Appendix B
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Section I:

Superstructure and Deck - Roadway Approach Spans

Photo I-1: Span 10, Bay 3. Curb Stringer S1 (West) Deterioration.

Photo I-2: Span 4, Bay 3. Curb Stringer S1 (West) Deterioration.

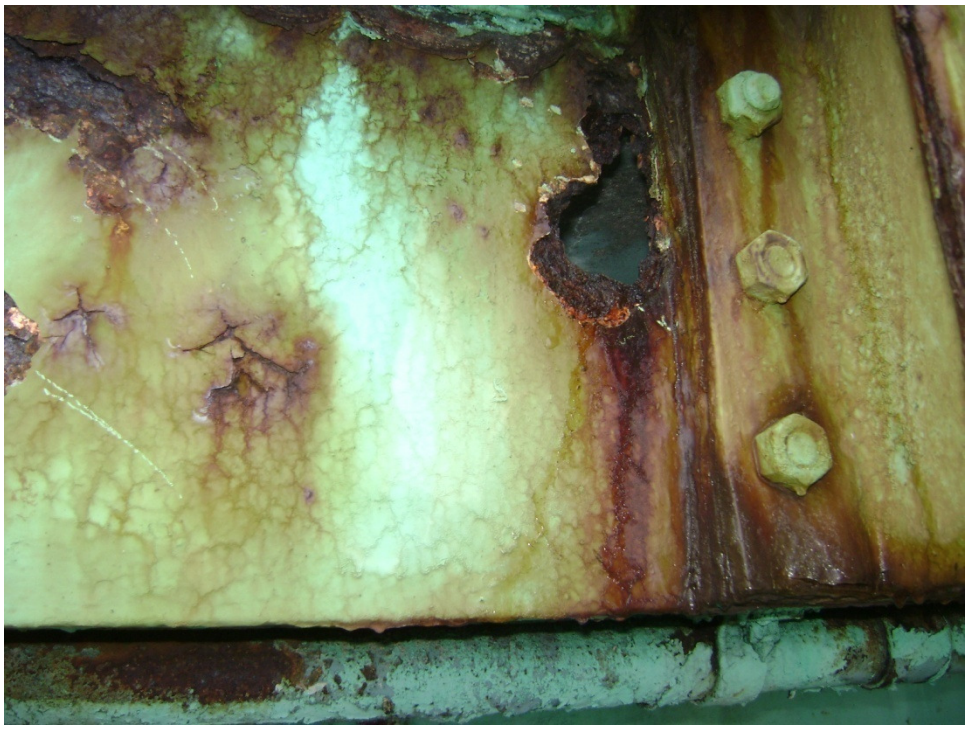

Photo I-3: Span 4, Bay 3. East Fascia Beam Deterioration.

Photo I-4: Span 4, Floorbeam 3. East Cantilever Top Flange and Concrete Deterioration at End of the Plate.

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Photo I-6: Concrete Curb at Pier 4. Deck Spalling below Concrete Curb.

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Photo I-9: Span 5, Floorbeam 3. West Cantilever Bottom Flange Paint Scaling and Laminar Corrosion.

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Photo I-18: Span 13, Bay 1. East Face of Curb Stringer S1 (West) Deterioration.

Photo I-19: Span 21, Floorbeam 2. West Cantilever Bottom Flange Paint Scaling and Laminar Corrosion.

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Photo I-23: Expansion Joint at Pier 3. Joint Leaking and Member Heavy Rusting.

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Photo I-30: Span 10, Floorbeam 3. East Cantilever Top Flange Deterioration.

Photo I-31: Span 10, Floorbeam 3. West Cantilever Top Flange Deterioration at End of Tie Plate.

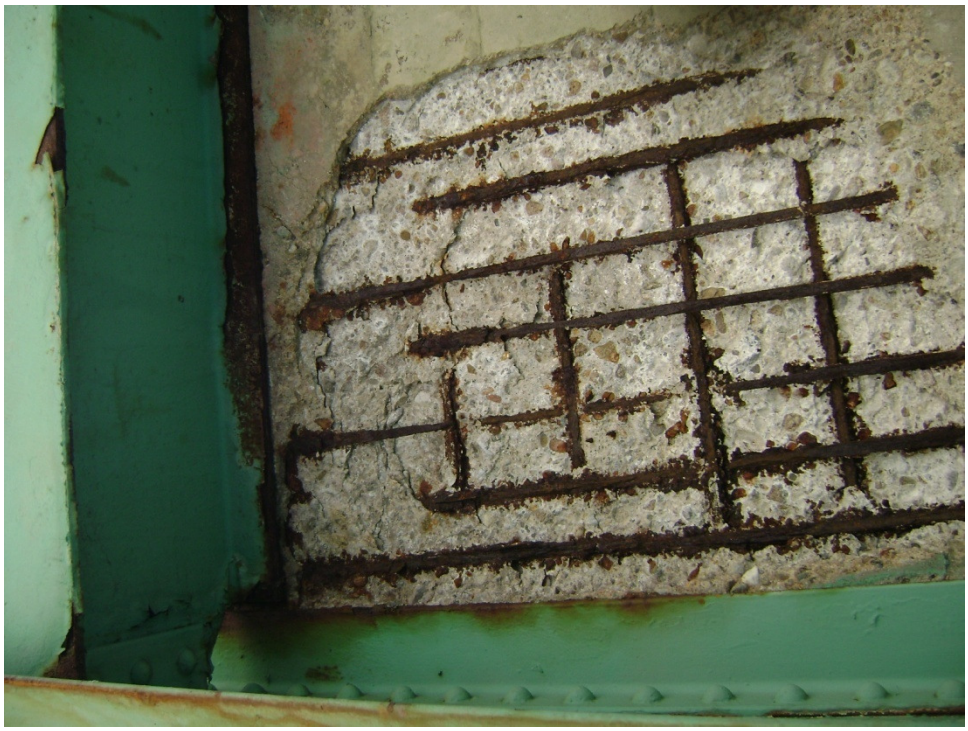

Photo I-32: Span 11, Floorbeam 1. Deck Spalling with Exposed Reinforcing near Floorbeam.

Photo I-33: Span 12, Floorbeam 0. East Cantilever Bottom Flange Paint Scaling and Laminar Corrosion.

Photo I-34: Span 12, Floorbeam 3. West Cantilever Top Flange Deterioration.

Photo I-35: Span 12, Floorbeam 0 and Span 11, Floorbeam 3. West Cantilever Top Flange Deterioration.

Photo I-36: Span 13, East Girder. Bottom Flange Deterioration at Hinge near Pier 13.

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Section II:

Superstructure, Deck and Towers - Truss Spans

Photo II-1: Truss Span 1, Bay 6, East Side. Metal drain pipe heavily corroded with holes. Laminar corrosion on bottom flange of stringer at drain. Condition typical of overhang stringers at metal downspouts.

Photo II-2: Truss Span 2, Bay 5, West Side. Metal drain pipe heavily corroded with holes. Laminar corrosion on bottom flange of stringer at drain. Condition typical of overhang stringers at metal downspouts.

Photo II-3: Truss Span 3, Bay 6, East Side. Metal drain pipe heavily corroded with holes. Laminar corrosion on bottom flange of stringer at drain.

Photo II-4: Truss Span 3, Floorbeam Overhang 7 at West Railing Support. Laminar corrosion on the top flange of the Floorbeam Overhang at the end, as well as rust and corrosion on the C-shaped Fascia Stringer. Condition typical of Floorbeam Overhang ends.

Photo II-5: Truss Span 3, Bay 3. East Side. Transverse cracks with efflorescence. Typical condition for Deck Overhang in portions between stringers.

Photo II-6: Truss Span 3, Bay 4, East Side. Spalls on deck underside at I-shaped Overhang Stringer with exposed rebar. Spall runs full-length of bay and is up to 1.5” deep.

Photo II-7: Truss Span 3, Bay 1, West Side. Large spall in deck underside with exposed rebar. Spall is approximately 4.5’ wide’ x 10’ long x 1.5” deep.

Photo II-8: Truss Span 3, Bay 6, East Side. Previously patched spall in deck underside near connection of the Top Chord and Floorbeam Overhang.

Photo II- 9: Truss Span 2, Bay 8, East Side. Laminar corrosion on I-shaped Overhang Stringer adjacent to tower.

Photo II-10: Truss Span 2, Operator House Support. Floor system for walkway shown.

Photo II-11: Truss Span 4, Barricade Arm Support at Floorbeam Overhang 3, West Side. Members at the joint between the sidewalk deck and barricade support deck exhibit surface rust.

Photo II-12: Truss Span 2, Floorbeam Overhang 5, East Side. Laminar corrosion at end of Floorbeam Overhang top flange underneath the Barricade Support. There is a corrosion hole on the end stiffener.

Photo II-13: Truss Span 5, Bottom Chord L5-L6 East. Fascia and top side of bottom chords. Typical condition shown.

Photo II-14 : Truss Span 5, Bottom Chord L5-L6 East. Fascia side of Bottom Chord. Typical truss web and flange condition shown. There is surface rust and some laminar corrosion on the batten plate.

Photo II-15: Truss Span 1, Joint L2 West. Interior of Bottom Chord at joint. Vertical web and splice plate shown in back of photo. Conditions typical of interior of bottom chord at joints.

Photo II-16: Truss Span 1, Bottom Chord L4-L5 West. Surface rust with bleeding and laminar corrosion on exterior web.

Photos II-17 and II-18: Truss Span 3, Bottom Chord L3-L4 West. Welded utility connection to bottom chord. Surface rust on top flange and web. Heavy corrosion on rivet head.

Photo II-19: Inside of Truss Span 2, Bottom Chord L0-L1 West. Laminar corrosion on the bottom flange over the full length.

Photo II-20: Top flange of Truss Span 5 Bottom Chord L2-L3 East. Typical laminar corrosion at top flange splice plates and batten plates.

Photo II-21: Truss Span 5, Bottom Chord L3-L4 West. Surface rust at rivets with bleeding. Typical condition for interior face of bottom chords.

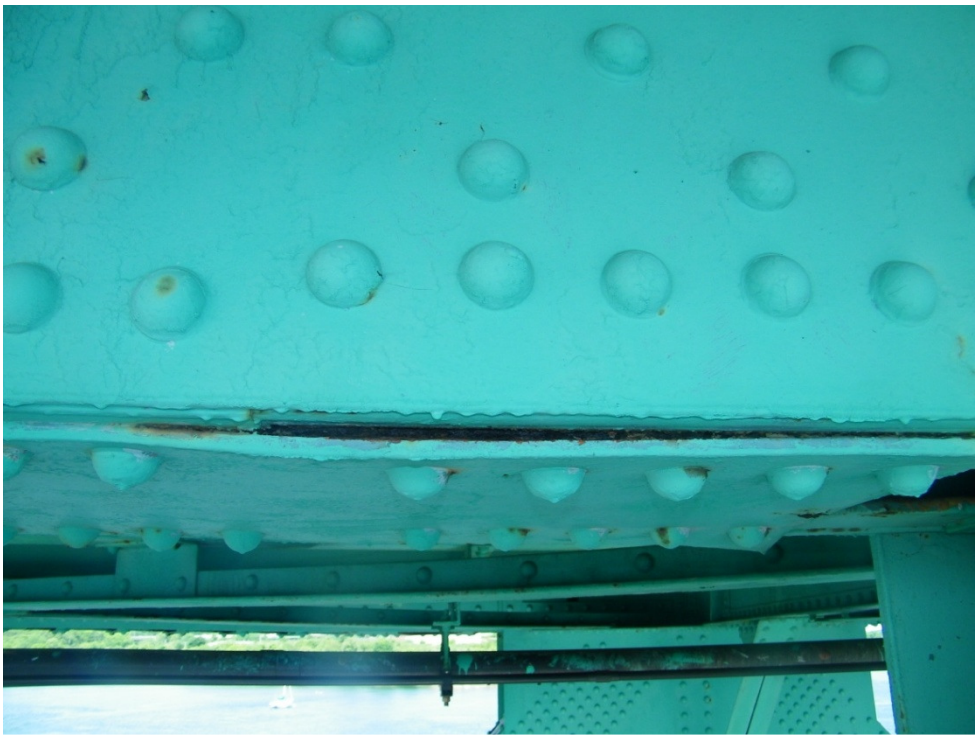

Photo II-22: Truss Span 2, Top Chord L0-U1 East. Pack rust with prying between the bottom flange and the end batten plate. Condition occurs on several top chord members.

Photo II-23: Truss Span 4, Top Chord U0-U1 East. Pack rust with prying between the bottom flange and web.

Photo II-24: Truss Span 3, Top Chord U0-U1 West. Minimal to no surface rust; typical exterior web condition.

Photo II-25: Truss Span 2, Top Chord U0-U1 East. Surface rust on top flange and bottom flange. Typical top chord condition.

Photo II-26: Truss Span 3, Top Chord U0-U1 at Joint U1. Pack rust between splice plate and exterior web causing prying.

Photo II-27: Truss Span 2, Diagonal L0-U1 West. Laminar corrosion on exterior web of Diagonal. All diagonals at span ends in similar, but less severe, condition.

Photo II-28: Truss Span 1, Diagonal L0-U1 West. Heavily deteriorated batten plate with corrosion hole at Joint L0.

Photo II-29: Truss Span 4, Diagonal U3-L4 West. Surface rust on top flange and lacing bars. Condition typical of diagonals.

Photo II-30: Truss Span 1, Diagonal L0-U1 West. Laminar corrosion on interior web of diagonal.

Photo II-31: Truss Span 5, Vertical L7-U7 at Joint L7. Laminar corrosion on the exterior flange at the interface with the batten plate.

Photo II-32: Truss Span 5, Vertical L4-U4. 3” wide by 1” high corrosion hole in exterior web at Joint L4. Area within ½” of corrosion hole has up to 50% section loss.

Joint 33: Truss Span 5, Vertical L5-U5 East. Pack rust between web of vertical and splice plate typical at bottom joints.

Photo II-34: Truss Span 2, Vertical L5-U5 East at Joint L5. Pack rust with prying between vertical flange and gusset plate. Occurs at several lower joints, see Appendix C for locations.

Photo II-35: Truss Span 3, Joint L7-U7 West. Surface rust on exterior flange typical of truss verticals. Pitting on exterior flange at Joint L7.

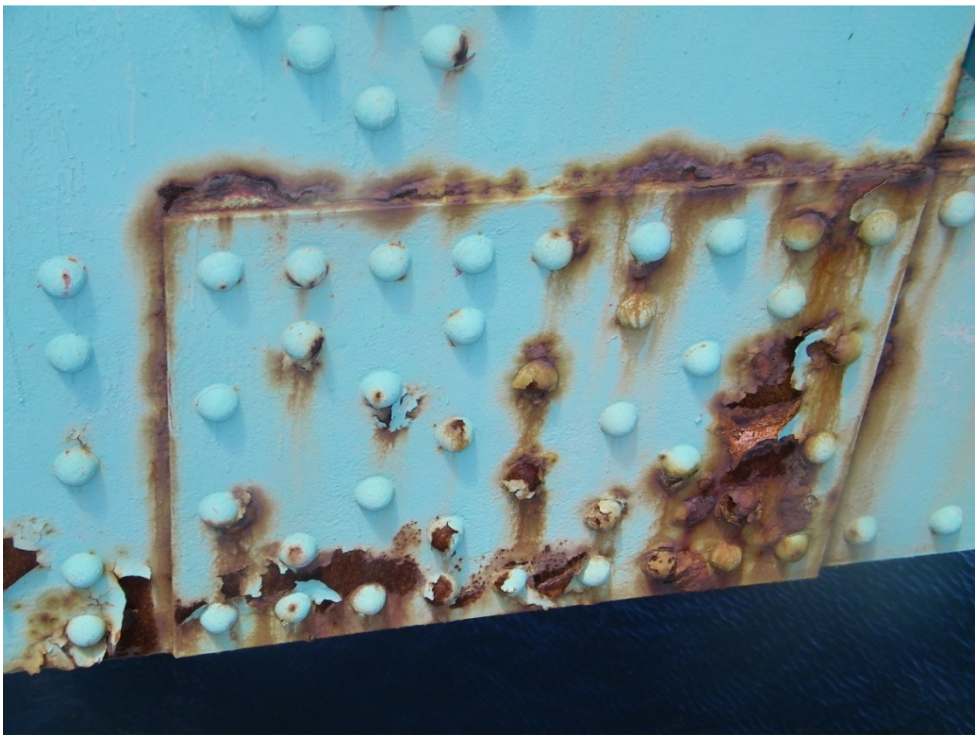

Photo II-36: Truss Span 1, Joint L6 East. Pitting and laminar corrosion on gusset plate at interface with splice plate.

Photo II-37: Truss Span 5, Joint L0 East. Surface rust on gusset plates with corrosion at interface between plates. Other lower gusset plates L0 and L8 similar.

Photo II-38: Truss Span 4, Joint L7 West. Surface rust with laminar corrosion on the gusset plate, as well as on the bottom chord web at the gusset plate interface.

Photo II-39: Truss Span 2, Joint L7 West. Laminar corrosion on gusset plate and on connection for the Operator House support.

Photo II-40: Truss Span 3, Joint L0 West. Laminar corrosion on the gusset plate at rivets, and on horizontal struts bracing the truss at the lifting girder.

Photo II-41: Truss Span 3, Joint L8 West. Surface rust on the truss vertical and the Lower Hanger at the Lifting Girder. Laminar corrosion on the batten plate between the Lower Hanger and the Vertical.

Photo II-42: Truss Span 3, Joint U7 West. Some paint loss and surface rust on the gusset plate. Rust with bleeding on the Floorbeam Overhang at the gusset plate interface. Conditions typical of Upper Gusset Plates.

Photo II-43: Truss Span 2, Bay 8, East Side. Laminar corrosion on I-shaped Overhang Stringer. Multiple spalls in bay with a depth up to 2.5”.

Photo II-44: Truss Span 3, Vertical L3-U3. Pack rust on interior Vertical flange at interface with Roadway Floorbeam knee brace. Condition typical of truss verticals.

Photo II-45: Span 4, Joint U0 East. Pack rust with prying at bottom edge of gusset plate at U0 East. Condition typical of gusset plates at U0 and U8 Truss Joints.

Photo II-46: Span 4, Joint U8 East. Laminar corrosion on interior face of gusset plates at Joints U0 and U8 is typical.

Photo II-47: Truss Span 4, Barricade Arm Support at Floorbeam Overhang 3, West Side. Laminar corrosion on the C-shaped Fascia Stringer at the connection to the barricade support.

Photo II-48: Truss Span 5, Bay 8. West Stringer at the connection to the Lower Lateral Bracing. Surface rust on all surfaces.

Photo II-49: Truss Span 2, Joint L1 East. Laminar corrosion on Lower Lateral Bracing Gusset Plate. Condition typical of LLB Gussets.

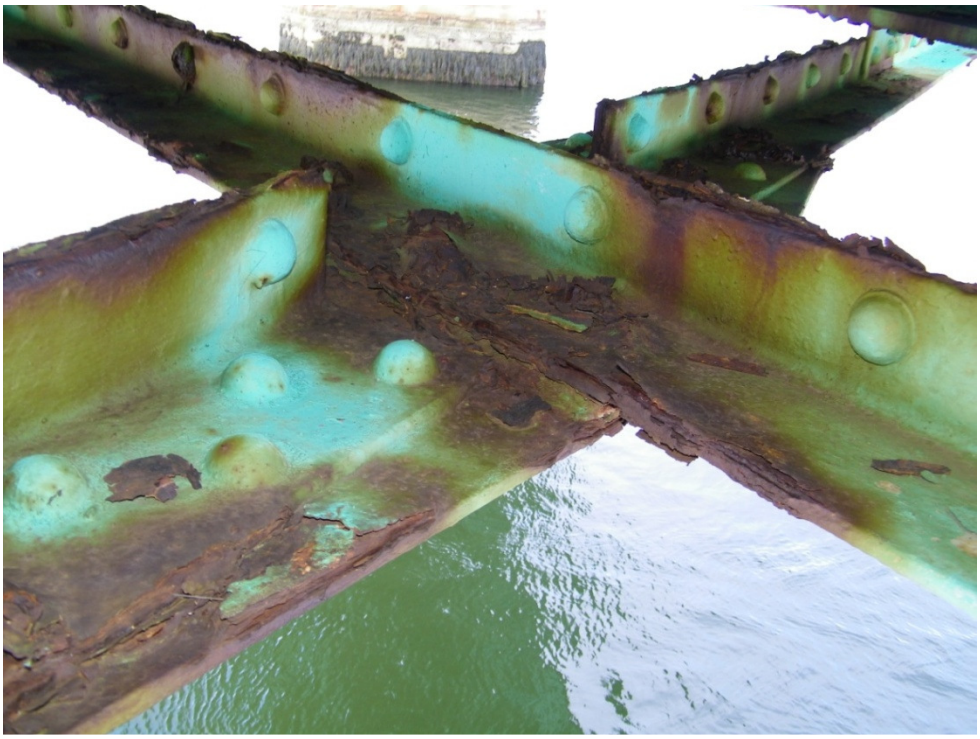

Photo II-50: Truss Span 5, Bay 4. Lower Lateral Bracing at middle connection. Laminar corrosion on top surfaces of bracing in this bay.

Photo II-51: Truss Span 2, Bay 7. Laminar corrosion on the Southern Cross Frame gusset plate.

Photo II-52: Truss Span 3, Bay 1. Laminar corrosion on the Southern Cross Frame gusset plate with a corrosion hole.

Photo II-53: Truss Span 2, Bay 1. Typical Cross Frame Condition. Surface rust and some laminar corrosion on top strut, as well as on top face of gusset plates.

Photo II-54: Truss Span 3, Bay 7. Upper Lateral Bracing. Pack rust with prying throughout member. Condition typical of Lower Lateral Bracing.

Photo II-55: Truss Span 1, Bay 8. Lower Lateral Bracing Connection to East Stringer. Rust and laminar corrosion on all surfaces adjacent to connection.

Photo II-56: Truss Span 1, Bay 6. Surface rust on bottom flange of East Stringer at connection to Floorbeam 6.

Photo II-57: Truss Span 3, Bay 8, East Stringer. Laminar corrosion and rust on top flange of stringer.

Photo II-58: Truss Span 3, Bay 4, Floorbeam 4. Floorbeam midspan shown. Surface rust on bottom flange and some laminar corrosion on top flange. Condition typical of Intermediate Floorbeams.

Photo II-59: Truss Span 1, Bay 4, West Stringer. Some surface rust on stringer web. Typical Stringer web condition.

Photo II-60: Truss Span 3, Bay 1, Floorbeam 0. Surface rust on web of End Floorbeam on east end of floorbeam.

Photo II-61: Span 3, Floorbeam 8, East end. Surface rust on Floorbeam top flange and laminar corrosion at top flange interface with the knee brace. Condition typical of Intermediate Floorbeam ends.

Photo II-62: Truss Span 3, Floorbeam 1, East end. Laminar corrosion and pack rust between Floorbeam bottom flange and Lower Lateral Gusset Plate. Condition typical of Floorbeam ends.

Photo II-63: Truss Span 3, Floorbeam 0. Rust and pitting on knee brace at ends of Lift Span. Condition typical of Truss Span 3 End Floorbeam knee braces.

Photo II-64: Pier 17 (South Tower), South Cross Girder. Laminar corrosion with corrosion holes on top flange. Condition typical of Cross Girders at Towers.

Photo II-65: Truss Span 3, South Bearing. Center bearing of lift span shown. Surface rust with minor corrosion on Bearing and End Floorbeam surfaces.

Photo II-66: Railroad Deck at North Tower, East Railroad Bearing Stringer. Pack rust and prying between stringer and support typical of Stringers at Towers.

Photo II-67: Railroad Deck at North Tower, Western Platform Stringer. 12” x 1” corrosion hole in stringer.

Photo II-68: South Tower, East Face. 53” crack in Tower Façade.

Photo II-69: South Tower, Northwest Corner. Tower façade is prying away up to 2.5”. Bed of grout found behind façade plates.

Photo II-70: North Tower Verticals. Pack rust with prying on fascia plate. Typical of Verticals.

Photo II-71: North Tower Anchorage has pitting and surface rust throughout.

Photo II-72: North Tower Diagonal Bracing, North Face, West Side. Bracing between Tower Panel Points T1 and T2 is bent out-of-plane.

Photo II-73: North Tower Diagonal Bracing, North Face, West Side. Bracing connections typically have minor pack rust at member interfaces.

Photo II-74: Lifting Girder at Pier 18 (North Tower). A 4.5” crack in steel angle connecting the top flange of the northwestern box-shaped strut to the truss gusset plate at Joint L8 West of Truss Span 3.

Photo II-75: Lifting Girder at Pier 18 (North Tower). A 4.5” crack in steel angle connecting the top flange of the northwestern box-shaped strut to the truss gusset plate at Joint L8 West of Truss Span 3.

Photo II-76: Lifting Girder at Pier 18 (North Tower). Laminar corrosion and rust at horizontal struts bracing the truss at Truss Span 3, Joint L8 West. Typical corrosion on horizontal struts at Truss Span 3 Lifting Girders.

Photo II-77: Lifting Girder at Pier 17 (South Tower). Laminar corrosion and rust, as well as corrosion holes, on the lacing bars of horizontal struts bracing the truss at Truss Span 3, Joint L0 West.

Photo II-78: Lifting Girder at Pier 17 (South Tower). Broken lacing bar on the I-shaped horizontal strut bracing the truss at Truss Span 3, Joint L0 East.

Photos II-79 and II-80: Span 2, Bay 7 West, Floor System at Operator House. Curb Stringer has laminar corrosion on the top flange, stay-in-place forms are rusted at end. Operator House support beams rusted with laminar corrosion at connections. Purlins in generally good condition.

Section III:

Superstructure and Deck - Railroad Approach Spans

Photo III-1: Span 15, Railroad Deck, West Fascia. Typical condition of exterior fascia for Railroad Approach Girders. Some surface rust on top surface of bottom flanges.

Photo III-2: Span 15, Railroad Deck, Cross Frame at North End. Surface rust and laminar corrosion on members typical of Railroad Approach Span End Cross Girders.

Photo III-3: Span 22, Railroad Deck, Northeast Bearing. Up to 80% section loss on nuts at girder-to-bearing connection. Section loss is typical of Railroad Deck Approach Spans.

Photo III-4: Span 15, Railroad Deck, East Girder. Laminar corrosion on top flange typical of Railroad Approach Span Girders.

Photo III-5: Span 15, Railroad Deck, East Girder. Pitting on bottom flange of girder for a distance of 12' from North Bearing.

Photo III-6: Span 21, Retractable Railroad Span Trolley Arm at Pier 20. Typical condition of Trolley Arm adjacent to Trolley Beam, with surface rust and some laminar corrosion at bolted arm splice. Welded ladder rungs typical of Trolley Arms.

Photo III-7: Retractable Railroad Approach Span 21, North Lifting Girder. Laminar corrosion on top flange over full-length, with more severe corrosion at ends, adjacent to knee brace.

Photo III-8: West Screw Housing Brace at Pier 21. Severe deterioration with up to 50% of cross-sectional area lost.

Section IV:

Bearings

Photo IV-1: Pier 16, West Bearings. Truss Span 2 Bearing has expanded approximately 1/2” from the neutral position. The West Bearing of Truss Span 1 is in the neutral position.

Photo IV-2: Pier 16, Truss Span 1, West Bearing. Laminar Corrosion on inside face of bearing gusset plates, as well as on pin. Condition typical of most Bearings.

Photo IV-3: Pier 16, Truss Span 2, West Bearing. Surface rust with some laminar corrosion on bearing plate and base plate. Condition typical of Truss Span Bearings.

Photo IV-4: Pier 17, Truss Span 2, East Bearing. Heavy laminar corrosion on all surfaces inside of bearing assembly.

Photo IV-5: Pier 17, Truss Span 3, West Bearing. Anchor bolt on fixed bearing bent. Typical of all Truss Span 3 Anchor Bolts at Pier 17.

Photo IV-6: West Girder, Span 3. Bearing Deterioration at Pier 3

Photo IV-7: Retractable Railroad Approach Span 21, Trolley Beam Bearing at Pier 22. Elastomeric Bearing has been crushed and is bulging.

Photo IV-8: Retractable Span Bearing Bulging at Pier 21.

Photo IV-9: Retractable Railroad Approach Span Bearing at Pier 20. West Bearing shown. Surface rust typical of all Retractable Railroad Approach Bearings.

Photo IV-10: Retractable Railroad Approach Span Bearing. Northwest Bearing shown. Laminar corrosion and section loss to bolt nuts typical of Bearing Plates.

Section V:

Substructure

Photo V-1: Pier 3, West Column. Concrete Deterioration with Exposed Reinforcing.

Photo V-2: Pier 3, East Column. Concrete Deterioration with Exposed Reinforcing.

Photo V-3: Pier 6, South Face Deterioration.

Photo V-4: Steel Plate Jackets of West Column of Pier 6.

Photo V-5: Looking Inside of Steel Encasing of West Column of Pier 6

Photo V-6: Pier 7, North Face Deterioration

Photo V-7: Pier 9 East Column Deterioration.

Photo V-8: Pier 12 Cracking at East Girder Bearing.

Photo V-9: Pier 13 Abutment Deterioration.

Photo V-10: Pier 13, Bridge Seat. Up to 4” of erosion on the bridge seat with exposed rebar.

Photo V-11: Pier 15, West Face. Large spall with corrosion at Southwest corner of Pier. Top face of pier spalled 6’ x 4’ x up to 6” deep.

Photo V-12: Pier 17, Southeast corner. Cracks with efflorescence and a 6”x3’ spall.

Photo V-13: Pier 17, Southeast corner. Concrete at corner beginning to spall adjacent to South Tower. The concrete is cracked and lifting away from the pier.

Photo V-14: Pier 18, Southeast corner. Large cracks with efflorescence adjacent to the base of the North Tower.

Photo V-15: Pier 19, East Face. Full-height spall and erosion on the East corner of the concrete cap.

Photo V-16: Pier 14, North Face. Hairline cracks on concrete cap and vegetation growing on portions of the pier below the high water elevation. Both conditions typical of Piers 16-20.

Photo V-17: Pier Bent 21, East Column of Bent. Bent Holed and Deteriorated.

Photo V-18: Pier 22 Column Holed.

Photo V-19: Pier 22 Column Deterioration (Looking Inside).

Photo V-20: South Abutment. Map Cracking and Spalling with Exposed Reinforcing.

Photo V-21: North Abutment East Pedestal Deterioration at Bearing Seat.

Section VI:

Wearing Surfaces and Bridge Railing

Photo VI-1: Wearing Surface Cracking in Span 2

Photo VI-2: Concrete Curb Deterioration over Pier 8

Photo VI-3: Concrete Curb Deterioration over Pier 10

Photo VI-4: Typical Deterioration at Bridge Handrail

Photo VI-5: Existing Typical Deck Repairs