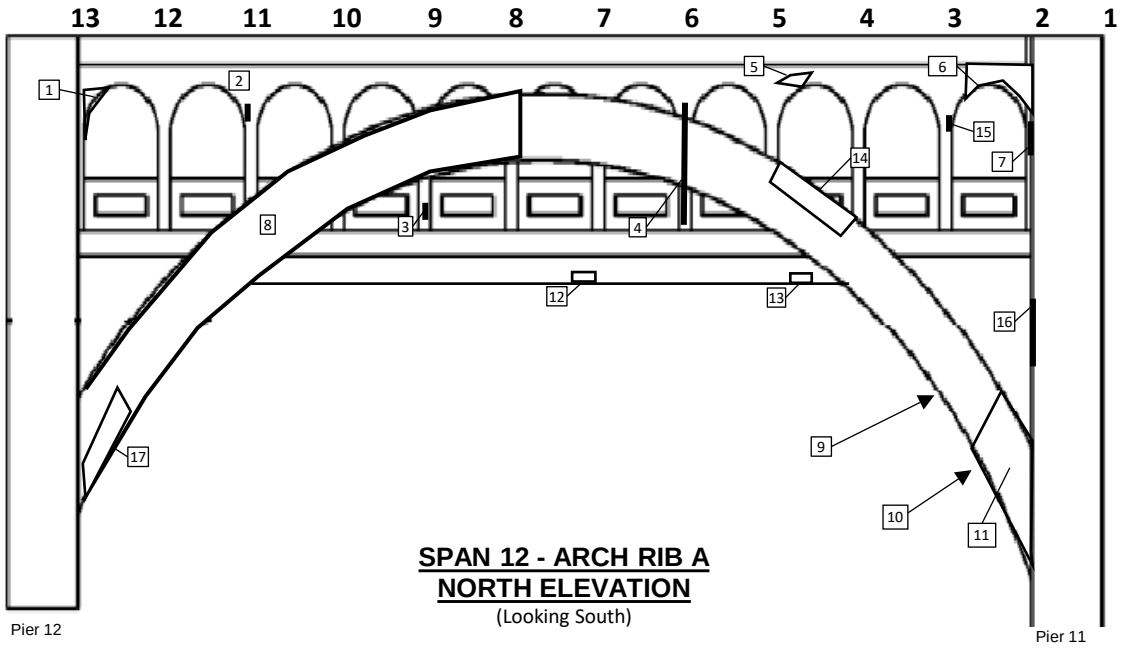
SPAN 11 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 6" D - 1.5' W x Full H
2	Delamination - 2 SF
3	Delamination - 2 SF



SPAN 11 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 2 SF
3	Delamination - 4 SF
4	Delamination - 2 SF
5	Spall - 2 SF



SPAN 12 - ARCH RIB A SOUTH ELEVATION
(Looking North)

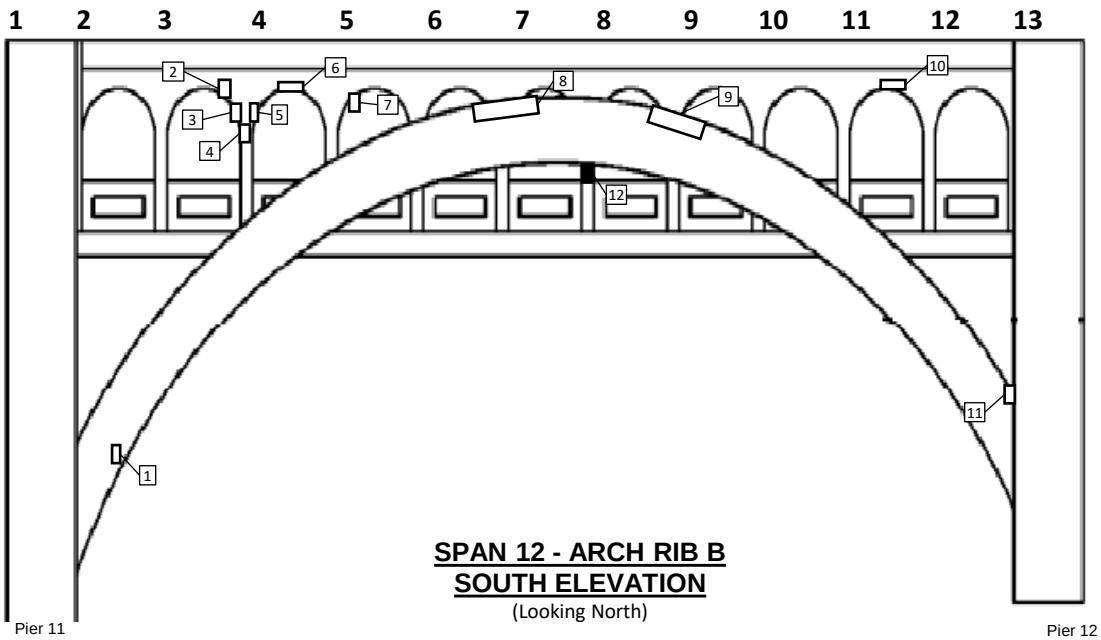


SPAN 12 - ARCH RIB A NORTH ELEVATION
(Looking South)

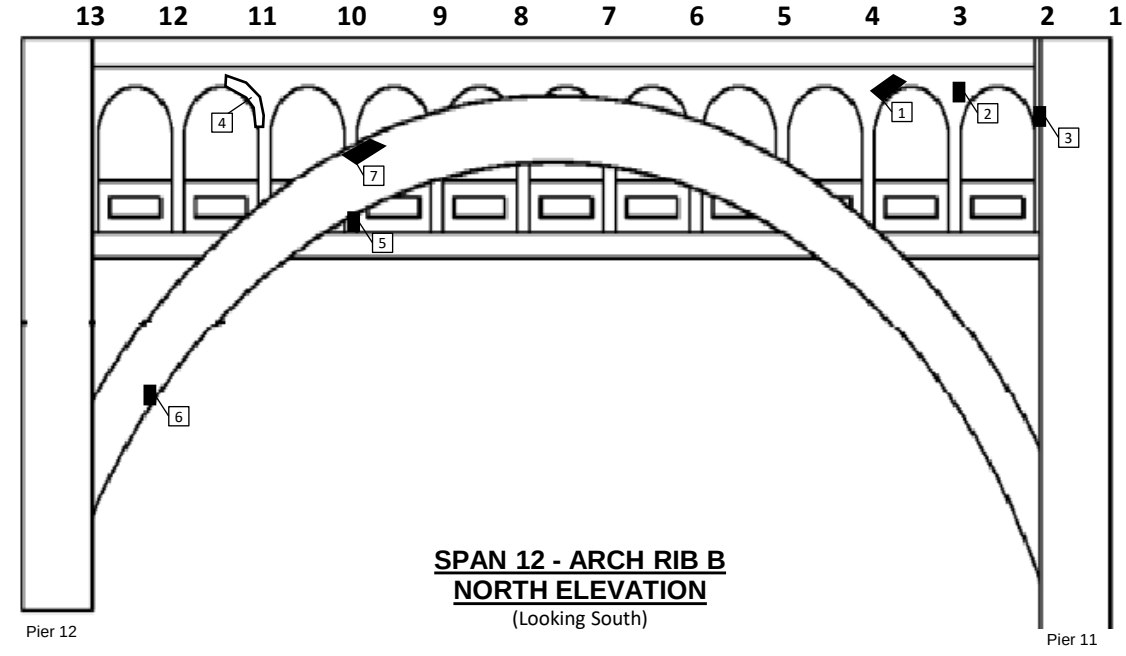
Note: All concrete encased steel hangers sound delaminted due to only 4"± cover between steel hanger and outside face of concrete.

SPAN 12 - RIB A SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall w/ exp. Reinf., 4" D - 3 SF	10	S. face of arch delam. (90%) w/ widespread cracking near the bases. 1/2" W crack in delam. surface.
2	Delam. w/ 1/8" W Crack - 12 SF		
3	Delam. w/ 1/2" W Crack - 15 SF		
4	Delamination - 8 SF	11	Delamination - 12 SF
5	Delamination - 10 SF (3 LF)		
6	Delamination - 6' L x 1' W		
7	Delamination - 2' L x 1' W		
8	Delamination - 3' L x 1' W		
9	Delamination - 1' L x 1' W		

SPAN 12 - RIB A NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Spall w/ exp. Reinf., 6" D - 12 SF	12	Spall - 1 SF
2	Spall w/ exp. Reinf., 2" D - 1 SF	13	Spall - 1 SF
3	Spall w/ exp. Reinf., 2" D - 1 SF	14	Delamination - 15 SF (8 LF)
4	Delamination - 8 SF	15	Spall w/ exp. Reinf. - 1 SF
5	Spall w/ exp. Reinf., 2" D - 1 SF	16	Delam. w/ Spall w/ exp. Reinf. (on pier) - 4 SF
6	Entire face of arch is spalling and delaminated, up to 3" D	17	Spall, 1" D - 3' L x 1' W
7	Spall, 4" D (on pier) - 8 SF		
8	Delam. w/ map cracking & poor patching - 120 SF (40 LF)		
9	Delam. (U.o.A) - 5' L x 1' W		
10	Delam. (U.o.A) - 18' L x 1' W		
11	Delam. w/ Spall - 18 LF		



SPAN 12 - ARCH RIB B
SOUTH ELEVATION
(Looking North)

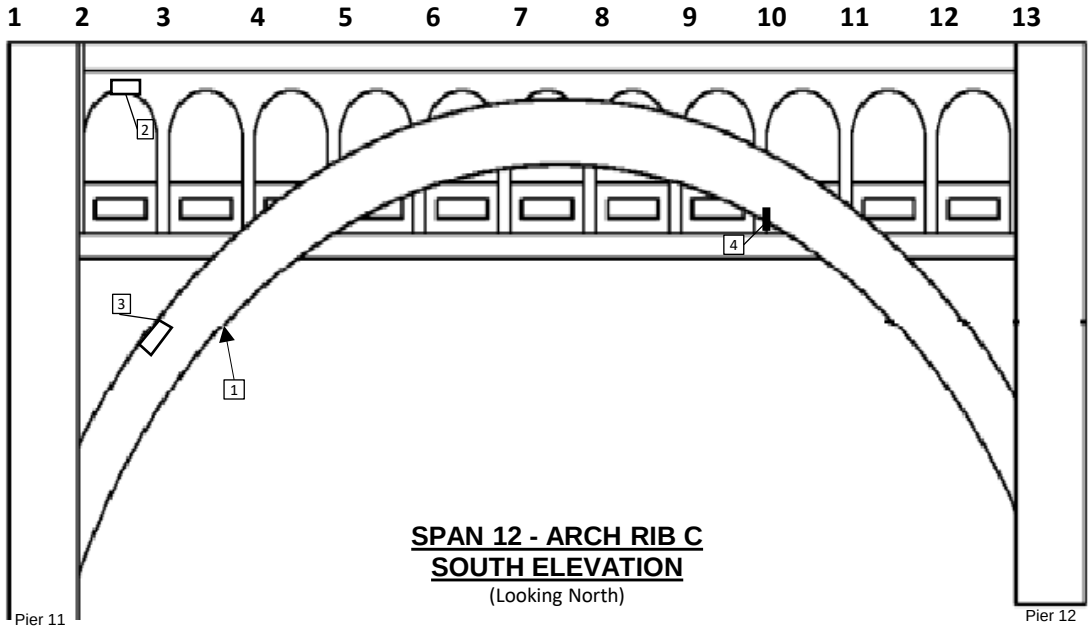


SPAN 12 - ARCH RIB B
NORTH ELEVATION
(Looking South)

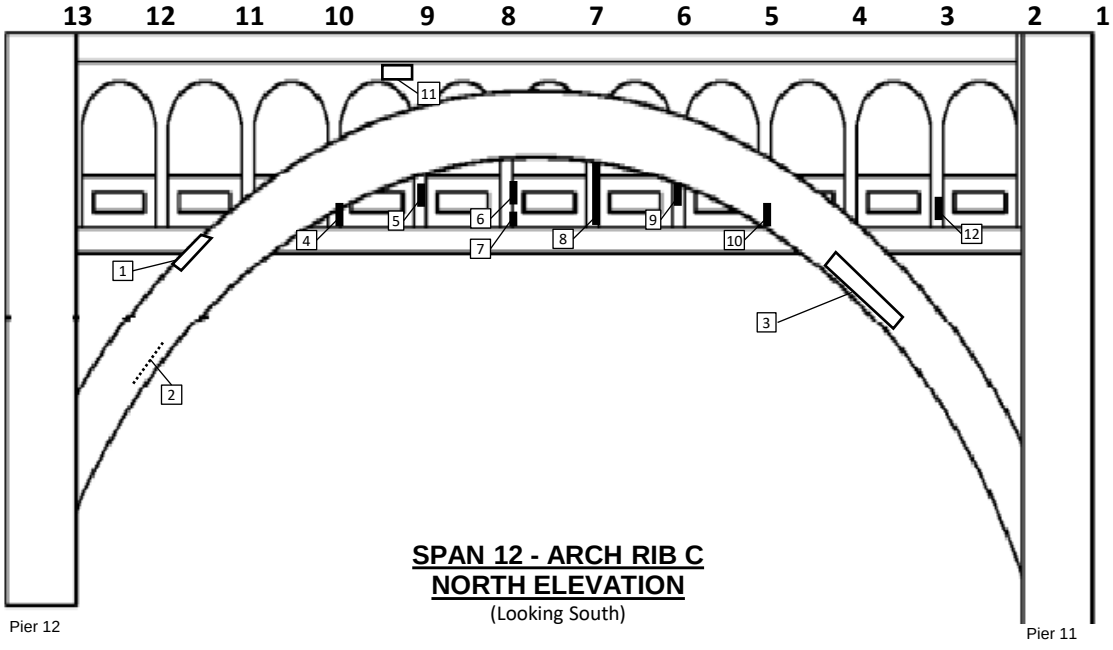
Note: All concrete encased steel hangers sound delaminted due to only 4"± cover between steel hanger and outside face of concrete.

SPAN 12 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delam. - 1' L x 1' W	9	I.S.R. - 3 SF
2	Incomplete Sawcut Repair (I.S.R.) Location - 1 SF	10	I.S.R. - 4 SF
		11	Delamination - 1 SF
3	I.S.R. - 1 SF	12	Delamination - 6 SF
4	I.S.R. - 1 SF		
5	I.S.R. - 1 SF		
6	I.S.R. - 1 SF		
7	I.S.R. - 1 SF		
8	I.S.R. - 4 SF		

SPAN 12 - ARCH RIB B NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delamination - 2 SF	5	Delamination - 9 SF
2	Delamination - 1 SF	6	Delamination - 6 SF
3	Delamination - 1 SF	7	Delam. - 2 SF (4 LF)
4	Delamination - 1 SF		



SPAN 12 - ARCH RIB C
SOUTH ELEVATION
(Looking North)

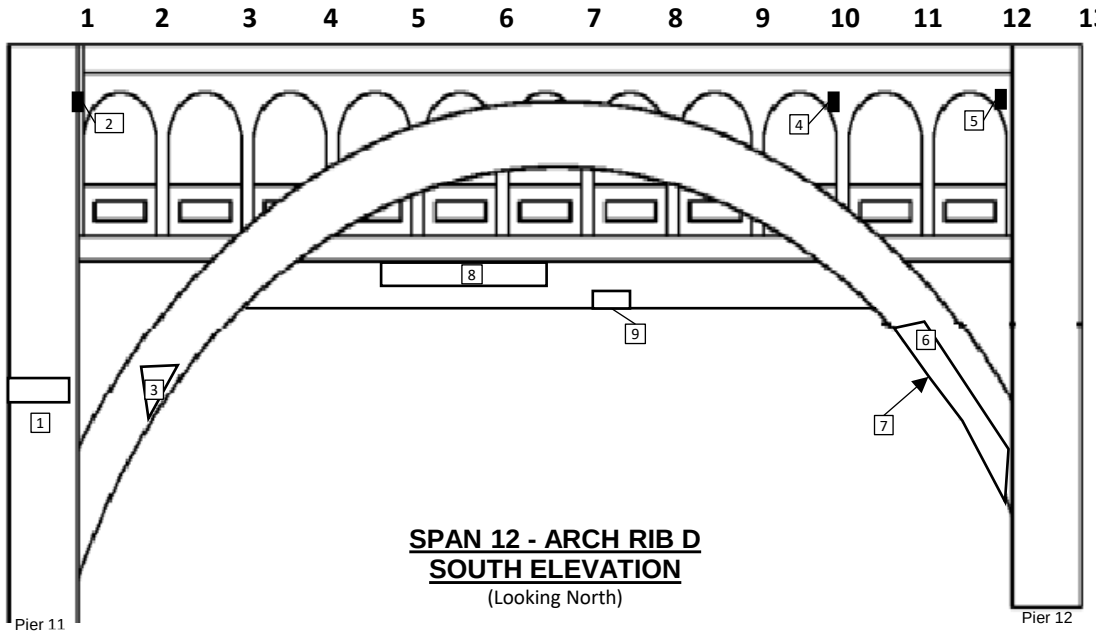


SPAN 12 - ARCH RIB C
NORTH ELEVATION
(Looking South)

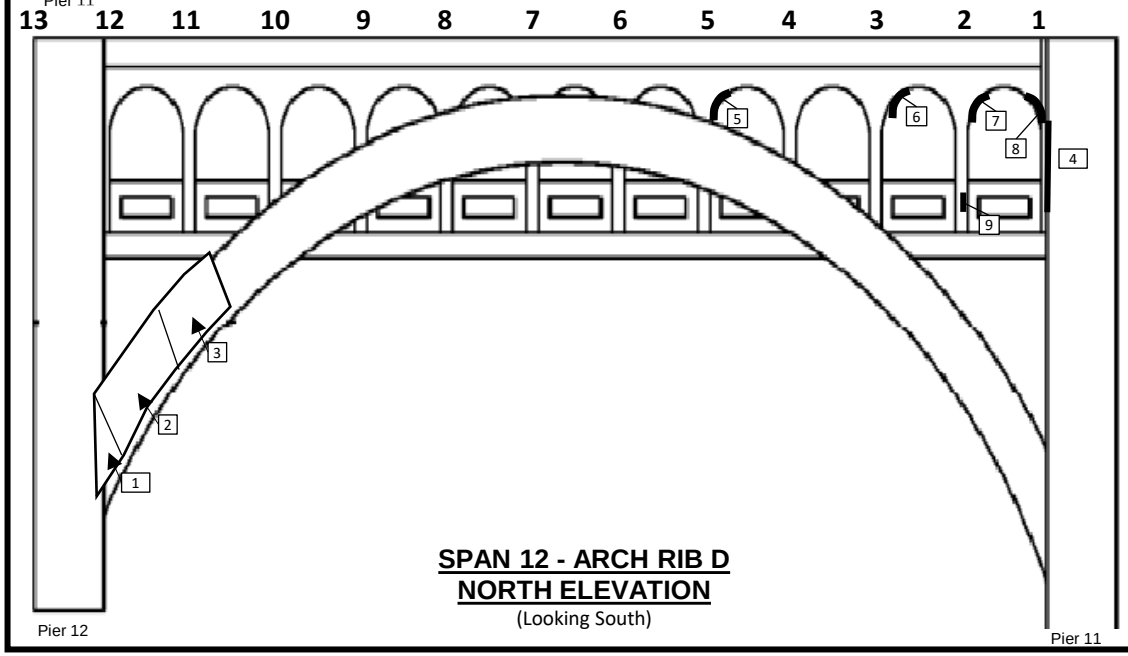
Note: All concrete encased steel hangers sound delaminted due to only 4"± cover between steel hanger and outside face of concrete. Map cracking typical.

SPAN 12 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delam. (underside) - 5 SF	3	Delamination - 2 SF
2	Incomplete Sawcut Repair Location (I.S.R.) w/ exp. Reinf. - 3 SF	4	I.S.R. w/ exp. Reinf. (entire face is exposed) - 5 SF

SPAN 12 - ARCH RIB C NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delamination - 2 SF	7	I.S.R. w/ exp. Reinf. - 2 SF
2	1/16" Crack w/ Delam. - 5 LF	8	Delamination - 10 SF
3	Delaminations - 5' L x 1' W & 1' L x 1' W	9	Delamination - 6 SF
		10	Delamination - 5 SF
4	Delamination - 8 SF	11	I.S.R. w/ exp. Reinf. - 10 SF
5	Delamination - 4 SF	12	Delamination - 1 SF
6	Delamination - 4 SF		



SPAN 12 - ARCH RIB D
SOUTH ELEVATION
(Looking North)

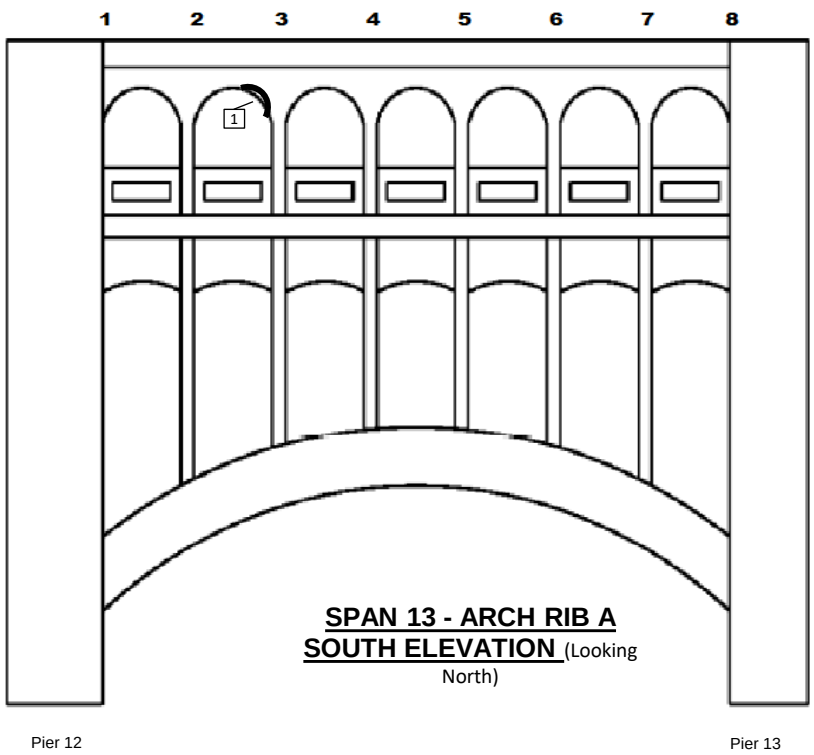


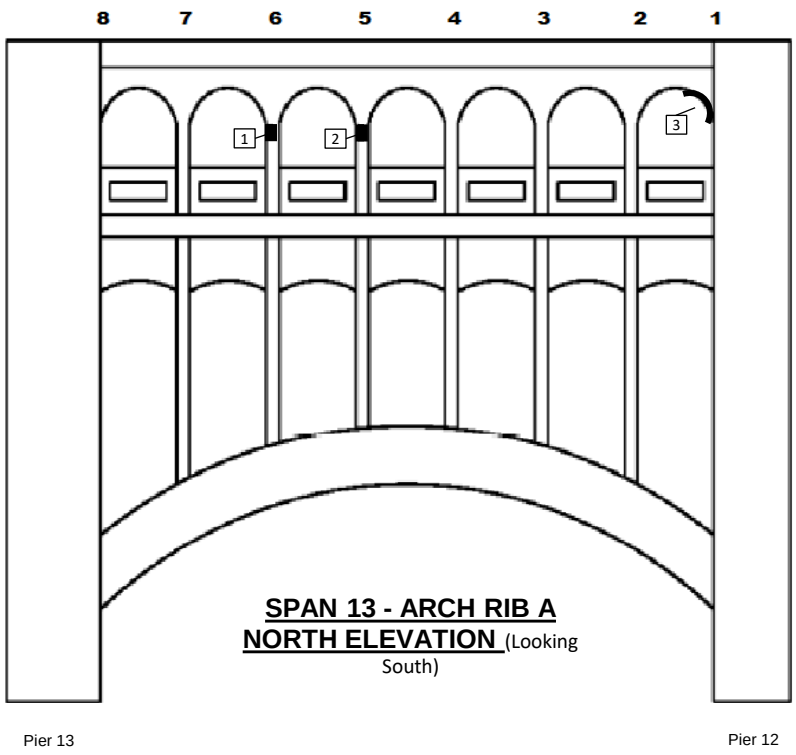
SPAN 12 - ARCH RIB D
NORTH ELEVATION
(Looking South)

Note: All concrete encased steel hangers sound delaminted due to only 4"± cover between steel hanger and outside face of concrete. Map cracking typical.

SPAN 12 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Map Cracking - 4' H x FW	7	Map Cracking (underside) - 20' L x FW
2	Delamination - 2 SF		
3	Map Cracking - 18 SF	8	Delamination - 8' L x 1' W
4	Spall w/ exp. Reinf., 1" D - 1 SF	9	Spall - 2' L x 1' H
5	Spall w/ exp. Reinf., 6" D - 1 SF		
6	Map Cracking w/ Delamination - 29' L x 2' H		

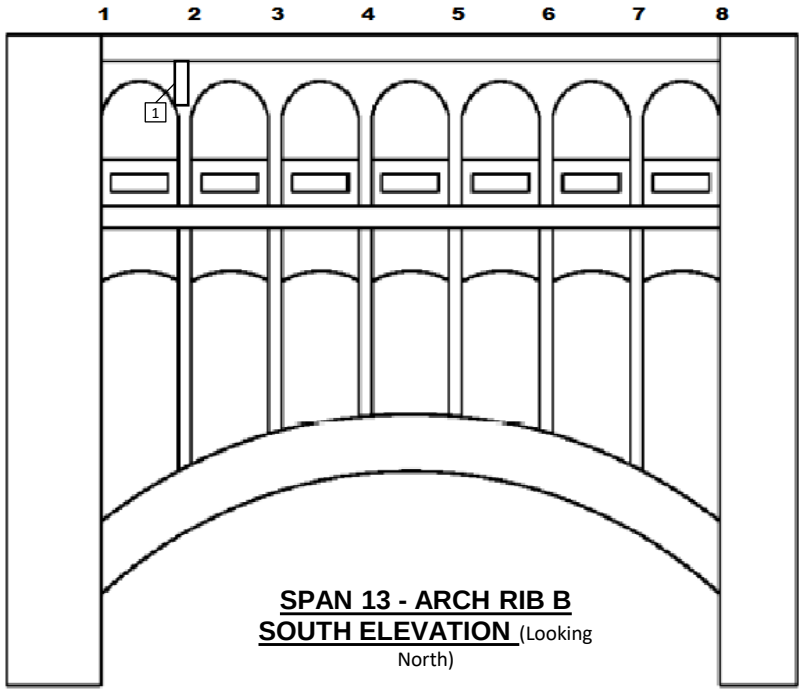
SPAN 12 - ARCH RIB D NORTH ELEVATION DEFICIENCIES			
#	Defect	#	Defect
1	Delamination - 3' L x 1' L	5	Delamination - 3 SF
2	Map Cracking - 5' L x 4' H	6	Delamination - 1 SF
3	Delamination - 6' L x 5' H	7	Delamination - 1 SF
4	Spall w/ exp. Reinf. (On tower) - 6 SF	8	Delamination - 2 SF
		9	Spall w/ exp. Reinf. - 1 SF



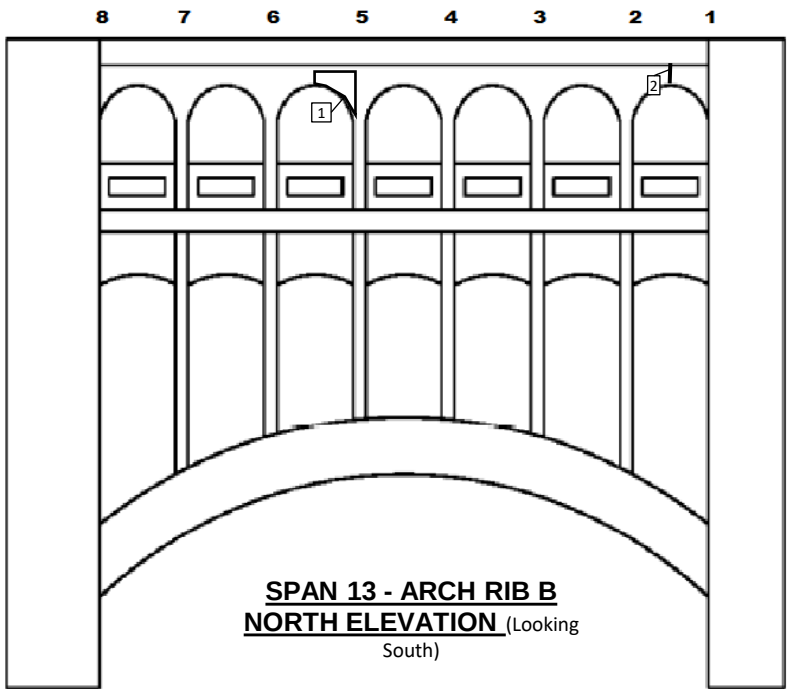


SPAN 13 - ARCH RIB A SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 1 SF

SPAN 13 - ARCH RIB A NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 2 SF
2	Delamination - 1 SF
3	Half Width 1/16" crack



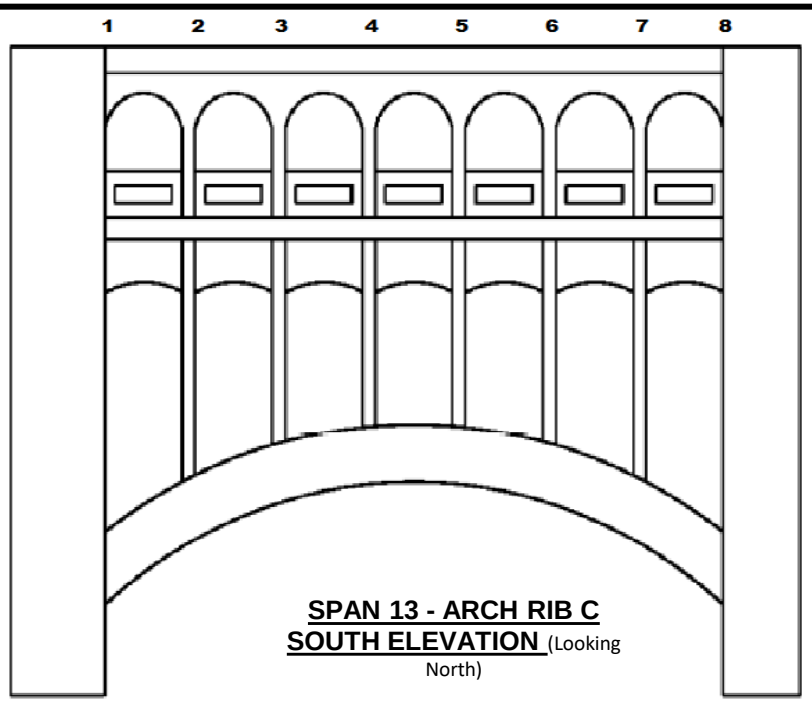
SPAN 13 - ARCH RIB B SOUTH ELEVATION (Looking North)



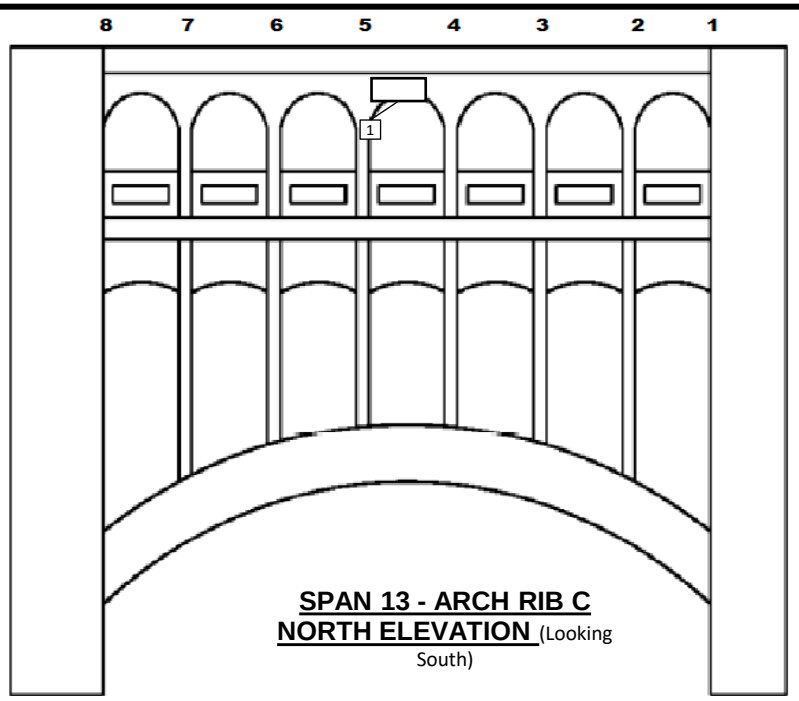
SPAN 13 - ARCH RIB B NORTH ELEVATION (Looking South)

SPAN 13 - ARCH RIB B SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Incomplete Sawcut Repair Location w/ exp. Reinf. (I.S.R.) - 2 SF

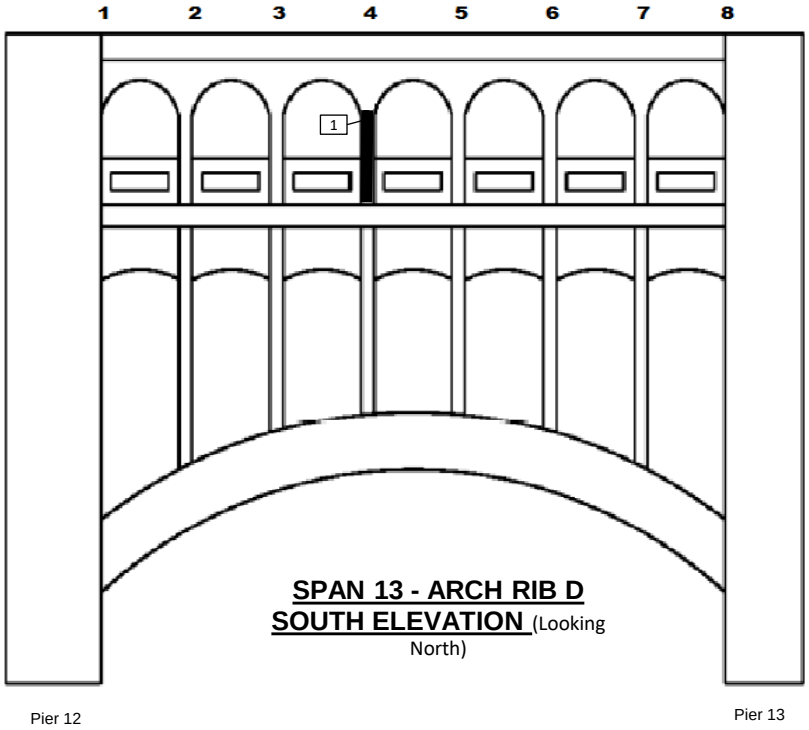
SPAN 13 - ARCH RIB B NORTH ELEVATION DEFICIENCIES	
#	Defect
1	I.S.R. - 8 SF
2	Full Height 1/8" W crack

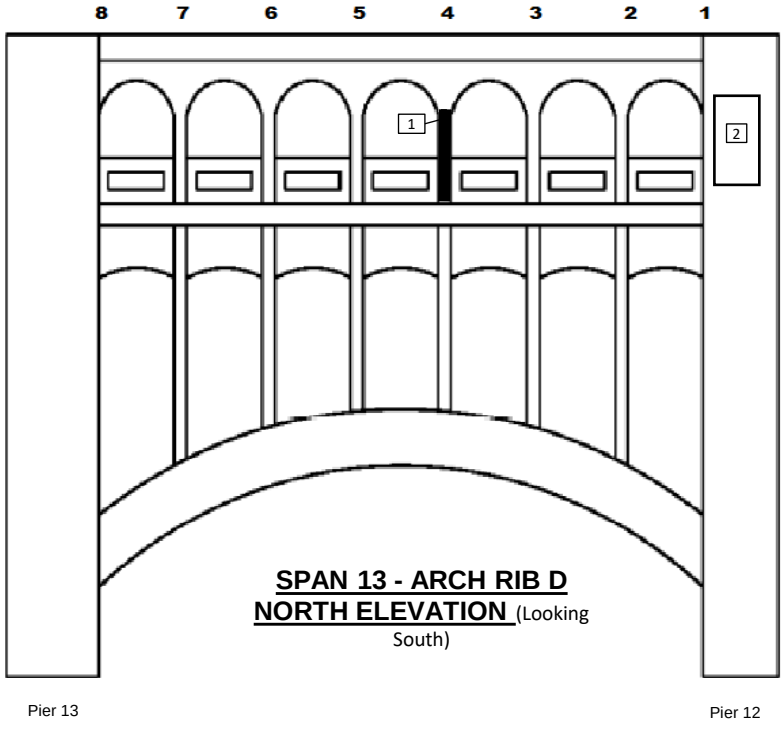


SPAN 13 - ARCH RIB C SOUTH ELEVATION DEFICIENCIES	
#	Defect



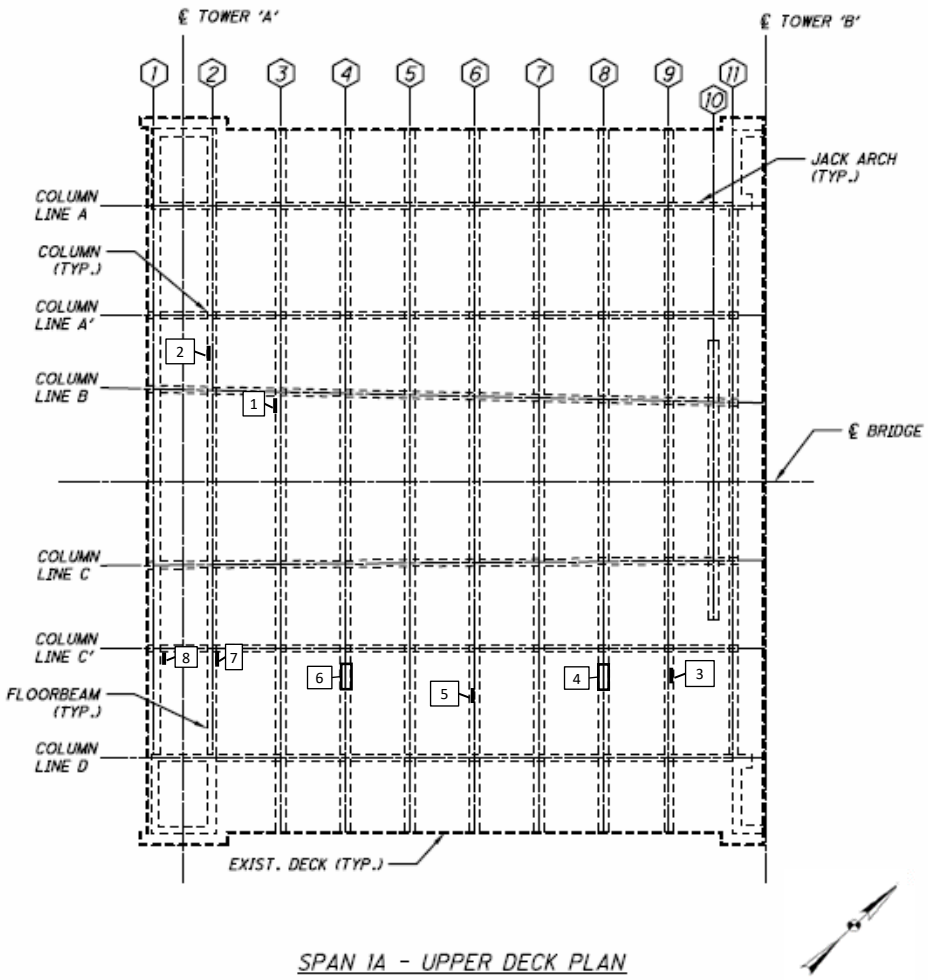
SPAN 13 - ARCH RIB C NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Incomplete Sawcut Repair Location w/ exp. Reinf. (I.S.R.) - 4 SF





SPAN 13 - ARCH RIB D SOUTH ELEVATION DEFICIENCIES	
#	Defect
1	Delamination - 12 SF

SPAN 13 - ARCH RIB D NORTH ELEVATION DEFICIENCIES	
#	Defect
1	Spall w/ exp. Reinf., 2.5" D - 8 SF
2	Delamination w/ up to 1/8" crack near column 1 (In tower) - 45 SF

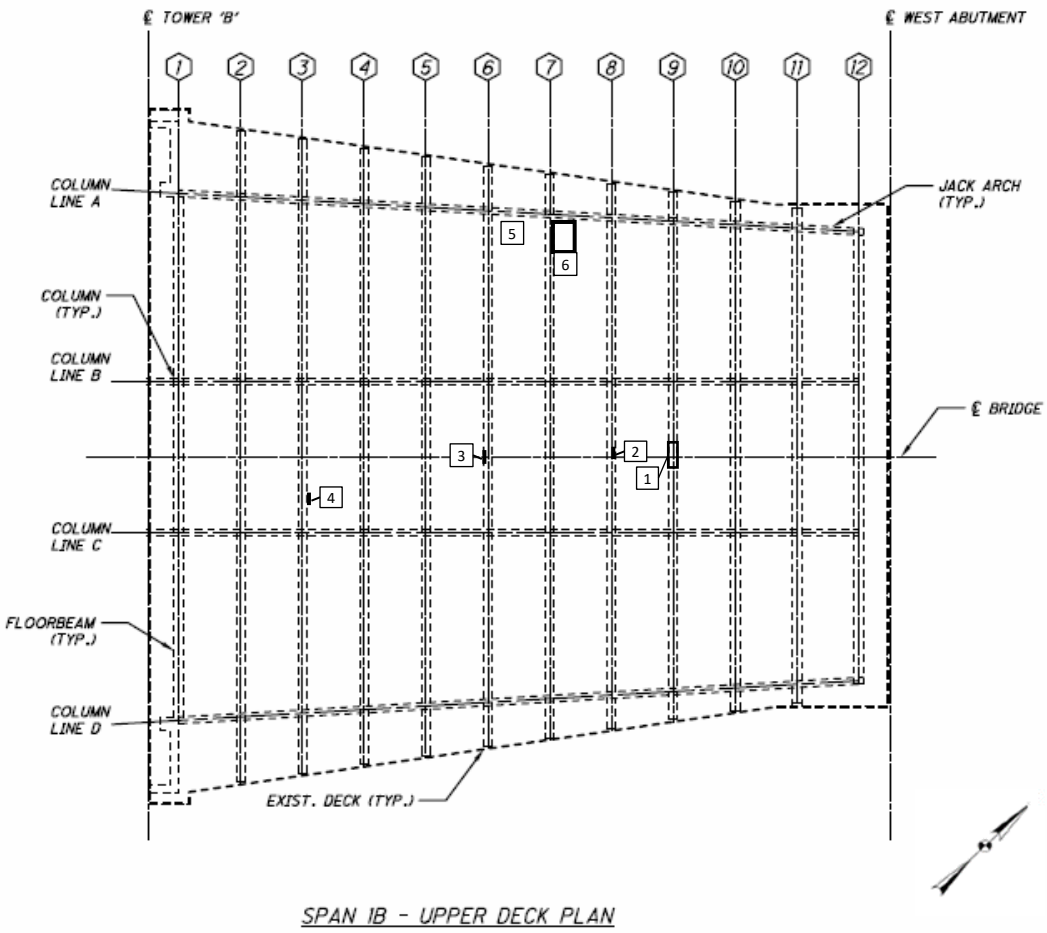


SPAN 1A - UPPER DECK PLAN

SPAN 1A, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Delamination w/ shallow Spall - 3 SF (2 LF)
2	Spall w/ exp. Reinf. - 2 SF (1 LF)
3	Spall w/ exp. Reinf. - 2 SF (2 LF)
4	Shallow Spall w/ exp. Reinf. - 20 SF (4 LF)
5	Spall w/ exp. Reinf. - 2 SF (1 LF) Delamination - 4 SF (2 LF)
6	Spall w/ exp. Reinf. - 2 SF (1 LF)
7	Delamination w/ shallow Spall - 6 SF (2 LF)
8	Delamination w/ shallow Spall - 6 SF (2 LF)

General Findings:

☐ = Area of Moisture Staining with efflorescence.

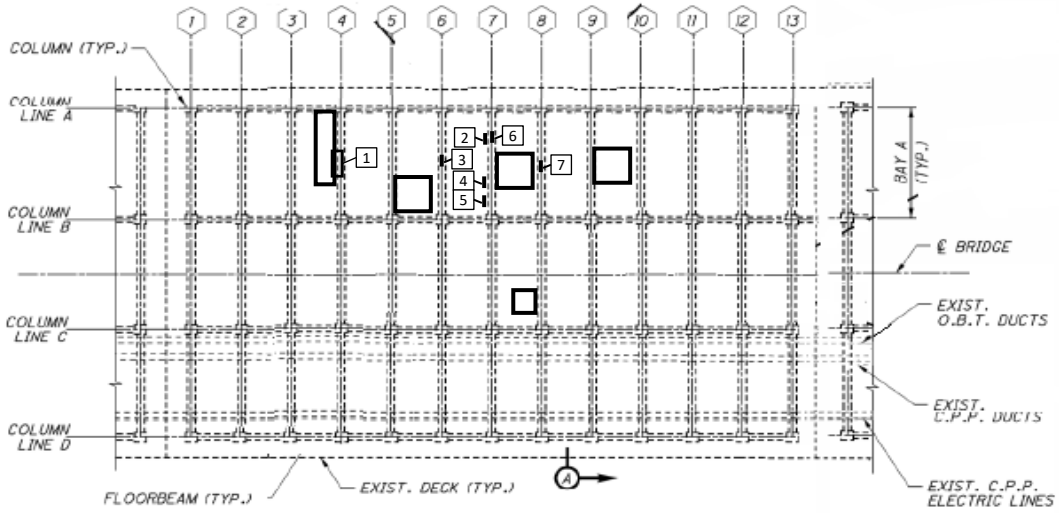


SPAN 1B - UPPER DECK PLAN

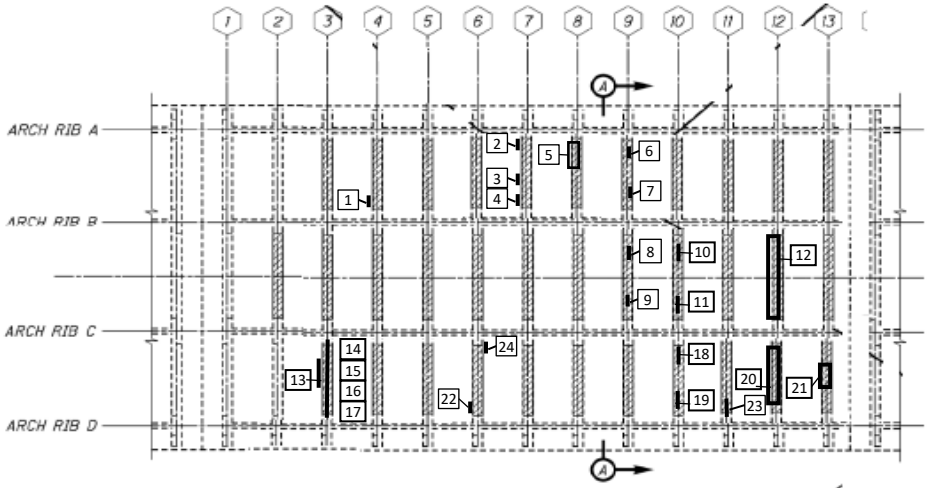
SPAN 1A, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Spall w/ exp. Reinf. - 4 SF (2 LF)
2	Delamination - 1 SF (1 LF)
3	Spall w/ exp. Reinf. - 4 SF (2 LF)
4	Spall w/ exp. Reinf. - 1 SF (1 LF)
5	Spall w/ exp. Reinf. - 1 SF
6	Delamination - 1 SF

General Findings:

☐ = Area of Moisture Staining with efflorescence.



SPAN 1 – UPPER DECK PLAN



SPAN 1 – LOWER DECK PLAN

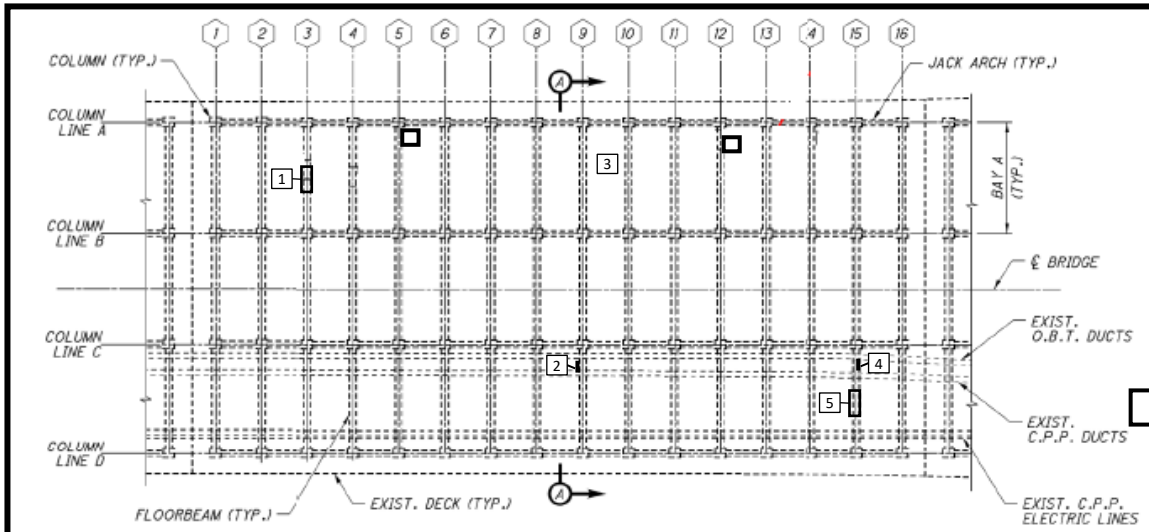
SPAN 1, UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delamination - 2 SF (2 LF)	5	Delamination - 3 SF (1 LF)
2	Two delams., 3 SF (3 LF)	6	Spall w/ exp. Reinf., 2" D - 2 SF (2 LF)
3	Spall w/ exp. Reinf., 2" D - 1 SF (1 LF)	7	Spall w/ exp. Reinf., 2" D - 1 SF (1 LF)
4	Spall w/ exp. Reinf., 2" D - 1 SF (1 LF)		

SPAN 1, LOWER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delamination - 3' L x 1' H	13	Delamination - 8' L x 4' H
2	Map Cracking - 8' L	14	Spall w/ exp. Reinf. - 2' L x 2' H
3	Delamination - 6" L x 2' H	15	Delamination - 3' L x 3' H
4	Delamination - 6" L x 2' H	16	Delamination - 4' L x 3' H
5	Delamination - 6' L x 2' H	17	Delamination - 2' L x 2' H
6	Delamination - 2' L x 2' H	18	Delamination - 2' L x 2' H
7	Delamination - 2' L x 1' H	19	Delamination - 3' L x 4' H
8	Crack w/ rust staining - 6' L	20	Delamination - 10' L x 2' W
9	Delamination - 1' L x 1' H	21	Delamination - 4' L x 6" W
10	Delamination - 6' L x 3' H	22	Delamination - 1' L x 1' W
11	Delamination - 2' L x 2' H	23	Delamination - 6' L x 1' H
12	Delamination - 15' L x 2' H	24	Delamination - 1' L x 1' W

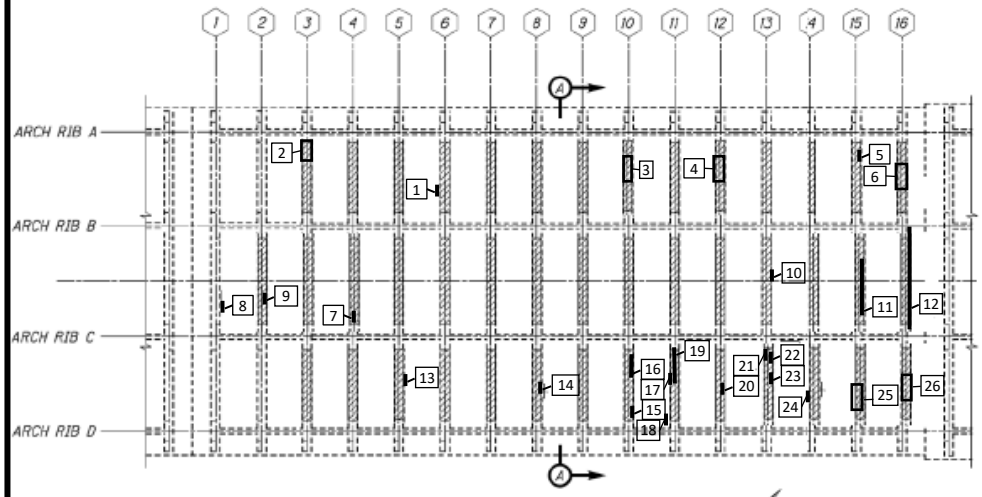
General Findings:

☐ = Area of Moisture Staining with efflorescence

Bay B floorbeams have hairline vertical cracks spaced about 3' apart. Some have light efflorescence.



SPAN 2 – UPPER DECK PLAN



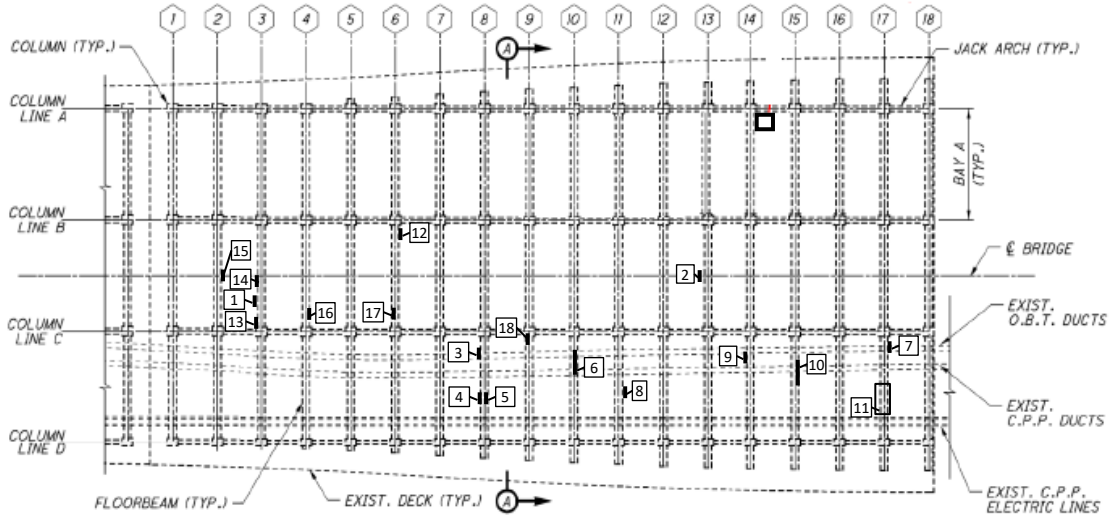
SPAN 2 – LOWER DECK PLAN

SPAN 2, UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Spall w/ exp. Reinf. - 2 SF (1 LF)	4	Delamination - 6' L x 1' H
2	Spall w/ exp. Reinf. - 1 SF (1 LF)	5	Delamination With Spall - 2 SF (2 LF)
3	Spall, 1" D - 1 SF		

General Findings:

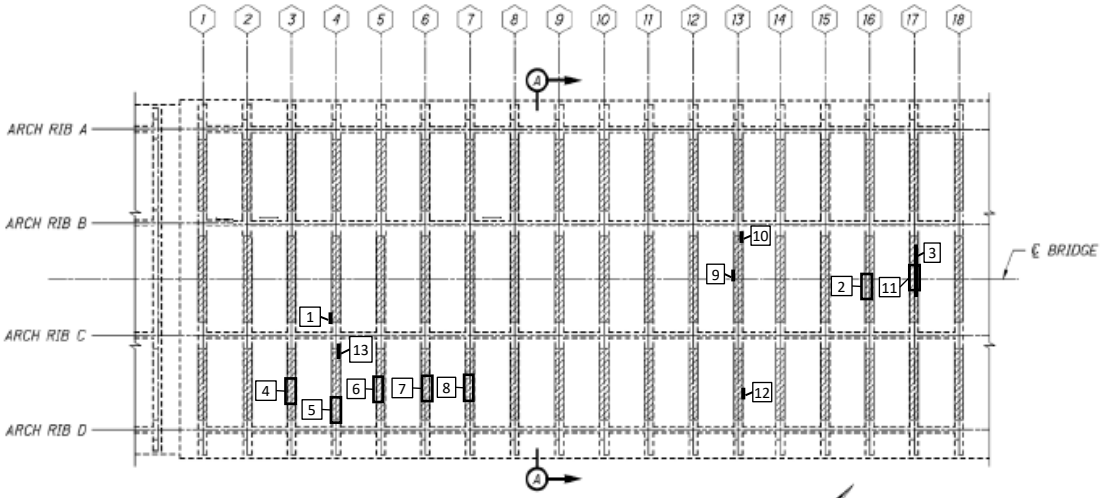
☐ = Area of Moisture Staining with efflorescence

SPAN 2, LOWER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delamination - 2' L x 2' H	15	Delamination - 4' L x 3' H
2	Delamination - 2' L x 2' H	16	Delamination w/ Spall w/ exp. Reinf - 5' L x 3' H
3	Delamination w/ Spall w/ exp. Reinf. - 6 SF	17	Delamination w/ Spall w/ exp. Reinf - 4' L x 3' H
4	Delamination - 4' L x 1' H		
5	Delamination - 9' L x 3' H	18	Delamination - 4' L x 3' H
6	Delamination w/ Spall w/ exp. Reinf - 4' L x 2' H	19	Delamination w/ Spall w/ exp. Reinf. - 6' L x 4' H
7	Delamination - 2' L x 1' H	20	Delamination - 10' L x 3' H & Spall w/ exp. Reinf - 2' L x 2' H
8	Delamination w/ Spall w/ exp. Reinf - 2' L x 2' H	21	Delamination - 6' L x 3' H
9	Spall w/ exp. Reinf - 1' L x 1' H	22	Delamination - 7' L x 2' H
10	Spall w/ exp. Reinf - 1' L x 1' H	23	Delamination - 2' L x 4' H
11	Delamination - 6' L x 4' H	24	Delamination - 9' L x Variable Width
12	Delamination - 20' L x 4' H		
13	Delamination - 6' L x 3' H	25	Delamination - 6' L x 1' H
14	Delamination w/ Spall w/ exp. Reinf. - 4' L x 2' H	26	Delamination - 13' L x 2' H



SPAN 3 – UPPER DECK PLAN

SPAN 3, UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Spall w/ exp. Reinf. w/ minor S.L., 3" D - 8 SF (3 LF)	9	Delam. w/ Spall, 2" D - 9 SF (3 LF)
2	Delam. - 2 SF (2 LF)	10	Delam. - 20 SF (7 LF)
3	Spall w/ exp. Reinf., 1.5" D - 0.5 SF (1 LF)	11	Spall w/ exp. Reinf - 3 SF (2 LF) & Delam. 16 SF (8 LF)
4	Delam. - 4 SF (2 LF)	12	Delam. - 1 SF (1 LF)
5	Delam. w/ small spall - 12 SF (4 LF)	13	Delam. - 3 SF (2 LF)
		14	Delam. - 2 SF (1 LF)
6	Delam. w/ small spall - 10 SF (5 LF)	15	Delam. - 1 SF (1 LF)
		16	Delam. - 1 SF (1 LF)
7	Delam. - 4 SF (2 LF)	17	Spall w/ exp. Reinf - 1 SF (1 LF)
8	Spall w/ exp. Reinf., 3" D - 20 SF (5 LF)	18	Spall w/ exp. Reinf., 2" D - 3 SF (2 LF)

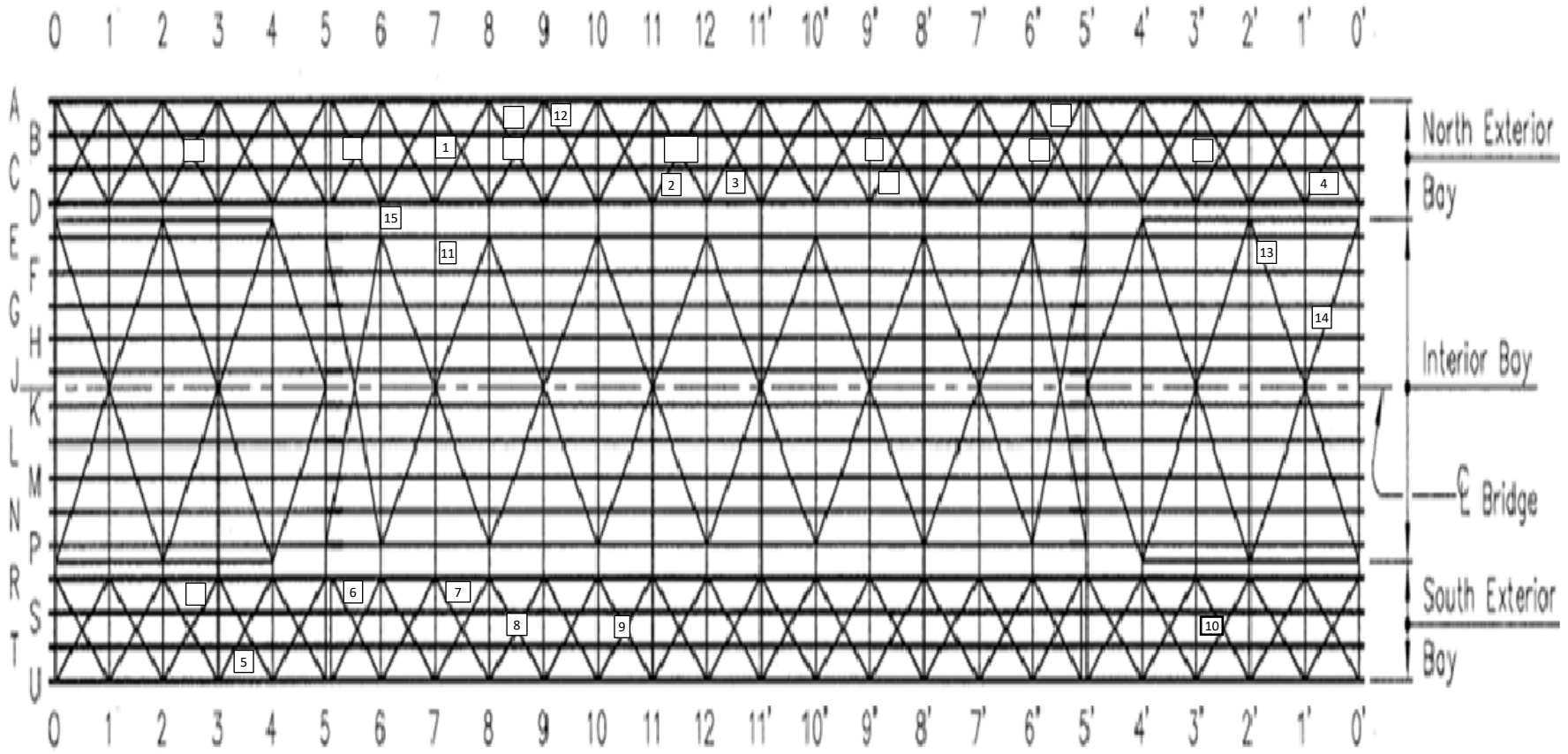


SPAN 3 – LOWER DECK PLAN

SPAN 3, LOWER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Spall w/ exp. Reinf - 1' L x 1' H	7	Spall w/ exp. Reinf. - 12' L x 2' H
2	Delam. - 2' L x 2' H	8	Delam. - 3' L x 1' H
3	Delam. - 12' L x 1' H	9	Delam. - 2' L x 2' H
4	Delam. - 10' L x 1' H	10	Delam. - 2' L x 2' H
5	Delam. - 6' L x 1.5' H	11	Delam. - 4' L x 2' H
6	Delam. - 10' L x 2' H & Spall w/ exp. Reinf. - 4' L x 1' H	12	Delam. - 4' L x 1' H
		13	Delam. - 2' L x 0.5' H

General Findings:

☐ = Area of Moisture Staining with efflorescence

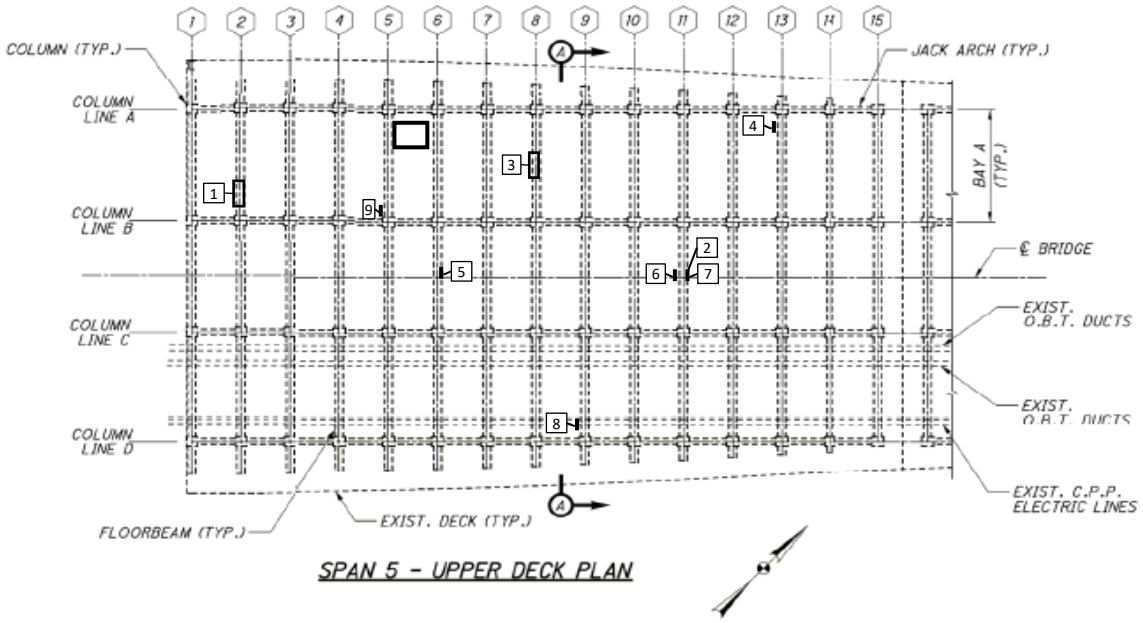


SPAN 4, UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Spall w/ exposed Reinforcement - 1 SF	9	Delamination - 9 SF
2	Spall w/ exposed Reinforcement - 1 SF	10	Spall w/ exposed Reinforcement - 6 SF
3	Spall w/ exposed Reinforcement - 1 SF	11	Spall w/ exposed Reinforcement - 1 SF
4	Spall - 1 SF	12	Spall - 1 SF
5	Delamination - 4 SF	13	Spall w/ exposed Reinforcement - 2 SF
6	Delamination - 1 SF	14	Spall w/ exposed Reinforcement - 2 SF
7	Delamination - 1 SF	15	Spall w/ exposed Reinforcement - 1 SF
8	Spall, 1/2" D - 1 SF		

General Findings:

* Typical Delamination / Spalling (< 1 SF) adjacent to the floorbeams

 = Area of Moisture Staining with efflorescence



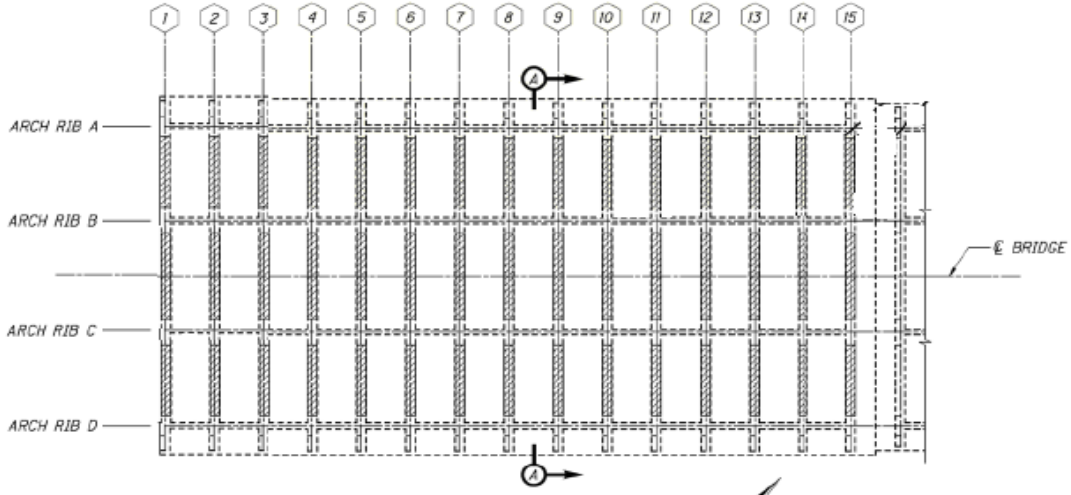
SPAN 5 – UPPER DECK PLAN

SPAN 5, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Spall w/ exp. Reinf. - 3 SF (2 LF)
2	Delamination (Bottom of Beam) - 1 SF (1 LF)
3	Spall - 1 SF (1 LF)
4	Delamination - 9 SF (3 LF)
5	Spall w/ exp. Reinf., 2" D - 4 SF (2 LF)
6	Spall w/ exp. Reinf. w/ minor S.L., 3" D - 9 SF (3 LF)
7	Spall - 6 SF (3 LF)
8	Spall w/ exp. Reinf., 1" D - 1 SF (1 LF)
9	Delamination - 3 SF (1 LF)

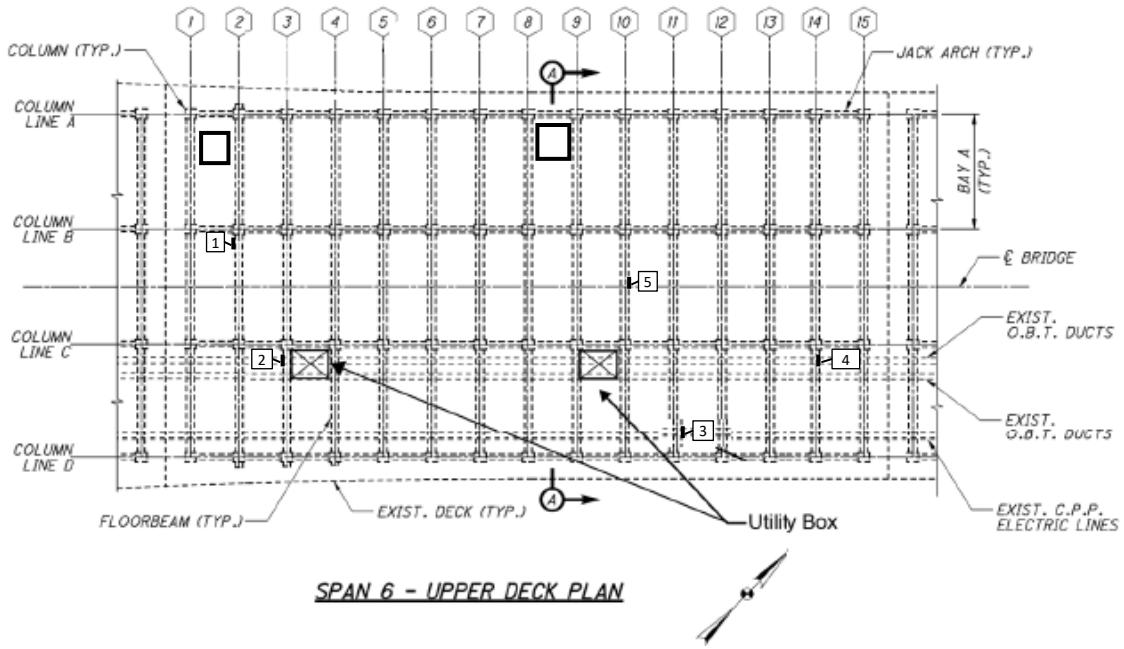
General Findings for Upper Deck:

In Bay B, there are numerous vertical hairline cracks wih efflorescence. Some cracks have been epoxy injected with 3-ft to 5-ft spacing.

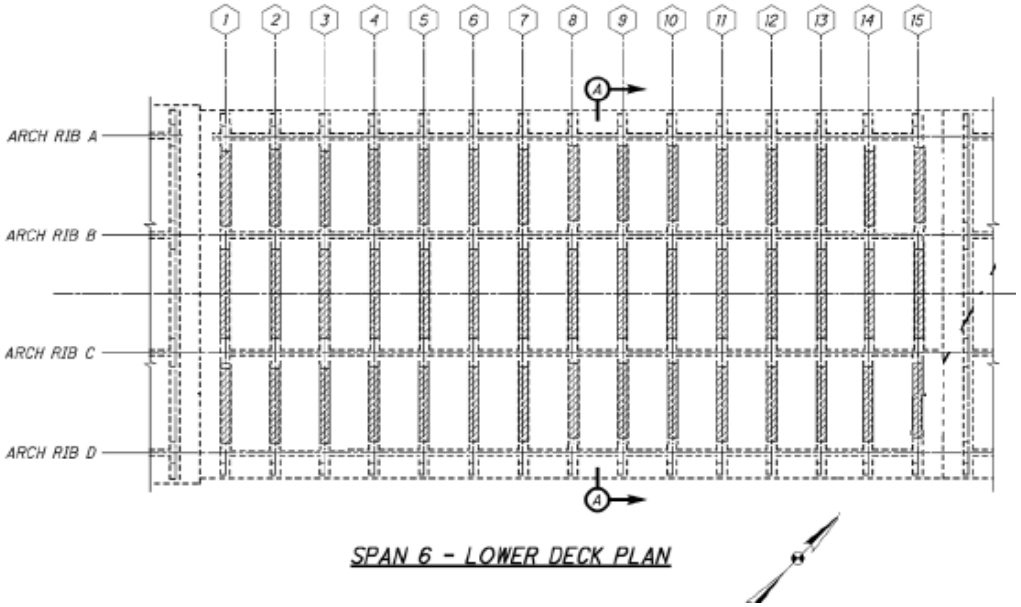
☐ = Area of Moisture Staining around the deck drain



SPAN 5 – LOWER DECK PLAN



SPAN 6 – UPPER DECK PLAN

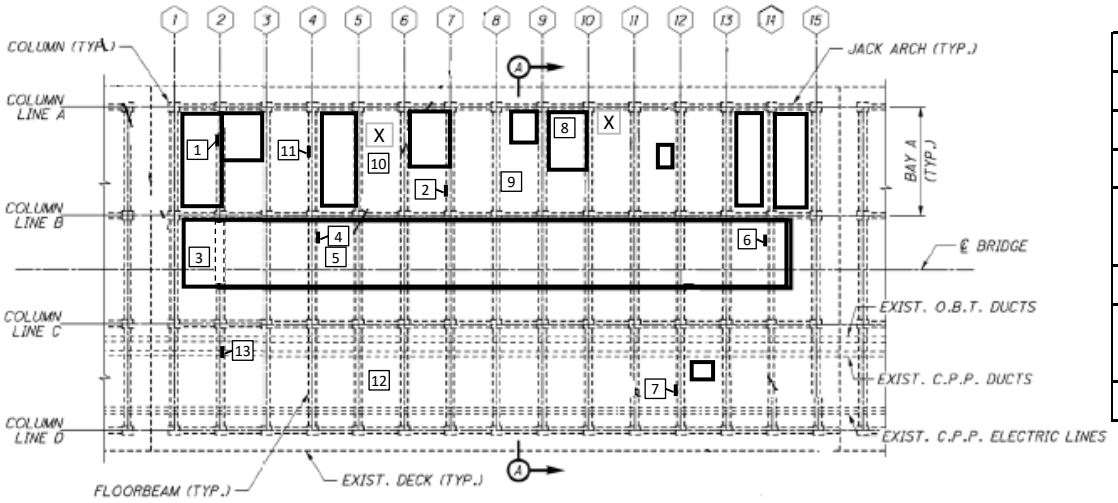


SPAN 6 – LOWER DECK PLAN

SPAN 6, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Spall w/ exp. Reinf., 4" D - 6 SF (2 LF)
2	Spall w/ exp. Reinf., 1" D - 1 SF (1 LF)
3	Delamination - 6 SF (3 LF)
4	Spall w/ exp. Reinf., 1" D - 1 SF (1 LF)
5	Spall w/ exp. Reinf., 1.75" D - 3 SF (2 LF)

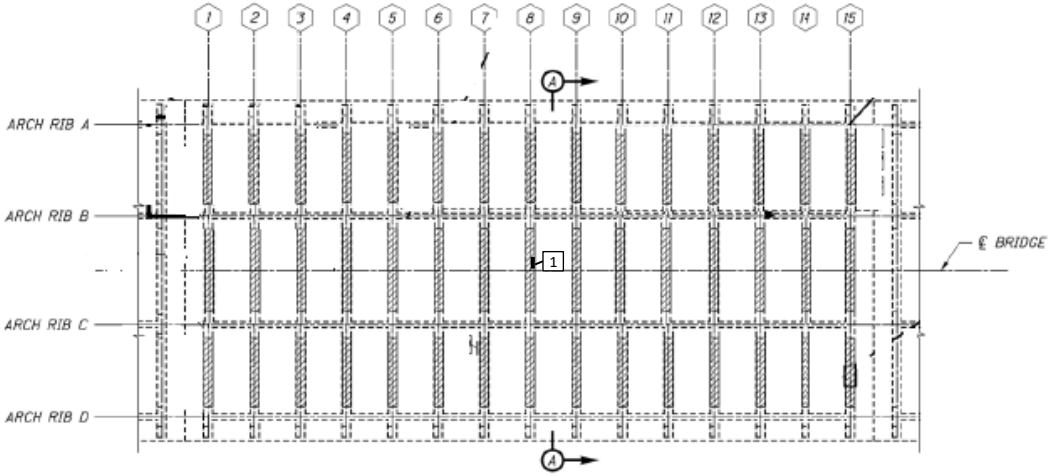
General Findings:

☐ = Area of Moisture Staining



SPAN 7 – UPPER DECK PLAN

SPAN 7, UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delam. - 1 SF (1 LF)	7	Delam. - 5 SF (5 LF)
2	Delam. - 1 SF (1 LF)	8	Delamination - 18 SF
3	Hairline crack w/ eff. and moisture staining - 4 LF	9	Delamination - 8 SF
		10	Delamination - 30 SF
4	Spall w/ exp. Reinf. - 1 SF (1 LF)	11	Spall - 1 SF (1 LF)
5	Hairline cracking w/ eff. & active leakage - 9 SF	12	Delamination - 4 SF
		13	Delamination - 1 SF (1 LF)
6	Spall, 1" D - 4 SF (2 LF)		



SPAN 7 – LOWER DECK PLAN

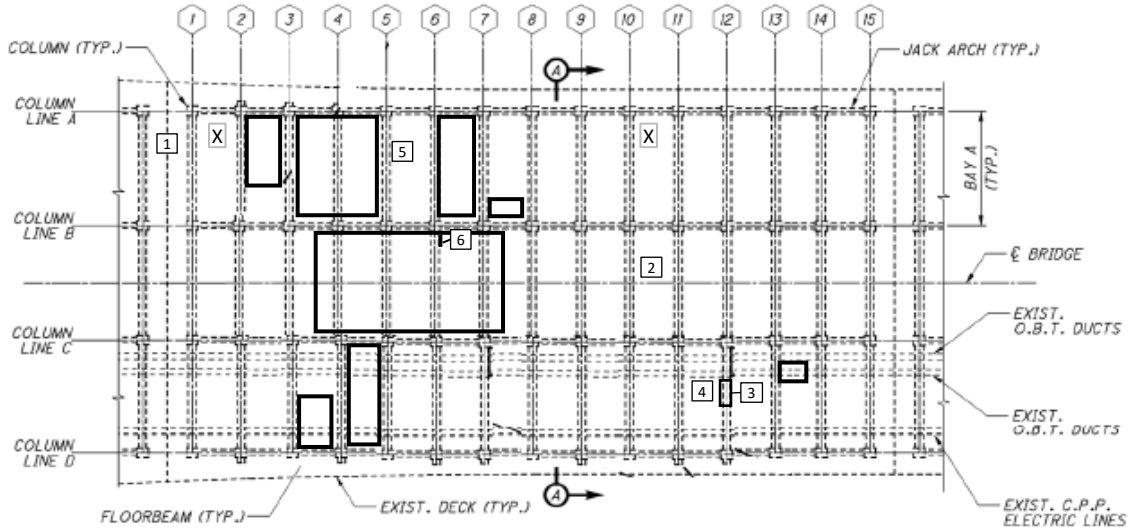
SPAN 7, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Delamination - 1 SF (1 LF)

General Findings:

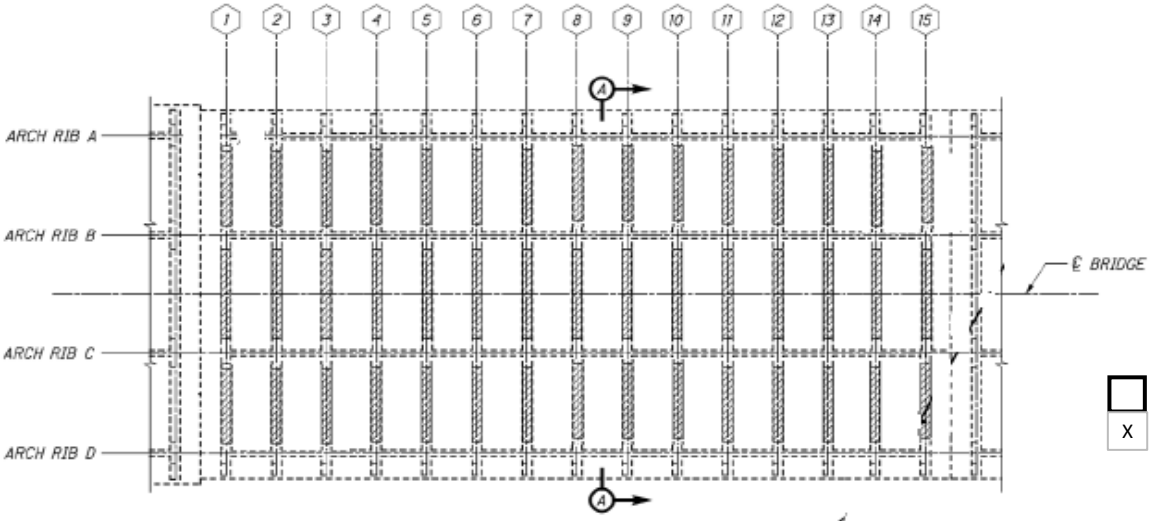
Area of Moisture Staining with efflorescence

X Area of Moisture Staining around the deck drains

Bay B floorbeams have hairline vertical cracks spaced about 3' apart. Some have light efflorescence.



SPAN 8 - UPPER DECK PLAN



SPAN 8 - LOWER DECK PLAN

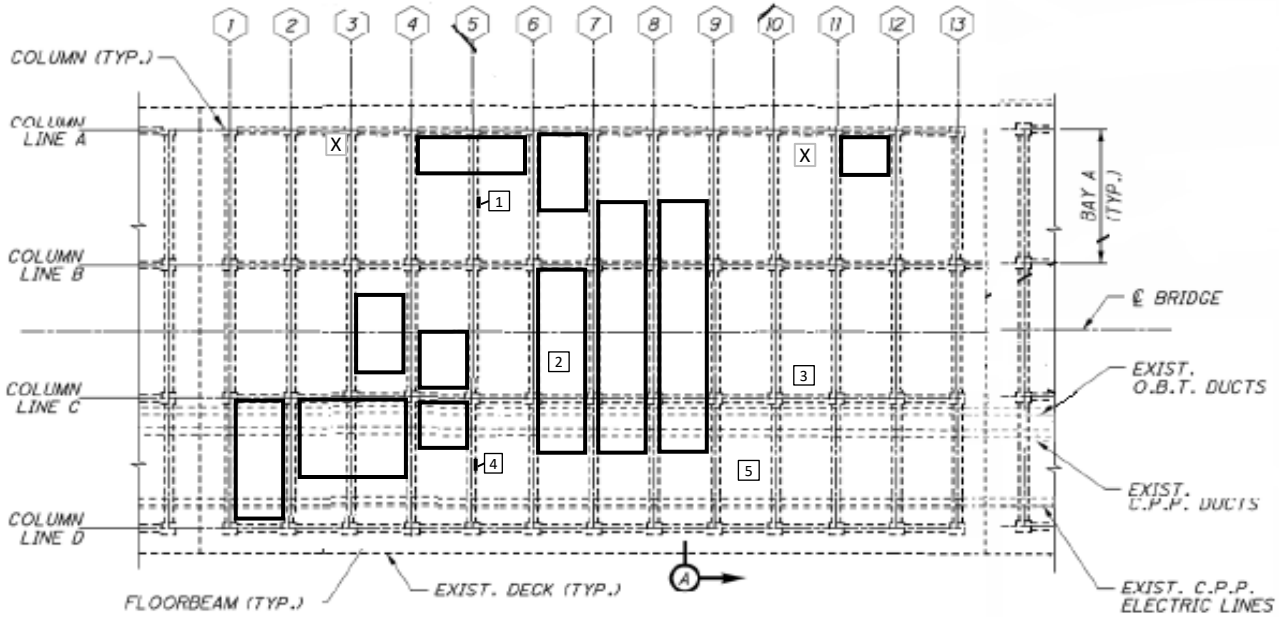
SPAN 8, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Leaking at the deck joint - 1 LF
2	Spall w. exp. Reinf., 2" D - 1 SF
3	Spall w/ exp. Reinf. - 4 SF (4 LF)
4	Spall w. exp. Reinf. - 9 SF
5	Delamination - 20 SF
6	Delamination - 1 SF (1 LF)

General Findings:

Area of Moisture Staining with efflorescence

X Area of Moisture Staining around the deck drains

* Bay B floorbeams have hairline vertical cracks spaced about 3' apart. Some have light efflorescence.



SPAN 9 – UPPER DECK PLAN

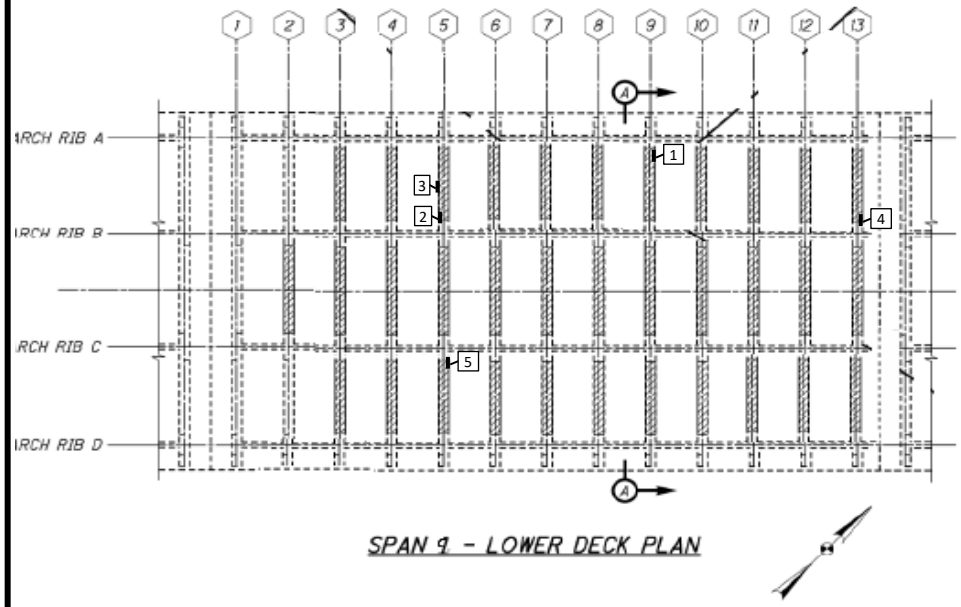
SPAN 9, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Delamination - 1 SF (1 LF)
2	Spall, 2.5" D - 4 SF
3	Spall w/ exp. Reinf., 1.5" D - 1 SF
4	Delamination - 4 SF (4 LF)
5	Delamination - 1 SF

General Findings:

☐ = Area of Moisture Staining with efflorescence

X = Area of Moisture Staining around the deck drains

Bay B floorbeams have hairline vertical cracks spaced about 3' apart. Some have light efflorescence.



SPAN 9 - LOWER DECK PLAN

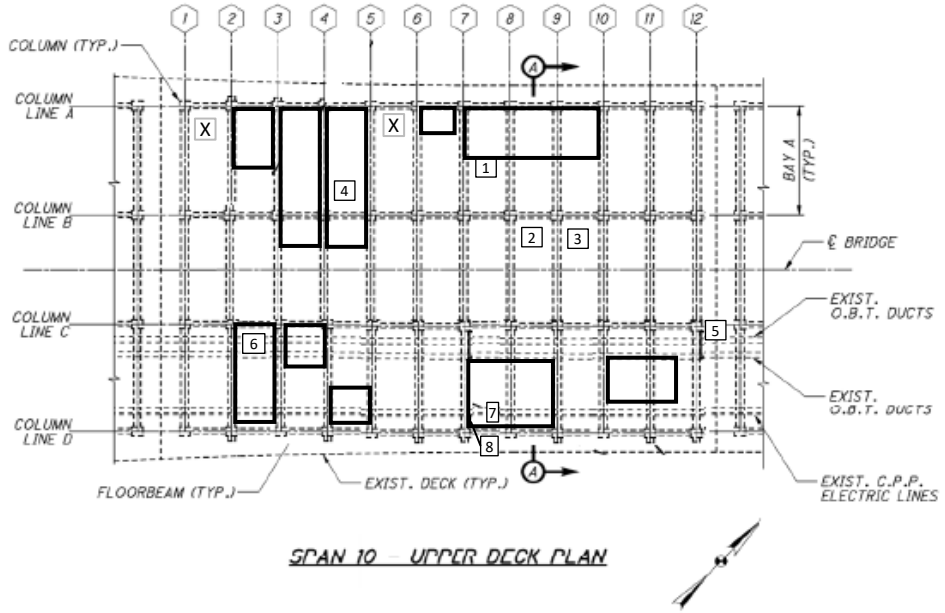
SPAN 9, LOWER DECK DEFICIENCIES	
#	Defect
1	Delamination - 1' L x 1' H
2	Delamination - 1' L x 2' H
3	Delamination - 2' L x 2' H
4	Delamination - 4' L x 2' H
5	Delamination - 1' L x 1' H

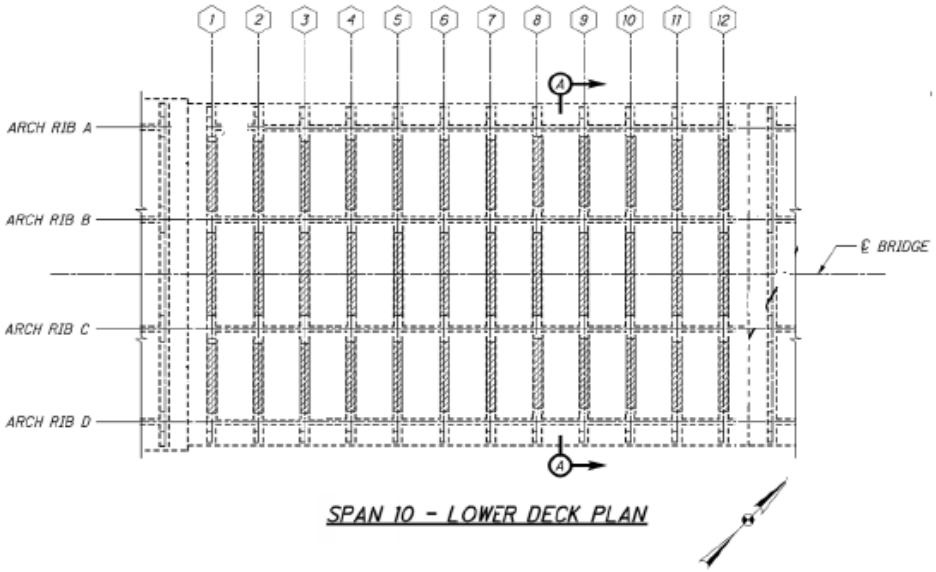
General Findings:

☐ = Area of Moisture Staining with efflorescence

X = Area of Moisture Staining around the deck drains

Bay B floorbeams have hairline vertical cracks spaced about 3' apart. Some have light efflorescence.



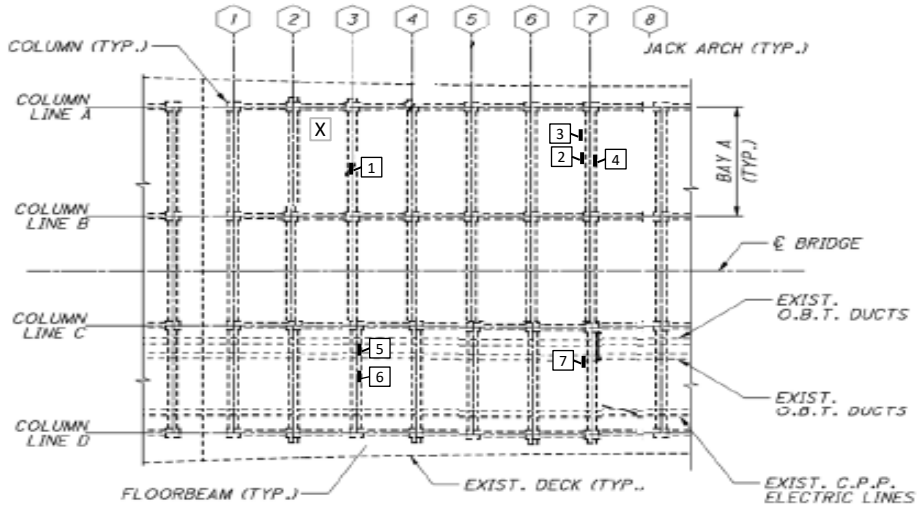


SPAN 10 - UPPER DECK DEFICIENCIES	
#	DEFECT
1	Spall w/ exp. Reinf., 2" D - 1 SF
2	Spall w/ exp. Reinf., 2" D - 3 SF
3	Spall w/ exp. Reinf., 2" D - 1 SF
4	Delamination - 12 SF
5	Leaking from hole in Joint 3 - 3 LF
6	Delamination w/ Efflorescence - 1 SF
7	Crack w/ Efflorescence for Half Span
8	Spall w/ exp. Reinf. - 1 SF (1 LF)

General Findings:

☐ = Area of Moisture Staining with efflorescence

X = Area of Moisture Staining around the deck drains



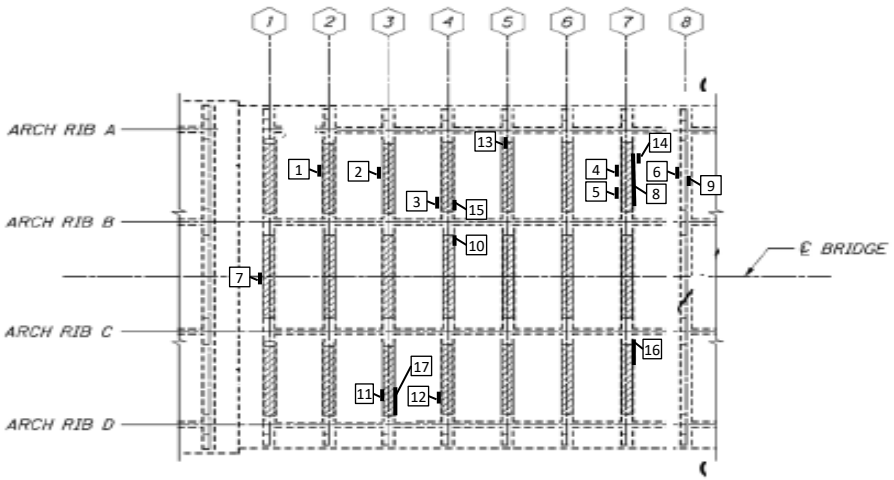
SPAN 11 -- UPPER DECK PLAN

SPAN 11, UPPER DECK DEFICIENCIES

#	DEFECT
1	Spall w/ exp. Reinf., 1" D - 8
2	Spall w/ exp. Reinf., 1" D - 2
3	Spall w/ exp. Reinf. - 1 SF (1
4	Spall w/ exp. Reinf., 1" D - 2
5	Delamination - 1 SF
6	Delamination - 2 SF
7	Delamination - 2 SF (2 LF)

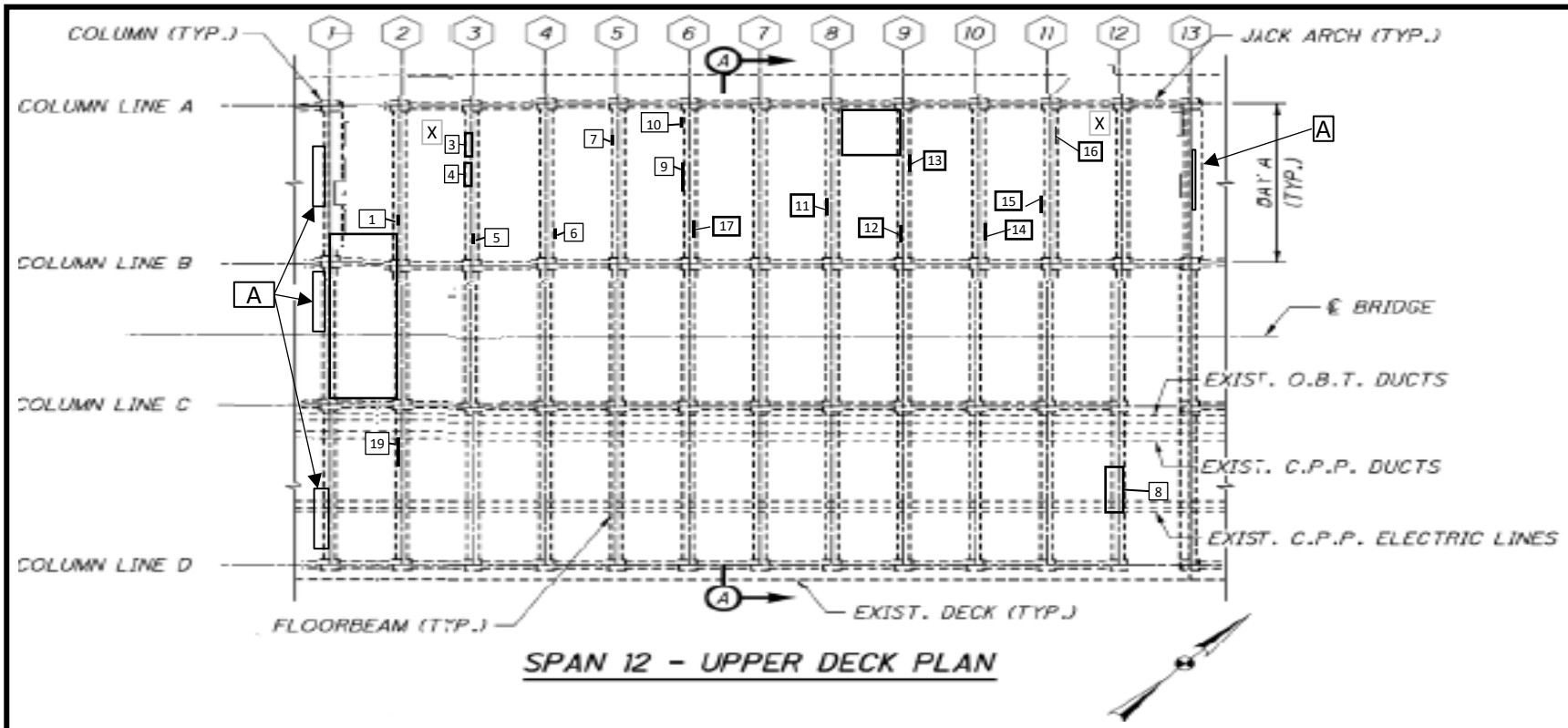
General Findings:

X = Area of Moisture Staining around the deck drains



SPAN 11 - LOWER DECK PLAN

SPAN 11, LOWER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delamination w/ Spalling - 1' W x 4' H	8	Crack - 8 LF
		9	Delamination - 6" W x 2' H
2	Delamination - 1' W x 1' H	10	Delamination - 6" W x 2' H
3	Delamination - 6" W x 2' H	11	Delamination - 6' W x 1' H
4	Spall w/ exp. Reinf. - 6" W x 1.5' H	12	Delamination - 4' W x 1' H
		13	Delam. w/ Spall w/ exp. Reinf. - 1' W x 1' H
5	Spall w/ exp. Reinf. - 6" W x 1.5' H	14	Delamination - 6" W x 1' H
6	Delamination - 2' W x 2' H	15	Delamination - 6" W x 1' H
7	Spall w/ exp. Reinf., 2" D - 1.5' W x 1.5' H	16	Delamination - 1' W x 2' H
		17	Delamination - 5' W x 1' H



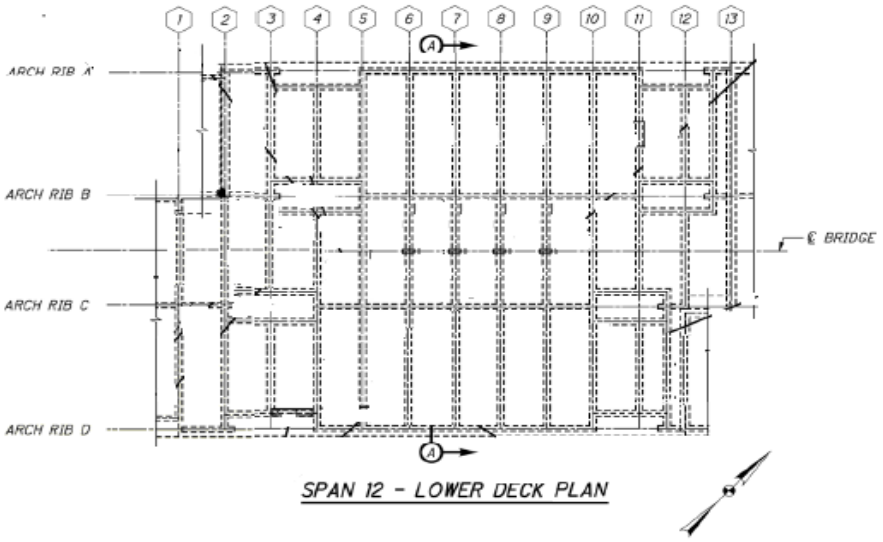
SPAN 12 - UPPER DECK PLAN

SPAN 12 - UPPER DECK DEFICIENCIES			
#	DEFECT	#	DEFECT
1	Delamination - 1 SF (1 LF)	12	Spall w/ exp. Reinf., 1" D - 2 SF (2 LF)
2	Spall w/ exp. Reinf. - 1 SF (1 LF)	13	Delam. w/ Spall w/ exp. Reinf., 1" D - 3 SF (3 LF)
3	Delamination - 4 SF (2 LF)		
4	Delamination - 3 SF (3 LF)	14	Spall w/ exp. Reinf. - 1 SF (1 LF)
5	Delamination - 3 SF (3 LF)	15	Delamination - 6 SF
6	Spall w/ exp. Reinf. - 1 SF (1 LF)	16	Delamination - 1 SF
7	Spall w/ exp. Reinf. - 3 SF (3 LF)	17	Delamination - 1 SF (1 LF)
8	Delamination - 2 SF (2 LF)		
9	Delamination - 27 SF (9 LF)		
10	Spall w/ exp. Reinf. - 1 SF (1 LF)		
11	Spall w/ exp. Reinf. - 1 SF (1 LF)		

X = Area of Moisture Staining around the deck drains

☐ = Area of Moisture Staining with efflorescence

See the next sheet for note A



SPAN 12 - LOWER DECK PLAN

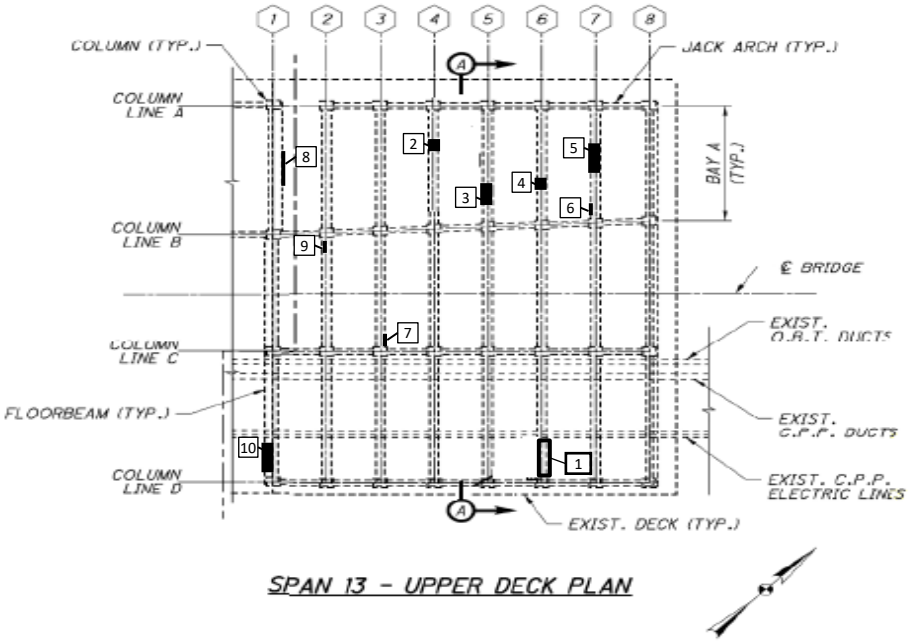
SPAN 12, LOWER DECK DEFICIENCIES				
FB #	Defect	Bay A (sf)	Bay B (sf)	Bay C (sf)
1	Delamination		0	0
	Spall w/ exp. Reinf.		0	0
2	Delamination	4 (4)	19 (8)	13 (5)
	Spall w/ exp. Reinf.	5 (5)	14 (6)	5 (3)
3	Delamination	1 (1)	3 (3)	0
	Spall w/ exp. Reinf.	0	0	0
4	Delamination	6 (3)	6 (6)	33 (12)
	Spall w/ exp. Reinf.	6 (3)	4 (3)	16 (6)
5	Delamination	8 (8)	6 (3)	17 (9)
	Spall w/ exp. Reinf.	16 (7)	0	6 (4)
6	Delamination	94 (30)	0	12 (8)
	Spall w/ exp. Reinf.	0	1 (1)	1 (1)
7	Delamination	2 (2)	0	0
	Spall w/ exp. Reinf.	0	0	0
8	Delamination	2 (2)	11 (6)	4 (2)
	Spall w/ exp. Reinf.	2 (2)	2 (2)	1 (1)
9	Delamination	22 (10)	19 (7)	45 (15)
	Spall w/ exp. Reinf.	0	0	2 (2)
10	Delamination	14 (7)	0	8 (4)
	Spall w/ exp. Reinf.	32 (8)	0	0
11	Delamination	4 (2)	0	8 (4)
	Spall w/ exp. Reinf.	7 (4)	2 (4)	0
12	Delamination	10 (5)	4 (2)	20 (10)
	Spall w/ exp. Reinf.	8 (6)	0	2 (1)
13	Delamination	0	0	
	Spall w/ exp. Reinf.	0	0	

LF in (x)

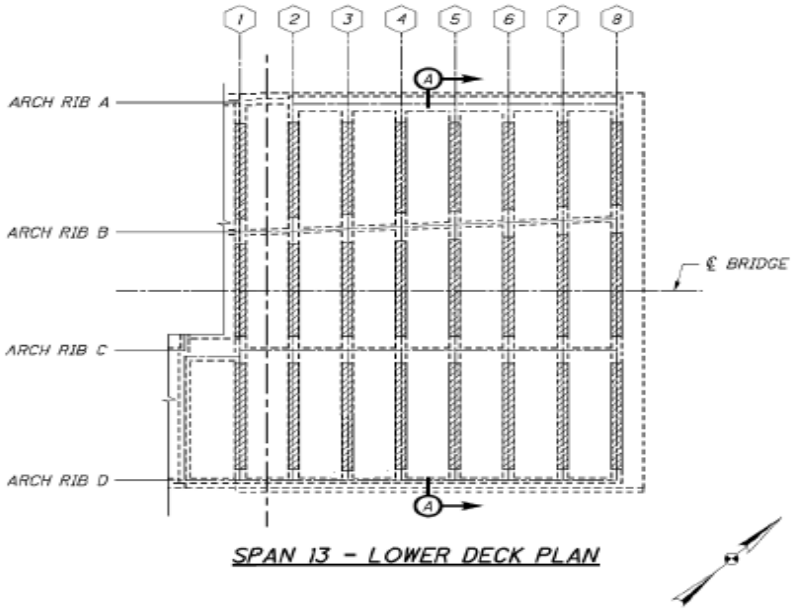
SPAN 12 - UPPER DECK FINDINGS:

Note A: Between the deck underside and the top of the transverse floorbeam overs Piers 11 and 12, there are 3" H concrete pedastals with galvanized steel plates sitting on top and between each pedestal. In several locations these plates are missing and no longer support the deck underside, or have displaced from the bearing pedestal. See Table below for locations and description of displaced plates.

Joint	Location	Description
Pier 11	Ribs A-B	One plate missing and one displaced 3.5" east
	Ribs B-C	Two plates missing and one plate displaced up to 1.5" west
	Ribs C-D	Six plates displaced up to 6.5" west
Pier 12	Ribs A-B	One plate missing and three displaced up to 1" east

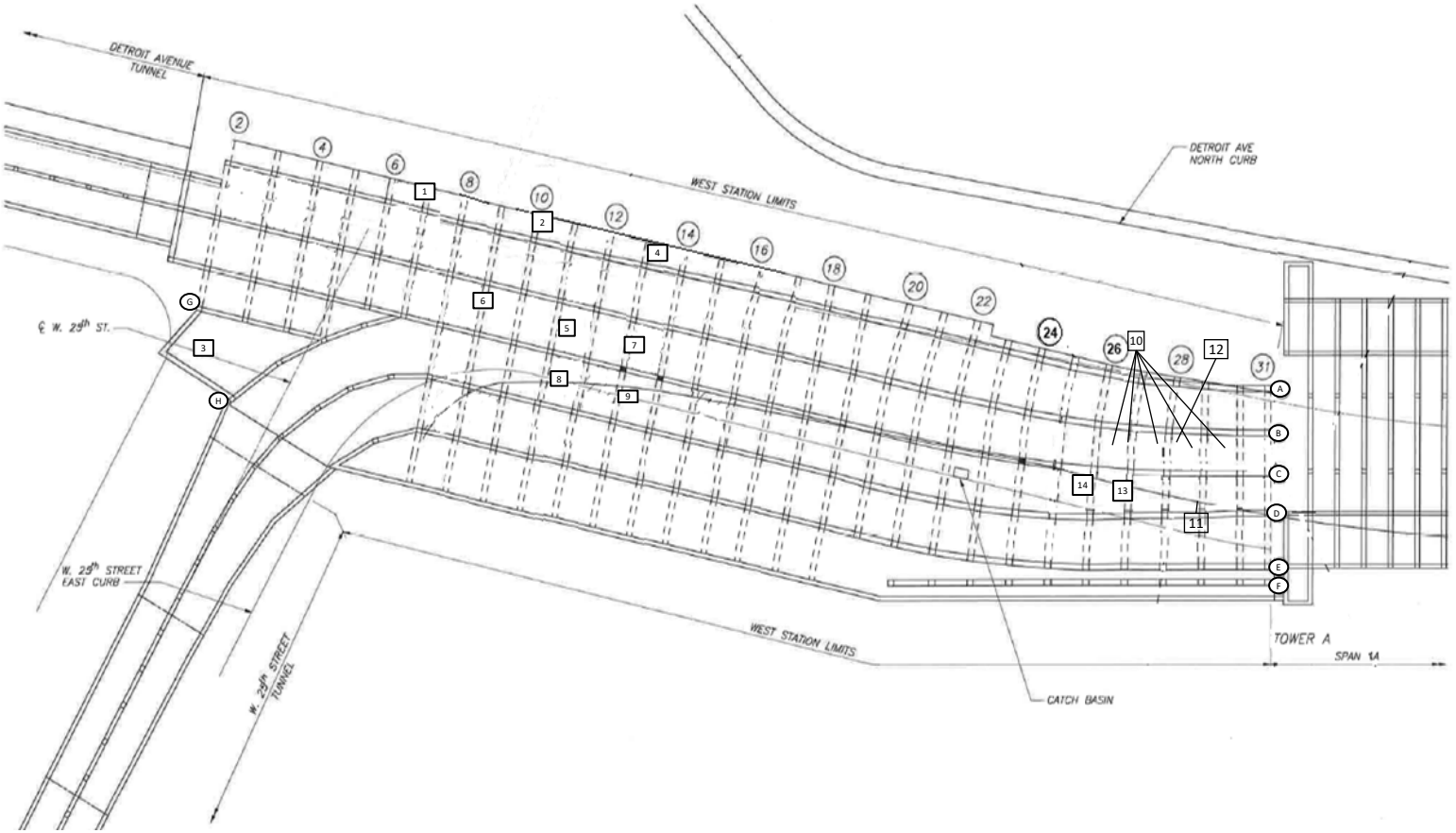


SPAN 13 – UPPER DECK PLAN

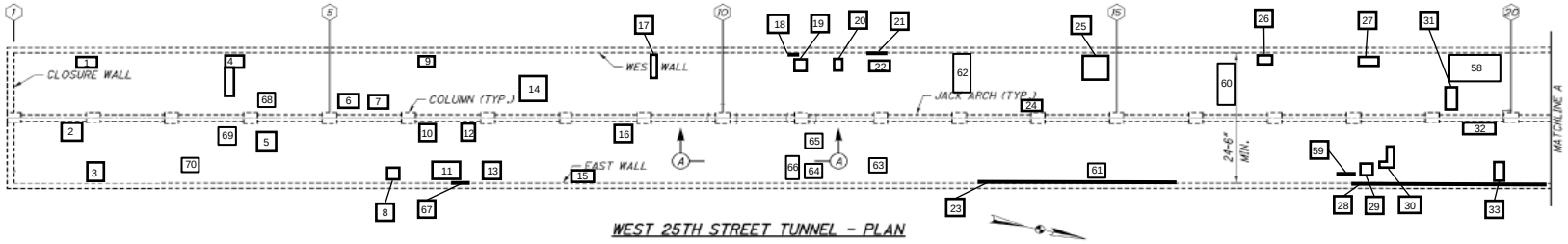


SPAN 13 – LOWER DECK PLAN

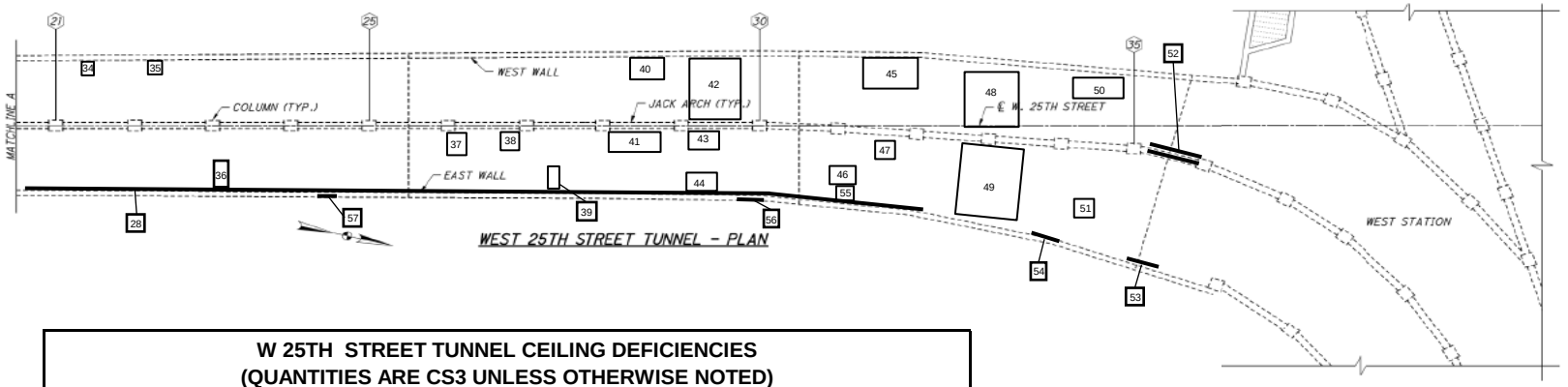
SPAN 13, UPPER DECK DEFICIENCIES	
#	DEFECT
1	Delam. w/ Spalling w/ exp. Reinf. - 24 SF, 4" D (8 LF)
2	Incomplete Sawcut Repair Location w/ exp. Reinf. (I.S.R.) - 4 SF (2 LF)
3	I.S.R. - 9 SF (6 LF)
4	I.S.R. - 4 SF (4 LF)
5	I.S.R. - 12 SF (4 LF)
6	I.S.R. - 2 SF (2 LF)
7	I.S.R. - 1 SF (1 LF)
8	Area of deck leakage - 2 LF
9	I.S.R. - 1 SF (1 LF)
10	Delamination - 12 SF (6 LF)



West Station Ceiling Deficiencies					
#	Defect	#	Defect	#	Defect
1	Spall w/ exp. Reinf. - 1 bar w/ 100% section loss; Adjacent bars have advanced section loss.	7	Spall w/ exp. Reinf. - Rebar has heavy section loss & one bar hanging loose.	13	Spall w/ exp. Reinf. - 1 completely exposed bar, not broken; Adjacent bars have advanced section loss.
2	Spall w/ exp. Reinf. - 1 bar w/ 100% section loss; Adjacent bars have advanced section loss.	8	Spall w/ exp. Reinf. - 1 completely exposed bar, not broken; Adjacent bars have advanced section loss.	14	Spall w/ exp. Reinf. - 3 adjacent bars w/ complete exposure.
3	Spall w/ exp. Reinf. - 2 completely exposed bars, no broken; Adjacent bars have heavy advanced section loss.	9	Spall w/ exp. Reinf. - 1 completely exposed bar, not broken.		
4	Spall w/ exp. Reinf. - 1 bar about to break.	10	Area typ. has numerous transverse and longitudinal cracking w/ heavy efflorescence and delam.		
5	Spall w/ exp. Reinf. - 1 completely exposed bar, not broken.	11	Spall w/ exp. Reinf. - Bars have advanced section loss.		
6	Spall w/ exp. Reinf. - 1 completely exposed bar, not broken.	12	Spall w/ exp. Reinf. - Adjacent bars have advanced section loss.		



WEST 25TH STREET TUNNEL - PLAN

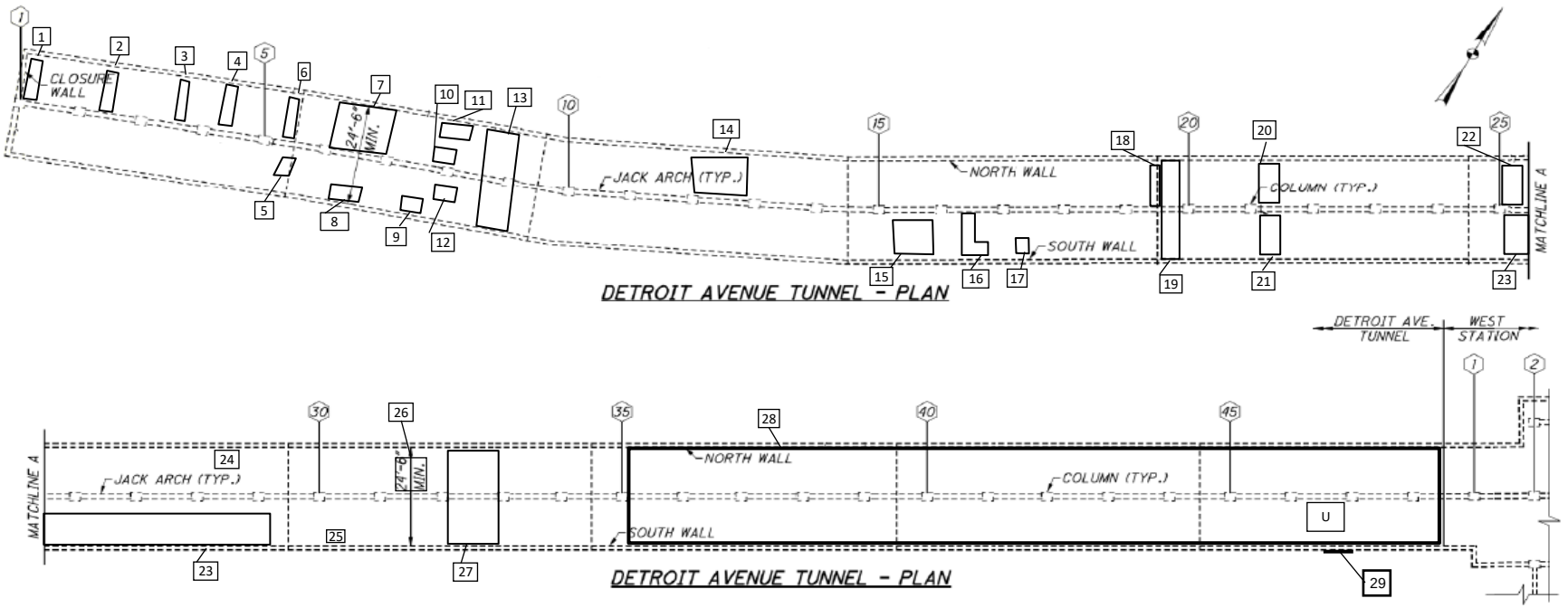


WEST 25TH STREET TUNNEL - PLAN

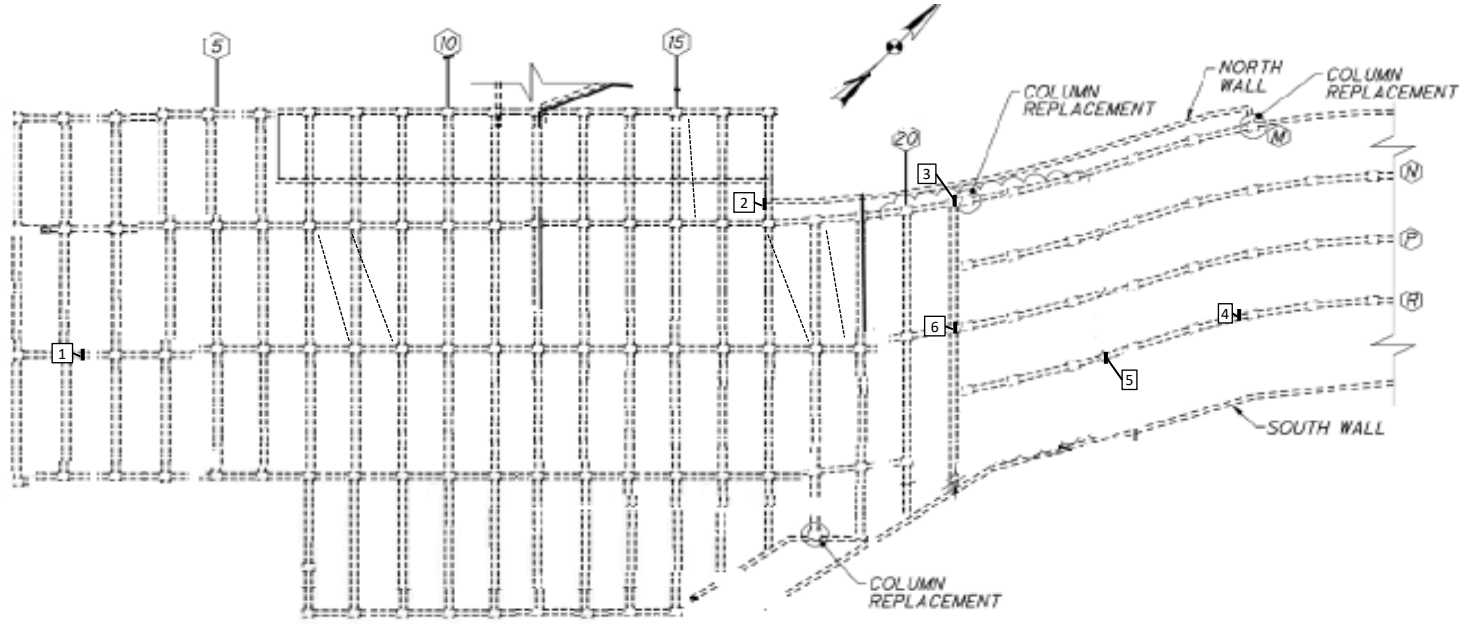
W 25TH STREET TUNNEL CEILING DEFICIENCIES
(QUANTITIES ARE CS3 UNLESS OTHERWISE NOTED)

#	SF	#	SF	#	SF	#	SF	#	SF
1	**12**	*14*	**10**	*31*	**5**	*44*	**9**	61	**5**
2	**20**	*15*	**4**	*32*	**5**	*45*	**40**	62	**12 (CS2)**
3	**30**	*16*	**16**	*33*	**10 (CS2)**	*46*	**3**	63	**2**
4	**40**	*17*	**24**	*34*	**1**	*47*	**4**	64	**2**
5	**6**	*19*	**4**	*35*	**2**	*48*	**50**	65	**9 (CS2)**
6	**2**	*20*	**1**	*36*	**15**	*49*	**300**	66	**15**
7	**1**	*22*	**15**	*37*	**15**	*50*	**28**	68	**3**
8	**4**	*24*	**12**	*38*	**2**	*51*	**16**	69	**1**
9	**20**	*25*	**10**	*39*	**8**	*55*	**15**	70	**1**
10	**30**	*26*	**2**	*40*	**54**	*57*	**1**		
11	**16**	*27*	**6**	*41*	**45**	58	**30 (CS2)**		
12	**5**	*29*	**2**	*42*	**77**	59	**2**		
13	**25**	*30*	**5**	*43*	**9**	60	**10**		

W 25TH STREET TUNNEL DEFICIENCIES	
#	Comments
18	Bottom of wall - 2 SF
21	Bottom of wall - 18 SF
23	Bottom of wall - 60 SF
28	Bottom of wall - 2.5' high spalling from columns
52	Top of arch - 75% of length, both faces
53	Wall - Full Height x 4' Spall w/ exp. Reinf.
54	Top of Wall - 12 SF
56	Top of wall - 10 SF Spall w/ exp. Reinf.
67	Top of wall - 4 SF Spall w/ exp. Reinf.

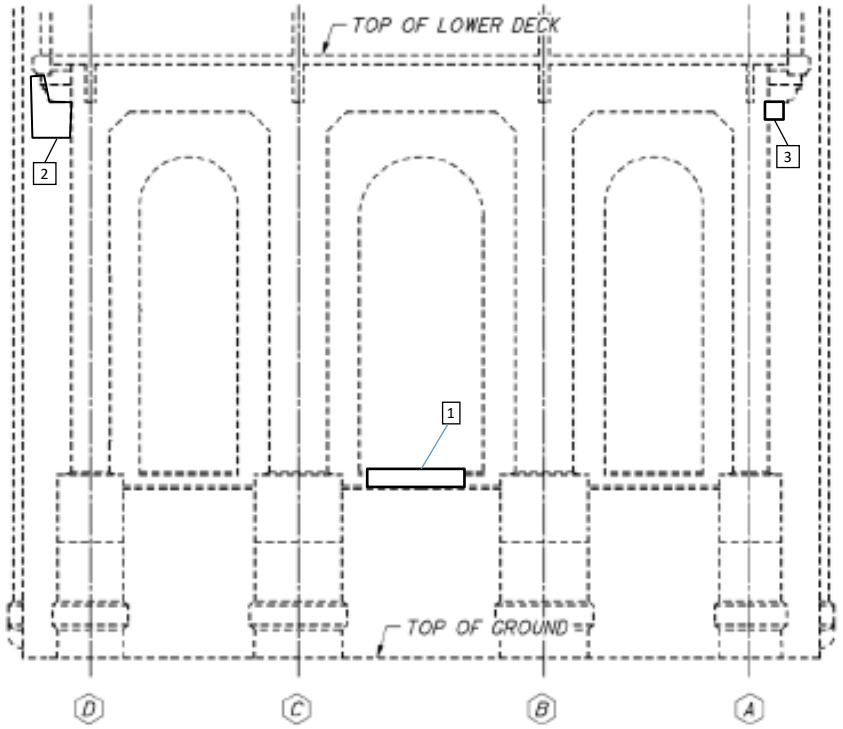


Detroit Avenue Tunnel Ceiling Deficiencies					
#	Defect	12	Spall w/ exp. Rebar - 12 SF	23	Spall w/ exp. Rebar w/ seepage & rust staining - 192 SF. Also Delamination w/ cracking - 76 SF
1	Spall w/ exp. Rebar - 50 SF	13	Several spalls w/ exp. Rebar - 10 SF		
2	Cracking w/ efflorescence & stalagtites & seepage - 66 SF	14	Spall w/ exp. Rebar - 120 SF		
3	Spall w/ exp. Rebar - 44 SF	15	Spall w/ efflorescence & heavy rust staining - 96 SF	24	Spall w/ exp. Rebar - 50 SF
4	Cracking w/ efflorescence & stalagtites & seepage - 30 SF	16	Spall w/ exp. Rebar - 36 SF	25	Spall w/ exp. Rebar - 2 SF
5	Spall w/ exp. Rebar - 6 SF	17	Spall w/ exp. Rebar - 5 SF	26	Spall w/ exp. Rebar - 80 SF
6	Cracking w/ efflorescence - 30 SF	18	Transverse & longitudinal cracks in the joint header. Joint is leaking.	27	Spall w/ exp. Rebar - 196 SF
7	Spall w/ exp. Rebar - 180 SF	19	Area of cracking, spalling, delamination w/ eff. & exp. Rebar - 150 SF	28	From C35-48, app. 50% of the ceiling is Spall w/ exp. Rebar (2390 SF) and 20% is cracking w/ seepage (956 SF).
8	Spall w/ exp. Rebar - 24 SF			29	Spall w/ exp. Rebar. - 150 SF
9	Spall w/ exp. Rebar - 35 SF	20	Spall w/ exp. Rebar - 96 SF	X	The lower up to 3-ft of walls are spalled w/ exp. Reinf. For 25% of their length.
10	Cracking w/ efflorescence - 3 SF	21	Spall w/ exp. Rebar - 48 SF		
11	Spall w/ exp. Rebar - 12 SF	22	Cracking - 36 SF		

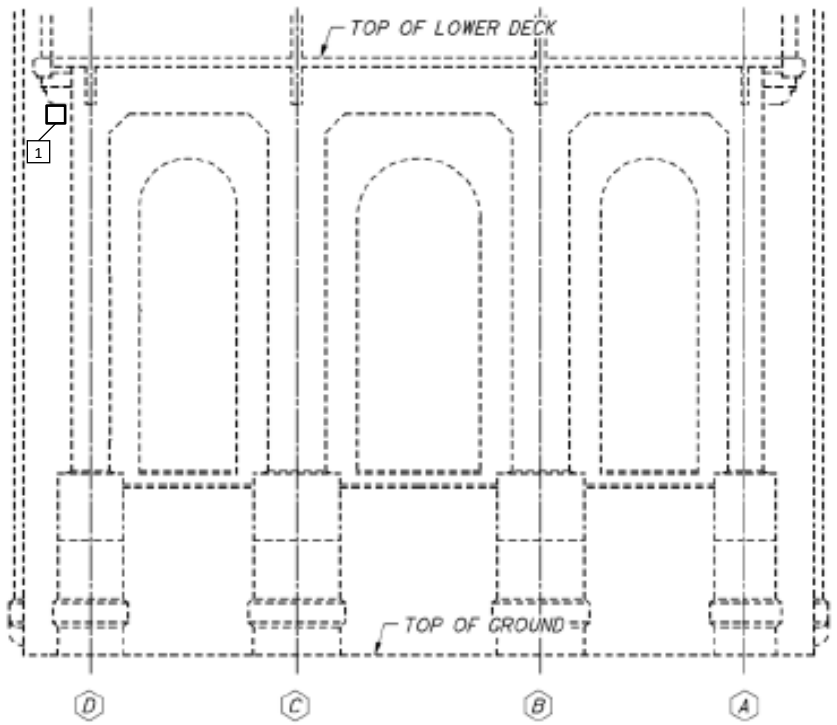


EAST STATION & SUBWAY - PLAN

EAST STATION & SUBWAY DEFICIENCIES	
#	DEFECT
1	Spall w/ exp. Reinf. - 1 SF, 1" D (underside of arch)
2	Spall w/ exp. Reinf. - 24 SF (in wall) and Spall - 6 SF (in btm of FB)
3	Spall w/ exp. Reinf. - 6 SF (top of Col. 22)
4	Spall w/ exp. Reinf. (N. side of jack arch 26-27) - 1 SF (1 LF)
5	Spall w/ exp. Reinf. (S. side of jack arch 24-25) - 1 SF (1 LF)
6	Delamination (Both sides of Col. 22) - 2 SF



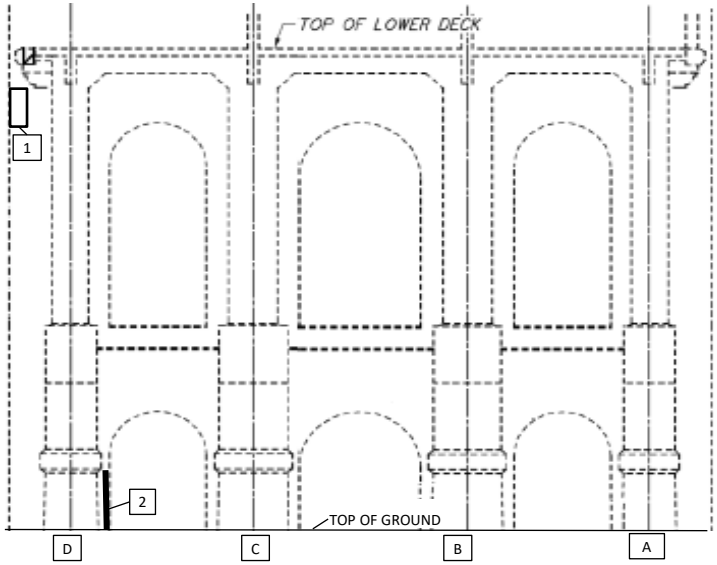
PIER 1 – EAST ELEVATION



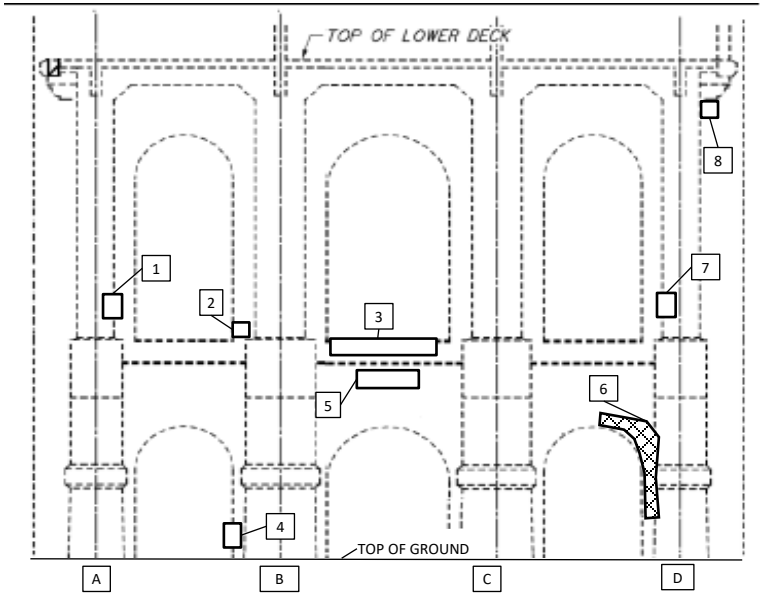
PIER 1 - WEST ELEVATION

Pier 1 - East Elevation Deficiencies	
#	Deficiency
1	Delamination - 8 SF
2	Spall w/ exp. Reinf., 8" D - 9 SF
3	Spall w/ exp. Reinf. - 4 SF

Pier 1 - West Elevation Deficiencies	
#	Deficiency
1	Delamination - 2 SF



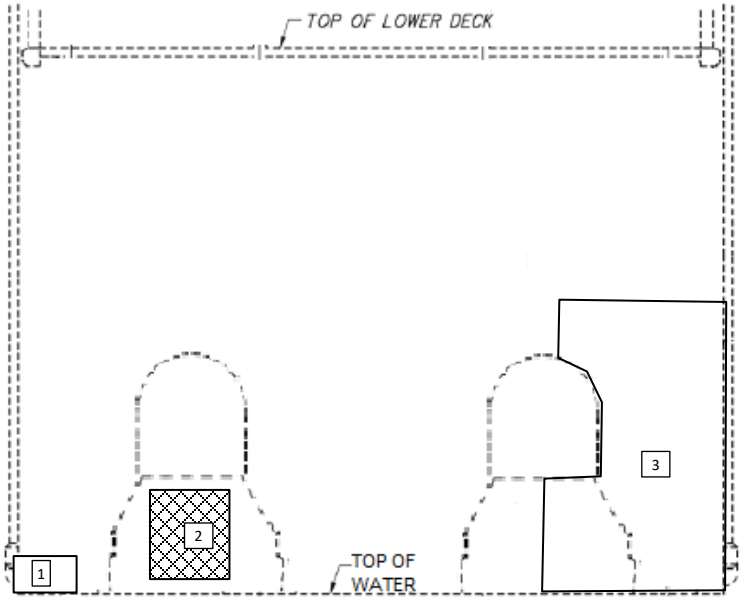
PIER 2 - EAST ELEVATION



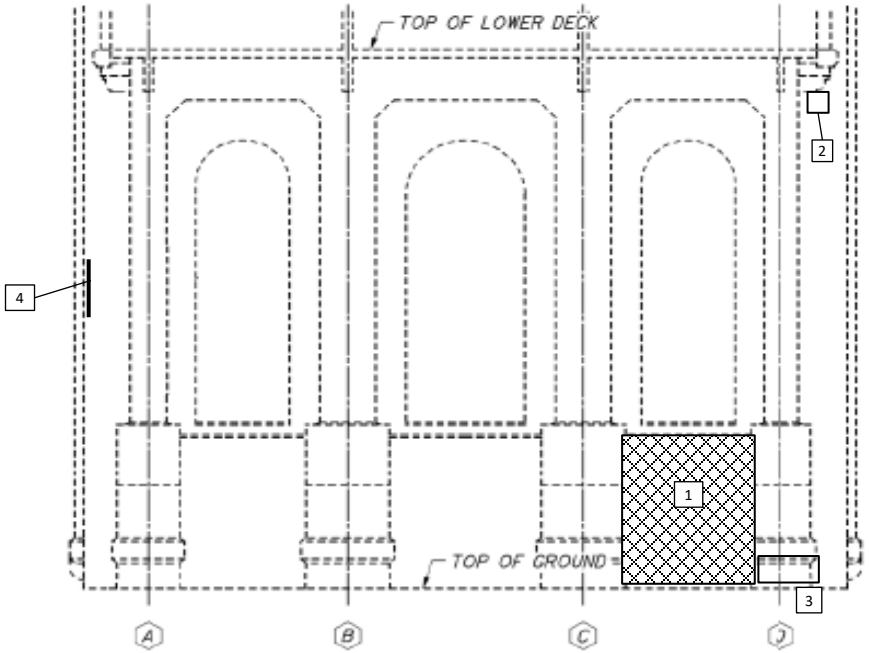
PIER 2 - WEST ELEVATION

Pier 2 - East Elevation Deficiencies	
#	Deficiency
1	Spall w/ exp. Reinf. - 6 SF
2	Map Cracking (inside face) - 15 SF

Pier 2 - West Elevation Deficiencies	
#	Deficiency
1	Delamination (south inner face) - 4 SF
2	Delamination - 1 SF
3	Delamination - 20 SF
4	Delam. w/ Spall - 4 SF
5	Delamination - 10 SF
6	Map Cracking 30 SF
7	Delamination (north inner face) - 9 SF
8	Spall w/ exp. Reinf., 4" D - 4 SF



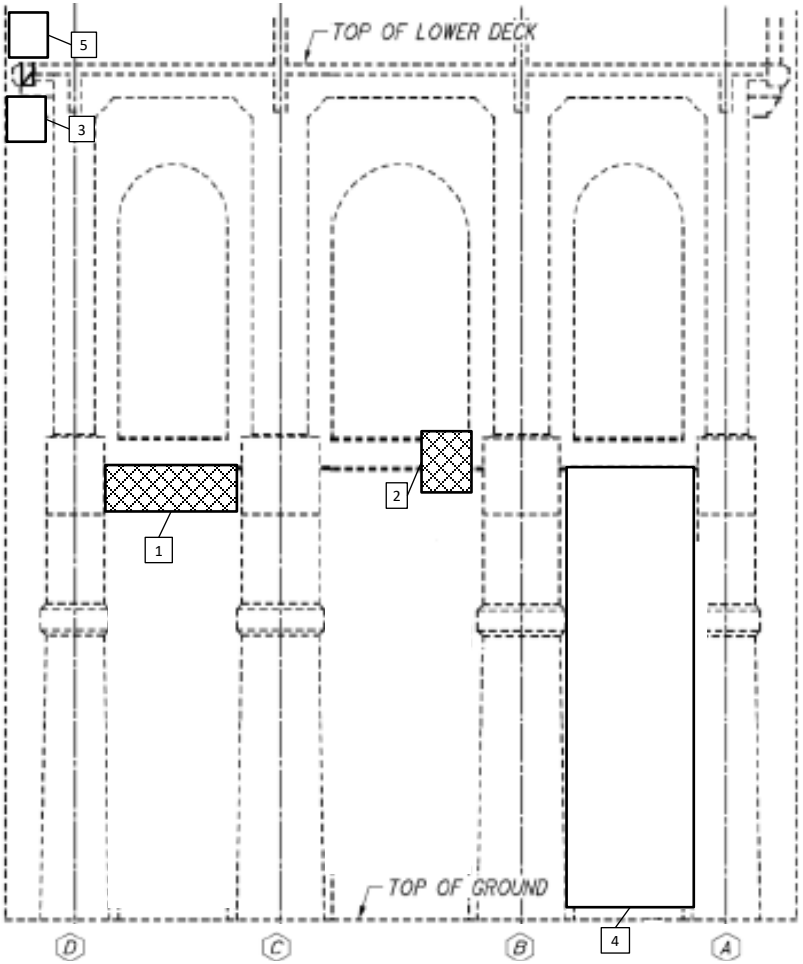
PIER 3 – EAST ELEVATION



PIER 3 – WEST ELEVATION

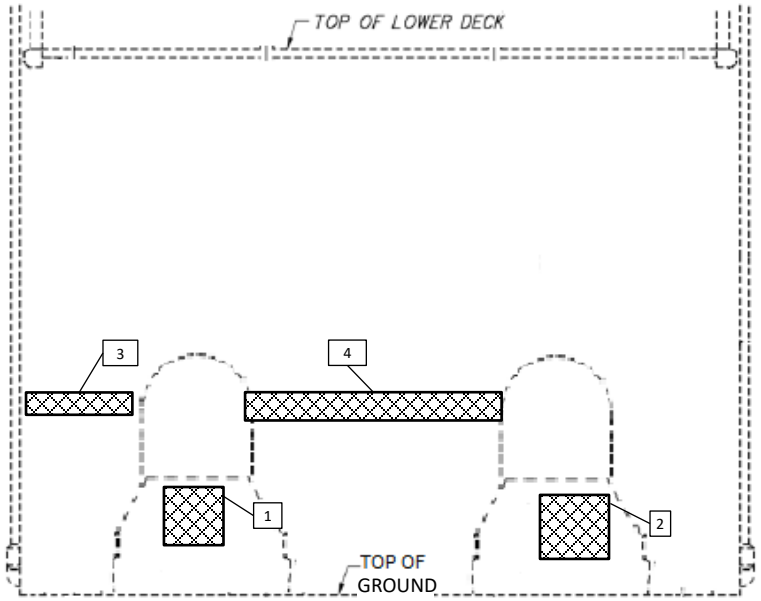
Pier 3 - East Elevation Deficiencies	
#	Deficiency
1	Corner Spall
2	Map Cracking - 144 SF
3	Vine growth covering concrete

Pier 3 - West Elevation Deficiencies	
#	Deficiency
1	Map Cracking - 80 SF
2	Spall - 1 SF
3	Base of pier has 1" D abrasion for 1' above the waterline. Embankment is steep and erodible despite placement of rubble rip rap.
4	Spall w/ exp. Reinf., 1.5" D - 5 SF



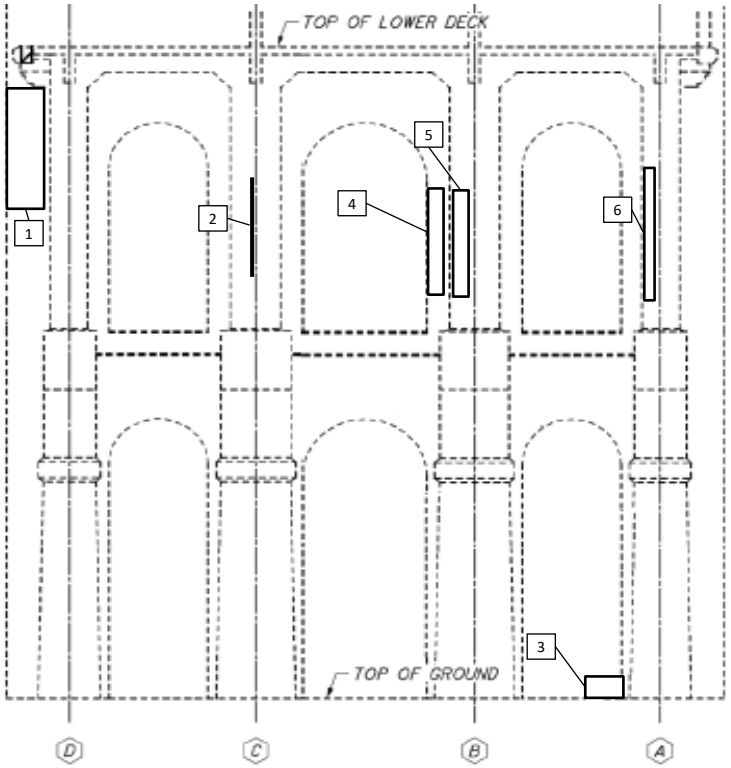
PIER 4 – EAST ELEVATION

Pier 4 - East Elevation Deficiencies	
#	Deficiency
1	Map Cracking w/ some Delam. - 32 SF
2	Map Cracking - 16 SF
3	Spalling - 1 SF
4	Map Cracking, Debonded Patching, Delam. - 600 SF
5	Incomplete Repair - 2 SF



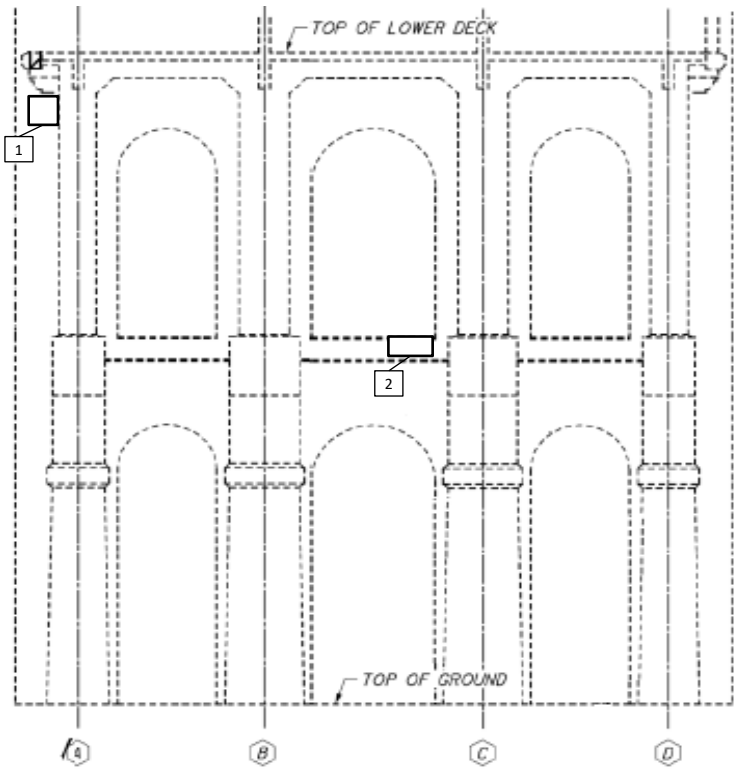
PIER 4 – WEST ELEVATION

Pier 4 - West Elevation Deficiencies	
#	Deficiency
1	Map Cracking - 144 SF
2	Map Cracking - 144 SF
3	Map Cracking - 20 SF
4	Map Cracking and Delamination - 170 SF



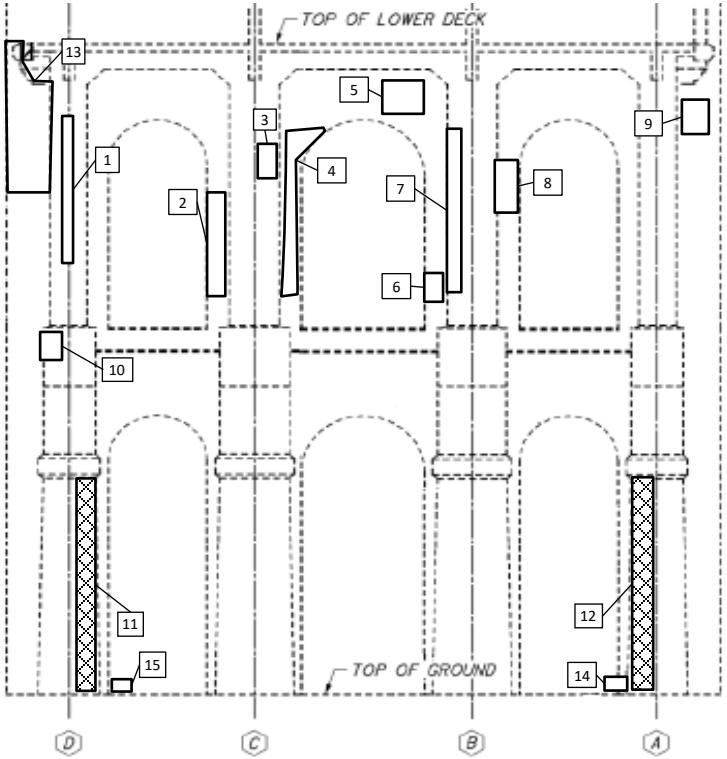
PIER 5 – EAST ELEVATION

Pier 5 - East Elevation Deficiencies	
#	Deficiency
1	Delamination - 40 SF and Spall w/ exp. Reinf. - 10 SF, 8" D
2	Delamination w/ heavy cracking - 40 SF
3	Catch basin shifted and spalled w/ exp. Reinf.
4	Delamination - 70 SF
5	Delamination - 35 SF
6	Delamination - 20 SF



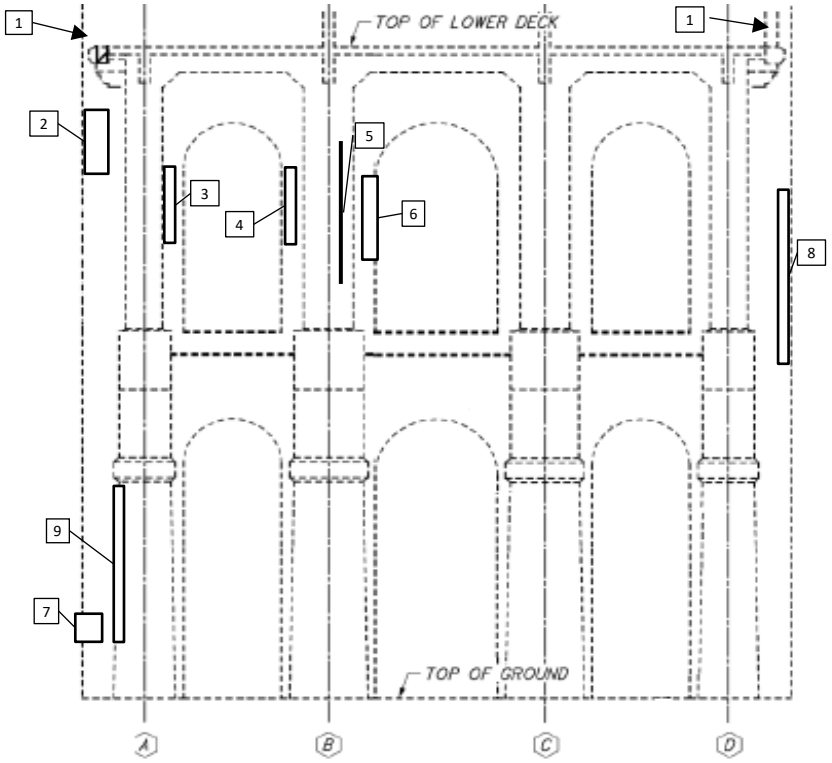
PIER 5 – WEST ELEVATION

Pier 5 - East Elevation Deficiencies	
#	Deficiency
1	Delamination - 10 SF
2	Delamination - 6 SF



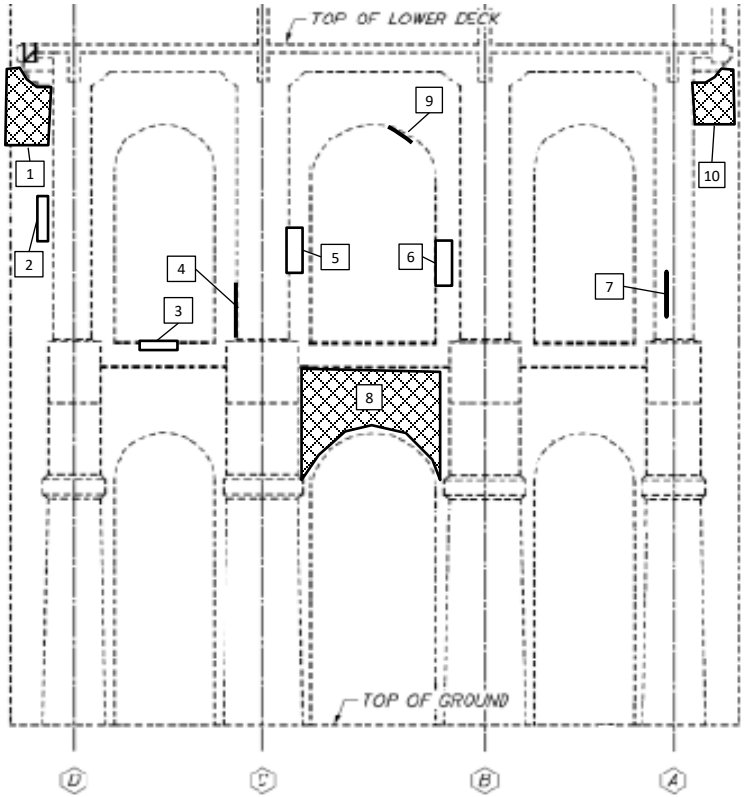
PIER 6 – EAST ELEVATION

Pier 6 - East Elevation Deficiencies			
#	Deficiency	#	Deficiency
1	Delamination - 30 SF	10	Spall, 6" D - 15 SF
2	Delamination - 80 SF	11	Map Cracking (inside face) - 60 SF
3	Delamination - 5 SF		
4	Delamination - 20 SF	12	Map Cracking - 60 SF
5	Delamination - 10 SF	13	Delam. w/ Spall w/ exp. Reinf. - 40 SF
6	Delamination - 20 SF		
7	Delamination - 35 SF	14	Catch basin cover has shifted.
8	Delamination - 15 SF		
9	Delamination- 20 SF Spall - 5 SF	15	Catch Basin cover rotated and shifted.



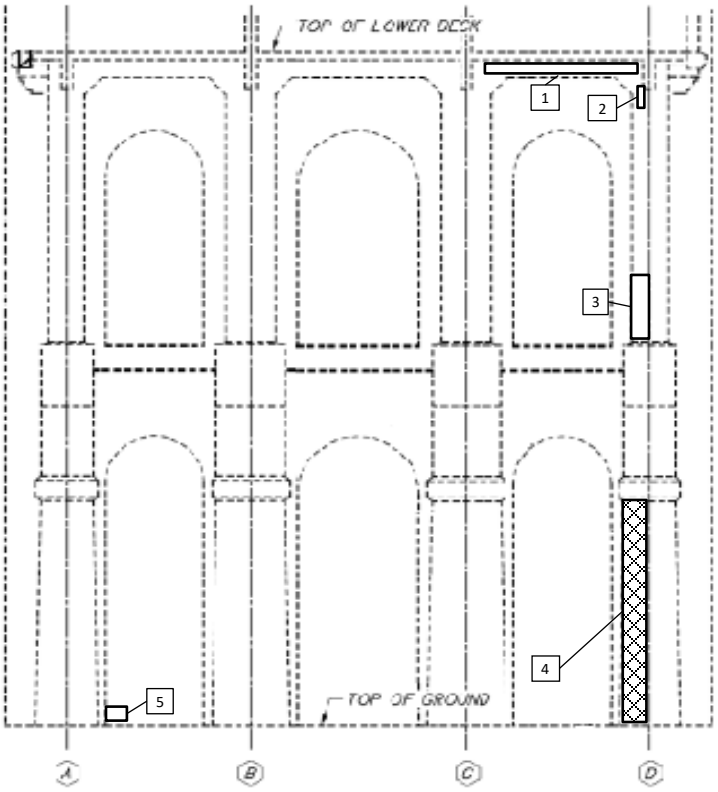
PIER 6 – WEST ELEVATION

Pier 6 - West Elevation Deficiencies			
#	Deficiency	#	Deficiency
1	The top West Pylon is pulling away 3/4". The top East Pylon is pulling away 2-1/4".	6	Delamination - 50 SF
		7	Spall - 3 SF
		8	Delam. w/ Spall (outside face) - 210 SF
2	Spall - 5 SF, 7" D	9	1/8" crack (outside face) - 20 LF
3	Delamination - 15 SF		
4	Delamination - 15 SF		
5	Delamination - 30 SF (south face)		



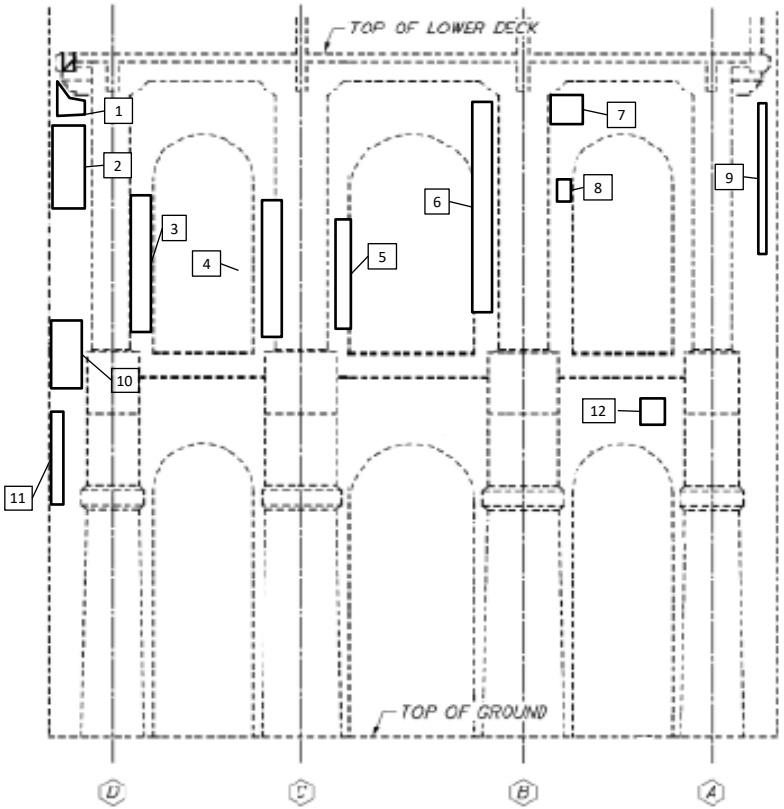
PIER 7 – EAST ELEVATION

Pier 7 - East Elevation Deficiencies	
#	Deficiency
1	Map Cracking - 30 SF
2	Delamination w/ some spalling - 7 SF
3	Delamination - 8 SF
4	Spall w/ exp. Reinf. (South face) - 3 SF
5	Delamination - 4 SF
6	Delamination - 15 SF
7	Spall w/ exp. Reinf. - 6 SF
8	Map Cracking w/ some delamination - 30 SF
9	Delamination - 2 SF
10	Delamination - 24 SF



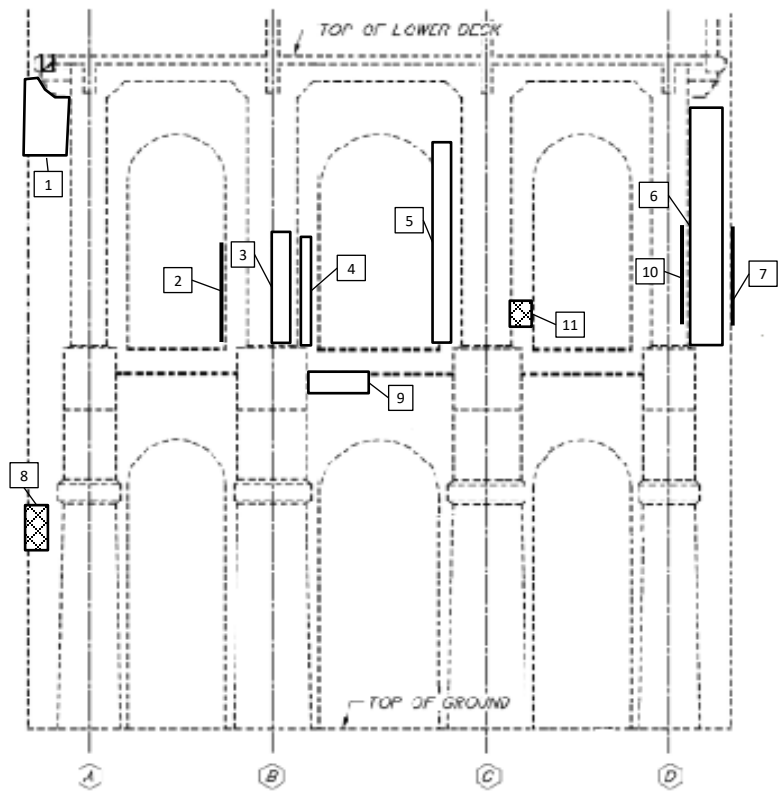
PIER 7 – WEST ELEVATION

Pier 7 - West Elevation Deficiencies	
#	Deficiency
1	Delamination - 20 SF
2	Delamination - 15 SF
3	Delamination - 10 SF
4	Map Cracking w/ Delamination - 60 SF
5	Catch basin cover has rotated.



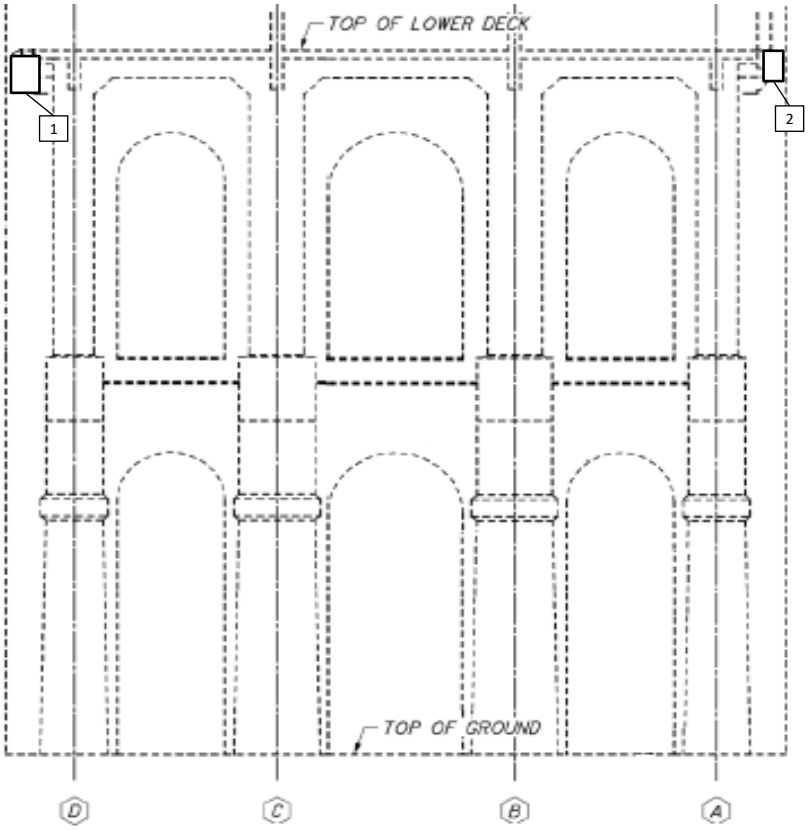
PIER 8 – EAST ELEVATION

Pier 8 - East Elevation Deficiencies			
#	Deficiency	#	Deficiency
1	Spall w/ exp. Reinf. - 9 SF	9	Delam. w/ some spalling w/ exp. Reinf. - 30 SF
2	Delamination - 42 SF		
3	Delamination - 75 SF		
4	Delamination - 100 SF	10	Delamination - 21 SF
5	Delamination - 40 SF	11	Delam. w/ some spalling - 10 SF
6	Delamination - 50 SF		
7	Delamination - 9 SF	12	Delamination - 4 SF
8	Delamination - 2 SF		

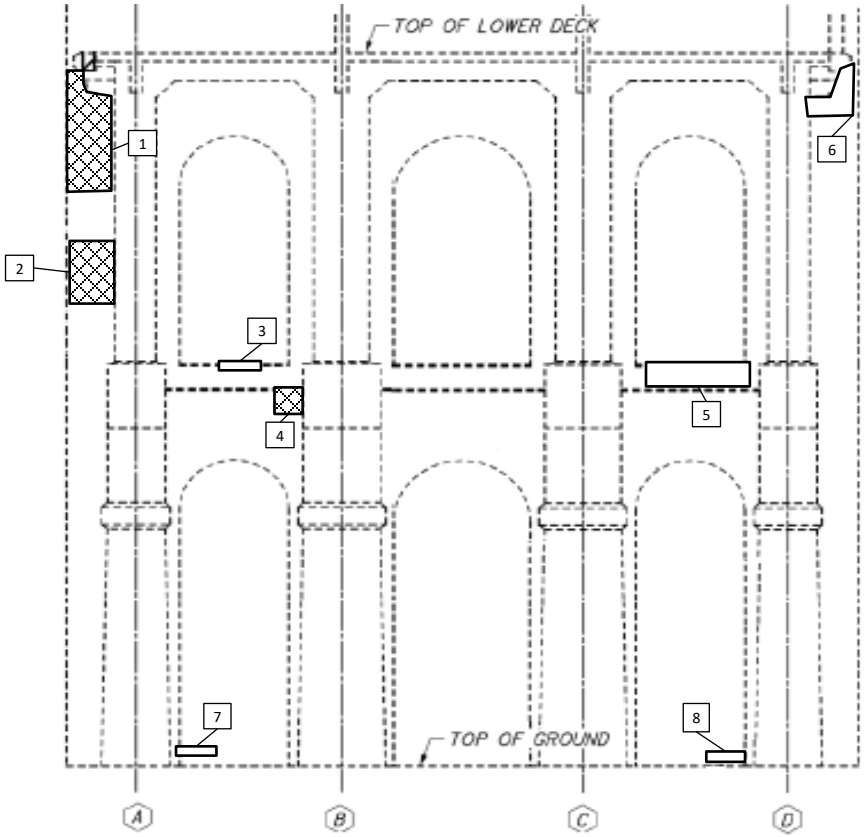


PIER 8 – WEST ELEVATION

Pier 8 - West Elevation Deficiencies			
#	Deficiency	#	Deficiency
1	Delam. w/ some spalling - 32 SF	7	Delamination - 9 SF
		8	Map Cracking - 10 SF
2	Delamination - 15 SF	9	Delamination - 4 SF
3	Delamination - 30 SF	10	Delamination - 10 SF
4	Delamination - 35 SF	11	Delamination - 3 SF
5	Delamination - 60 SF		
6	Delam. w/ some spalling - 68 SF		



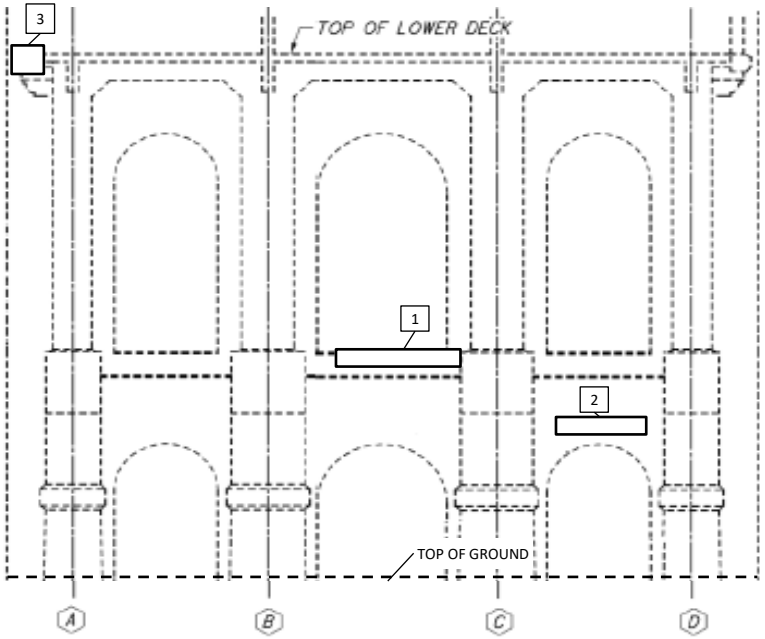
PIER 9 - EAST ELEVATION



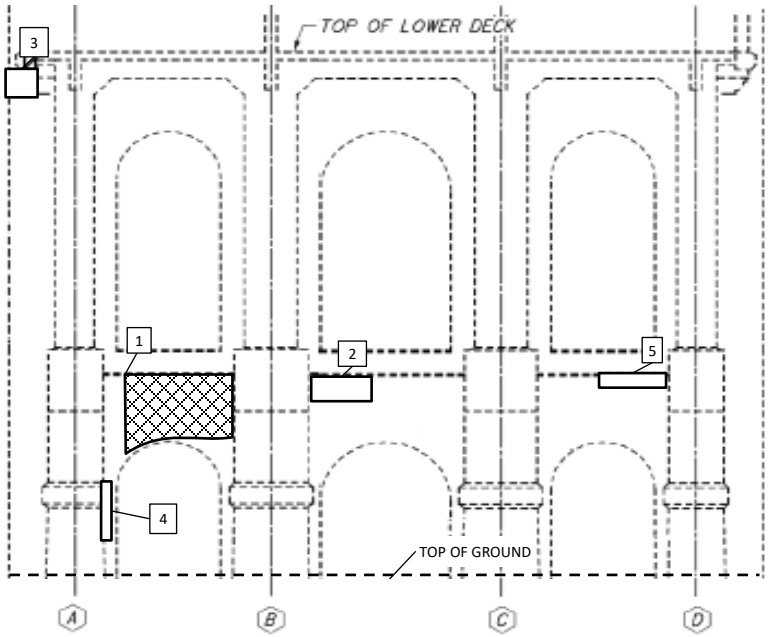
PIER 9 - WEST ELEVATION

Pier 9 - East Elevation Deficiencies	
#	Deficiency
1	Delamination - 2 SF
2	Delamination - 3 SF

Pier 9 - West Elevation Deficiencies			
#	Deficiency	#	Deficiency
1	Map Cracking - 34 SF	6	Delam. w/ Spalling - 20 SF
2	Delam. w/ Spall w/ exp. Reinf. - 8 SF	7	Catch basin cover has shifted and rotated.
3	Delamination - 1 SF		
4	Map Cracking - 9 SF	8	Catch basin conc. frame has shifted.
5	Delamination - 20 SF		



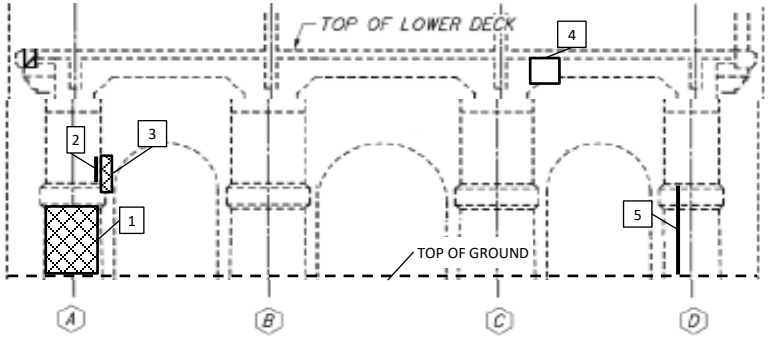
PIER 10 – WEST ELEVATION



PIER 10 – EAST ELEVATION

Pier 10 - West Elevation Deficiencies	
#	Deficiency
1	Delamination - 10 SF
2	Delamination - 21 SF
3	Spall - 5 SF

Pier 10 - East Elevation Deficiencies	
#	Deficiency
1	Map Cracking - 30 SF
2	Delamination - 3 SF
3	Spall - 2 SF
4	Map Cracking - 15 SF
5	Poor Patching / Delamination - 8 SF



PIER 11 - WEST ELEVATION

Pier 11 - West Elevation Deficiencies	
#	Deficiency
1	Map Cracking - 30 SF
2	Map Cracking - 6 SF
3	Delamination and Map Cracking - 10 SF
4	Delamination - 2 SF
5	Delamination (Inside face) - 4 SF

APPENDIX D – ASSETWISE BRIDGE INSPECTION FIELD REPORT

Inspector:	Rufener,Justin	**Structure Number:**	1800930
Inspection Date:	10/31/2022	**Facility Carried:**	USR 6

Bridge Inspection Report

Ohio Bridge Inspection Summary Report — CUY-00006-1456 (1800930)

2: District	District 12 — 16000 - CLEVELAND (CUY county)	5A: Inventory Route	1 00006
21: Major Maint A/B	01 - State Highway Agency /	7: Facility On	USR 6
225 Routine Main A/B	04 - City or Municipal Highway Agency /	6: Feature Ints	CUY. RIVER & RTA
221 Inspection A/B	01 - State Highway Agency / 01	9: Location	DETROIT/SUPERIOR BRIDGE
220: Inv. Location	DISTRICT 12	Lat, Lon	41.49193438201303 ,-81.70618648755347

Condition

58: Deck	**6 - Satisfactory Condition**
58.01 Wearing Surface	8 - Very Good (isolated or minor problems)
58.02 Joint	6- Satisfactory (isolated leaking)
59: Superstructure	**5 - Fair Condition**
59.01 Paint & PCS	6 - Satisfactory (5-10% corr.)
60: Substructure	**6 - Satisfactory Condition**
61: Channel	**6**
61.01 Scour	**7 - Good**
62: Culverts	**N - Not Applicable**
67.01 GA	**5**

Appraisal

Sufficiency Rating	65.6 SD/FO 2 - FO
36: Rail, Tr, Gd, Term Std	1 N 1 0
72: Approach Alignment	8 - Equal to present desirable criteria
113: Scour Critical	8 - Stable for scour conditions
71: Waterway Adequacy	8 - Bridge Above Approaches

Geometric

48: Max Span Length (ft)	591.0
49: Structure Length (ft)	2656.0
52: Deck Width, Out-To-Out (ft)	85.2
424: Deck Area (sf)	226291.2
32: Appr Roadway Width (ft)	84.0
51: Road Width, Curb-Curb (ft)	72.0
50A: Curb/SW Width: Left (ft)	5
50A: Curb/SW Width: Right (ft)	5
34: Skew (deg)	0
33: Bridge Median	3 - Closed median with non-mountable barriers
54B: Min Vert Underclearance (ft)	30
336A: Min Vert Clrnce IR Cardinal (ft)	14
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 (%)	110

Structure Type

43: Bridge Type	3 - Steel 12 - Arch - Thru N- Not Applicable
45: Spans Main / Approach	1 / 12
107: Deck Type	1 - Concrete Cast-in-Place
408: Composite Deck	Y - Composite Construction
414A Joint Type 1	8 - Elastomeric Strip Seal
414B: Joint Type 2	3 - Compression Seal
108A: Wearing Surface	1 - Monolithic Concrete (concurrently placed with structural deck) N- Not Applicable
422: WS Date	11/15/1996
423: WS Thick (in)	1.0
482: Protective Coating	5 - Paint System OZEU
483: PCS Date	07/15/1997
453: Bearing Type 1	8 - Fixed Arch-Rib
455: Bearing Type 2	3 - Sliding (Bronze)
528: Foundn: Abut Fwd	4 - Spread Footing (on soil)
533: Foundn: Abut Rear	4 - Spread Footing (on Soil)
536: Foundn: Pier 1	N - None (Such as most Culverts)
539: Foundn: Pier 2	N - None (Such as most Culverts)

Age and Service

27: Year Built/ 106 Rehab	1917 / 1997
42A: Service On	5 - Highway-pedestrian
42B: Service Under	7 - Railroad - waterway
28A: Lanes on	06
28B: Lanes Under	00
19: Bypass Length	2
29: ADT	20094
109: % Trucks (%)	1

Inspections

		Months	
90: Routine Insp.		12	10/31/2022
92A: FCM Insp.	Y	12	10/14/2022
92B: Dive Insp.	Y	60	07/08/2020
92C: Special Insp.	N	0	
92D: UBIT Insp.	N	0	12/23/2016
92E: Drone Insp.	N	0	

Inspector:	Rufener,Justin	**Structure Number:**	1800930
Inspection Date:	10/31/2022	**Facility Carried:**	USR 6

Bridge Inspection Report

704: Analysis Date	12/09/2019	Inspector	Rufener,Justin
63: Analysis Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.		

Inspector: Rufener,Justin **Structure Number:** 1800930

Inspection Date: 10/31/2022 **Facility Carried:** USR 6

Bridge Inspection Report

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
12-Reinforced Concrete Deck	3 - Mod.	332900	sq. ft.	303176	24924	4800	0
	CS2: Areas of minor cracking with efflorescence, patching, delamination and saturation CS3: Areas of spalling with and without exposed reinforcing.						
510-Wearing Surfaces		246755	sq. ft.	234380	12375	0	0
	CS2: Areas of map cracking. Moderate transverse cracks in asphalt wearing surface.						
110-Reinforced Concrete Open Girder/Beam	3 - Mod.	7394	ft.	6094	1100	200	0
	CS2: Areas of delamination and efflorescence. CS3: Areas of spalling with exposed reinforcement.						
113-Steel Stringer	3 - Mod.	10638	ft.	10238	250	150	0
	CS2: Areas of active corrosion. CS3: Areas of active and painted over minor pitting. Isolated moderate section loss with corrosion holes.						
515-Steel Protective Coating		101200	sq. ft.	95640	5060	500	0
	CS2: Areas of surface dulling and loss of effectiveness (substantially effective) CS3: Isolated areas of limited effectiveness						
120-Steel Truss	3 - Mod.	1182	ft.	490	500	192	0
	CS2: Areas of active surface corrosion CS3: Areas of active and painted over pitting, pack rust, and rivet head loss.						
515-Steel Protective Coating		60700	sq. ft.	44930	6070	9100	600
	CS2: Areas of surface dulling, loss of effectiveness (substantially effective), and peeling topcoat CS3: Areas of limited effectiveness and peeling paint.						
144-Reinforced Concrete Arch	3 - Mod.	8040	ft.	6740	1200	100	0
	CS2: Areas of minor to moderate cracking, poor patching and delamination on Columns and Arch CS3: Areas of spalling with and without exposed reinforcing on Columns and Arch						
152-Steel Floor Beam	3 - Mod.	3925	ft.	3475	250	200	0
	CS2: Areas of active surface corrosion CS3: Areas of active and painted over pitting, and painted over perforations at deck openings.						
515-Steel Protective Coating		52950	sq. ft.	49770	2650	530	0
	CS2: Areas of surface dulling and loss of effectiveness (substantially effective) CS3: Isolated areas of limited effectiveness						

Inspector: Rufener,Justin **Structure Number:** 1800930

Inspection Date: 10/31/2022 **Facility Carried:** USR 6

Bridge Inspection Report

	Environment	Total Quantity	Units	Condition State 1	Condition State 2	Condition State 3	Condition State 4
155-Reinforced Concrete Floor Beam	3 - Mod.	33543	ft.	27543	5000	1000	0
	CS2: Areas of minor to moderate cracking, poor patching and delamination CS3: Areas of spalling with and without exposed reinforcing						
161-Steel Pin and Pin & Hanger Assembly or both	3 - Mod.	30	each	27	3	0	0
	CS2: Minor painted over pitting on several eyebars below upper deck.						
162-Steel Gusset Plate	3 - Mod.	100	each	20	47	33	0
	CS2: Areas of active surface corrosion CS3: Areas of active and painted over pitting and rivet head loss						
205-Reinforced Concrete Column	3 - Mod.	513	each	358	55	100	0
	CS2: Locations of map cracking, failing patches and delaminations. CS3: Location of spalling with and without exposed reinforcing						
210-Reinforced Concrete Pier Wall	3 - Mod.	200	ft.	100	50	50	0
	CS2: Areas of map cracking and delamination CS3: Deep spalls at base of Pier 3. Interior faces of Piers 3 & 4 have areas of spalling with exposed reinforcing.						
215-Reinforced Concrete Abutment	3 - Mod.	3459	ft.	3059	200	200	0
	CS2: Areas of cracking with staining and delamination CS3: Areas of spalling						
300-Strip Seal Expansion Joint	3 - Mod.	2579	ft.	1479	1000	100	0
	CS2: Areas of minor leakage and debris impaction. CS3: Areas of active leakage and broken welds in joint armor.						
313-Fixed Bearing	3 - Mod.	4	each	0	4	0	0
	CS3: Pack rust around pins.						
330-Metal Bridge Railing	3 - Mod.	1366	ft.	1366	0	0	0
331-Reinforced Concrete Bridge Railing	3 - Mod.	5312	ft.	5208	100	4	0
	CS2: Areas of minor cracking with staining. CS3: Isolated spalling						
815-Drainage	3 - Mod.	28	each	18	6	2	2
	CS2: Several partially plugged scuppers. CS3: Several plugged downspouts CS4: Several fully plugged scupper inlets						
830-Abutment Backwall	3 - Mod.	263	ft.	263	0	0	0

Inspector:	Rufener,Justin	**Structure Number:**	1800930
Inspection Date:	10/31/2022	**Facility Carried:**	USR 6

Bridge Inspection Report

CUY-00006-1456 _(1800930)

ODOT District:	District 12					Date Built:	07/01/1917
Major Maint:	01 - State Highway Agency	Facility Carried:	USR 6	Traffic On:	5 - Highway-pedestrian	Rehab Date:	01/01/1997
Routine Maint:	04 - City or Municipal Highway Agency	Feature Inters:	CUY. RIVER & RTA	Traffic Under:	7 - Railroad - waterway	Insp. Resp A:	01 - State Highway Agency
FIPS Code:	16000 - CLEVELAND (CUY county)	Location:	DISTRICT 12		DETROIT/SUPERIOR BRIDGE	Insp Resp B:	01 - State Highway Agency

Inspector Rufener,Justin Inspection Date 10/31/2022 Reviewer Rufener,Justin

Inspector Comments - Deck and Approach

Deck

Element
12 – Reinforced Concrete Deck (SF)

The reinforced concrete deck is in Satisfactory condition.
The deck is divided into several sections as detailed below:

Detroit Avenue Tunnel: During the 1995-1997
rehabilitation a new reinforced concrete slab was placed on top of the original slab. The new slab was designed to support live and dead loads, with the original slab offering no structural support. The top and bottom surfaces for the new slab is not visible and assumed to be in good condition despite the poor and critical conditions of the original tunnel slab beneath.

West 25th Street Tunnel: The West 25th Street tunnel ceiling is in satisfactory condition, with areas of saturation, isolated delaminated areas and some shallow spalling with exposed reinforcing.

West Station: The West Station ceiling is in fair condition
and has areas of spalling, cracking and efflorescence, active water infiltration, and exposed reinforcing steel.

Spans
1A, 1B, and 1 through 13: The upper deck floor in the main spans is in satisfactory condition. There are isolated cracks with some efflorescence, sound and unsound patches and spalls, some with exposed reinforcing. There are numerous areas of moisture staining, some of which have mottling, efflorescence and rust staining.

East
Station: The East Station ceiling is overall in good condition with scattered cracking with efflorescence.

Lower Deck: The lower deck floor is not open to vehicular or pedestrian traffic is therefore not included as part of the element quantities. The lower deck floor is in good condition and consists of reinforced concrete with metal stay-in-place forms in Spans 1 through 3, and Spans 5 through 13. In isolated locations, the stay-in-place forms have active corrosion. In Span 4, the lower deck is an open steel grid type in middle section, and fiberglass grid in the exterior sections.

See the inspection report for additional details.

Element 300 – Strip Seal Expansion Joint
(LF)

The
expansion joints are overall in Satisfactory condition. Joints typically have sections with loose debris and edge spalls along the joint armor. There are some areas of tearing in the joint seals accompanied by active

leakage, and minor damage to joint armor. See the inspection report for additional details.

Element 330 – Metal Bridge Railing (LF)

The median railings are in **Good** condition. The median railings are located along the edges of the roadway in Span 4 to protect the truss and hangers from vehicle impact.

Element 331 – Reinforced Concrete Bridge Railing (LF)

The concrete railings are in Good condition. The railings on the north and south side of the bridge consist of a reinforced concrete railing with an aluminum fence on top. All concrete railing is in good condition with minor cracking, staining, and isolated spalling. The fence has isolated areas of minor damage. See the inspection report for additional details.

Element 510 – Wearing Surface (SF)

The wearing surface is in Good condition. In Spans 1A – 13 and the East Station the wearing surface is a micro silica modified concrete, which was placed in 2019. There are isolated locations of map cracking in the concrete wearing surface. Above the Detroit Avenue Tunnel, West 25th Street Tunnel and West Station, the wearing surface is asphalt. The asphalt has areas of transverse and map cracking. See the inspection report for additional details.

Element 815 – Drainage (EA)

The deck drainage is in Fair condition. The West Abutment south downspout is completely clogged at the base of the catch basin. The Pier 1 downspout is completely clogged at the base of the catch basin and is disconnecting at a coupler above the catch basin. At Pier 3, the south downspout is disconnected at the base of the pier, allowing drainage on the pier face. At Piers 5, 6, 7 and 9, some of the catch basins and covers show signs of movement or damage. The north sidewalk longitudinal trench drains are filled with debris and active vegetation growth, and are not functioning. Some of the scupper inlets are fully or partially clogged. At Pier 5 on the North Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck, allowing roadway drainage onto the maintenance deck. See the inspection report for additional details.

Curb/Sidewalk

The concrete curb and sidewalk are in Satisfactory condition. The curbs and sidewalks have areas of cracking, delamination, and spalling. The steel curb plates have widespread surface corrosion. See the inspection report for additional details.

Lighting

The lighting on the bridge is in **Fair** condition. Architectural light pole bases on the north sidewalk in Spans 5, 8 and 11 have cracked and are broken. Two of the architectural lights on the north sidewalk, and numerous of the taller, cobra style roadway lights are not functioning. All of the exterior pier shaft light brackets have paint failure and corrosion with minor section loss present. Many of the architectural lights attached to the lower deck fascia are not functioning, and several are visually broken.

Signs

The signs on the
structure are in Good condition.

Approach

Approach Wearing Surface

The approach wearing surfaces are in Satisfactory condition. There are some areas of transverse and map cracking.

Embankment

The approach
embankments are in Fair condition. The embankment under Spans 1 through 3 has several slope depressions. This embankment was primarily loose soil placed over demolition debris. Beneath this fill is are two concrete struts between Pier 2 and 3 used to maintain stability during construction. The south strut is preventing portions of the fill from sliding into the Cuyahoga River. This embankment is being monitored with slope inclinometers maintained by ODOT District 12. See the
inspection report for additional details.

The embankment
along the south side of Spans 1A and 1B has significant erosion for the full length. At the west end of the erosion, there is a 15’ diameter x 4’ deep erosion ditch around a manhole. An erosion ditch extends from the manhole towards the east typically 3’ W x 2’ D. This erosion is relatively unchanged from the 2020 inspection. Tower B South, which is in this area, is leaning due to slope instability, as previously discussed. See the inspection report for additional details.

Guardrail

The approach
guardrails are in Good condition with some minor impact scrapes in the concrete rail.

Security Items

There are locations where the structure and structure right-of-way can be accessed by non-bridge personnel. The fence which encloses the area under Span 1 and along the south sides of Spans 1A and 1B is accessible due to an unlocked gate on the southeast end of Pier 1, and two locations where holes have been cut into the fence on the south side of Spans 1A & 1B. Due to these openings, there are multiple homeless encampments within the fenced in area. Preventative access steel mesh installed outside Span 1A near Tower A to prevent access has failed. Security fencing installed around Piers 2 and 3 can easily be surpassed, and there is evidence of a homeless encampment inside of Pier 3.

A chain link
enclosure for the Center Street Bridge operator’s vehicle on the west side of Pier 4 allows vandals to climb the fencing cover to access the Span 4 truss. From here the vandals have vandalized Pier 4 and have access to the truss lower

chord and potentially the lower deck.

Inspector Comments - General Appraisal

Superstructure

Element 110 - Reinforced Concrete Beam (LF)

The beams are in overall Fair condition. This element consists of the longitudinal beams in the Detroit Avenue Tunnel, West 25th Street Tunnel, and West Station. The concrete beams have delaminations, efflorescence, and some areas of spalling with exposed reinforcing. See the inspection report for additional details.

Element 144 – Reinforced Concrete Arch (LF)

The concrete arches are in Fair condition. This element encompasses the concrete arches and arch columns. The concrete arches in Spans 5 through 10, Span 13 and portions of Span 3 were patched, crack injected and then wrapped on the underside with FRP to prevent future spalling. Select columns were also patched. The concrete arches and columns that were not repaired typically have areas of cracking, delamination, poor patching and spalling with and without exposed reinforcing. The concrete jack arches connecting the columns below the upper and maintenance decks have spalls with exposed reinforcing steel, cracks, and delaminated areas.

See the
inspection report for additional details.

Element 155 – Reinforced Concrete Floor Beam (LF)

The concrete floorbeams in Spans 1A, 1B, 1 through 3, and Spans 5 through 13 are in Satisfactory condition. The floorbeams have isolated spalls with and without exposed reinforcing, cracking, delaminations, and areas of poor patching. The lower deck floorbeams tend to be in worse condition than the upper deck floorbeams. The structural corbels are included in the rating of this element exhibit similar defects as the rest of the floorbeams. The lower deck floorbeams in the East Station have the bottom mat of reinforcing steel exposed. This deterioration has changed little since the 1980s, but they carry no substantial live load. As part of the most recent rehabilitation, the undersides of lower deck floorbeams in Spans 5 through 10, 13 and portions of Span 3 were fiber wrapped after patching, to prevent future spalling.

See the
inspection report for additional details.

Element 113 – Steel Stringer (LF)

The stringers are in Satisfactory condition. There are 18 lines of stringers in the upper deck and 12 in the lower deck. The upper deck stringers have shear studs welded to the top flange providing composite action with the deck. The upper and lower deck stringers in Panels 4, 5, 5', and 4' were replaced in 1995. The upper deck stringers are in

good condition. The original curb stringers of Lines E and N have areas of painted over pitting, with some active corrosion.

The lower deck is not open to vehicular or pedestrian traffic the stringers are therefore not included as part of the element quantities. The stringers supporting the steel grid deck are in good condition. Stringers D, E, I and J, which support only their own dead load, often have painted over advanced section loss and perforations at the floorbeams and saddle bearings. Stinger K, which supports the south fiberglass pedestrian deck has a similar locations of advanced section loss. The rest of the stringers supporting the outer pedestrian fiberglass grid deck are in good condition.

See the inspection report for additional details.

Element 120 – Steel Truss (LF)

The steel truss is overall in **Satisfactory** condition. There are areas of pack rust, pitting and surface corrosion, mainly at and below the upper deck. Perforations, many of which have been cleaned and painted over are present in the diaphragm plates and lacing bars. At the eyebar connections there are areas of painted over pitting in the web plates.

See the inspection report for additional details.

Element 152 – Steel Floor Beam (LF)

The steel floorbeams are in **Satisfactory** condition. The floorbeams typically have painted over perforations near the deck openings at the truss lines, with repair plates welded in place at some of these locations. Active surface corrosion is present at due to ongoing water infiltration at the deck openings.

On lower deck floorbeams 10, 12 and 11' through 6' there are cracks along the weld of the stiffening plates to the top flange at the north truss line. Some of the crack lengths have changed in length from the 2020 Inspection. The cracks at Floorbeam 12 were not noted in previous inspections. Some of the cracks have increased in length from the 2021 Inspection.

See the inspection report for additional details.

Element 161 – Steel Pin & Hanger Assembly (EA)

The pins, hangers and hinges are in **Good** condition with no significant deficiencies noted. Minor painted over pitting was noted on some eye-bars below the upper deck. There is active corrosion on some of the hangers above the previous zonal painting. See the inspection report for additional details.

Element 162 – Steel Gusset Plates (EA)

The truss gusset plates are in **Fair** condition. The gusset plates typically have areas of active surface corrosion. The lower chord gusset plates below the upper deck typically have painted over pitting and reactivating corrosion along the top of the lower chord. At North Truss L2, the north gusset plate has 2' L x 3" H x up to 1/8" D reactivating pitting at the lower chord interface on the south face and 2' L x up to 3" H x up to 5/16" D pitting on the north face. The south gusset plate has 30" L x up to 4" H x up to 3/8" D pitting on the south face with reactivating corrosion and 2' L x up to 3" H x up to 1/16" D pitting on the north face. At the North Truss L3, the gusset plates have pitting up to 3/16" D. In other scattered locations, the gusset plates have areas of pitting. See the inspection report for additional details.

Lateral Bracing & Sway Bracing

The lateral bracing and sway bracing is in **Satisfactory** condition with isolated areas of active surface corrosion, pack rust, and advanced section loss including perforations. See the inspection report for additional details.

Element 313 – Fixed Bearing (EA)

The bearings are in Fair condition with some pack rust around the pins, and surface corrosion noted on the interior faces of all four bearing castings. The non-structural bearing pin cover plates have cracks up to 7 inches long at L0 and L0' on both trusses. The north pin cover at L0 on the north truss has fallen off. There is advanced section loss of some of the anchor bolt and nuts

Between the deck underside and the top of the transverse floorbeams over Piers 11 & 12, there are 3" H concrete pedestals with galvanized steel plates sitting on top and between each pedestal. In several locations these plates have moved and in some cases are no longer support the deck underside. See the inspection report for additional details.

Item 515 – Steel Protective Coating (SF)

The protective coating system (PCS) is in **Satisfactory** condition. Areas of corrosion, peeling and failed paint are present on the main truss members below the lower deck. The structural steel between the upper and lower decks was repainted in 2014-2015 and is in good condition. The protective coating system above the upper deck has areas of fading and surface corrosion with minor rust staining.

Fatigue Prone Details

The fatigue prone details are in **Fair** condition. Stiffening retrofit plates welded to the top flange of the lower deck floorbeams at the truss lines are classified as Category E fatigue details. Cracks in the fillet welds are present at several locations. Refer to *Element 152 – Steel Floor Beam* above for additional details on crack locations and growth.

Utilities

The utilities are in Satisfactory condition. The lower deck telephone junction chambers and supports are corroded due to saltwater infiltration through the manhole above. At Pier 5 on the North Side, in Span 6 on the South Side, and in Span 13 on the South Side, there is active leakage coming through the utility entrances in the deck. A utility line mounted below the top deck in the south bay is sagging and making contact with the maintenance deck in several locations. There is a missing electric junction box cover on the south concrete rail in Span 7.

Substructure

Element 205 – Reinforced Concrete Column (EA)

The pier columns are in Satisfactory condition. This item includes the main span pier columns, columns in Spans 1A and 1B, and the columns in the subway tunnels and stations. The main span pier columns have areas of map cracking, failing patching, and delamination. There are also a few areas of minor spalling with exposed reinforcing. The decorative arches above these columns have areas of map cracking, failing patching, delamination and spalling with exposed reinforcing. The remaining columns have areas of failing patching, delamination, and spalling with and without exposed reinforcing.

The decorative towers on the north and south faces of the piers typically have widespread cracking, delamination and spalling with and without exposed reinforcing. The south towers at Piers 5 through 7 are leaning away from bridge, with gaps up to 2¼-in between the top of the tower and the outside face of the upper jack arches. Detailed measurements of the gaps between these towers and the adjacent bridge features are given Table 5 in Appendix B. No change was noted between the current measurements and those taken during the 2020 inspection.

See the inspection report for additional details.

Element 210 – Reinforced Concrete Pier Wall (LF)

The pier walls at Piers 1, 3 and 4 are in Satisfactory condition. The west face of Pier 1 is primarily covered by fill. The exposed portions of the pier walls have areas of map cracking and delamination. Piers 3 and 4 are located adjacent to the Cuyahoga River. The portion of Pier 3 that is exposed to the channel has widespread areas of deep abrasion and numerous spalls. Piers 3 and 4 are cellular type structures, which are open on their Span 3 and 5 faces, respectively. The interiors faces of the walls have areas of delamination and spalling with exposed reinforcing. See the inspection report for additional details.

Element 215 – Reinforced Concrete Abutment (LF)

The abutment walls are in Satisfactory condition. The abutment walls consist of the West and East Abutments and the walls of the Detroit Avenue and West 25th Street Tunnels. The abutments have areas of cracking with minor moisture staining, delamination and some spalling. Some staining appears to be superficial due to leaking deck joints above. In the tunnels, the lower 1-ft to 2-ft of the walls have widespread shallow spalling with exposed reinforcing. The portions of the walls in the tunnels above these areas were repaired as part of the most recent rehabilitation. . See the inspection report for additional details.

Element 830 – Abutment Backwall (LF)

The backwalls are in Good condition. The backwalls consist of the closure panels at the ends of the West 25th Street Tunnel, Detroit Avenue Tunnel, and East Station.

Wingwalls

The wingwalls are in Poor condition. The wingwalls along Spans 1A and 1B and the East Station have cracking and spalling with exposed reinforcement throughout. See the inspection report for additional details.

Tower B South

A section of the rear abutment, south wall at Tower B has through cracks in the wall and associated footing, and is leaning to the south. It has continued to show incremental movement over the past 10+ years. On the interior, the top of the tower is spalled and cracked due to contact with the soffit of the upper level sidewalk. Crack gages have been placed at several locations to monitor the movement of the section. Crack gauges located at the base of Tower B are cracked and slightly displaced. New gauges should be installed to ensure an accurate record of the tower rotation is maintained. See the inspection report for additional details.

West and East Abutment Chambers

The chambers below Spans 1A and 1B on the west approach and below the East Station were inspected, however, they are not included in any of the quantities within this report. There are large spalls and delaminations throughout the chambers with exposed and corroded reinforcing on the walls and ceilings of most of the cells. Horizontal, vertical, diagonal and map cracking with efflorescence and moisture staining are also present throughout all cells. The floors are typically covered in dirt and construction debris. In the west chamber this is heavy cracking around south Tower B (see discussion above for more details), and a second area of significant cracking at the north end of cells 2S through 6S. Crack gauges have been installed to track developments at both of these areas.

Water Infiltration

Standing water was noted in the pedestrian tunnel under the West Station. In the east abutment chamber, most of the lower cells are filled with standing water. The pedestrian tunnel under the East Station is also filled with standing water. Holes drilled in the east abutment to drain some of the standing water had a steady flow of water at the time of inspection.

Slope Protection

The slope protection is in Satisfactory condition, with some areas of erosion and sliding material noted.

Culvert

Inspector Comments - Waterway

Waterway Adequacy

Channel

Alignment

The alignment is in Good 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 with only minor deficiencies. The west bank is vegetated with some dumped rock channel protection. The west bank is protected by a sheet pile wall.

Hydraulic Openings

The hydraulic opening is in Good condition with no major constrictions associated with the bridge.

Navigation Lights

The navigation lights are in Poor condition. None of the upstream lights were functioning at the time of inspection. On the Downstream side, the center and west lights were not functioning. No damage was noted to the light fixtures.

Scour

The scour is in Good condition. An underwater bridge inspection was performed on July 8, 2020. No areas of exposed foundation or significant scour holes were found in the inspection. See the underwater inspection report for additional details.

Scour Critical

APPENDIX E – 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 & Appendix E

District:	12
County-Route-SLM	CUY-006-1456
Structural File Number:	1800930
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 span
Internally Redundant:	Yes/No, some built up riveted members present
System Redundant:	Analysis has not been performed to determine

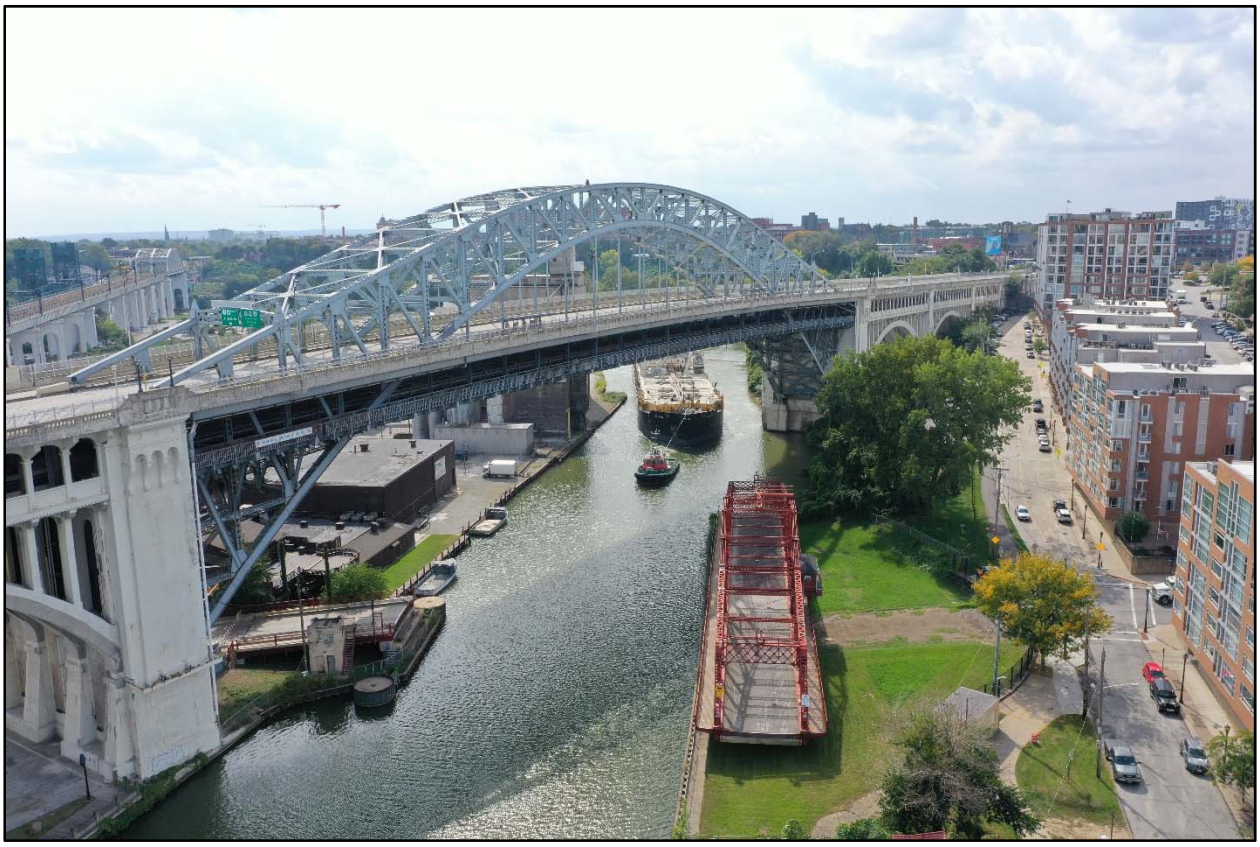


Figure 1: CUY-6-1456 over the Cuyahoga River

Location: The CUY-6-1456 Bridge (Veterans Memorial/Detroit-Superior Bridge) carries three lanes of vehicular traffic and one lane of bike traffic over the Cuyahoga River Valley, local streets, and RTA railroad tracks, in Cleveland, OH.

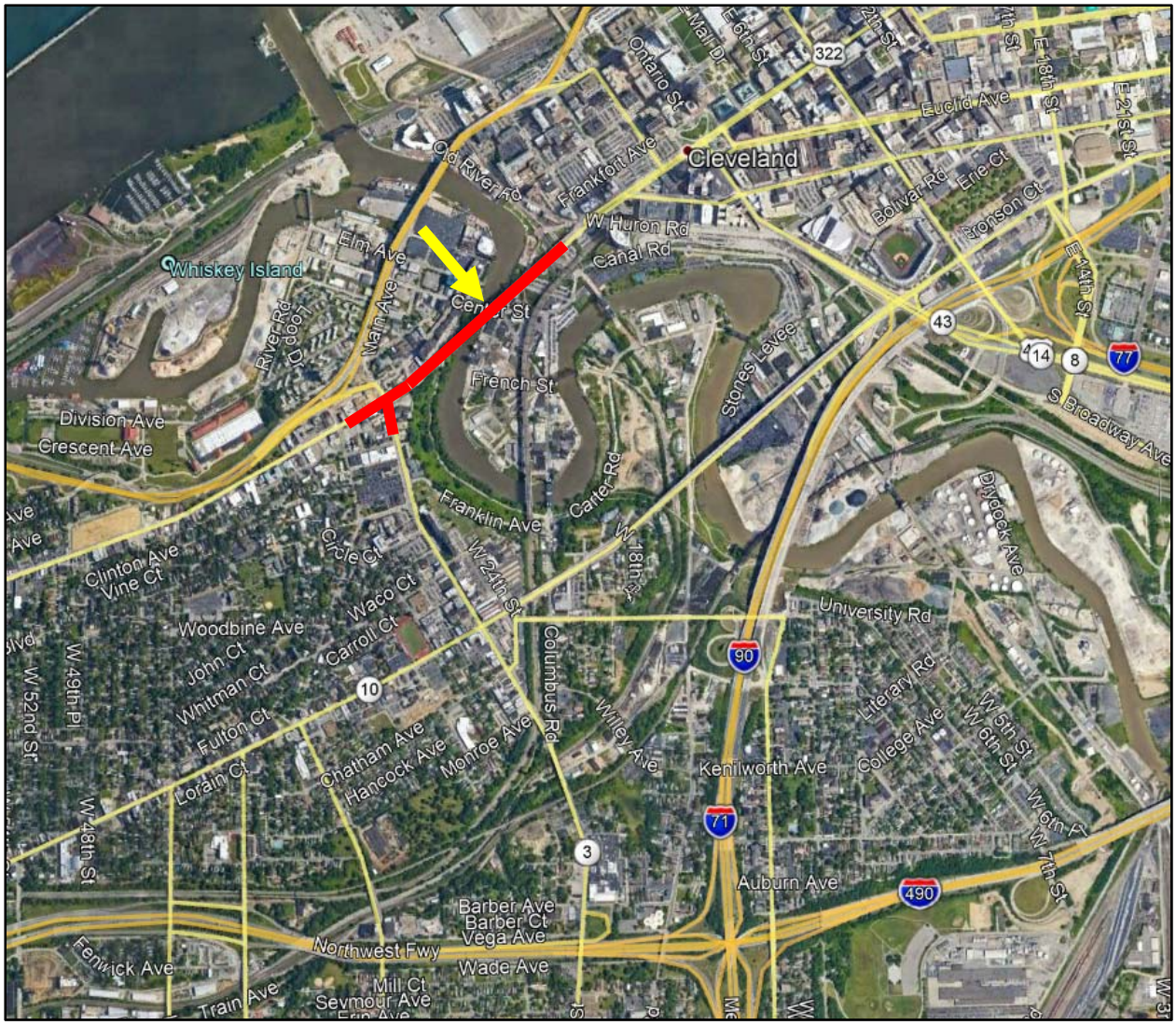


Figure 2: CUY-6-1456 in Cleveland over the Cuyahoga River

Description: The bridge is approximately 2,880 feet long, including 1,673 feet of subway tunnel that is linked by the lower deck. The bridge was constructed from 1912 to 1917. The majority of the main spans are reinforced concrete deck arches. Span 4 is a 591-foot long, three-hinged steel half through arch truss in a Pratt configuration. In this steel arch span, portions of the arch truss, pins, hangers, upper deck floorbeams and upper deck overhang brackets are considered fracture critical (see *Figures 3 & 4*).

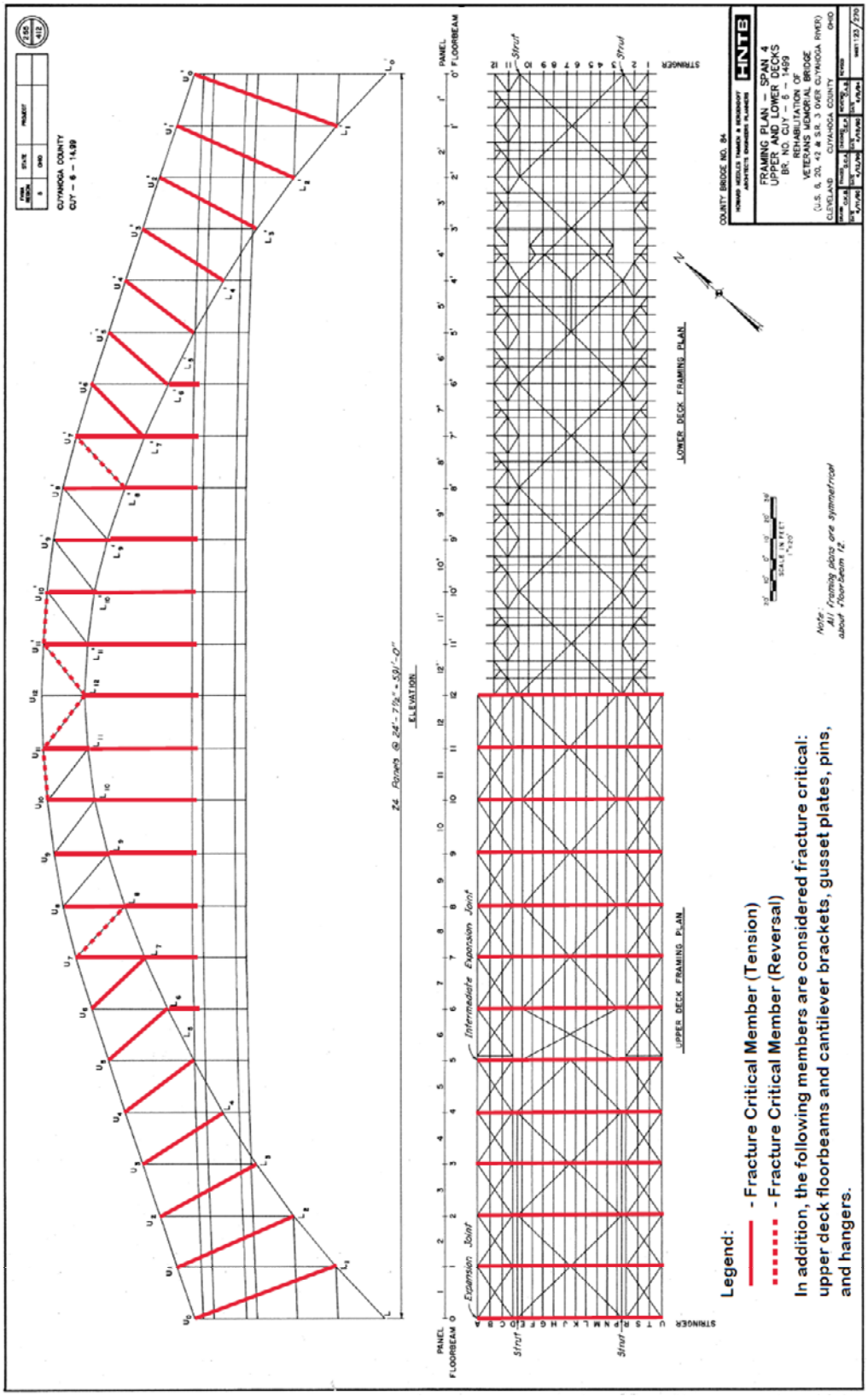


Figure 3: Fracture Critical Member Locations (Highlighted Red)

Fracture Critical Member and Fatigue Prone Connection Identification Plan

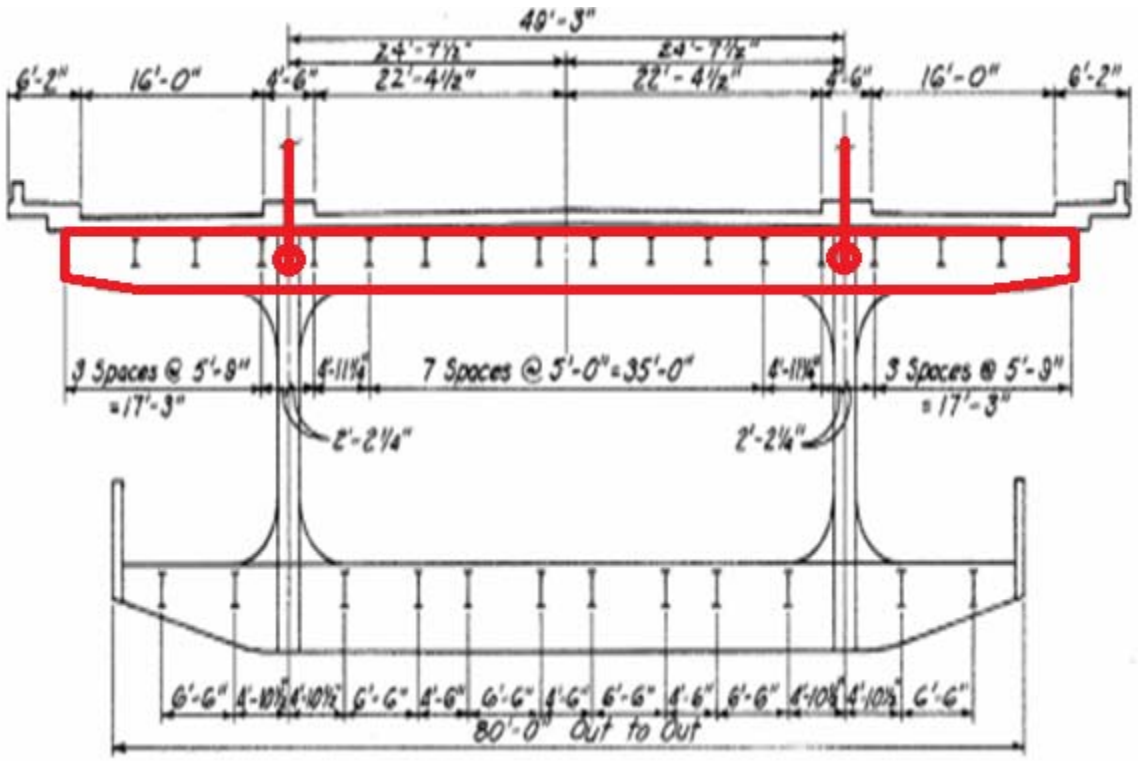


Figure 4: Fracture Critical Member Locations (Highlighted Red)

FCM Access: A combination of aerial work platform, ladder and climbing techniques 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.

Aerial Work Platform / Ladder: 40' straight boom unit placed on lower (maintenance) deck to access upper deck floorbeams, cantilever brackets, and lower pins. This work is assisted with a 24' ladder, placed on the exterior walkways, in areas of utility conflict.

Climbing Techniques: All portions of the arch truss, hangers, pins, and gusset plates.

Known Structural Risk Factors & Fatigue Prone Details

Category reference: AASHTO LRFD Bridge Design Specs, 9th Ed. Table 6.6.1.2.3-1

Photo Reference	Label / Fatigue Category	Where?	Description
1a, 1b	Top Flange Stiffening Plate Retrofit, Fatigue Category E	Lower Deck Floorbeams	Fillet welds connecting top flange stiffening plate retrofits to existing top flange plates at truss lines. Fillet welds have cracked at several locations. No propagation into base metal noted.

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

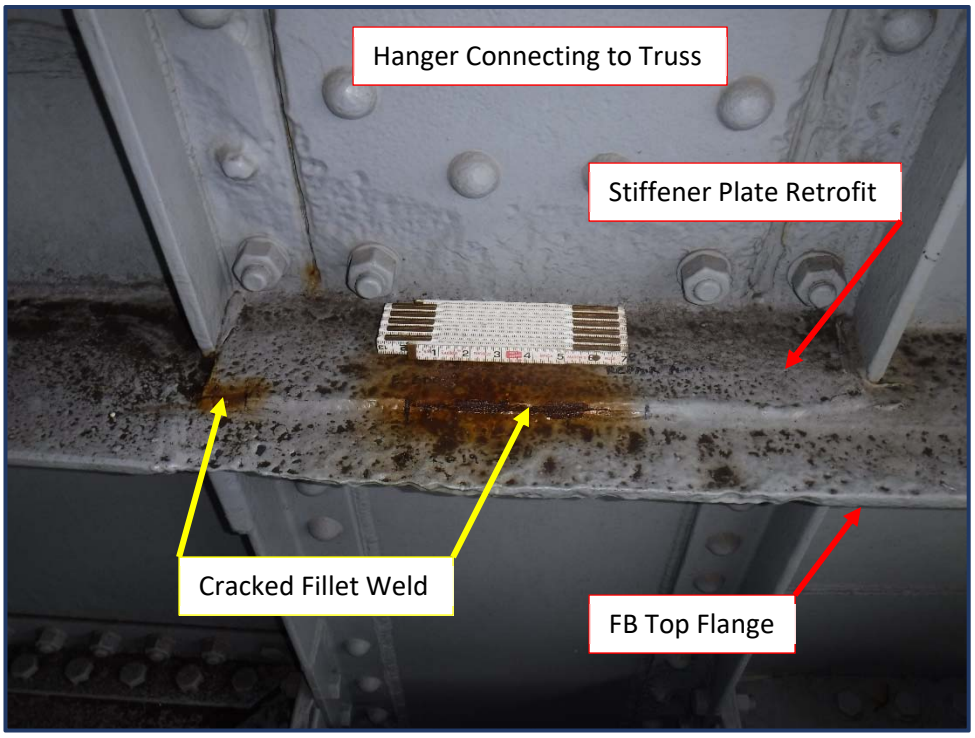


Photo 1a – Cracking at Lower Deck Floorbeam Stiffener Plate Retrofit

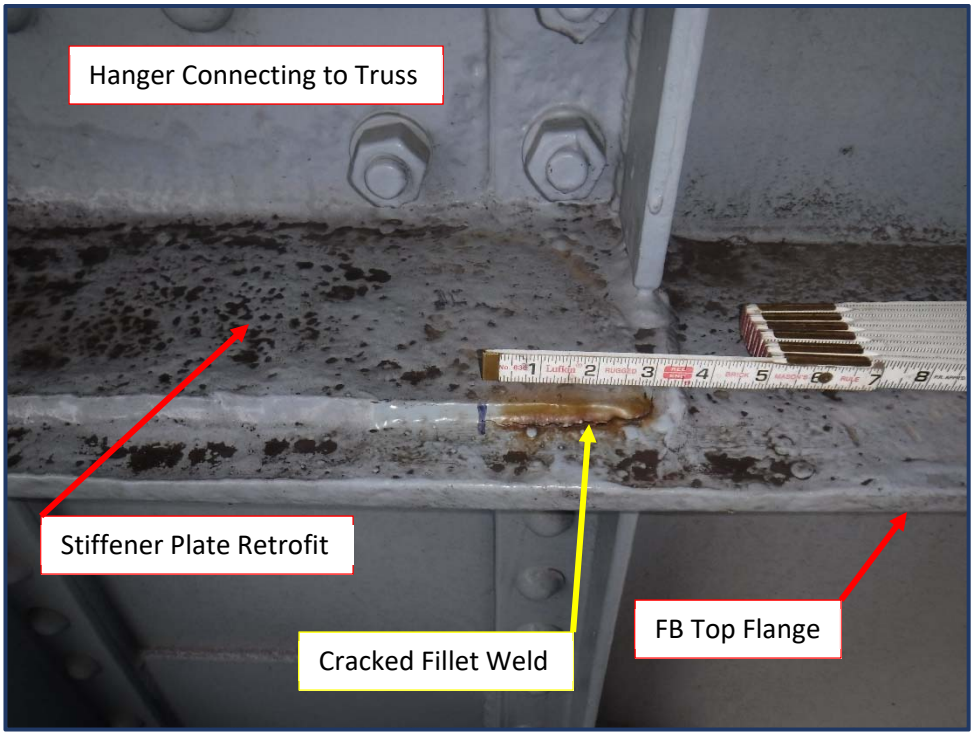


Photo 1b – Cracking at Lower Deck Floorbeam Stiffener Plate Retrofit