



Cuyahoga County

# **W.150TH STREET BRIDGE 01.94**

## **SFN 1833405**

### Bridge Inspection and Evaluation Report

January 26, 2021

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**SFN 1833405**

Bridge Inspection and Evaluation Report

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## EXECUTIVE SUMMARY

Cuyahoga County engaged Arcadis to provide an in-depth bridge inspection, concrete sampling and testing, condition assessment, evaluation, and load rating of the following Cuyahoga County owned and maintained structure. The **West 150<sup>th</sup> Street Bridge 01.94** (SFN 1833405) is a 708 ft-long, 10-span, structure located in the City of Cleveland that carries W. 150<sup>th</sup> Street over Norfolk Southern Railroad (NS), Greater Cleveland Regional Transit Agency (GCRTA), Chatfield Avenue and an access drive. This report discusses the results of the inspection, testing, and assessment, and presents the results from the bridge evaluation and load rating.



West 150th Street Bridge 01.94

The Arcadis team performed an in-depth inspection of this structure between September 19 and November 19, 2020. The superstructure was in poor condition due to advanced corrosion/section loss to the steel beams in the spans over NS. The reinforced concrete substructures were also in poor condition due to concrete deterioration. Pier 5 is in the worst condition with delaminations/spalling throughout and extensive deterioration at the left end of Pier 5L under Beam 1. Based on the poor condition of the bridge superstructure and substructure, the General Appraisal for this structure is **Poor (Condition Rating = 4)**.

A total of 19 concrete core samples were obtained from the bridge deck, abutments, and piers and were evaluated for compressive strength, permeability, chlorides, and bond strength. The results of each concrete test were within normal ranges.

A pre-demolition hazardous building material survey was performed for this structure and is included in the Appendices. The objective of the survey was to ascertain the general presence, quantity, and location of asbestos-containing materials and material coated with lead paint. Our asbestos specialist could not safely access/sample insulation for bridge electrical wiring which may have asbestos containing material. All of the bulk samples that were collected and tested for asbestos were reported by the laboratory as "None Detected" for asbestos. Three paint chip samples that were collected and tested were confirmed to contain detectable levels of lead. They were gray paint on metal beams, gray paint on concrete parapet wall and brown paint on lamp posts.

During the inspection, the degree of rusting of the painted surfaces of the steel beams were evaluated in accordance with SSPC-VIS 2, Standard Method of Evaluating Degree of Rusting on Painted Steel Surfaces. Paint dry film thickness measurements were obtained at various beams/locations throughout the structure using a Paint/Coating Thickness Gauge Meter. Paint adhesion testing was also performed using the crosshatch test method (Method B). Paint dry film thicknesses ranged from 13.1 to 17.3 mil. The paint adhesion was rated as good (Method B rating = 5B) at all locations. The painted surfaces of the steel beams in Spans 6, 7, and 8 were assigned a Rust Grade = 0. The painted surfaces of the steel beams in the remaining spans were assigned a Rust Grade = 8 with the exception of the beam ends near the expansion joints at both abutments and Pier 5.

A bridge load rating analysis was performed in accordance with Section 900 of the ODOT Bridge Design Manual. Existing bridge plans and field measurements (including section loss measurements) were used to prepare the bridge load rating model using AASHTOWare BrR Bridge Rating Software. The bridge was evaluated for the HS20 loading, Ohio Legal Loads (2F1, 3F1, 4F1, 5C1), Special Haul Vehicles (SU4, SU5, SU6, SU7) and Emergency Vehicles (EV2, EV3). No load posting is recommended for this structure.

Based on the results of inspection and material testing, bridge maintenance and capital improvement recommendations were developed that will help extend the service life of the existing structure. Bridge maintenance recommendations were broken down into Level 1-Safety Items, Level 2-Reactive Items, Level 3-Planned Activities, and Level 4-Housekeeping/Preventative Maintenance. The capital Improvements were broken down into short-term, mid-range, and long-range recommendations. Cost estimates were developed for each of the capital improvements.

A desktop review was performed to assess potential project impacts to the following resources categories: Cultural Resources, Section 4(f) Resources, Ecological Resources, Hazardous Materials, and Environment Justice. The desktop review identified several potential hazardous material sites in close proximity that will need further study.

# 1 INTRODUCTION

## 1.1 Location Map

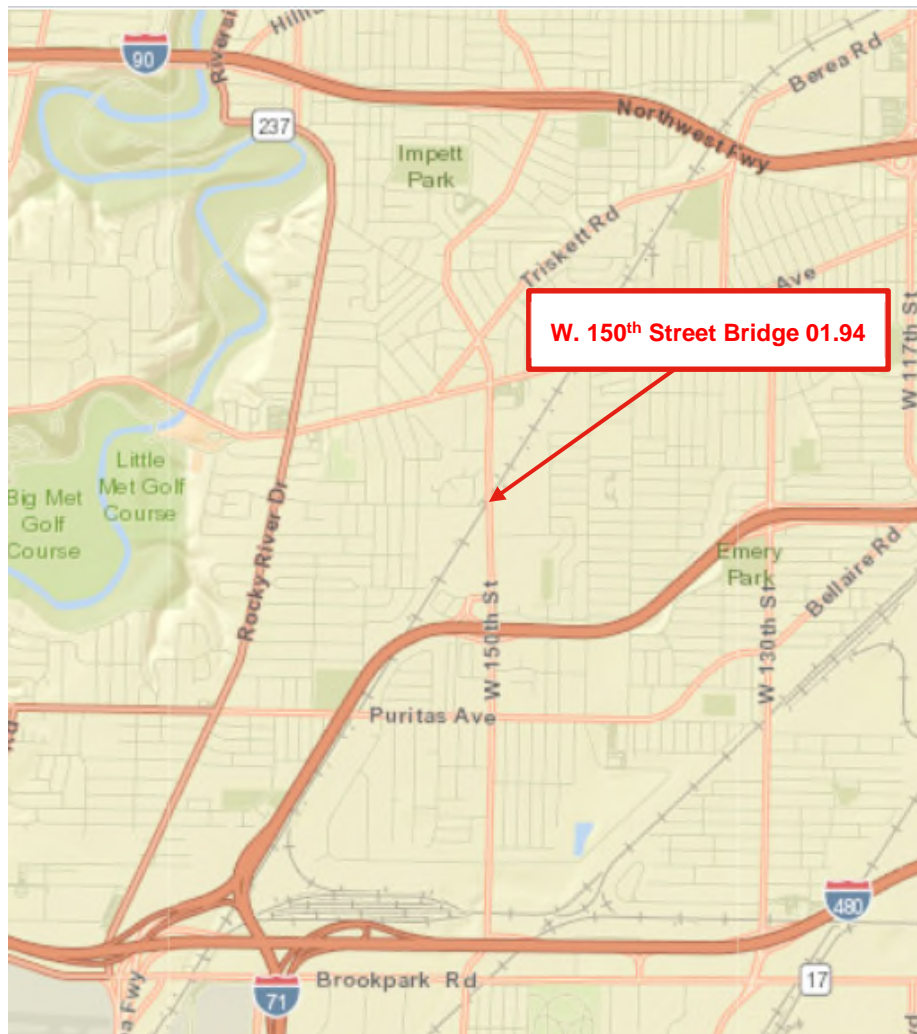


Figure 1 – Bridge Location Map



## 1.2 Bridge Data/Description

The **West 150<sup>th</sup> Street Bridge 01.94** (SFN 1833405) is a 708 ft-long, 10-span, structure located in the City of Cleveland. The bridge carries W. 150<sup>th</sup> Street over Norfolk Southern Railroad, Greater Cleveland Regional Transit Agency (GCRTA), Chatfield Avenue and an access drive. The bridge superstructure consists of a composite reinforced concrete deck supported on ten (10) continuous steel rolled beams lines. The bridge deck is 64-feet wide and accommodates four lanes of traffic (two in each direction) and two sidewalks. The bridge abutments consist of reinforced concrete wall-type abutments supported on steel pile foundations. The bridge piers consist of reinforced concrete T-type piers supported on steel piling. This structure was originally constructed in 1967 and rehabilitated in 2000 (deck replacement).

There are four tracks at this location that are owned and operated by Norfolk Southern's Pittsburgh Division. There are 2 mainline tracks, 1 siding track, and 1 limited-use track utilized by West Park Industrial Railroad. Based on a review of the USDOT Crossing Inventory Form for this structure, Norfolk Southern operates 45 trains per day on the mainline tracks. There are also two mainline tracks serving GCRTA's Red Line located under the bridge and GCRTA's West Park Rapid Station is located just west of the W. 150th Street bridge. GCRTA's Red Line operates 7 days a week from early morning through late night.



Left Bridge Elevation (Looking East)

## **2 BRIDGE INSPECTION FINDINGS**

### **2.1 Inspection Coordination and Procedures**

There are numerous stakeholders and property owners requiring extensive coordination for permitting, inspection access, and general notification.

#### **2.1.1 GCRTA Coordination**

This bridge spans over the electrified tracks of GCRTA's Red Line and required that inspection work within Span 8 be performed during an outage/shutdown to ensure the safety of the inspection team and not interfere with GCRTA's revenue service. Through early and frequent communication with GCRTA, we were able to perform the inspection of this span during a total shutdown scheduled during the weekend of 9/19 and 9/20. All bridge inspectors performing work within GCRTA's right-of-way completed the GCRTA Rulebook C Training prior to the inspection and strictly adhered to the requirements set forth by the GCRTA Rulebook C Training, the GCRTA Rail Rulebook, and our team's own Health and Safety Plan.

#### **2.1.2 Norfolk Southern Coordination**

The bridge spans over four sets of tracks that are owned and operated by the Pittsburgh Division of Norfolk Southern (NS). There is 1 siding track located within Span 6. There are 2 mainline tracks and 1 limited-use track located within Span 7. A right of entry permit was obtained from Norfolk Southern in order to access the areas of the structure located above or adjacent to NS tracks or within the NS right-of-way. All inspection work completed within 25' of the centerline of tracks was performed using a NS flagger. All bridge inspectors performing work within the NS right-of-way completed Roadway Worker Training and received their eRailSafe certification prior to the inspection.

#### **2.1.3 City of Cleveland Coordination**

Street Opening and/or Sidewalk Obstruction Permits were required from the City of Cleveland in order to perform lane closures on W. 150<sup>th</sup> Street and Chatfield Avenue. The Bureau of Police Traffic was notified in advance of each lane closure. Deck Inspection (i.e., chain dragging/sounding), deck coring, and GPR operations were coordinated to minimize lane closures. Separate lane closures were required for snoopers inspection work.

#### **2.1.4 Property Owner Coordination**

During the inspection planning phase of this project, property research was performed to identify all of the property owners surrounding the bridge. Property Owner Notification Letters were drafted and sent to the owners to notify them of the upcoming inspections. Arcadis personnel also met with each of the property owners to discuss the work and to coordinate inspection access to each property. In order to inspect the rear-left retaining wall, we had to coordinate access inside PNC's gated property at the southwest corner of the bridge. Inspection of the forward-right retaining wall was performed during the middle of the week as requested by Second to None Autobody and Frame during their least busy days.



## 2.2 Bridge Inspection Procedures and Access

### *Bridge Inspection Team:*

Three 2 or 3-person inspection teams (Table 1) were utilized during the inspection of this structure. The Arcadis Inspection Teams led by Frank Getz, PE and Christine Dohy, PE inspected the bridge deck/sidewalks/railings/fencing, all structural steel members (steel beams, moment plates, bolted field splices, and cross-frames), bearings, and all piers. The Osborn Inspection Team led by Jeffrey Horvath, PE inspected the abutments, backwalls, wingwalls, retaining walls, and approaches (asphalt/concrete pavement, sidewalks, railings, fence, embankment, and guardrail). As outlined in our Project Health and Safety Plan, our inspection teams were equipped with all necessary Personal Protective Equipment (PPE) including hard hats, safety glasses, safety vests, safety shoes, ear protection, gloves, 5-point harnesses, shock absorbing lanyards, and fall relief devices.

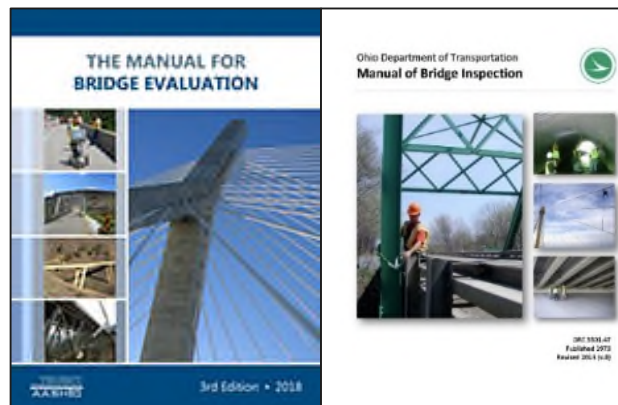
**Table 1: Bridge Inspection Team**

Arcadis Team 1	Arcadis Team 2	Osborn Team 1
Frank Getz, PE (Team Leader)	Christine Dohy, PE (Team Leader)	Jeffrey Horvath, PE (Team Leader)
Nick Swank, EIT	Craig Ferrell, Technician	Michelle D'Cruz
Konnor Demattio, Intern		

### *Inspection Procedures:*

All inspections were performed in accordance with the following accepted standards:

- ODOT Manual of Bridge Inspection, 2014 v8
- AASHTO Manual for Bridge Evaluation, 3<sup>rd</sup> Edition
- National Bridge Inspection Standards



The inspection consisted of a hands-on inspection of all structural members/elements as outlined below. Non-structural elements were also inspected for deficiencies which could render them potentially hazardous to the safety of the traveling public and pedestrians.

*Deck, Wearing Surface, Sidewalks, & Railings:* The concrete bridge deck, concrete wearing surface, sidewalks, and railings were inspected for cracking, scaling, delamination, spalling, leaching, chloride contamination, potholes, and full or partial depth failures. The wearing surface and sidewalks were sounded with chain-drags and all exposed concrete surfaces of the parapets were struck with blunt hammers to test for soundness and delaminations. Deteriorated areas were marked with keel/crayon, measured, photographed, and recorded on a field sketch. The inspection teams attempted to remove loose concrete/delaminations on the underside of the bridge deck and deck fascias that were located over roadways or rail/transit lines. A GPR survey of the bridge deck was also performed to help identify defects in the upper half of the bridge deck. The field sketches from the deck inspection and the GPR survey are included in Appendices.

*Structural Steel Members:* All structural steel members/elements including steel beams, cross-frames, moment plates, and field splices were checked for cracking, rusting, pitting, section loss, paint failure, impact damage, and signs of distress. The dimensions and thicknesses of plates were obtained by removing paint/rust then measuring with calipers. Deteriorated/damaged members/elements were photographed and recorded on a field sketch. Field sketches of the steel superstructure are included in Appendices.

*Expansion Joints:* Expansion joints were checked for proper opening, missing or damaged compression seals, spalling or failure of material surrounding the joints and evidence of water leaks/water infiltration onto abutment backwall and bearing areas.

*Bearings:* The steel pot bearings were inspected for paint failure, corrosion/section loss, function/movement, and alignment. Anchor bolts were also checked for deterioration/corrosion and missing nuts/bolts.

*Protective Coating System:* The degree of rusting of the painted surfaces of the steel beams were evaluated in accordance with SSPC-VIS 2, Standard Method of Evaluating Degree of Rusting on Painted Steel Surfaces. The degree of rusting was evaluated on a zero to ten scale based on the percentage of visible rust present on the surface. Paint dry film thickness measurements and adhesions tests were also performed (see Section 2.4.4 for results).

*Abutments, Backwalls, Wingwalls, & Piers:* The concrete abutments, backwalls, wingwalls, and piers (walls, columns and caps) were inspected for cracking, scaling, delaminations, spalling, leaching, and settlement/rotation. All exposed concrete surfaces of the substructure were struck with blunt hammers to test for soundness and delaminations. Deteriorated areas were marked with keel/crayon, measured, photographed, and recorded on a field sketch. Field sketches of the abutments, backwalls, wingwalls, and piers are included in the Appendices.

*Deck Drainage:* The deck surface was observed for evidence of standing water/ponding and the deck scuppers and downspouts were inspected for clogging/plugging.

*Asphalt/Concrete Approach Pavement, Approach Slabs, Approach Sidewalks/Railings, & Retaining Walls:* The asphalt approach pavement was inspected for cracking, rutting, potholes, and settlement. The concrete approach pavement, concrete approach slabs, sidewalks, parapets and retaining walls were

inspected for cracking, scaling, delamination, spalling, leaching, chloride contamination, potholes, and full or partial depth failures. The concrete pavement, approach slabs and sidewalks were sounded with chain-drags and all exposed concrete surfaces of the railings and retaining walls were struck with blunt hammers to test for soundness and delaminations. Deteriorated areas were marked with keel/crayon, measured, photographed, and recorded on a field sketch. Field sketches are included in the Appendices.

*Inspection Equipment and Access:*

Our inspections teams utilized a variety of inspection access equipment to perform the inspection of this structure (Photos EQP-1 and EQP-2). An Aspen Aerial A-62 Under Bridge Inspection Vehicle (Snooper), a JLG 450AJ Articulating Boom-Lift, and extension ladders were utilized to inspect the deck/parapet fascias, the under-deck portions of the superstructure, and the pier caps. Snooper set-ups on both sides of the bridge were required in order to access the entire width of the superstructure and to inspect the deck/parapet fascias. Extension ladders were also utilized to access the abutments, wingwalls, retaining walls, and piers.



**Photo EQP-1: Inspection access using underbridge inspection vehicle (Snooper)**



Photo EQP-2: Inspection access using extension ladders

*Traffic Control:*

Traffic Control was required on W. 150<sup>th</sup> Street and Chatfield Avenue during the inspection. Traffic control on W. 150<sup>th</sup> Street consisted of right or left lane closures which were performed in accordance with ODOT Standard Drawings MT-95.31 and MT-95.32. Traffic Control on Chatfield Avenue consisted of right or left lane closures and were performed in accordance with ODOT Standard Drawing MT-97.11. Traffic Control services were provided by Area Wide Protective (AWP) and SOFIS Company. Due to the shortened work window (9:00am to 3:30pm) permitted by our Street Opening and/or Sidewalk Obstruction Permit, both right lanes or both left lanes on W. 150<sup>th</sup> Street were closed simultaneously during the bridge deck inspection, concrete deck coring, and GPR survey to minimize impacts to the traveling public and to reduce Traffic Control costs. During snoopers inspection work, only the outside lane that the snoopers occupied was closed.

## 2.3 Inspection Findings

Inspection findings for the Approach Items, Deck Items, Superstructure Items, and Substructure Items are provided in the following sections.

### 2.3.1 Approach Items

Inspection findings for the Approach Wearing Surface, Approach Slabs, Approach Curb/Sidewalks, Approach Railings, Approach Vandal Protection Fence, Relief Joints, Embankment, and Guardrail Items are included in the following sections.

#### 2.3.1.1 Approach Wearing Surface

The *Approach Wearing Surface* is in *Good Condition*.

At the rear approach, the asphalt pavement has several longitudinal and transverse cracks, but most of them have been sealed (Photo APR-1). There are also minor potholes along the joint between the asphalt and concrete pavement and a minor spall in the concrete pavement (Photos APR-2 and APR-3). At the forward approach, the asphalt pavement has several longitudinal and transvers cracks, but most of them have been sealed (Photo APR-4).



Photo APR-1: Rear Approach (looking south), minor cracks (sealed) in asphalt pavement





Photo APR-2: Rear Approach (looking east), minor potholes along asphalt/concrete pavement joint



Photo APR-3: Rear Approach (looking east), minor spall in approach slab & concrete pavement (near centerline)



Photo APR-4: Forward Approach (looking north), cracks in asphalt wearing surface

#### 2.3.1.2 Approach Slabs

*The Approach Slabs are in Good Condition.*

The rear approach slab has minor spalls and is missing joint material along the backwall joint in the southbound lanes (Photo APR-5). There is also a minor spall near the centerline of roadway at the joint between the approach slab and concrete pavement (Photo APR-3). The forward approach slab has a 3" wide x 16' long spall and is missing joint material along the backwall joint in the northbound lanes (Photo APR-6).



Photo APR-5: Rear Approach Slab, minor spalling along backwall joint



Photo APR-6: Forward Approach Slab, 3" wide x 16' long spall along backwall joint

### 2.3.1.3 Approach Curbs/Sidewalks

The Approach Curbs/Sidewalks are in *Fair Condition*.



The curbs have scattered small spalls and/or missing areas of curb. The sidewalks have numerous cracks, spalls, and scattered areas of vegetation growing along sidewalk panels (Photo APR-7).



Photo APR-7: Rear-Left Sidewalk, spalled areas and vegetation (typical)

#### 2.3.1.4 Approach Railings

The *Approach Railings* are in *Poor Condition*.

The approach railings at the rear-left, rear-right and forward-right corners have scattered areas of map-cracking, open cracks, delaminations, and spalls. There are some full-height/full-depth spalls at several locations with exposed/corroded reinforcing steel. Some aluminum tube rails are loose and bolts have corrosion beginning throughout with some bolts not tightened down fully.



Photo APR-8: Approach Railing, concrete spalling/deterioration



Photo APR-9: Approach Railing, concrete spalling/deterioration



Photo APR-10: Approach Railing, concrete spalling/deterioration

#### 2.3.1.5 Approach Vandal Protection Fence

The *Approach Vandal Protection Fence* is in *Good Condition*.

There is some minor, scattered corrosion beginning on fence posts, rails, base plates, etc. The bottom closure angles that attached the chain link fence to the top of the concrete railing are missing bolts/screws at several locations and the angles are lifted up in some areas (Photo APR-11). The top of the fence closure/gate at the south end of the rear-right approach railing is damaged (Photo APR-12).





Photo APR-11: Missing bolts/screws in bottom closure angle



Photo APR-12: Damaged gate at south end of rear-right approach railing.

### 2.3.1.6 Relief Joints

The *Relief Joints* are in *Good Condition*.

Both joints are effectively performing under traffic. Both joints have cracks, some open, but most sealed (Photo APR-13). At the rear-right corner, the curb is slightly spalled. At the forward-left corner, a 1 foot length of curb is missing (Photo APR-14).



Photo APR-13: Forward Relief Joint



Photo APR-14: Forward Relief Joint, 1 foot length of curb is missing

#### 2.3.1.7 Embankment

The *Embankment* areas adjacent to structure are in *Good Condition*.

#### 2.3.1.8 Guardrail



The *Guardrail* (including the bridge terminal assemblies) is in *Good Condition*. There is no approach guardrail or bridge terminal assembly at the rear-left corner. The rear-right corner only has a bridge terminal assembly with a flared end. The height of rear-right bridge terminal assembly is 29½". The height of all other bridge terminal assemblies is 31 ½".



Photo APR-15: Guardrail at forward-left approach.

### 2.3.1.9 Approach Summary

The *Approaches* are in *Good Condition* (*Condition Rating* = 7).

Condition findings of individual approach items are provided in the preceding sections.

## 2.3.2 Deck Items

Inspection findings for the Floor/Slab, Edge of Floor/Slab, Wearing Surface/Overlay, Curbs/Sidewalks, Railing, Vandal Protection Fence, Expansion Joints, and Deck Drainage Items are included in the following sections.

### 2.3.2.1 Floor/Slab

The *Floor/Slab* is in *Good Condition*.

The underside of the concrete bridge deck has multiple hairline, leach-stained, transverse cracks that extend between beam flanges that are typical in all bays in all spans (Photo DCK-1 and Photo DCK-2). In the exterior bays (Bays 1 & 9) the concrete is dark/mottled (~30 inches wide) (Photo DCK-3). There are scattered areas in Bay 5 (above the waterline) that are mottled and wet in all spans, however Span 5 is the worst. The deck haunches are cracked and spalled (2" wide) over several piers along Beams 6, 7, 8, and 9 (Photo DCK-4). Some haunch spalling occurred during the previous rehabilitation as several spalls are painted over.



Photo DCK-1: Underside of deck, minor transverse cracks



Photo DCK-2: Underside of deck, transverse cracks with leakage/leaching



Photo DCK-3: Dark/mottled concrete (~30 wide) in exterior bays (typ. all spans)



Photo DCK-4: Cracked/spalled haunches along top flange moment plate.

### 2.3.2.2 Edge of Floor/Slab

The *Edge of Floor/Slab* is in *Good Condition*.

There are some transverse cracks with some leaching on the underside of the overhang. There are also several scattered delaminations/spalls on the parapet coping. All delaminations that were discovered during the inspection that were over public areas (i.e., rail/transit, access roads, parking areas) were removed during the inspections



W.150TH STREET BRIDGE 01.94



Photo DCK-5: Right Edge of Deck (looking south)



Photo DCK-6: Right Edge of Deck (looking north)



Photo DCK-7: Left Deck Edge (looking south)



Photo DCK-8: Spall in parapet coping

### 2.3.2.3 Wearing Surface

The *Wearing Surface* consisting of a latex modified concrete overlay is in *Good Condition*. There are some minor cracks throughout and some minor spalls along the gutter lines (Photo DCK-9). There was also minor wearing/abrasion of the wearing surface in the wheel paths (Photo DCK-10).





Photo DCK-9: Spall along right gutterline



Photo DCK-10: Minor transverse crack and wearing/abrasion in wheel path

#### 2.3.2.4 Curbs/Sidewalks

The *Curbs/Sidewalks* are in *Satisfactory Condition*.

The steel curb plates are scraped and corroded and there is very minor chipping/spalling of the concrete walk along the curb plates (Photo DCK-11). There is also some vegetation growing along the curb plate and base of railings at some locations. The sidewalks have minor surface scaling, minor transverse/longitudinal cracks and minor delaminations/spalls throughout.



Photo DCK-11: Chipping and spalling of sidewalk behind curb plate (typ.)



Photo DCK-12: Cracking and delaminations in left sidewalk at rear expansion joint



Photo DCK-13: Cracking and delaminations in left sidewalk at pier 5 expansion joint



Photo DCK-14: Spalling in right sidewalk at Pier 5 expansion joint.





Photo DCK-15: Longitudinal cracking in left sidewalk (typical along length)



Photo DCK-16: Transverse cracks/minor spalls in right sidewalk

#### 2.3.2.5 Railings

The *Railings* are in *Fair Condition*.

The sidewalk parapets have scattered leach-stained horizontal/vertical/map cracking throughout. The right sidewalk parapet has several areas that are heavily saturated and have partial or near-full depth spalls with exposed reinforcing steel. At a few of these locations, the anchor bolts for the vandal protection fence are exposed. The epoxy-urethane sealer is bubbling/flaking off at the top of parapet in many areas.



Photo DCK-17: Right Parapet, Saturated concrete/spall with exposed VPF anchor bolt



Photo DCK-18: Right Parapet, Saturated concrete/spall with exposed/corroded rebar.



Photo DCK-19: Right Parapet, Saturated concrete/spall with exposed VPF anchor bolts



Photo DCK-20: Right Parapet, Saturated concrete/spall with exposed VPF anchor bolt

### 2.3.2.6 Vandal Protection Fence

The *Vandal Protection Fence* is in *Fair Condition*.

Spalls/deterioration of the concrete railing (right) have exposed the front anchor bolts for the vandal protection fence at 4 locations (Photo DCK-17, Photo DCK-19, and Photo DCK-20). There is some minor, scattered corrosion beginning on fence posts, rails, base plates, etc. There is a small cut-out in the chain link fence and a kink in the bottom rail of the left vandal protection fence at the intermediate expansion joint at Pier 5 (Photo DCK-21). There are also some loose or missing light pole access covers (Photo DCK-22). There is also a missing anchor bolt in the fence post base plate at one location (Photo DCK-23).





Photo DCK-21: Cut-out in chain link fence and kink in bottom rail at Pier 5 expansion joint.



Photo DCK-22: Missing light pole access cover in vandal protection fence



Photo DCK-23: Missing anchor bolt in fence base plate.

### 2.3.2.7 Expansion Joints

The *Expansion Joints* are in *Good Condition*.

The elastomeric strip seals are filled with dirt and debris (Photo DCK-24). There is also some evidence of localized leakage onto backwalls at both abutments (Photo DCK-25, Photo DCK-26, and Photo DCK-27).



Photo DCK-24: Dirt and debris in elastomeric strip seal



Photo DCK-25: South Expansion Joint, evidence of leakage onto backwall



Photo DCK-26: South Expansion Joint, evidence of leakage onto backwall





Photo DCK-27: North Expansion Joint, evidence of leakage onto backwall

### 2.3.2.8 Deck Drainage

The *Deck Drainage* is in *Good Condition*. There were small accumulations of dirt/garbage/debris along both gutter lines, however, the deck still drained adequately, and no standing water/ponding was observed at any time during the inspection.

Cuyahoga County (CDPW) maintenance crews were on site 9/30/2020 pressure cleaning the railings, sidewalks and gutters. During this cleaning operation, the downspout for the rear-right deck scupper was overflowing (Photo DCK-28). The downspout was inspected during dry conditions, and no clogs were noted in the above-ground portion of the downspout. The manhole/storm sewer system that the downspout drains into is backed up/full of water.

The manhole cover was missing from the manhole located under Span 1 near the right corner of the rear abutment. The inlet grate was also missing from the catch basin located under Span 1 along the access road near Pier 1L. The corroded/perforated manhole cover under Span 9 that was noted during previous inspections was not observed during this inspection.



Photo DCK-28: Overflowing downspout at rear-right corner



Photo DCK-29: Dirt/debris along gutterline

### 2.3.2.9 Item 58 – Deck Summary

Overall, the *Deck* is in *Good Condition* (*Condition Rating = 7*). Condition findings of individual deck items are provided in the preceding sections.

## 2.3.3 Superstructure Items

Inspection findings for the Alignment, Beams/Girders, Diaphragms/X-Frames, Bearing Devices, Protective Coating System, and Fatigue Items are included in the following sections.

### 2.3.3.1 Alignment

The *Alignment* of all primary superstructure members is *Good*.

### 2.3.3.2 Beams/Girders

The *Beams/Girders* are in *Poor Condition*.

*Span 1:* Beams 1 and 10 have web plate repairs at the rear abutment (Photos SUP-1 ad SUP-2).

*Spans 5-6:* The ends of Beams 1, 2, and 10 in Spans 5 & 6 at Pier 5 have corrosion/pack rust due to leakage from expansion joint.

*Spans 6-7:* All beams are over the NS tracks are unpainted and have minor section loss (up to 4%) to lower flange at midspan. Beams 5 and 6 have corrosion/pack rust on interior faces (Bay 5) of webs and flanges with considerable section loss to lower flange. Average section loss to lower flange of Beams 5 and 6 is ~12% in span 6 and ~50% in span 7.

*Span 8:* All Beams have small flaking corrosion.

There was pack rust and warping of bottom flange splice plates at several of the bolted field splices.





Photo SUP-1: Span 1, Beam 1 web plate repairs



Photo SUP-2: Span 1, Beam 10 web plate repairs



Photo SUP-3: Span 1, Beam 2, transverse weld at end of moment plate



Photo SUP-4: Span 2, pack rust at bottom flange bolted field splice



Photo SUP-5: Underside of superstructure Span 6.



Photo SUP-6: Beam 6/Span 7, advanced corrosion/section loss at lower flange



Photo SUP-7: Beam 5/Span 7, advanced corrosion/pack rust at lower flange





Photo SUP-8: Beam 6/Span 7, advanced corrosion/pack rust at bottom flange field splices



Photo SUP-9: Beam6/Span 8, sheet/pack rust at web and bottom flange in bay 5.



### 2.3.3.3 Diaphragms/X-Frames

The *Diaphragms/X-Frames* are in *Good Condition*. There are several (<10%) deteriorated, bent, and/or broken x-frames throughout the bridge.



Photo SUP-10: Span 1, Bay 3, broken weld/buckled diagonal x-frame frame member



Photo SUP-11: Span 1, Bay 1, missing bottom intermediate x-frame angle



Photo SUP-12: Span 2, Bay 4, broken weld/buckled intermediate x-frame member



Photo SUP-13: Span 5, Bay 1, deteriorated x-frame

#### 2.3.3.4 Bearing Devices

The *Bearing Devices* are in *Poor Condition*.

A majority of the steel pot bearings at the abutments and piers only have 1 or 2 anchor bolts per bearing and many of the anchor bolts are crooked/bent, broken, or have loose nuts. The bearings at the Rear and Forward Abutments and Pier 5 have areas of corrosion from leakage through expansion joints with Bearings 1, 5, 6, and 10 being the worst.



**Photo SUP-14: Bearing 10/Rear Abutment, corrosion of bearing**



**Photo SUP-15: Bearing 1/Pier 1, broke anchor bolt**



Photo SUP-16: Bearing 10/Pier 4, broken anchor bolt



Photo SUP-17: Bearing 5/Pier 5, corrosion/pack rust





Photo SUP-18: - Bearing 6/Pier 9, missing anchor bolt



Photo SUP-19: - Bearing 9/Forward Abutment, light corrosion and loose nut

### 2.3.3.5 Protective Coating System

The *Protective Coating System* is in *Poor Condition*.

There is some minor pinpoint rusting throughout (<1%) Spans 1-5 and Spans 9-10 with the exception of the beam ends at both abutments and Pier 5. The painted surfaces in Span 6-8 have failed and the beams/crossframes are corroded with pack rust.

The painted surfaces in Spans 6-8 were assigned a Rust Grade = 0 (>50% rusted) and the painted surfaces in the remaining spans were assigned a Rust Grade = 8 (<0.1%), with the exception of the beam ends at the abutments and Pier 5.



Photo SUP-20: Typical paint condition in Span 2 (Rust Grade 10)



Photo SUP-21: Typical paint condition in Span 6 (Rust Grade 0).



Photo SUP-22: Typical paint condition in Span 7 (Rust Grade 0)



Photo SUP-23: Typical paint condition in Span 8 (Rust Grade 0)

### 2.3.3.6 Fatigue Prone Connections

The *Fatigue Prone Connections* are in *Poor Condition*.

Several top and bottom moment plates in spans 6, 7, and 8 are corroded along the transverse and longitudinal welds.



Photo SUP-24: Corrosion of bottom flange and moment plate in Span 8.



Photo SUP-25: Pack rust and small crack in transverse weld at end of moment plate in Span 1

#### 2.3.3.7 Item 59 – Superstructure Summary

Overall, the *Superstructure* is in *Poor Condition* (*Condition Rating = 4*).

Condition findings of individual Superstructure Items are provided in the preceding sections.

### 2.3.4 Substructure Items

The inspection findings for the Abutment Walls, Backwalls, Wingwalls, Pier Walls, Pier Caps, and Slope Protection Items are included in the following sections.

#### 2.3.4.1 Abutment Walls

The *Abutment Walls* are in *Satisfactory Condition*.



Both abutments have scattered cracks, map-cracking, rust-staining (from formwork anchors and/or rebar too close to surface), spalls, delaminations and previously patched areas. Some of the previously patched areas are delaminated.



Photo SUB-1: Rear Abutment, cracking, leakage, and rust staining



Photo SUB-2: Rear Abutment, cracking and spalling at right end face.



Photo SUB-3: Rear Abutment, cracking and spalling at left end face.



Photo SUB-4: Forward Abutment, leakage and spalling at right end face.



Photo SUB-5: Forward Abutment, spalling/exposed rebar at right end of beam seat

#### 2.3.4.2 Backwalls

The *Backwalls* are in *Good Condition*.

The tops of both backwalls have scattered delaminations and minor spalls along length (Photo SUB-6). The vertical face of rear backwall has some scattered minor cracks. Several cracks are leaching or rust-stained (Photo SUB-7).



Photo SUB-6: Forward Backwall, minor chips/spalls along top





Photo SUB-7: Rear Backwall, minor vertical cracks



Photo SUB-8: Forward Backwall, cracking/leakage/rust staining

#### 2.3.4.3 Wingwalls

The *Wingwalls* are in *Satisfactory Condition*.



All walls show signs of cracking, leaching, rust-staining, scattered delaminated areas and spalls, mostly adjacent to previous patches. Many walls had coatings and graffiti covered over. The large spalls occurred at the expansion joints and/or construction joints with exposed/corroded rebar.

*Note: The approach retaining walls are included with the wingwalls for rating. The aesthetic "coping" on the outside face of wall below the bridge parapet were considered to be part of these walls*



**Photo SUB-9: Rear-right wingwall, cracking and minor delaminations/spalling**



Photo SUB-10: Rear-right retaining wall, cracking and minor delaminations/spalling



Photo SUB-11: Rear-left wingwall, minor cracking and delaminations



Photo SUB-12: Rear-left retaining wall, cracking and minor delaminations/spalling



Photo SUB-13: Forward-right wingwall, cracking and minor delaminations/spalling



Photo SUB-14: Forward-right retaining wall, delaminations/spalls near top of wall



Photo SUB-15: Forward-left wingwall, no problems

#### 2.3.4.4 Pier Walls

The *Pier Walls/Stems* are in *Fair Condition* (*Condition Rating = 5*).

There are scattered vertical and/or diagonal cracks, rust staining, and light surface scaling. There were also minor to moderate scattered delaminations/spalls on pier ends and faces





Photo SUB-16: Pier 4L



Photo SUB-17: Pier 2R

#### 2.3.4.5 Pier Caps

The *Pier Caps* are in *Poor Condition* (*Condition Rating = 4*).

All pier caps have scattered rust staining, and vertical/diagonal and map cracks. The pier caps also have scattered minor to severe delaminations/spalls, with Pier 5 being the worst.

Pier 5L and Pier 5R have cracks/delaminations/spalls near the top of the cap/seat for a majority of their length. Pier 5L has extensive spalling/deterioration at the left end/rear face under Beam 1. The deterioration is 6-7" deep and multiple vertical and horizontal reinforcing bars are exposed and completely unbonded.



Photo SUB-18: Pier 2R, large spall and diagonal shear crack between Beams 9 and 10



Photo SUB-19: Pier 5R, cracking/delaminations/rust staining at right end of cap



Photo SUB-20: Pier 5L, extensive spalling/deterioration at left end of cap



Photo SUB-21: Pier 5L, extensive spalling/deterioration at left end of cap



Photo SUB-22: Pier 5L, extensive spalling/deterioration at left end of cap.



Photo SUB-23: Pier 5L, large crack/delamination in pier seat.

#### 2.3.4.6 Item 60 - Substructure Summary

The overall condition of the *Substructure* is *Poor* (*Condition Rating = 4*).

Condition findings of individual Substructure Items are provided in the preceding sections.

### 2.3.5 Sign/Utility Items

The inspection findings for the Signs/Utility Items are included in the following sections.

#### 2.3.5.1 Signs

The *Signs* are in *Good Condition*.

Bridge end markers are in-place at all four corners of the bridge.





Photo SGN-1: Typical Bridge End Marker

### 2.3.5.2 Utilities

The *Utilities* are in *Fair Condition*.

The cover plates for the utility access panels in the concrete railings are loose or are missing (3 locations) and have exposed wires (Photos UTL-1 and UTL-2). Both light poles located along the rear-right approach are missing. The two northern most light poles on the right side of the bridge are not illuminated. The bottom 6 feet of the last light pole at the forward-left approach is severely corroded.

The water line located in Bay 5 has missing/failed insulation in all spans (Photos UTL-3 and UTL-4). The water line support angles are also corroded in all spans (Photos UTL-4 and UTL-5).



Photo UTL-1: Utility Access Panel, missing cover plate and exposed wires (typ. at 3 locations)



Photo UTL-2: Utility Access Panel, loose cover plate at forward-right approach



Photo UTL-3: Exposed water-line insulation



Photo UTL-4: Exposed water-line insulation and corroded support angle.



Photo UTL-5: Corroded water-line support angles.

### 2.3.6 General Appraisal

The General Appraisal rating for this structure is **Poor (Condition Rating = 4)**. The poor condition of the substructure controlled this rating.



## 2.4 Material Sampling and Testing

### 2.4.1 Concrete Sampling and Testing

Terracon obtained twelve (12) 4-inch diameter concrete cores from the bridge deck using a truck mounted core drill. Six of the cores were advanced nearly full depth and were used for compressive strength testing, chloride ion testing, and permeability testing. The other six cores were used to test the adhesion/bond strength between the latex-modified concrete overlay and deck concrete.

Terracon also obtained two (2) 4-inch diameter concrete cores from the bridge abutments (one from each abutment) and five (5) 4-inch diameter concrete cores from the bridge piers.

Concrete Testing Results					
Core No.	Core Location	Compressive Strength (psi)	Bond Strength (psi)	Permeability (cm/sec)	Chloride, lb/ft <sup>3</sup> by Weight of Concrete
A-1	Rear Abut.	7,780	---	---	0.018
A-2	Forward Abut.	---	---	$8.5 \times 10^{-6}$	---
D1	Deck - SB Lane	7,180	---	---	0.024
D1A	Deck - SB Lane	---	590	$1.2 \times 10^{-6}$	---
D2	Deck - SB Lane	5,900	---	---	0.018
D2A	Deck - SB Lane	---	520	$1.8 \times 10^{-7}$	---
D3	Deck - NB Lane	7,260	---	---	0.012
D3A	Deck - NB Lane	---	490	$4.2 \times 10^{-9}$	---
D4	Deck - NB Lane	7,200	---	---	0.018
D4A	Deck - NB Lane	---	490	$1.5 \times 10^{-8}$	---
D5	Deck - NB Lane	6,580	---	---	0.041
D5A	Deck - NB Lane	---	865	$1.3 \times 10^{-6}$	---
D6	Deck - SB Lane	6,850	---	---	0.012
D6A	Deck - SB Lane	---	440	$1.2 \times 10^{-8}$	---
P1	Pier 1	6,830	---	---	0.015
P2	Pier 2	---	---	$1.2 \times 10^{-8}$	---
P3	Pier 3	7,700	---	---	0.006
P8	Pier 4	5,190	---	---	0.006
P9	Pier 5	6,390	---	---	0.013

The compression strengths for the deck and substructure cores exceeded their design values of 4,500 psi (deck) and 4,000 psi (substructure). The chloride content at all core locations were below the 0.074 lb/ft<sup>3</sup> threshold where corrosion typically starts.

The complete Coring Report is included in the Appendices.

### **2.4.2 Asbestos Survey**

Arcadis conducted an asbestos survey for this structure on October 2, 2020. The survey was completed in compliance with the National Emissions Standards for Hazardous Air Pollutants (NESHAPs). The asbestos survey included a visual and physical assessment of each accessible space to locate suspect Asbestos Containing Materials (ACMs). Suspect materials were divided into "Homogeneous Areas" (HAs) (i.e., building materials that were determined by the inspector to be homogeneous based on their color, texture, and assumed date of installation).

The presence of asbestos in suspect materials was assumed in one case without bulk samples being collected or analyzed. The following HA could not be safely accessed and sampled due to electrical hazard and was assumed to contain asbestos at concentrations above 1% (ACM is defined as a material containing more than 1% of asbestos by weight):

- HA 150-21 – Electrical Wire Insulation was assumed to be present and be ACM. This material should be managed as ACM until laboratory analysis can prove otherwise.

A representative number of samples were collected from the remaining HA's and sent to a laboratory for testing. All of these samples were reported by the laboratory as "None Detected" for asbestos.

If other suspect materials, not referenced in this survey report, are identified during demolition activities, Arcadis recommends that these materials be considered ACM until they are inspected by an appropriately licensed asbestos inspector and proven otherwise. Asbestos waste must be disposed at an asbestos waste receiving facility that is duly permitted by the state and/or local municipality in which it resides.

The asbestos survey is included in the "Pre-Demolition Hazardous Building Materials Survey" report and is included in the Appendices.

### **2.4.3 Lead Paint Survey**

Arcadis conducted a lead paint survey for this structure on October 2, 2020. The survey was completed in compliance with USEPA Resource Conservation and Recovery Act (RCRA) (Standard 40 CFR 240-280) and OSHA Lead in Construction (Standard 29 CFR 1926.62). A visual inspection of the structure was performed, and paint samples from various painted surfaces were collected and sent to a laboratory for testing. The following paint chip samples were confirmed via laboratory testing to contain detectable levels of lead:

- 150-PC-03: Gray Paint on Metal Beams
- 150-PC-04: Gray Paint on Concrete Parapet Wall
- 150-PC-05: Brown Paint on Lamp posts

Arcadis recommends that for future maintenance/rehabilitation/replacement projects, the general contractor and any sub-trades be advised of the presence of lead-based paint/lead-containing paint and their requirements for compliance with the OSHA Lead in Construction standard (Title 29 CFR, Part 1962.62).

The lead paint survey is included in the "Pre-Demolition Hazardous Building Materials Survey" report in the Appendices.

## 2.4.4 Paint Dry Film Thickness and Adhesion Testing

During the inspection, paint dry film thickness measurements were obtained at various beams/locations (see table below) throughout the structure using a Paint/Coating Thickness Gauge Meter. Paint adhesion testing was also performed in accordance with ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test (Test Method B) using a crosshatch cutter adhesion testing kit. Dry film and adhesion tests were performed on the beam web at each test location. Dry film thickness measurements and adhesion testing were not performed in Spans 6, 7, and 8 due to the poor condition of the paint or lack thereof. Paint thicknesses measurements ranged from 13.1 to 17.3 mil. The paint adhesion was rated as good (Method B rating = 5B) at all locations. Since the adhesion testing is a destructive test, the damaged paint was repaired with zinc primer.

Paint Dry Film Thickness and Adhesion Testing			
Span Number	Beam Number	Dry Film Thickness (mil)	Adhesion
1	1	14.6	---
1	5	15.2	5B (Good)
1	6	15.6	5B (Good)
1	10	16.1	---
2	3	17.1	5B (Good)
2	8	16.3	5B (Good)
3	1	13.0	---
3	5	15.4	5B (Good)
3	6	15.6	5B (Good)
3	10	17.3	---
4	3	13.1	5B (Good)
4	8	15.4	5B (Good)
5	1	15.6	---
5	5	14.8	5B (Good)
5	6	14.5	5B (Good)
5	10	15.3	---
6 thru 8	1 thru 10	---	---
9	1	13.9	---
9	5	15.2	5B (Good)
9	6	14.8	5B (Good)
9	10	15.6	---
10	3	16.1	5B (Good)
10	8	15.6	5B (Good)

### 3 BRIDGE EVALUATION

#### 3.1 Bridge Load Rating Analysis

A bridge load rating analysis was performed in accordance with Section 900 of the ODOT Bridge Design Manual. Existing bridge plans and field measurements (including section loss measurements) were utilized to prepare the bridge load rating model using AASHTOWare BrR Bridge Rating Software. The bridge was evaluated for the HS20 loading, Ohio Legal Loads (2F1, 3F1, 4F1, 5C1), Special Haul Vehicles (SU4, SU5, SU6, SU7) and Emergency Vehicles (EV2, EV3). The load rating results are included below. No Load Posting is Recommended.

Figure 2 – Bridge Load Rating Summary

OHIO LEGAL VEHICLES				DESIGN VEHICLE		
Loading Type	GVW (Tons)	Operating Rating RF	Legal Weight (Tons)	Loading Type	Rating by RF	
					Operating	Inventory
2F1	15	3.351	15.00	HS20 Loading	1.063	0.636
3F1	23	2.202	23.00			
4F1	27	1.897	27.00			
5C1	40	1.489	40.00	<div>Overall Legal Posting Rating135%</div> <div>Posting RecommendationNo Load Posting is Recommended</div> <div>Sign Posting Recommendation:</div>		
SPECIALIZED HAULING VEHICLES (SHV)						
SU4	27	1.898	27.00			
SU5	31	1.678	31.00			
SU6	34.75	1.504	34.75			
SU7	38.75	1.368	38.75			
EMERGENCY VEHICLES (EV)						
Check box if this is an NBI bridge <input checked="" type="checkbox"/>						
EV2	28.75	1.799	28.75			
EV3	43	1.425	43.00			

A load rating report including the ODOT Bridge Load Rating Summary Form (BR100) is included in the Appendices.

#### 3.2 Bridge Maintenance and Repair/Rehabilitation Strategies

This section of the Structure Evaluation Report includes bridge maintenance and capital improvement (Short Term, Mid-Range, Long Range) recommendations that are necessary to extend the service life of the existing structure. This section also includes a Project Constraints Evaluation.

##### 3.2.1 Maintenance Recommendations

###### 3.2.1.1 Level 1 – Safety Items

The following Level 1 - Safety Items should be addressed within the next 6 months.

- Patch spalled areas on bridge deck wearing surface and sidewalks.
- Patch spalled areas on bridge/approach railings.



- Repair Pier Cap at Pier 5 (see *Note* below)
- Clean out clogged drainage system.

*Note: Through previous discussions with CCDPW, it was our understanding that CCDPW was planning to perform repairs to the pier cap at Pier 5 in the fall/winter of 2020/2021. No repairs had been performed by the conclusion of our field inspection on November 19, 2020. **Due to the location (directly under Beam 1) and severity of the concrete deterioration at Pier 5L, Arcadis recommends that these repairs be completed as soon as possible but within the next 3-4 months.** The pier cap repairs are not included in estimate*

The estimated cost to complete the above Level 1 – Safety Items is **\$90,000**

### 3.2.1.2 Level 2 – Reactive Items

The following Level 2 – Reactive Items should be addressed within the next 1-2 years

- Reset bearings/replace anchor bolts.
- Replace damaged/deteriorated cross-frames

The estimate cost to complete the above Level 2 – Reactive maintenance items is **\$50,000**.

### 3.2.1.3 Level 3 – Planned Activities

There are no Level 3 – Planned Activities that need to be addressed at this time.

### 3.2.1.4 Housekeeping/Preventative Maintenance

The following “housekeeping” tasks should be performed in-house by CCDPW maintenance crews at least **once every year**. Due to the amount of dirt, debris, and trash that collects on the bridge, the bridge deck/sidewalks should be swept 3-4 times per year. Power washing should be performed in the spring after the final application of roadway deicing salts. Costs were not prepared for these in-house tasks.

- Sweep (power broom) bridge deck and approach.
- Sweep (power broom) bridge/approach sidewalks.
- Power wash bridge deck and approach slabs.
- Power wash bridge/approach sidewalks.
- Power wash bridge/approach parapets.
- Remove dirt and debris collecting in the elastomeric strip seal expansion joints (3 joints).
- Clean and flush out bridge scuppers and downspouts.
- Power wash beam ends at the rear and forward abutments and Pier 5.
- Power wash the abutment seat, backwall, and the entire front face of the rear and forward abutments.

The following “preventative maintenance” tasks should be performed once **every 5 years**.

- Seal the entire surface of the bridge/approach sidewalks with silane/siloxane sealer.
- Seal the entire surface of the bridge/approach parapets with silane/siloxane sealer.

- Seal the backwall, abutment seat, and entire front face of the rear and forward abutments with silane/siloxane sealer.
- Seal pier seat and faces/ends of pier caps (to 3' below seat) at Pier 5 with silane/siloxane sealer.
- Clean/lubricate bearings.

The estimated cost to complete the above preventative maintenance items is **\$30,000**.

The following “preventative maintenance” tasks should be performed **every 10 years**.

- Flood/seal the entire surface of the bridge deck/wearing surface with High Molecular Weight Methacrylate (HMWM) sealer.
- Seal the backwall, abutment seat, and entire front face of the rear and forward abutments with epoxy urethane sealer.
- Seal pier seat and faces/ends of pier caps (to 3' below seat) at Pier 5 with epoxy urethane sealer.
- Replace elastomeric strip seal glands.
- Clean and paint beam ends at rear and forward abutment and at Pier 5.
- 
- Clean and paint steel curb plates.

The estimated cost to complete the above preventative maintenance items is **\$260,000**

### **3.2.2 Capital Improvement Recommendations**

#### **3.2.2.1 Short-Term Capital Improvements**

The following short-term capital improvements are recommended within the next **5-10 years**.

- Replace concrete overlay.
- Replace expansion joints
- Replace approach slabs
- Patch Substructures
- Repair Structural Steel
- Paint Structural Steel

The estimated cost to complete the above short-term capital improvements is **\$15,000,000**.

#### **3.2.2.2 Mid-Range Capital Improvements**

The following mid-range capital improvement is recommended in **approximately 30 years**.

- Replace bridge deck and overlay
- Replace expansion joints
- Replace approach slabs
- Replace bridge railings
- Replace bridge sidewalks

- Replace Bearings
- Patch Substructures
- Paint Structural Steel

The estimated cost to complete the above mid-range capital improvements is **\$31,000,000**.

### 3.2.2.3 Long-Range Capital Improvements

The following long-range capital improvement is recommended in ***approximately 50 years***.

- Complete Structure Replacement

The estimated cost to complete the above long-range capital improvements is **\$113,000,000**.

## 3.2.3 Project Constraints Evaluation

Site/construction access requirements, railroad/transit requirements, right-of-way requirements, traffic control requirements, legal/permitting issues, constructability issues, and environmental red flags were also evaluated and described below.

### 3.2.3.1 Site / Construction Access

Due to the urban setting, there is very limited site access for this structure. Above deck work will need to be completed using single right or left lane closures, or part-width staged construction (see Traffic Control Requirements). For the larger rehabilitation projects, the bridge approaches will likely be utilized for material/equipment storage.

### 3.2.3.2 Railroad/Transit Requirements

Norfolk Southern and GCRTA will need to be engaged early on when planning major rehabilitation/replacement work. Adequate time will need to be allotted in the design and construction schedules to allow for plan and shop drawing reviews/submittals by NS and GCRTA. Railroad/Transit flaggers are required when workers or construction equipment are working within 25 feet of the tracks.

### 3.2.3.3 Right of Way Requirements

Due to the limited right-of-way on each side of the bridge, temporary right-of-way will be necessary for construction access/equipment staging for major rehabilitation work (deck replacements, superstructure replacement).

### 3.2.3.4 Traffic Control Requirements

Routine maintenance work (i.e., cleaning, crack sealing, patching) on the bridge deck can be completed using single right lane or left lane closures per ODOT Standard Drawing MT-95.30 or MT-95.31. Major rehabilitation/replacement items (i.e., new deck overlay, expansion joint replacement, deck replacement)

can be completed using part-width staged construction while maintaining one lane of traffic in each direction at all times.

### 3.2.3.5 Legal / Permitting Requirements

Right-of Entry Permits are required to perform any work within Norfolk Southern's right-of-way.

Street Opening and/or Sidewalk Obstruction Permits are required to perform lanes closures on City streets.

### 3.2.3.6 Constructability Issues

*Track time/outages:* Working on or above Norfolk Southern and GCRTA property and getting necessary track-time/outages will be the biggest construction hurdle/challenge when performing bridge repairs/rehabilitations.

*Utilities:* There are also several utilities within the project site that may or may not be impacted by construction activities.

- There is an existing 12" diameter waterline carried on the structure in Bay 5. The waterline would need to be protected during deck replacement activities or relocated during superstructure and total replacement.
- There are high voltage overhead power lines that run along the south side of Norfolk Southern and cross over the bridge above Span 6, just north of Pier 5.
- There are underground fiberoptic lines that run along the south side of NS property.
- There are underground gas lines that run along the west and east sides of the structure.
- There are overhead telecom lines that cross under the structure in Span 3 and Span 5.

*Nearby Airport:* Highway/airway clearance was not evaluated in this structure evaluation report. Cleveland Hopkins Airport is located approximately 2.5 miles from the project site and could present limitations on the height of construction equipment (i.e. cranes) required for major rehabilitation/replacement work.

*Composite Deck Construction:* There are shear connectors that tie the existing concrete deck to the steel beams and will make deck removals more difficult.

### 3.2.3.7 Environmental Red Flags

A desktop review was performed to assess the potential for impact to the following resource categories during these maintenance/repair/rehabilitation projects.

*Cultural Resources:*

There were no historic structures or archaeological resources identified in the project area.

*Section 4(f) Resources:*

There were no parks, recreation areas, trails or shared-use paths, school playgrounds, wildlife areas, or other Section 4(f) properties identified in within the project area.



*Ecological Resources:*

There are no streams or wetlands within the project area. There were no bat roost trees or suitable wooded habitat (SHW) identified in the project area.

*Hazardous Materials:*

A database search identified 11 potential hazardous material sites in proximity to the project area. This includes 5 Resource Conservation and Recovery Act (RCRA) sites, 2 Underground Storage Tank (UST) sites, and 4 Leaking Underground Storage Tank (LUST) sites. A Regulated Material Review (RMR) Screening will need to be completed. A RMR Investigation (Phase II) may be required following the RMR Screening depending on the ROW requirements and the depth of construction.

*Environmental Justice:*

There were no HUD or Section 8 properties identified within the project area. Underserved populations were identified in the project/study area; however, the repair/rehabilitation projects should cause no adverse impact.

# APPENDIX A

## Coordination Information

## W. 150th St.

		West Side	East Side
Approach Wall	Person	Randy Smith	
	Business	PNC Bank	Wood Dimensions
	Address	4100 W. 150th St.	4031 W. 150th St.
		Cleveland, OH 44135	Cleveland, OH 44135
	Phone #		216.251.5509
	Cell #	216.213.4752	
	Person	(Note: PNC Bank rents this building from owner Randy Smith - coord with him, cell # listed above; Building phone number - 216.257.5524)	
	Business		Rocksolid Surfaces
	Address		4031 W. 150th St.
	Phone #		Cleveland, OH 44135
	Cell #		
Span 1	Person		
	Business	Service Road / same as above	Service Road
	Address		
	Phone Number		
	Cell #		
Spans 2 & 3	Person		Robert A. & Gretchen L. Hill
	Business	Service Road / same as above	(Unknown - Property Report says "Bldg Material Stge")
	Address		4015 W. 150th St.
			Cleveland, OH 44135
	Phone Number		
Span 8 Spans 4, 5, 6, & 7		Norfolk Southern	
		GCRTA	
Span 9	Person	Frank T. Shaker	
	Business	Second to None Auto Body	Norfolk Southern
	Address	15009 Chatfield Ave.	
		Cleveland, OH 44111	
	Phone Number	216.251.7772	
Span 10	Cell #		
		Chatfield Avenue	
Approach Wall	Person		Frank T. Shaker
	Business	City of Cleveland (sidewalk)	Second to None Auto Body
	Address		3931 W. 150th St.
			Cleveland, OH 44111
	Phone Number		216.251.7772
Approach Wall	Cell #		

Mr. Randy Smith  
PNC Bank  
4100 West 150<sup>th</sup> St.  
Cleveland, Ohio 44135

Subject:  
**Cuyahoga County**  
**West 140<sup>th</sup> Street Bridge 0182 & West 150<sup>th</sup> Street 0194 Bridge Inspections**

Arcadis U.S., Inc.  
222 South Main Street  
Suite 200  
Akron  
Ohio 44308  
Tel 330 434 1995  
Fax 330 374 1095  
[www.arcadis.com](http://www.arcadis.com)

INFRASTRUCTURE

Dear Property Owner:

The Cuyahoga County Engineer has contracted Arcadis U.S., Inc. to perform inspection and evaluation of the two referenced bridges.

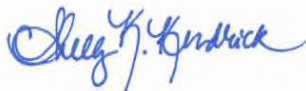
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Sections 5517.01 and 163.03 of the Ohio Revised Code authorize such entries but also require that reimbursement be made for any actual damage resulting from such work. The work crews have received strict instructions concerning the preservation of private property and public lands. If at any time you feel that our representatives have not given proper attention to private property, please notify us at once.

We sincerely appreciate your cooperation and assistance. If you have any questions regarding this work, please feel free to contact me at 330-515-5699.

Respectfully,

Arcadis U.S., Inc.



Shelly Kendrick, PE  
Project Coordinator



Robert Beasley, PE  
Project Manager

Copies: Demetrios J. Hazimihalis, PE, MSCE, Cuyahoga County

Date:  
September 14, 2020

Contact:  
Shelly Kendrick, PE

Phone:  
330.515.5699

Email:  
[shelly.kendrick@arcadis.com](mailto:shelly.kendrick@arcadis.com)

Our ref:  
30056244



Wood Dimensions  
4031 West 150<sup>th</sup> St.  
Cleveland, Ohio 44135

Subject:  
**Cuyahoga County**  
**West 140<sup>th</sup> Street Bridge 0182 & West 150<sup>th</sup> Street 0194 Bridge Inspections**

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[shelly.kendrick@arcadis.com](mailto:shelly.kendrick@arcadis.com)

Our ref:  
30056244

Rocksolid Surfaces  
4031 West 150<sup>th</sup> St.  
Cleveland, OH 44135

Subject:  
**Cuyahoga County**  
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Our ref:  
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Robert & Gretchen Hill  
4015 West 150<sup>th</sup> St.  
Cleveland, Ohio 44135

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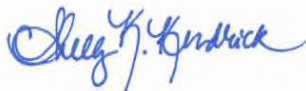
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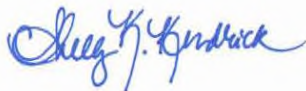
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Our ref:  
30056244

## TEMPORARY RIGHT OF ENTRY AGREEMENT

THIS TEMPORARY RIGHT OF ENTRY AGREEMENT ("Agreement"), made this 2<sup>nd</sup> day of September 2020 (the "Effective Date"), by and between the GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY ("Licensor") a political subdivision of the State of Ohio having an office located at 1240 W. 6<sup>th</sup> St., Cleveland, Ohio 44113 and ARCADIS ("Licensee"), a Consultant working on the behalf of the Cuyahoga County Department of Public Works with a business address at 222 South Main Street, Suite 200, Akron, Ohio 44308, collectively, "the Parties."

Licensor hereby permits Licensee to enter upon property owned or controlled by Licensor located at West 140<sup>th</sup> Street and West 150<sup>th</sup> Street on the Red Line West, Heavy Rail (the "Property"), and being located substantially as shown upon the print marked **Exhibit "A"**, attached hereto and made a part hereof.

This Right of Entry is granted upon the following terms and conditions:

1. The Right of Entry is granted only for the purpose of inspection and maintenance of the existing Cuyahoga County Bridges on West 140<sup>th</sup> Street and West 150<sup>th</sup> Street over the Red Line West, Heavy Rail from September 1, 2020 through December 31, 2020 (the "Term"). Specifically, Licensee will be conducting field activities for bridge inspections and minor maintenance (removal of small areas of spalling concrete) for the structures over the tracks. Licensee may use ladders and/or personnel lift equipment to conduct the inspections. Licensee work will be conducted during a total track shutdown.
2. Licensor shall be given at least ten (10) days advance written notice before entry upon the property. Notices to Licensor shall be directed to: Jim Rusnov, Property Manager, GCRTA, 1240 W. 6<sup>th</sup> Street, Cleveland, Ohio, 44113 and whose email address is [JRusnov@gcrt.org](mailto:JRusnov@gcrt.org). Email notice will serve as written notice, so long as it is accompanied by notice by U.S. Mail or hand-delivery. Activities shall be coordinated through Lorie Beabes at GCRTA whose telephone number is (216) 356-3256.
3. All reasonable care shall be exercised and such precautions taken as Licensor may deem necessary to protect Licensor's facilities and operations and comply with Licensor's specifications as described in Sections 014500, 015010 and 015020, attached hereto as **Exhibit "B"** and made a part hereof. Licensor reserves the right to place inspectors and supervisors for observation purposes during the operations hereunder and the expense thereof, including the expense of any material furnished, shall be promptly paid by Licensee upon receipt of Licensor's invoice therefore. In addition to direct wage and material cost, such expense shall include, but shall not be limited to, cost of supervision, traveling expenses, Ohio Public Employees' Retirement System ("OPERS") contributions, Unemployment taxes, vacation allowances, and all other expenses incidental thereto.
4. To the fullest extent permitted by law and to the full extent of Licensee's intentional, reckless or negligent acts or omissions, the Licensee shall, at its sole cost and expense, indemnify, defend, satisfy all judgments, and hold harmless Licensor and its officials, agents, representatives, and employees from and against all claims, actions, judgments, costs, penalties, liabilities, damages, losses and expenses,

including but not limited to attorney's fees and worker's compensation benefits, for Licensee's intentional, reckless or negligent acts or omissions arising out of or resulting from the subject matter of this Agreement, or the acts or omissions of any person or contracted entity directly or indirectly employed or contracted by Licensee.

Nothing herein shall be construed as making Licensee liable for any claims, actions, judgments, costs, penalties, liabilities, damages or losses and expenses caused by the sole negligence and/or misconduct of Licensors.

To the extent that any portion of this provision is found to be in violation of any applicable law, said portion(s) of this provision are stricken but all remaining portions of this provision shall remain in full force and effect.

5. Insurance.

- a. The Licensee shall obtain and maintain for the Term of this Agreement the following minimum insurance coverages. Such insurance shall protect the Licensee from claims which may arise out of or result from the Licensee's operations under the Right of Entry and for which the Licensee may be legally liable, whether such operations be by the Licensee or by a subcontractor or by anyone employed directly or indirectly by any of them, or by anyone for whose acts any of them may be liable.

Approval by the Licensors: Approval of the insurance by the Licensors shall not relieve or decrease the liability of the Licensee hereunder and shall not affect the obligations of Licensee pursuant to Section 4 of this Agreement. It is to be understood that the Licensors does not in any way represent that the insurance or the limits of insurance specified herein are sufficient or adequate to protect the Licensee's interests or liabilities.

In the event the Licensee neglects, refuses or fails to provide the insurance required under this Agreement, or if such insurance is cancelled for any reason, the Licensors shall have the right but not the duty to procure the same at Licensee's costs pursuant to the provisions of Section 3 of this Agreement.

Licensors reserves the right to request a copy of all policies and endorsements prescribed herein.

At its sole expense, Licensee shall obtain and maintain:

- i. **Commercial General Liability (CGL) Insurance** in the amount of \$1,000,000 combined single limit each occurrence for bodily injury and/or property damage and with a \$5,000,000 annual aggregate.
- ii. **Business Automobile Liability (BAL) Insurance** in the amount of \$1,000,000 combined single limit each accident for bodily injury and/or property damage. Said policy shall apply to all owned, leased, hired and non-owned vehicles used in connection with the work that is the subject of this Agreement.
- iii. **Statutory Workers' Compensation Coverage** in compliance with all applicable state workers' compensation laws to cover all employees

furnishing labor under the terms of this Agreement and under the control of the Licensee. Employers' Liability coverage in the amount of \$1,000,000 per accident / \$1,000,000 per employee for disease will also be included, either under the Workers' Compensation policy or under the Commercial General Liability policy (Stop Gap) referenced under i. above. In Ohio, a copy of a certificate of premium payment from the Industrial commission and Bureau of Workers Compensation, or a copy of the Certificate of Employer's Right to Pay Compensation Directly shall be sufficient proof of the coverages required by this subpart iii.

- iv. **Railroad Protective Liability Insurance** shall be obtained and maintained naming Licensor (or the other railroad, as applicable) as an insured and having limits of no less than \$5,000,000 per occurrence and \$10,000,000 in the aggregate to cover bodily injury liability, property damage liability and physical damage to property.

**Alternative:** *If it is not in the construction business per se or if it does not customarily work in proximity of a railroad right-of-way, with express permission from the Property Manager, the Licensee may address this exposure by an endorsement to its commercial general liability policy. The applicable endorsement is CG 24 17 – Contractual Liability – Railroads. A copy of the endorsement must be attached to the required Certificate of Insurance.*

- v. ***If the work that is the subject of this Agreement could result in fumes, hazardous materials or other potential pollutant or involves construction which could cause ground or air pollution: Contractor's Pollution Liability Insurance*** for bodily injury and property damage coverage with a combined single limit for bodily injury and property damage of \$2,000,000 This insurance shall include coverage for, but not be limited to, sudden and accidental discharges, gradual discharges, clean-up of pollutants and disposal thereof, as well as mold, asbestos and/or lead in an abatement contract. The policy must be maintained for a period of two (2) years from completion of the work under this Agreement or the Licensee may satisfy this requirement with the purchase of a two (2)-year extended reporting period.
- vi. **Professional Liability / Errors & Omissions Insurance** in the amount of \$2,000,000 per claim. The definition of wrongful acts must be applicable to the work performed hereunder. As this insurance is written on a claims-made basis, the policy must be maintained for a minimum of two years following completion of the work.

b. General Requirements:

- i. The Licensee shall not commence work herein until it has obtained the required insurance and has received written approval of such insurance by the Licensor. ***Licensee shall furnish evidence of such insurance in the form of a certificate (Accord or similar form).***
- ii. The certificate shall provide the following:



- The policy shall be written on an occurrence basis. If any insurance specified above is written on a "Claims Made" (rather than an "occurrence" basis), then in addition to the coverage requirements stated herein, Licensee shall:
  - Ensure that the Retroactive Date is shown on the policy, and such date shall be before the Effective Date of the Agreement or any work beginning under this Agreement.
  - Maintain and provide evidence of similar insurance for at least three (3) years following project completion, including the requirement of adding all additional insureds; and
  - If insurance is cancelled or non-renewed and not replaced with another claims-made policy form with a Retroactive Date prior to the Effective Date, Licensee shall purchase "extended reporting" coverage for a minimum of three (3) years after completion of the work.
- Name the Licensor as an additional insured for all CGL, BAL, and, if applicable, CPL liability coverage for claims arising out of operations in conjunction with this Agreement.
- Contain a waiver of subrogation in favor of the Licensor.
- Specify that the insurance is primary and non-contributory as respects any insurance or self-insurance programs maintained by Licensor.
- Contain a specific reference to this Agreement.
- Specify all deductibles & Self-Insured Retentions (SIR), as applicable.
- In the event the insurance should be changed or cancelled, such change or cancellation shall not be effective until 15 days after the Licensor has received written notice of such change or cancellation from the Licensee. Such notice shall be mailed by certified mail, return receipt requested, to the Licensor's Real Estate Manager.
- An insurance company having less than an A-X rating by The A. M. Best Company will not be considered acceptable. All certificates are subject to acceptance by the Licensor. The Licensor shall be entitled to receive a full copy of the insurance policy(ies) upon request and reserves the right to review financial statements and approve any deductibles or SIR.

iii. Licensor will accept any combination of primary CGL along with Excess or Umbrella policies, as well as primary BAL along with Excess or Umbrella, policies to meet the minimum coverage requirements contained herein.

6. At the termination of this Agreement, Licensor's property shall be restored by Licensee to its original condition, or to a condition satisfactory to Licensor in its sole discretion.

7. No drainage conditions shall be created or allowed to exist which would be adverse to Licensor's Property.

8. A minimum clearance of fifteen feet (15') from the centerline of the nearest rail track shall be maintained at all times for any material, equipment or vehicles of Licensee occupying Licensor's Property unless authorized in writing by Licensor.

9. The license and permission hereby granted is for the sole benefit of Licensee, and Licensor is to receive no benefit therefrom nor any consideration therefor, except the covenants, promises and agreements set forth in this Agreement.

10. No explosives of any kind shall be used on Licensor's Property.

11. No debris will be buried in or burned upon Licensor's Property.

12. This Agreement (a) shall not be assigned or transferred by Licensee, (b) may be terminated at will by Licensor or Licensee, and (c) shall terminate automatically at the close of business on December 31, 2020; however, that termination shall not relieve Licensee of any obligation or liability incurred prior to such termination.

IN WITNESS WHEREOF, the parties hereto have executed this Temporary Right of Entry Agreement in duplicate as of the date first hereinabove written.

Signed in the presence of:

**THE GREATER CLEVELAND REGIONAL  
TRANSIT AUTHORITY**

(Witness)

By:

India L. Birdsong

General Manager, Chief Executive Officer

(Witness)

Date:

9/21

2020

APPROVED AS TO LEGAL FORM

Sheryl King Benford  
Sheryl King Benford, General Counsel  
Deputy General Manager for Legal Affairs

Signed in the presence of:

[LICENSEE]

(Witness)

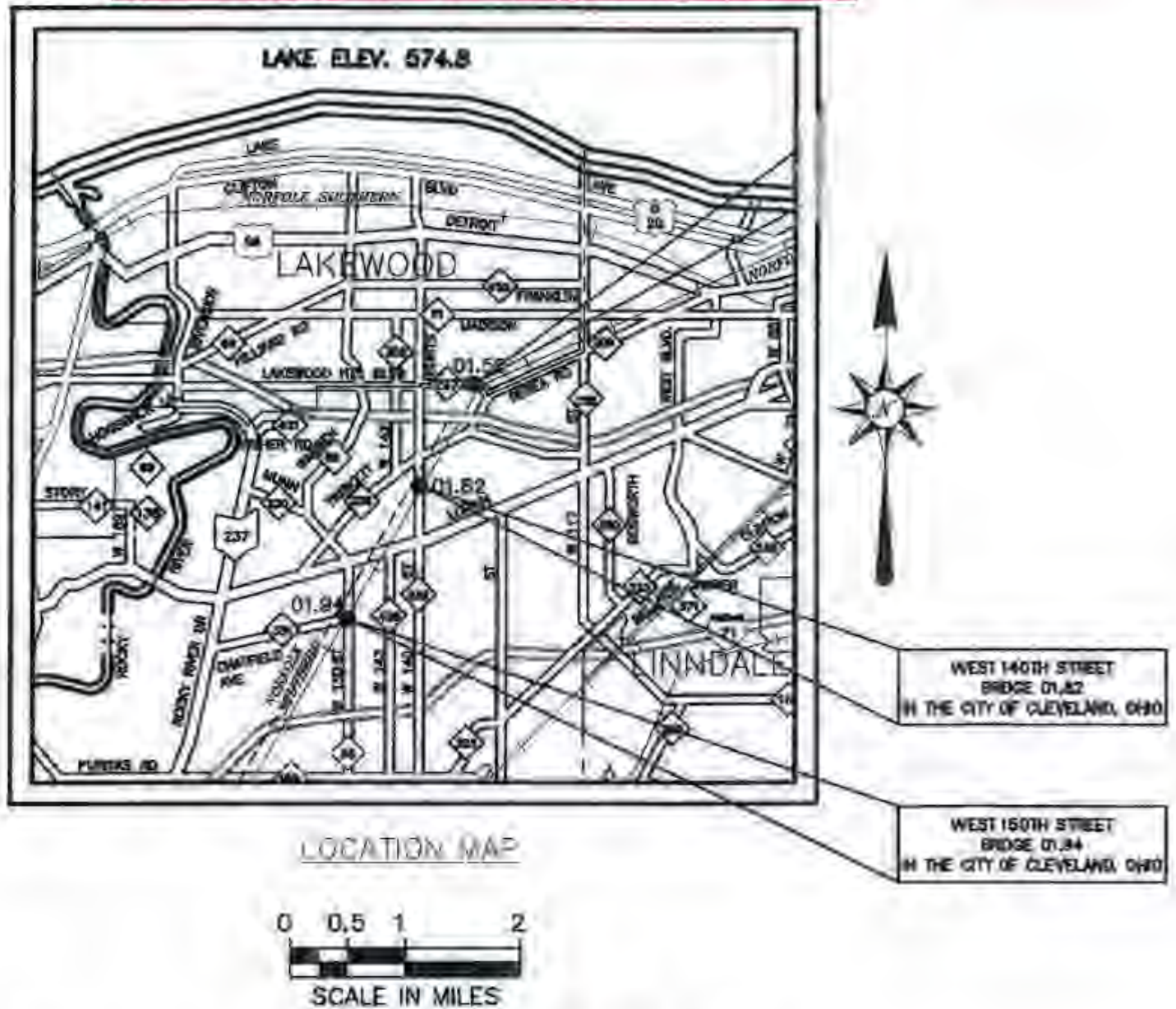
By:

Name (Printed): Robert B. Beasley

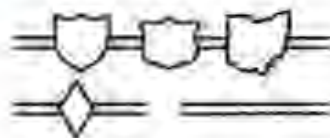
Title: Ohio Bridge Practice Manager

(Witness)

Date: August 26, 2020



INTERSTATE, U.S. AND STATE ROUTES  
 COUNTY AND OTHER ROADS



Project Location Map

WEST 140TH ST BRIDGE 01.82

LATITUDE: 41° 27' 36"

LONGITUDE: 81° 47' 24"

WEST 150TH ST BRIDGE 01.94

LATITUDE: 41° 26' 47"

LONGITUDE: 81° 48' 5"





# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
08/21/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b>	
	<b>PHONE (A/C. No. Ext):</b> (866) 283-7122	<b>FAX (A/C. No.):</b> 800-363-0105
	<b>E-MAIL ADDRESS:</b>	
	<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>
<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<b>INSURER A:</b> Greenwich Insurance Company	22322
	<b>INSURER B:</b> XL Specialty Insurance Co	37885
	<b>INSURER C:</b> XL Insurance America Inc	24554
	<b>INSURER D:</b>	
	<b>INSURER E:</b>	
	<b>INSURER F:</b>	

**COVERAGES**

CERTIFICATE NUMBER: 57008358803

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:	Y	Y	GEC001076118 SIR applies per policy terms & conditions	10/01/2019	10/01/2020	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
B	<input checked="" type="checkbox"/> <b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> Property Damage to <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY	Y	Y	AEC001075818	10/01/2019	10/01/2020	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
B	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10,000	Y	Y	UEC001075918	10/01/2019	10/01/2020	EACH OCCURRENCE \$3,000,000 AGGREGATE \$3,000,000
C	<input checked="" type="checkbox"/> <b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N	N/A	RWD943516314 All Other States RWR943516714 AK, WI Only	10/01/2019 10/01/2019	10/01/2020 10/01/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Project Number: 30056244 - Cuyahoga County W. 140th & 150th Bridge Inspections, Temporary Right of Entry Agreement. The Greater Cleveland Regional Transit Authority (Licensor) is included as Additional Insured in accordance with the policy provisions of the General Liability, Automobile Liability and Umbrella Liability policies. General Liability policy evidenced herein is Primary and Non-Contributory to other insurance available to an Additional Insured, but only in accordance with the policy's provisions. A Waiver of Subrogation is granted in favor of The Greater Cleveland Regional Transit Authority (Licensor) in accordance with the policy provisions of the General Liability, Automobile Liability, Umbrella Liability and Workers' Compensation policies. Stop Gap Coverage for State of (fill in state) is provided for on the General Liability policy.

**CERTIFICATE HOLDER****CANCELLATION**

The Greater Cleveland Regional Transit Authority Attn: Lorie Beabes 1240 W. 6th St. Cleveland OH 44113 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  <i>Aon Risk Services South Inc.</i>

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**ENDORSEMENT #**

This endorsement, effective 12:01 a.m., 10-1-19 forms a part of  
Policy No. RWD9435163-14 issued to Arcadis U.S., Inc.  
by XL Insurance America, Inc.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**CANCELLATION NOTIFICATION TO OTHERS ENDORSEMENT**

This endorsement modifies insurance provided under the following:

**WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE POLICY**

In the event coverage is cancelled for any statutorily permitted reason, other than nonpayment of premium, advanced written notice will be mailed or delivered to person(s) or entity(ies) according to the notification schedule shown below:

Name of Person(s) or Entity(ies)	Mailing Address:	Number of Days Advanced Notice of Cancellation:
When required in a written agreement, per the most current schedule maintained by Aon Risk Services South, Inc. for Arcadis U.S., Inc., CallisonRTKL, Inc. and their subsidiaries furnished to us 45 days prior to the effective date of cancellation.		30

All other terms and conditions of the Policy remain unchanged.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

**(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)**

Endorsement Effective 10-01-2019  
Insured Arcadis U.S., Inc.

Policy No. RWD9435163-14

Endorsement No.  
Premium At Audit

Insurance Company XL Insurance America, Inc. Countersigned by \_\_\_\_\_

### ENDORSEMENT

This endorsement, effective 12:01 a.m., October 1, 2019 forms a part of Policy No. UEC001075918 issued to ARCADIS U.S., INC. AND CALLISONRTKL INC. by XL Specialty Insurance Company.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### CANCELLATION NOTIFICATION TO OTHERS ENDORSEMENT

Advanced written notice will be mailed or delivered to person(s) or entity(ies) shown in the Schedule below at least:

- a. 10 days before the effective date of cancellation if we cancel for nonpayment of premium; or
- b. 30 days before the effective date of cancellation if we cancel for any other reason

Name of Person(s) or Entity(ies)	Mailing Address:	Number of Days Advanced Notice of Cancellation:
AS PER SCHEDULE ON FILE WITH THE COMPANY	AS PER SCHEDULE ON FILE WITH THE COMPANY	30

All other terms and conditions of the Policy remain unchanged.

### ENDORSEMENT

This endorsement, effective 12:01 a.m., October 1, 2019 forms a part of Policy No. AEC001075818 issued to ARCADIS U.S., INC. AND CALLISONRTKL INC. by XL Specialty Insurance Company.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### CANCELLATION NOTIFICATION TO OTHERS ENDORSEMENT

Advanced written notice will be mailed or delivered to person(s) or entity(ies) shown in the Schedule below at least:

- a. 10 days before the effective date of cancellation if we cancel for nonpayment of premium; or
- b. 30 days before the effective date of cancellation if we cancel for any other reason

Schedule	
Name of Person(s) or Entity(ies)	Mailing Address:
AS PER SCHEDULE ON FILE WITH COMPANY	AS PER SCHEDULE ON FILE WITH COMPANY

All other terms and conditions of the Policy remain unchanged.

### ENDORSEMENT

This endorsement, effective 12:01 a.m., October 1, 2019 forms a part of Policy No. GEC001076118 issued to ARCADIS U.S., INC. AND CALLISONRTKL INC. by Greenwich Insurance Company.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### CANCELLATION NOTIFICATION TO OTHERS ENDORSEMENT

In the event coverage is cancelled for any statutorily permitted reason, other than nonpayment of premium, advanced written notice will be mailed or delivered to person(s) or entity(ies) according to the notification schedule shown below:

Name of Person(s) or Entity(ies)	Mailing Address:	Number of Days Advanced Notice of Cancellation:
AS PER SCHEDULE ON FILE WITH COMPANY	AS PER SCHEDULE ON FILE WITH COMPANY	30

All other terms and conditions of the Policy remain unchanged.





# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
08/21/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b>	
	<b>PHONE (A/C. No. Ext):</b> (866) 283-7122	<b>FAX (A/C. No.):</b> (800) 363-0105
<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<b>E-MAIL ADDRESS:</b>	
	<b>INSURER(S) AFFORDING COVERAGE</b>	
	<b>NAIC #</b>	
	<b>INSURER A:</b> Lexington Insurance Company	
	<b>INSURER B:</b> Indian Harbor Insurance Company	
	<b>INSURER C:</b>	
<b>INSURER D:</b>		
<b>INSURER E:</b>		
<b>INSURER F:</b>		

**COVERAGES****CERTIFICATE NUMBER:** 570083588450**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below Y/N <input type="checkbox"/> N/A						PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT
B	Env Contr Poll	Y	Y	US00090310E020A Professional & Pollution SIR applies per policy terms & conditions	06/01/2020	06/01/2021	Each Claim \$2,000,000 Annual Aggregate \$2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Project Number: 30056244 - Cuyahoga County W. 140th & 150th Bridge Inspections, Temporary Right of Entry Agreement. The Greater Cleveland Regional Transit Authority (Licensor) is included as Additional Insured on the Pollution Liability policy as respects Liability arising out of activities by, or on behalf of the Named Insured. A waiver of Subrogation is granted in favor of The Greater Cleveland Regional Transit Authority (Licensor) in accordance with the policy provisions of the Pollution Liability and Professional Liability policies. For Professional Liability and Pollution Liability coverage, the Aggregate Limit is the total insurance available for claims presented within the policy period for all operations of the insured. The Limit will be reduced by payments of indemnity and expense.

**CERTIFICATE HOLDER****CANCELLATION**

The Greater Cleveland Regional Transit Authority Attn: Lorie Beabes 1240 W. 6th St. Cleveland OH 44113 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  <i>Aon Risk Services South Inc.</i>

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Holder Identifier : @

Certificate No : 570083588450



AGENCY Aon Risk Services South, Inc.		NAMED INSURED Arcadis U.S., Inc.
POLICY NUMBER See Certificate Number: 570083588450		
CARRIER See Certificate Number: 570083588450	NAIC CODE	EFFECTIVE DATE:

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER	
INSURER	
INSURER	
INSURER	

[illegible]

This endorsement, effective 12:01 a.m., 06/01/2020 forms a part of  
Policy No. US00090310EO20A  
Issued to Arcadis U.S., Inc.  
by Indian Harbor Insurance Company

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**POLICY CANCELLATION – NOTICE TO DESIGNATED ENTITIES**

This endorsement modifies insurance provided under the following:

PROFESSIONAL, ENVIRONMENTAL AND NETWORK SECURITY LIABILITY POLICY – ARCHITECTS,  
CONSULTANTS AND ENGINEERS

Section XI. OTHER CONDITIONS, Paragraph A. Cancellation is amended by the addition of the following:

In the event that the Company cancels this Policy for any statutorily permitted reason other than non-payment of premium, the Company agrees to provide thirty (30) days' notice of cancellation of this Policy to any entity with whom the NAMED INSURED agreed in a written contract or agreement would be provided with notice of cancellation of this Policy, provided that:

1. The Company receives, at least fifteen (15) days prior to the date of cancellation, a written request from the NAMED INSURED to provide notice of cancellation to entities designated by the NAMED INSURED to receive such notice and;
2. The written request includes the name and address of each person or entity designated by the NAMED INSURED to receive such notice.

This endorsement does not apply to non-renewal of the Policy, cancellation at the INSURED'S request, or to cancellation of the Policy for non-payment of premium to the Company or to a premium finance company authorized to cancel the Policy. Furthermore, nothing contained in this endorsement shall be construed to provide any rights under the Policy to the entities receiving notice of cancellation pursuant to this endorsement, nor shall this endorsement amend or alter the effective date of cancellation stated in the cancellation notice issued to the NAMED INSURED.

All other terms and conditions of the Policy remain unchanged.





**XL Insurance**  
Railroad

# Policy





## **CLAIM REPORTING INSTRUCTIONS**

New claims can be reported by phone, fax, mail or email, 24 hours a day, seven days a week, 365 days a year.

Please include, if available, the name, address and phone number for all relevant parties, the date and time of loss, the location of the loss, a description of the loss, and any damage information.

When reporting your claim, please be sure to indicate if the claim involves a fatality, serious bodily injury, pollution spill, or requires an immediate response.

**Phone:** 1-800-823-7351 (Toll-Free)

**Fax:** 1-866-262-9002 (Toll-Free)  
1-678-819-7388 (Toll)

**Email:** [napropcasclaimnewnotices@axaxl.com](mailto:napropcasclaimnewnotices@axaxl.com) (New Claims Notices)

**Email:** [napropcasclaims@axaxl.com](mailto:napropcasclaims@axaxl.com) (All Other Claims Correspondence)

**USPS Mail:** AXA XL  
Attn: Railroad  
PO Box 614002  
Orlando, FL 32861-4002

**Overnight Mail:** AXA XL  
Attn: Railroad  
4209 Vineland Road, Suite J-2  
Orlando, FL 32811

## **INSTRUCTIONS FOR REQUESTING LOSS RUNS**

Due to privacy issues, AXA XL can only honor requests for loss runs when submitted in writing by our broker of record or by the Insured, on their company letterhead. We can only deliver loss runs to our producer of record or to the Insured.

To request a copy of loss runs for your policy, please submit your request to:

**[XLRail.LossRuns@axaxl.com](mailto:XLRail.LossRuns@axaxl.com)**

# NOTICE TO POLICYHOLDERS

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## PRIVACY POLICY

The AXA XL insurance group (the "Companies"), believes personal information that we collect about our customers, potential customers, and proposed insureds (referred to collectively in this Privacy Policy as "customers") must be treated with the highest degree of confidentiality. For this reason and in compliance with the Title V of the Gramm-Leach-Bliley Act ("GLBA"), we have developed a Privacy Policy that applies to all of our companies. For purposes of our Privacy Policy, the term "personal information" includes all information we obtain about a customer and maintain in a personally identifiable way. In order to assure the confidentiality of the personal information we collect and in order to comply with applicable laws, all individuals with access to personal information about our customers are required to follow this policy.

### Our Privacy Promise

Your privacy and the confidentiality of your business records are important to us. Information and the analysis of information is essential to the business of insurance and critical to our ability to provide to you excellent, cost-effective service and products. We understand that gaining and keeping your trust depends upon the security and integrity of our records concerning you. Accordingly, we promise that:

1. We will follow strict standards of security and confidentiality to protect any information you share with us or information that we receive about you;
2. We will verify and exchange information regarding your credit and financial status only for the purposes of underwriting, policy administration, or risk management and only with reputable references and clearinghouse services;
3. We will not collect and use information about you and your business other than the minimum amount of information necessary to advise you about and deliver to you excellent service and products and to administer our business;
4. We will train our employees to handle information about you or your business in a secure and confidential manner and only permit employees authorized to use such information to have access to such information;
5. We will not disclose information about you or your business to any organization outside the AXA XL insurance group of Companies or to third party service providers unless we disclose to you our intent to do so or we are required to do so by law;
6. We will not disclose medical information about you, your employees, or any claimants under any policy of insurance, unless you provide us with written authorization to do so, or unless the disclosure is for any specific business exception provided in the law;
7. We will attempt, with your help, to keep our records regarding you and your business complete and accurate, and will advise you how and where to access your account information (unless prohibited by law), and will advise you how to correct errors or make changes to that information; and
8. We will audit and assess our operations, personnel and third party service providers to assure that your privacy is respected.

### Collection and Sources of Information

We collect from a customer or potential customer only the personal information that is necessary for (a) determining eligibility for the product or service sought by the customer, (b) administering the product or service obtained, and (c) advising the customer about our products and services. The information we collect generally comes from the following sources:

- Submission – During the submission process, you provide us with information about you and your business, such as your name, address, phone number, e-mail address, and other types of personal identification information;
- Quotes – We collect information to enable us to determine your eligibility for the particular insurance product and to determine the cost of such insurance to you. The information we collect will vary with the type of insurance you seek;

## NOTICE TO POLICYHOLDERS

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- Transactions – We will maintain records of all transactions with us, our affiliates, and our third party service providers, including your insurance coverage selections, premiums, billing and payment information, claims history, and other information related to your account;
- Claims – If you obtain insurance from us, we will maintain records related to any claims that may be made under your policies. The investigation of a claim necessarily involves collection of a broad range of information about many issues, some of which does not directly involve you. We will share with you any facts that we collect about your claim unless we are prohibited by law from doing so. The process of claim investigation, evaluation, and settlement also involves, however, the collection of advice, opinions, and comments from many people, including attorneys and experts, to aid the claim specialist in determining how best to handle your claim. In order to protect the legal and transactional confidentiality and privileges associated with such opinions, comments and advice, we will not disclose this information to you; and
- Credit and Financial Reports – We may receive information about you and your business regarding your credit. We use this information to verify information you provide during the submission and quote processes and to help underwrite and provide to you the most accurate and cost-effective insurance quote we can provide.

### Retention and Correction of Personal Information

We retain personal information only as long as required by our business practices and applicable law. If we become aware that an item of personal information may be materially inaccurate, we will make reasonable effort to re-verify its accuracy and correct any error as appropriate.

### Storage of Personal Information

We have in place safeguards to protect data and paper files containing personal information.

### Sharing/Disclosing of Personal Information

We maintain procedures to assure that we do not share personal information with an unaffiliated third party for marketing purposes unless such sharing is permitted by law. Personal information may be disclosed to an unaffiliated third party for necessary servicing of the product or service or for other normal business transactions as permitted by law.

We do not disclose personal information to an unaffiliated third party for servicing purposes or joint marketing purposes unless a contract containing a confidentiality/non-disclosure provision has been signed by us and the third party. Unless a consumer consents, we do not disclose "consumer credit report" type information obtained from an application or a credit report regarding a customer who applies for a financial product to any unaffiliated third party for the purpose of serving as a factor in establishing a consumer's eligibility for credit, insurance or employment. "Consumer credit report type information" means such things as net worth, credit worthiness, lifestyle information (piloting, skydiving, etc.) solvency, etc. We also do not disclose to any unaffiliated third party a policy or account number for use in marketing. We may share with our affiliated companies information that relates to our experience and transactions with the customer.

### Policy for Personal Information Relating to Nonpublic Personal Health Information

We do not disclose nonpublic personal health information about a customer unless an authorization is obtained from the customer whose nonpublic personal information is sought to be disclosed. However, an authorization shall not be prohibited, restricted or required for the disclosure of certain insurance functions, including, but not limited to, claims administration, claims adjustment and management, detection, investigation or reporting of actual or potential fraud, misrepresentation or criminal activity, underwriting, policy placement or issuance, loss control and/or auditing.

## NOTICE TO POLICYHOLDERS

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### Access to Your Information

Our employees, employees of our affiliated companies, and third party service providers will have access to information we collect about you and your business as is necessary to effect transactions with you. We may also disclose information about you to the following categories of person or entities:

- Your independent insurance agent or broker;
- An independent claim adjuster or investigator, or an attorney or expert involved in the claim;
- Persons or organizations that conduct scientific studies, including actuaries and accountants;
- An insurance support organization;
- Another insurer if to prevent fraud or to properly underwrite a risk;
- A state insurance department or other governmental agency, if required by federal, state or local laws; or
- Any persons entitled to receive information as ordered by a summons, court order, search warrant, or subpoena.

### Violation of the Privacy Policy

Any person violating the Privacy Policy will be subject to discipline, up to and including termination.

For more information or to address questions regarding this privacy statement, please contact your broker.



## NOTICE TO POLICYHOLDERS

### FRAUD NOTICE

<b>Alabama</b>	Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or who knowingly presents false information in an application for insurance is guilty of a crime and may be subject to restitution fines or confinement in prison, or any combination thereof.
<b>Arkansas</b>	Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or knowingly presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.
<b>Colorado</b>	<b>It is unlawful to knowingly provide false, incomplete, or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance, and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claimant with regard to a settlement or award payable from insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies.</b>
<b>District of Columbia</b>	<b>WARNING:</b> It is a crime to provide false or misleading information to an insurer for the purpose of defrauding the insurer or any other person. Penalties include imprisonment and/or fines. In addition, an insurer may deny insurance benefits if false information materially related to a claim was provided by the applicant.
<b>Florida</b>	Any person who knowingly and with intent to injure, defraud, or deceive any insurer files a statement of claim or an application containing any false, incomplete, or misleading information is guilty of a felony of the third degree.
<b>Kansas</b>	A "fraudulent insurance act" means an act committed by any person who, knowingly and with intent to defraud, presents, causes to be presented or prepares with knowledge or belief that it will be presented to or by an insurer, purported insurer, broker or any agent thereof, any written, electronic, electronic impulse, facsimile, magnetic, oral, or telephonic communication or statement as part of, or in support of, an application for the issuance of, or the rating of an insurance policy for personal or commercial insurance, or a claim for payment or other benefit pursuant to an insurance policy for commercial or personal insurance which such person knows to contain materially false information concerning any fact material thereto; or conceals, for the purpose of misleading, information concerning any fact material thereto.
<b>Kentucky</b>	Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance containing any materially false information or conceals, for the purpose of misleading, information concerning any fact material thereto commits a fraudulent insurance act, which is a crime.
<b>Louisiana</b>	Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or knowingly presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.
<b>Maine</b>	It is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties may include imprisonment, fines, or denial of insurance benefits.
<b>Maryland</b>	Any person who knowingly or willfully presents a false or fraudulent claim for payment of a loss or benefit or who knowingly or willfully presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.
<b>New Jersey</b>	Any person who includes any false or misleading information on an application for an insurance policy is subject to criminal and civil penalties.

## NOTICE TO POLICYHOLDERS

<b>New Mexico</b>	ANY PERSON WHO KNOWINGLY PRESENTS A FALSE OR FRAUDULENT CLAIM FOR PAYMENT OF A LOSS OR BENEFIT OR KNOWINGLY PRESENTS FALSE INFORMATION IN AN APPLICATION FOR INSURANCE IS GUILTY OF A CRIME AND MAY BE SUBJECT TO CIVIL FINES AND CRIMINAL PENALTIES.
<b>New York</b>	<p><b>General: All applications for commercial insurance, other than automobile insurance:</b> Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance or statement of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime, and shall also be subject to a civil penalty not to exceed five thousand dollars and the stated value of the claim for each such violation.</p> <p><b>All applications for automobile insurance and all claim forms:</b> Any person who knowingly makes or knowingly assists, abets, solicits or conspires with another to make a false report of the theft, destruction, damage or conversion of any motor vehicle to a law enforcement agency, the department of motor vehicles or an insurance company, commits a fraudulent insurance act, which is a crime, and shall also be subject to a civil penalty not to exceed five thousand dollars and the value of the subject motor vehicle or stated claim for each violation.</p> <p><b>Fire:</b> Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance containing any false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime.</p> <p>The proposed insured affirms that the foregoing information is true and agrees that these applications shall constitute a part of any policy issued whether attached or not and that any willful concealment or misrepresentation of a material fact or circumstances shall be grounds to rescind the insurance policy.</p>
<b>Ohio</b>	Any person who, with intent to defraud or knowing that he is facilitating a fraud against an insurer, submits an application or files a claim containing a false or deceptive statement is <u>guilty</u> of insurance fraud.
<b>Oklahoma</b>	<p><b>WARNING:</b> Any person who knowingly, and with intent to injure, defraud or deceive any insurer, makes any claim for the proceeds of an insurance policy containing any false, incomplete or misleading information is guilty of a felony.</p> <p><b>WARNING: All Workers Compensation Insurance:</b> Any person or entity who makes any material false statement or representation, who willfully and knowingly omits or conceals any material information, or who employs any device, scheme, or artifice, or who aids and abets any person for the purpose of:</p> <ol style="list-style-type: none"> <li>obtaining any benefit or payment,</li> <li>increasing any claim for benefit or payment, or</li> <li>obtaining workers' compensation coverage under this act, shall be guilty of a felony punishable pursuant to Section 1663 of Title 21 of the Oklahoma Statutes.</li> </ol>
<b>Pennsylvania</b>	<p>Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance or statement of claim containing any materially false information or conceals for the purpose of misleading, information concerning any fact material thereto commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties.</p> <p><b>Automobile Insurance:</b> Any person who knowingly and with intent to injure or defraud any insurer files an application or claim containing any false, incomplete or misleading information shall, upon conviction, be subject to imprisonment for up to seven years and the payment of a fine of up to \$15,000.</p>

## NOTICE TO POLICYHOLDERS

<b>Puerto Rico</b>	Any person who knowingly and with the intention of defrauding presents false information in an insurance application, or presents, helps, or causes the presentation of a fraudulent claim for the payment of a loss or any other benefit, or presents more than one claim for the same damage or loss, shall incur a felony and, upon conviction, shall be sanctioned for each violation by a fine of not less than five thousand dollars (\$5,000) and not more than ten thousand dollars (\$10,000), or a fixed term of imprisonment for three (3) years, or both penalties. Should aggravating circumstances [be] present, the penalty thus established may be increased to a maximum of five (5) years, if extenuating circumstances are present, it may be reduced to a minimum of two (2) years.
<b>Rhode Island</b>	Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or knowingly presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.
<b>Tennessee</b>	It is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties include imprisonment, fines and denial of insurance benefits.  <b>Workers' Compensation:</b> It is a crime to knowingly provide false, incomplete or misleading information to any party to a workers' compensation transaction for the purpose of committing fraud. Penalties include imprisonment, fines and denial of insurance benefits.
<b>Utah</b>	<b>Workers' Compensation:</b> Any person who knowingly presents false or fraudulent underwriting information, files or causes to be filed a false or fraudulent claim for disability compensation or medical benefits, or submits a false or fraudulent report or billing for health care fees or other professional services is guilty of a crime and may be subject to fines and confinement in state prison.
<b>Virginia</b>	It is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties include imprisonment, fines and denial of insurance benefits.
<b>Washington</b>	It is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties include imprisonment, fines and denial of insurance benefits.
<b>West Virginia</b>	Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or knowingly presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.
<b>All Other States</b>	Any person who knowingly and willfully presents false information in an application for insurance may be guilty of insurance fraud and subject to fines and confinement in prison. (In Oregon, the aforementioned actions may constitute a fraudulent insurance act which may be a crime and may subject the person to penalties).

## NOTICE TO POLICYHOLDERS

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### **U.S. TREASURY DEPARTMENT'S OFFICE OF FOREIGN ASSETS CONTROL ("OFAC")**

No coverage is provided by this Policyholder Notice nor can it be construed to replace any provisions of your policy. You should read your policy and review your Declarations page for complete information on the coverages you are provided.

This Policyholder Notice provides information concerning possible impact on your insurance coverage due to the impact of U.S. Trade Sanctions<sup>1</sup>. Please read this Policyholder Notice carefully.

In accordance with the U.S. Department of the Treasury's Office of Foreign Assets Control ("OFAC") regulations, or any other U.S. Trade Sanctions embargoes or export controls applied by any regulatory body, if it is determined that you or any other insured, or any person or entity claiming the benefits of this insurance has violated U.S. sanctions, embargoes or export controls law, is a Specially Designated National and Blocked Person ("SDN"), or is owned or controlled by an SDN, this insurance will be considered a blocked or frozen contract. When an insurance policy is considered to be such a blocked or frozen contract, neither payments nor premium refunds may be made without authorization from OFAC or the applicable regulator. Other limitations on the premiums and payments also apply.

<sup>1</sup> "U.S Trade Sanctions" may be promulgated by Executive Order, act of Congress, regulations from the U.S. Departments of State, Treasury, or Commerce, regulations from the State Insurance Departments, etc.





Regulatory Office  
Dept: Regulatory  
505 Eagleview Blvd., Suite 100  
Exton, PA 19341-1120  
Telephone: 800-688-1840

**Insurance Company Providing Coverage: Indian Harbor Insurance Company**

### RAILROAD PROTECTIVE LIABILITY INSURANCE DECLARATIONS

THE INSURANCE HEREBY EVIDENCED IS WRITTEN BY AN APPROVED NON-LICENSED INSURER IN THE STATE OF OHIO AND IS NOT COVERED IN CASE OF INSOLVENCY BY THE OHIO INSURANCE GUARANTY ASSOCIATION.

**Policy Number:** US00102037LI20A

**Renewal or Replacement of:** New

**Item 1.      Named Insured:** Greater Cleveland Regional Transit Authority  
**Address:** 1240 West 6th Street  
Cleveland, OH 44113

**Item 2.      Policy Period:**      **From:** August 15, 2020      **To:** December 1, 2020  
At 12:01 A.M. Standard time at the Named Insured's address stated above.

**Item 3.      Limits of Insurance:**  
**Each Occurrence**      \$ 5,000,000  
**Policy Aggregate**      \$ 10,000,000

**Item 4.      Designated Contractor:** Arcadis U.S., Inc.  
**Address:** 22 S. Main Street, Suite 200, Akron, OH 44308

**Item 5.      Description of Operations:** Bridge inspection of two bridges: W. 140th Street and W. 150th Street  
over GCRTA  
**Job Location:** Cleveland, OH

**Item 6.      Name and Address of Involved Governmental Authority or Other Contracting Party:**  
N/A

**Item 7. Premium Details**

Classification	Code	Premium Basis	Rate per \$1,000 of Cost	Advance Premium
Railroad Protective	40011	\$7,500	Flat	\$4,613

**Advance Premium** \$ 4,500

**Total Advanced Premium** \$ 4,613

**Premium for Acts of Terrorism** \$ 113

**Minimum and Deposit Premium** \$ 4,613

**Item 8. Premium Audit Terms**

☒ Policy is not subject to audit

☐ Policy is subject to audit

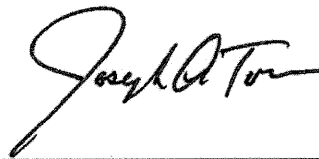
**Item 9. Form(s) and Endorsement(s) made a part of this policy at time of issue:**

Endorsement Number	Endorsement Title
PN CW 02 0119	Notice To Policyholders – Privacy Policy
PN CW 01 0719	Notice To Policyholders – Fraud Notice
PN CW 05 0519	Notice To Policyholders – U.S. Treasury Department's Office of Foreign Assets Control ("OFAC")
IL MP 91 04 0314 IHIC	In Witness – Indian Harbor Insurance Company
CG 0035 1207	Railroad Protective Liability Coverage Form
Endorsement # 001 RRL 013 0911	Asbestos Exclusion
Endorsement # 002 RRL 201 0911	Minimum Earned Premium – 100% Fully Earned
Endorsement # 003 RRL 808 0520	Access or Disclosure Exclusion
IL 0021 0908	Nuclear Energy Liability Exclusion Endorsement (Broad Form)
IL 0985 0115	Disclosure Pursuant To Terrorism Risk Insurance Act
CG 2170 0115	Cap On Losses From Certified Acts Of Terrorism
Endorsement # 004 XL-OH-SOP 0118	Service of Process

**Item 10. Producer Name:** Aon Risk Services

**Address:** 53 State Street  
Boston, MA 02109

By: \_\_\_\_\_



THESE DECLARATIONS TOGETHER WITH THE COMMON POLICY CONDITIONS, COVERAGE PART COVERAGE FORM(S) AND FORMS AND ENDORSEMENTS, IF ANY, ISSUED TO FORM A PART THEREOF, COMPLETE THE ABOVE NUMBERED POLICY.

**Date Issued:** August 19, 2020

## IN WITNESS


### INDIAN HARBOR INSURANCE COMPANY

REGULATORY OFFICE  
505 EAGLEVIEW BOULEVARD, SUITE 100  
DEPARTMENT: REGULATORY  
EXTON, PA 19341-1120  
PHONE: 800-688-1840

It is hereby agreed and understood that the following In Witness Clause supercedes any and all other In Witness clauses in this policy.

All other provisions remain unchanged.

IN WITNESS WHEREOF, the Company has caused this policy to be executed and attested, and, if required by state law, this policy shall not be valid unless countersigned by a duly authorized representative of the Company.



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Joseph Tocco  
President



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Toni Ann Perkins  
Secretary

## RAILROAD PROTECTIVE LIABILITY COVERAGE FORM

Various provisions in this policy restrict coverage. Read the entire policy carefully to determine rights, duties and what is and is not covered.

Throughout this policy, the words "you" and "your" refer to the Named Insured shown in the Declarations. The words "we", "us" and "our" refer to the Company providing this insurance.

The word "insured" means any person or organization qualifying as such under Section II – Who Is An Insured.

Other words and phrases that appear in quotation marks have special meaning. Refer to Section V – Definitions.

### SECTION I – COVERAGES

#### COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY

##### 1. Insuring Agreement

- a. We will pay those sums that the insured becomes legally obligated to pay as damages because of "bodily injury" or "property damage" to which this insurance applies. We will have the right and duty to defend the insured against any "suit" seeking those damages. However, we will have no duty to defend the insured against any "suit" seeking damages for "bodily injury" or "property damage" to which this insurance does not apply. We may, at our discretion, investigate any "occurrence" and settle any claim or "suit" that may result. But:

- (1) The amount we will pay for damages is limited as described in Section III – Limits Of Insurance; and
- (2) Our right and duty to defend ends when we have used up the applicable limit of insurance in the payment of judgments or settlements.

No other obligation or liability to pay sums or perform acts or services is covered unless explicitly provided for under Supplementary Payments – Coverage A.

- b. This insurance applies to "bodily injury" and "property damage" only if:
- (1) The "bodily injury" or "property damage" occurs during the policy period; and

- (2) The "bodily injury" or "property damage" arises out of acts or omissions at the "job location" which are related to or are in connection with the "work" described in the Declarations.

- c. Damages because of "bodily injury" include damages claimed by any person or organization for care, loss of services or death resulting at any time from the "bodily injury".

##### 2. Exclusions

This insurance does not apply to:

###### a. Expected Or Intended Injury

"Bodily injury" or "property damage" expected or intended from the standpoint of the insured. This exclusion does not apply to "bodily injury" resulting from the use of reasonable force to protect persons or property.

###### b. Contractual Liability

"Bodily injury" or "property damage" for which the insured is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages assumed in a contract or agreement that is a "covered contract".

###### c. Completed Work

"Bodily injury" or "property damage" occurring after the "work" is completed. The "work" will be deemed completed at the earliest of the following times:

- (1) When all the "work" called for in the "contractor's" contract has been completed.
- (2) When all the "work" to be done at the "job location" has been completed.
- (3) When that part of the "work" done at the "job location" has been put to its intended use by you, the governmental authority or other contracting party.

This exclusion does not apply to "bodily injury" or "property damage" resulting from the existence of or removal of tools, uninstalled equipment or abandoned or unused materials.



**d. Acts Or Omissions Of Insured**

"Bodily injury" or "property damage", the sole proximate cause of which is an act or omission of any insured other than acts or omissions of any of "your designated employees". This exclusion does not apply to injury or damage sustained at the "job location" by any of "your designated employees" or employee of the "contractor", or by any employee of the governmental authority or any other contracting party (other than you) specified in the Declarations.

**e. Workers' Compensation And Similar Laws**

Any obligation of the insured under a workers' compensation, disability benefits or unemployment compensation law or any similar law. This exclusion does not apply to any obligation of the insured under the Federal Employers Liability Act, as amended.

**f. Pollution**

"Bodily injury" or "property damage" arising out of the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of "pollutants" at or from the "job location":

- (1) Due to the past or present use of the "job location" by you or for you or others for the handling, storage, disposal, processing or treatment of waste; or
- (2) Due to the dumping or disposal of waste on the "job location" by the "contractor" with the knowledge of you or any of "your designated employees"; or
- (3) On which you or "contractors" working directly or indirectly on any insured's behalf are performing operations if the "pollutants" are brought on or to the "job location" in connection with such operations by you, the "contractor" or "your designated employee". However, this subparagraph does not apply to:
  - (a) "Bodily injury" or "property damage" arising out of the escape of fuels or lubricants from equipment used at the "job location".
  - (b) "Bodily injury" or "property damage" arising out of heat, smoke or fumes from a "hostile fire".
- (4) On which you or "contractors" working directly or indirectly on any insured's behalf are performing operations if the operations are to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to, or assess the effects of, "pollutants".

**g. Damage To Owned, Leased Or Entrusted Property**

"Property damage" to property owned by you or leased or entrusted to you under a lease or trust agreement.

**h. War**

"Bodily injury" or "property damage", however caused, arising, directly or indirectly, out of:

- (1) War, including undeclared or civil war;
- (2) Warlike action by a military force, including action in hindering or defending against an actual or expected attack, by any government, sovereign or other authority using military personnel or other agents; or
- (3) Insurrection, rebellion, revolution, usurped power, or action taken by governmental authority in hindering or defending against any of these.

**COVERAGE B – PHYSICAL DAMAGE TO PROPERTY**

**1. Insuring Agreement**

We will pay for "physical damage to property" to which this insurance applies. The "physical damage to property" must occur during the policy period. The "physical damage to property" must arise out of acts or omissions at the "job location" which are related to or in connection with the "work" described in the Declarations. The property must be owned by or leased or entrusted to you under a lease or trust agreement.

**2. Exclusions**

This insurance does not apply to "physical damage to property":

**a. Completed Work**

Occurring after the "work" is completed. The "work" will be deemed completed at the earliest of the following times:

- (1) When all the "work" called for in the "contractor's" contract has been completed.
- (2) When all the "work" to be done at the "job location" has been completed.
- (3) When that part of the "work" done at the "job location" has been put to its intended use by you, the governmental authority or other contracting party.

This exclusion does not apply to "physical damage to property" resulting from the existence of tools, uninstalled equipment or abandoned or unused materials.

**b. Acts Or Omissions Of Insured**

The sole proximate cause of which is an act or omission of any insured other than acts or omissions of any of "your designated employees".

**c. Nuclear Incidents Or Conditions**

Due to nuclear reaction, nuclear radiation or radioactive contamination or to any related act or condition.

**d. Pollution**

Due to the discharge, dispersal, seepage, migration, release or escape of "pollutants" excluded under Exclusion f. Pollution, Coverage A.

**SUPPLEMENTARY PAYMENTS – COVERAGE A**

We will pay, with respect to any claim we investigate or settle, or any "suit" against an insured we defend:

1. All expenses we incur.
2. All court costs taxed against the insured in the "suit". However, these payments do not include attorneys' fees or attorneys' expenses taxed against the insured.
3. All interest on the full amount of any judgment that accrues after entry of the judgment and before we have paid, offered to pay or deposited in court the part of the judgment that is within the applicable limit of insurance.
4. The cost of bonds to release attachments, but only for bond amounts within the applicable limit of insurance. We do not have to furnish these bonds.
5. Expenses incurred by the insured for first aid administered to others at the time of an accident, for "bodily injury" to which this insurance applies.
6. All reasonable expenses, incurred by the insured at our request to assist us in the investigation or defense of the claim or "suit", including actual loss of earnings up to \$250 a day because of time off from work.
7. Prejudgment interest awarded against the insured on that part of the judgment we pay. If we make an offer to pay the applicable limit of insurance, we will not pay any prejudgment interest based on that period of time after the offer.

These payments will not reduce the limits of insurance.

**SECTION II – WHO IS AN INSURED**

1. You are an insured.
2. Your "executive officers" and directors are insureds, but only with respect to their duties as your officers and directors.
3. Your stockholders are insureds, but only with respect to their liability as stockholders.

4. Any railroad operating over your tracks is an insured.

**SECTION III – LIMITS OF INSURANCE**

1. The Limits of Insurance shown in the Declarations and the rules below fix the most we will pay regardless of the number of:
  - a. Insureds;
  - b. Claims made or "suits" brought; or
  - c. Persons or organizations making claims or bringing "suits".
2. The Aggregate Limit is the most we will pay for the sum of all damages because of all "bodily injury", all "property damage" and all "physical damage to property".
3. Subject to Paragraph 2. above, the Each Occurrence Limit is the most we will pay for the sum of all damages because of all "bodily injury", all "property damage" and all "physical damage to property" arising out of any one occurrence.
4. Subject to Paragraph 3. above, the payment for "physical damage to property" shall not exceed the lesser of:
  - a. The actual cash value of the property at the time of loss; or
  - b. The cost to repair or replace the property with other property of like kind or quality.

The Limits of Insurance of this Coverage Part apply separately to each consecutive annual period and to any remaining period of less than 12 months, starting with the beginning of the policy period shown in the Declarations, unless the policy period is extended after issuance for an additional period of less than 12 months. In that case, the additional period will be deemed part of the last preceding period for purposes of determining the Limits of Insurance.

**SECTION IV – CONDITIONS**

- A.** The following Conditions apply to Coverages A and B:

**1. Assignment**

Assignment of interest under this Coverage Part shall not bind us unless we issue an endorsement consenting to the assignment.

**2. Bankruptcy**

Bankruptcy or insolvency of the insured or of the insured's estate will not relieve us of our obligations under this Coverage Part.

**3. Cancellation**

- a. You may cancel this policy by mailing or delivering to us advance written notice of cancellation.

- b. We may cancel this policy by mailing or delivering to you, the "contractor" and any involved governmental authority or other contracting party designated in the Declarations, at the respective mailing addresses last known to us, written notice of cancellation at least 60 days before the effective date of cancellation.
- c. Notice of cancellation will state the effective date of cancellation. The policy period will end on that date.
- d. If this policy is cancelled, any unearned premium will be refunded. If we cancel, the refund will be pro rata. If you cancel, the refund may be less than pro rata. The cancellation will be effective even if we have not made or offered a refund.
- e. If notice is mailed, proof of mailing will be sufficient proof of notice.

#### 4. Changes

This policy contains all the agreements between you and us concerning the insurance afforded. You are authorized to make changes in the terms of this policy with our consent. This policy's terms can be amended or waived only by endorsement issued by us and made a part of this policy.

#### 5. Inspections And Surveys

- a. We have the right to:
  - (1) Make inspections and surveys at any time;
  - (2) Give you reports on the conditions we find; and
  - (3) Recommend changes.
- b. We are not obligated to make inspections, surveys, reports or recommendations and any such actions we do undertake relate only to insurability and the premiums to be charged. We do not make safety inspections. We do not undertake to perform the duty of any person or organization to provide for the health or safety of workers or the public. And we do not warrant that conditions:
  - (1) Are safe or healthful; or
  - (2) Comply with laws, regulations, codes or standards.
- c. Paragraphs a. and b. of this condition apply not only to us, but also to any rating, advisory, rate service or similar organization which makes insurance inspections, surveys, reports or recommendations.

- d. Paragraph b. of this condition does not apply to any inspections, surveys, reports or recommendations we may make relative to certification, under state or municipal statutes, ordinances or regulations, of boilers, pressure vessels or elevators.

#### 6. Other Insurance

The insurance afforded by this policy is:

- a. Primary insurance and we will not seek contribution from any other insurance available to you except if the other insurance is provided by a contractor other than the designated contractor for the same operation and "job location"; and
- b. If the other insurance is available, we will share with that other insurance by the method described below.

If all of the other insurance permits contribution by equal shares, we will follow this method also. Under this approach, each insurer contributes equal amounts until it has paid its applicable limit of insurance or none of the loss remains, whichever comes first.

If any of the other insurance does not permit contribution by equal shares, we will contribute by limits. Under this method, each insurer's share is based on the ratio of its applicable limit of insurance to the total applicable limits of insurance of all insurers.

#### 7. Premium And Premium Audit

- a. We will compute all premiums for this Coverage Part in accordance with our rules and rates.
- b. Contract cost, the premium base shown in the Declarations, means the total cost of the operations described in the Declarations.
- c. The premium shown in the Declarations as advance premium is a deposit premium only. At the close of each audit period we will compute the earned premium for that period and send notice to the "contractor" designated in the Declarations. The due date for audit and retrospective premiums is the date shown as the due date on the bill. If the sum of the advance and audit premiums paid for the policy period is greater than the earned premium, we will return the excess to the contractor designated in the Declarations.

In no event shall the payment of premium be your obligation.

## **8. Transfer Of Rights Of Recovery Against Others To Us**

If the insured has rights to recover all or part of any payment we have made under this policy, those rights are transferred to us. The insured must do nothing after loss to impair them. At our request, the insured will bring "suit" or transfer those rights to us and help us enforce them.

## **9. When We Do Not Renew**

If we decide not to renew this Coverage Part, we will mail or deliver to the first Named Insured shown in the Declarations written notice of the nonrenewal not less than 30 days before the expiration date.

If notice is mailed, proof of mailing will be sufficient proof of notice.

## **B. The following Conditions apply to Coverage A only:**

### **1. Legal Action Against Us**

No person or organization has a right under this policy:

- a. To join us as a party or otherwise bring us into a "suit" asking for damages from an insured; or
- b. To sue us on this policy unless all of its terms have been fully complied with.

A person or organization may sue us to recover on an agreed settlement or on a final judgment against an insured; but we will not be liable for damages that are not payable under the terms of this policy or that are in excess of the applicable limit of insurance. An agreed settlement means a settlement and release of liability signed by us, the insured and the claimant or the claimant's legal representative.

### **2. Duties In The Event Of Occurrence, Claim Or Suit**

- a. You must see to it that we are notified as soon as practicable of an occurrence which may result in a claim. To the extent possible, notice should include:
  - (1) How, when and where the occurrence took place;
  - (2) The names and addresses of any injured persons and witnesses; and
  - (3) The nature and location of any injury or damage arising out of the occurrence.
- b. If a claim is made or "suit" is brought against any insured, you must:
  - (1) Immediately record the specifics of the claim or "suit" and the date received; and

- (2) Notify us as soon as practicable.

You must see to it that we receive written notice of the claim or "suit" as soon as practicable.

### **c. You and any other involved insured must:**

- (1) Immediately send us copies of any demands, notices, summonses or legal papers received in connection with the claim or "suit";
- (2) Authorize us to obtain records and other information;
- (3) Cooperate with us in the investigation or settlement of the claim or defense against the "suit"; and
- (4) Assist us, upon our request, in the enforcement of any right against any person or organization which may be liable to the insured because of injury or damage to which this insurance may also apply.

- d. No insured will, except at that insured's own cost, voluntarily make a payment, assume any obligation, or incur any expense, other than for first aid, without our consent.

### **3. Separation Of Insureds**

Except with respect to the Limits of Insurance this insurance applies:

- a. As if each Named Insured were the only Named Insured; and
- b. Separately to each insured against whom claim is made or "suit" is brought.

## **C. The following Conditions apply to Coverage B only:**

### **1. Appraisal**

If you fail to agree with us on the value of the property, or the amount of loss, either you or we may make written demand for an appraisal of the loss within sixty (60) days after proof of loss is filed. In this event, each party will select a competent appraiser. The two appraisers will select a competent and impartial umpire. The appraisers will state separately the value of the property and the amount of loss. If they fail to agree, they will submit their differences to the umpire. A decision agreed to by any two will be binding. Each party will:

- a. Pay its chosen appraiser; and
- b. Bear the other expenses of the appraisal and umpire equally.

If we submit to an appraisal, we still retain our right to deny the claim.

## **2. No Benefit To Bailee**

No person or organization, other than you, having custody of the property will benefit from this insurance.

## **3. Insured's Duties In The Event Of A Loss**

You must:

- a. Protect the property, whether or not the loss is covered by this policy. Any further loss due to your failure to protect the property shall not be recoverable under this policy. Reasonable expenses incurred in affording such protection shall be deemed to be incurred at our request; and
- b. Submit to us, as soon after the loss as possible, your sworn proof of loss containing the information we request to settle the loss and, at our request, make available the damaged property for examination.

## **4. Legal Action Against Us**

No person or organization has a right under this policy to sue us on this policy unless all of its terms have been fully complied with and until 30 days after proof of loss is filed and the amount of loss is determined as provided in this policy.

## **5. Payment Of Loss**

We may pay for the loss in money, but there can be no abandonment of any property to us.

## **SECTION V – DEFINITIONS**

1. "Bodily injury" means bodily injury, sickness or disease sustained by a person, including death resulting from any of these at any time.
2. "Contractor" means the contractor designated in the Declarations and includes all subcontractors working directly or indirectly for that "contractor" but does not include you.
3. "Covered contract" means any contract or agreement to carry a person or property for a charge or any interchange contract or agreement respecting motive power, or rolling stock equipment.
4. "Executive officer" means a person holding any of the officer positions created by your charter, constitution, by-laws or any other similar governing document.
5. "Hostile fire" means one which becomes uncontrollable or breaks out from where it was intended to be.
6. "Job location" means the job location designated in the Declarations including any area directly related to the "work" designated in the Declarations. "Job location" includes the ways next to it.
7. "Physical damage to property" means direct and accidental loss of or damage to rolling stock and their contents, mechanical construction equipment or motive power equipment, railroad tracks, roadbeds, catenaries, signals, bridges or buildings.
8. "Pollutants" means any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot, fumes, acids, alkalis, chemicals and waste. Waste includes material to be recycled, reconditioned or reclaimed.
9. "Property damage" means:
  - a. Physical injury to tangible property, including all resulting loss of use of that property. All such loss of use shall be deemed to occur at the time of the physical injury that caused it; or
  - b. Loss of use of tangible property that is not physically injured. All such loss of use shall be deemed to occur at the time of the occurrence that caused it.
10. "Suit" means a civil proceeding in which damages because of "bodily injury" or "property damage" to which this insurance applies are alleged. "Suit" includes:
  - a. An arbitration proceeding in which such damages are claimed and to which the insured must submit or does submit with our consent; or
  - b. Any other alternative dispute resolution proceeding in which such damages are claimed and to which the insured submits with our consent.
11. "Work" means work or operations performed by the "contractor" including materials, parts or equipment furnished in connection with the work or operations.
12. "Your designated employee" means:
  - a. Any supervisory employee of yours at the "job location";
  - b. Any employee of yours while operating, attached to or engaged on work trains or other railroad equipment at the "job location" which are assigned exclusively to the "contractor"; or
  - c. Any employee of yours not described in Paragraph a. or b. above who is specifically loaned or assigned to the work of the "contractor" for the prevention of accidents or protection of property.



## ENDORSEMENT # 001

This endorsement, effective 12:01 a.m., August 15, 2020, forms a part of Policy No. US00102037LI20A issued to Greater Cleveland Regional Transit Authority by Indian Harbor Insurance Company.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### ASBESTOS EXCLUSION

This endorsement modifies insurance provided under the following:

#### RAILROAD PROTECTIVE LIABILITY COVERAGE FORM

This insurance does not apply to:

- (1) Any "injury, damage, loss or expense" based upon or arising out of the actual or alleged existence, presence, inhalation, absorption or ingestion of, or the contact with, exposure to or use of "asbestos".

This includes, but is not limited to the following:

- a. The installation, storage or handling of "asbestos";
- b. The manufacture, distribution, sale, application, mining, consumption, or disposal of "asbestos" or goods or products containing "asbestos";
- c. The removal, abatement, containment, treatment, transportation or disposal of "asbestos";
- d. The presence or alleged presence of "asbestos" in any structures, manufacturing processes, or products, or in the soil or groundwater; or
- e. Any directions, supervision, instructions, recommendations, warnings or advice given or which should have been given with respect to "asbestos".

- (2) Any loss, cost or expense arising out of any:

- a. Request, demand, order or statutory or regulatory requirement that any insured or others test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to, or assess the effects of "asbestos"; or
- b. Claim or "suit" by or on behalf of a governmental entity or others for damages because of testing for, monitoring, cleaning up removing, containing, treating, detoxifying or neutralizing, or in any way responding to or assessing the effects of "asbestos".

This exclusion applies regardless of whether the insured or others manufactured, distributed, sold, installed, or in any way handled, used stored or controlled the "asbestos" and regardless of whether the alleged or actual presence of "asbestos" contributed concurrently or in any sequence to any "injury, damage, loss or expense".

As used in this endorsement, the following definitions apply:

"Asbestos" means any form of the mineral known as asbestos or any form of impure magnesium silicate, including but not limited to any material, waste, equipment or device containing asbestos, or any dust or particles containing asbestos, whether or not the asbestos is friable and whether or not the asbestos is in or on any structure or in the soil or groundwater.

"Injury, damage, loss or expense" means any injury, damage, loss or expense covered under any Coverage Form or Policy to which this endorsement applies, and includes but is not limited to "bodily injury", "property

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damage", "personal and advertising injury", medical expenses or any other coverages as may be defined under this Coverage Form, Policy or any applicable endorsement.

All other terms and conditions of this policy remain unchanged.

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**ENDORSEMENT # 002**

This endorsement, effective 12:01 a.m., August 15, 2020, forms a part of Policy No. US00102037LI20A issued to Greater Cleveland Regional Transit Authority by Indian Harbor Insurance Company.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

**MINIMUM EARNED PREMIUM – 100% FULLY EARNED**

This endorsement modifies insurance provided under the following:

**RAILROAD PROTECTIVE LIABILITY COVERAGE**

It is agreed that this Policy is subject to a minimum earned premium of one hundred percent (100%) of the premium stated on the Declarations Page. This means that the minimum earned premium is considered fully earned by us as of the inception date of the Policy, and the "insured" is not entitled to any return earned premium upon cancellation or termination.

If a policy fee or inspection fee is applicable to this Policy, the fee(s) will be fully earned and no refund of fees will be made.

All other terms and conditions of this policy remain unchanged.

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### ENDORSEMENT # 003

This endorsement, effective 12:01 a.m., August 15, 2020, forms a part of Policy No. US00102037LI20A issued to Greater Cleveland Regional Transit Authority by Indian Harbor Insurance Company.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

### **EXCLUSION – ACCESS OR DISCLOSURE OF CONFIDENTIAL OR PERSONAL INFORMATION AND DATA-RELATED LIABILITY**

This endorsement modifies insurance provided under the following:

#### RAILROAD PROTECTIVE LIABILITY COVERAGE FORM

- I. **SECTION I – COVERAGE A – BODILY INJURY AND PROPERTY DAMAGE LIABILITY, 2. Exclusions** is amended to add the following exclusion:

This insurance does not apply to:

#### **Access Or Disclosure Of Confidential Or Personal Information And Data-related Liability**

Damages arising out of:

- (1) Any access to or disclosure of any person's or organization's confidential or personal information, including patents, trade secrets, processing methods, customer lists, financial information, credit card information, health information or any other type of nonpublic information; or
- (2) The loss of, loss of use of, damage to, corruption of, inability to access, or inability to manipulate "electronic data".

This exclusion applies even if damages are claimed for notification costs, credit monitoring expenses, forensic expenses, public relations expenses or any other loss, cost or expense incurred by you or others arising out of that which is described in Paragraph (1) or (2) above.

- II. For the purposes of this endorsement, **SECTION V – DEFINITIONS** is amended to add the following definition:

"Electronic data" means information, facts or programs stored as or on, created or used on, or transmitted to or from computer software, including systems and applications software, hard or floppy disks, CD-ROMs, tapes, drives, cells, data processing devices or any other media which are used with electronically controlled equipment.

All other terms, definitions, conditions and exclusions of this Policy remain unchanged.

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**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **NUCLEAR ENERGY LIABILITY EXCLUSION ENDORSEMENT**

(Broad Form)

This endorsement modifies insurance provided under the following:

COMMERCIAL AUTOMOBILE COVERAGE PART  
COMMERCIAL GENERAL LIABILITY COVERAGE PART  
FARM COVERAGE PART  
LIQUOR LIABILITY COVERAGE PART  
MEDICAL PROFESSIONAL LIABILITY COVERAGE PART  
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART  
POLLUTION LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART  
RAILROAD PROTECTIVE LIABILITY COVERAGE PART  
UNDERGROUND STORAGE TANK POLICY

**1. The insurance does not apply:**

**A. Under any Liability Coverage, to "bodily injury" or "property damage":**

- (1) With respect to which an "insured" under the policy is also an insured under a nuclear energy liability policy issued by Nuclear Energy Liability Insurance Association, Mutual Atomic Energy Liability Underwriters, Nuclear Insurance Association of Canada or any of their successors, or would be an insured under any such policy but for its termination upon exhaustion of its limit of liability; or
- (2) Resulting from the "hazardous properties" of "nuclear material" and with respect to which (a) any person or organization is required to maintain financial protection pursuant to the Atomic Energy Act of 1954, or any law amendatory thereof, or (b) the "insured" is, or had this policy not been issued would be, entitled to indemnity from the United States of America, or any agency thereof, under any agreement entered into by the United States of America, or any agency thereof, with any person or organization.

**B. Under any Medical Payments coverage, to expenses incurred with respect to "bodily injury" resulting from the "hazardous properties" of "nuclear material" and arising out of the operation of a "nuclear facility" by any person or organization.**

**C. Under any Liability Coverage, to "bodily injury" or "property damage" resulting from "hazardous properties" of "nuclear material", if:**

- (1) The "nuclear material" (a) is at any "nuclear facility" owned by, or operated by or on behalf of, an "insured" or (b) has been discharged or dispersed therefrom;
- (2) The "nuclear material" is contained in "spent fuel" or "waste" at any time possessed, handled, used, processed, stored, transported or disposed of, by or on behalf of an "insured"; or
- (3) The "bodily injury" or "property damage" arises out of the furnishing by an "insured" of services, materials, parts or equipment in connection with the planning, construction, maintenance, operation or use of any "nuclear facility", but if such facility is located within the United States of America, its territories or possessions or Canada, this exclusion (3) applies only to "property damage" to such "nuclear facility" and any property thereat.

**2. As used in this endorsement:**

"Hazardous properties" includes radioactive, toxic or explosive properties.

"Nuclear material" means "source material", "special nuclear material" or "by-product material".



"Source material", "special nuclear material", and "by-product material" have the meanings given them in the Atomic Energy Act of 1954 or in any law amendatory thereof.

"Spent fuel" means any fuel element or fuel component, solid or liquid, which has been used or exposed to radiation in a "nuclear reactor".

"Waste" means any waste material **(a)** containing "by-product material" other than the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its "source material" content, and **(b)** resulting from the operation by any person or organization of any "nuclear facility" included under the first two paragraphs of the definition of "nuclear facility".

"Nuclear facility" means:

- (a)** Any "nuclear reactor";
- (b)** Any equipment or device designed or used for **(1)** separating the isotopes of uranium or plutonium, **(2)** processing or utilizing "spent fuel", or **(3)** handling, processing or packaging "waste";

- (c)** Any equipment or device used for the processing, fabricating or alloying of "special nuclear material" if at any time the total amount of such material in the custody of the "insured" at the premises where such equipment or device is located consists of or contains more than 25 grams of plutonium or uranium 233 or any combination thereof, or more than 250 grams of uranium 235;

- (d)** Any structure, basin, excavation, premises or place prepared or used for the storage or disposal of "waste";

and includes the site on which any of the foregoing is located, all operations conducted on such site and all premises used for such operations.

"Nuclear reactor" means any apparatus designed or used to sustain nuclear fission in a self-supporting chain reaction or to contain a critical mass of fissionable material.

"Property damage" includes all forms of radioactive contamination of property.

**THIS ENDORSEMENT IS ATTACHED TO AND MADE PART OF YOUR POLICY IN RESPONSE TO THE DISCLOSURE REQUIREMENTS OF THE TERRORISM RISK INSURANCE ACT. THIS ENDORSEMENT DOES NOT GRANT ANY COVERAGE OR CHANGE THE TERMS AND CONDITIONS OF ANY COVERAGE UNDER THE POLICY.**

## **DISCLOSURE PURSUANT TO TERRORISM RISK INSURANCE ACT**

### **SCHEDULE**

<b>SCHEDULE – PART I</b>
<b>Terrorism Premium (Certified Acts)    \$ 113.00</b> <b>This premium is the total Certified Acts premium attributable to the following Coverage Part(s), Coverage Form(s) and/or Policy(ies):</b> Railroad Protective Liability Coverage Form
          <b>Additional information, if any, concerning the terrorism premium:</b>
<b>SCHEDULE – PART II</b>
<b>Federal share of terrorism losses        80    % Year: 2020</b> (Refer to Paragraph B. in this endorsement.)
 <b>Federal share of terrorism losses        80    % Year: 2021</b> (Refer to Paragraph B. in this endorsement.)
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

#### **A. Disclosure Of Premium**

In accordance with the federal Terrorism Risk Insurance Act, we are required to provide you with a notice disclosing the portion of your premium, if any, attributable to coverage for terrorist acts certified under the Terrorism Risk Insurance Act. The portion of your premium attributable to such coverage is shown in the Schedule of this endorsement or in the policy Declarations.

**B. Disclosure Of Federal Participation In Payment Of Terrorism Losses**

The United States Government, Department of the Treasury, will pay a share of terrorism losses insured under the federal program. The federal share equals a percentage (as shown in Part II of the Schedule of this endorsement or in the policy Declarations) of that portion of the amount of such insured losses that exceeds the applicable insurer retention. However, if aggregate insured losses attributable to terrorist acts certified under the Terrorism Risk Insurance Act exceed \$100 billion in a calendar year, the Treasury shall not make any payment for any portion of the amount of such losses that exceeds \$100 billion.

**C. Cap On Insurer Participation In Payment Of Terrorism Losses**

If aggregate insured losses attributable to terrorist acts certified under the Terrorism Risk Insurance Act exceed \$100 billion in a calendar year and we have met our insurer deductible under the Terrorism Risk Insurance Act, we shall not be liable for the payment of any portion of the amount of such losses that exceeds \$100 billion, and in such case insured losses up to that amount are subject to pro rata allocation in accordance with procedures established by the Secretary of the Treasury.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **CAP ON LOSSES FROM CERTIFIED ACTS OF TERRORISM**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART  
LIQUOR LIABILITY COVERAGE PART  
OWNERS AND CONTRACTORS PROTECTIVE LIABILITY COVERAGE PART  
POLLUTION LIABILITY COVERAGE PART  
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART  
RAILROAD PROTECTIVE LIABILITY COVERAGE PART  
UNDERGROUND STORAGE TANK POLICY

- A. If aggregate insured losses attributable to terrorist acts certified under the federal Terrorism Risk Insurance Act exceed \$100 billion in a calendar year and we have met our insurer deductible under the Terrorism Risk Insurance Act, we shall not be liable for the payment of any portion of the amount of such losses that exceeds \$100 billion, and in such case insured losses up to that amount are subject to pro rata allocation in accordance with procedures established by the Secretary of the Treasury.

"Certified act of terrorism" means an act that is certified by the Secretary of the Treasury, in accordance with the provisions of the federal Terrorism Risk Insurance Act, to be an act of terrorism pursuant to such Act. The criteria contained in the Terrorism Risk Insurance Act for a "certified act of terrorism" include the following:

1. The act resulted in insured losses in excess of \$5 million in the aggregate, attributable to all types of insurance subject to the Terrorism Risk Insurance Act; and

2. The act is a violent act or an act that is dangerous to human life, property or infrastructure and is committed by an individual or individuals as part of an effort to coerce the civilian population of the United States or to influence the policy or affect the conduct of the United States Government by coercion.

- B. The terms and limitations of any terrorism exclusion, or the inapplicability or omission of a terrorism exclusion, do not serve to create coverage for injury or damage that is otherwise excluded under this Coverage Part.

#### **ENDORSEMENT # 004**

This endorsement, effective 12:01 a.m., August 15, 2020, forms a part of Policy No. US00102037LI20A issued to Greater Cleveland Regional Transit Authority by Indian Harbor Insurance Company.

#### **SERVICE OF PROCESS**

The Superintendent of Insurance of the State of Ohio is hereby designated the true and lawful attorney of the Insurer upon whom may be served all lawful process in any action, suit or proceeding arising out of this Policy. The Insurer further designates:

Sarah Mims  
General Counsel  
505 Eagleview Boulevard, Suite 100  
Exton, PA 19341-1120

as its agent in Ohio to whom such process shall be forwarded by the Superintendent of Insurance.

For Illinois exposures, the Insurer further designates the Director of the Illinois Division of Insurance and his successors in office, as its true and lawful attorney upon whom may be served any lawful process in any action, suit or proceeding instituted by or on behalf of the Insured or any beneficiary hereunder arising out of an Illinois exposure and this contract of insurance.

All other terms and conditions of this Policy remain unchanged.

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(Authorized Representative)





**Bureau of Workers'  
Compensation**

30 W. Spring St.  
Columbus, OH 43215

### **Certificate of Ohio Workers' Compensation**

This certifies that the employer listed below participates in the Ohio State Insurance Fund as required by law. Therefore, the employer is entitled to the rights and benefits of the fund for the period specified. This certificate is only valid if premiums and assessments, including installments, are paid by the applicable due date. To verify coverage, visit [www.bwc.ohio.gov](http://www.bwc.ohio.gov), or call 1-800-644-6292.

This certificate must be conspicuously posted.

Policy number and employer  
00903117

Period Specified Below  
07/01/2020 to 07/01/2021

ARCADIS U S INC  
630 PLAZA DR STE 100  
HIGHLANDS RANCH, CO 80129-2379



[www.bwc.ohio.gov](http://www.bwc.ohio.gov)  
Issued by: BWC

*Stephanie McCloud*

Administrator/CEO

You can reproduce this certificate as needed.

### **Ohio Bureau of Workers' Compensation**

#### **Required Posting**

Section 4123.54 of the Ohio Revised Code requires notice of rebuttable presumption. Rebuttable presumption means an employee may dispute or prove untrue the presumption (or belief) that alcohol, marihuana or a controlled substance not prescribed by the employee's physician is the proximate cause (main reason) of the work-related injury.

The burden of proof is on the employee to prove the presence of alcohol, marihuana or a controlled substance was not the proximate cause of the work-related injury. An employee who tests positive or refuses to submit to chemical testing may be disqualified for compensation and benefits under the Workers' Compensation Act.



**Bureau of Workers'  
Compensation**

You must post this language with the Certificate of Ohio Workers' Compensation.

## SECTION 014500 - SAFETY PROCEDURES

EXHIBIT B

### PART 1 - GENERAL

#### 1.1 GENERAL

- A. Contractor will perform its work in a safe manner, comply with all environmental safety and health requirements of the contract documents as issued by the Greater Cleveland Regional Transit Authority (GCRTA), and comply with all applicable laws, codes, ordinances, rules, regulations, and lawful orders of all public authorities. Contractor has the sole and complete obligation to provide a safe and healthful working environment for its employees and for other persons at the project site who may be exposed to the Contractors and Subcontractor's work.
- B. Contractor and its Subcontractors are responsible for the development, implementation, administration and enforcement of their individual safety and health programs.
- C. Contractor is responsible for the implementation of all applicable governmental federal, state and local regulations as they apply to the scope of work and the project.
- D. Contractor is responsible for conforming to all applicable safety requirements of the (GCRTA), as specified herein and in the contract.
- E. Contractor is responsible for assuring that project supervisors are trained in Safety procedures and that designated "Competent Persons" meet all training and experience requirements necessary to comply with OSHA directives.
- F. Contractor is required to maintain a Substance Abuse Prevention Program that meets all applicable regulatory requirements. Employee must successfully complete a substance abuse prevention test.
- G. The Contractor must notify GCRTA whenever a Contractor's employee sustains an injury that requires more than first aid. In those cases when an employee needs medical attention but is treated and released, notification to GCRTA shall be the day of the incident of the following business day for off-shift and weekend work. A business day is considered Monday through Friday, 8:00 a.m. until 5:00 p.m. In those cases when the injury is serious and the employee is hospitalized, GCRTA must be notified within 3 hours of the incident. The same immediate notification requirement would be required for a fatality. The Contractor shall contact the Project Manager, who will then notify the Manager of Safety through GCRTA Service Quality Integrated Communications Center. In case of any injury or accident at the work site, a written accident report must be prepared by the Contractor and one (1) copy thereof given to GCRTA's Project Manager within 24 hours.

H. IMMINENT DANGER

1. RTA may stop those operations that create an imminent danger to employees, to the public, and to property.

I. COOPERATION

1. The Contractor shall cooperate with all the safety representatives from local, state, or federal agencies, including those of GCRTA.

1.2 SAFETY PROGRAM (SCHEDULE 18)

- A. For projects requiring a Schedule 18, the Contractor is required to have a written site-specific safety and health program aligned with OSHA and the contract requirements. This program must be submitted to the GCRTA Project Manager for review and approval prior to commencement of work.
- B. A copy of the Contractor's site-specific safety program shall be available for review at the Contractor's field offices.
- C. The approval of the Contractor's site-specific safety and health program does not relieve the Contractor from its responsibility for employees, public safety, and compliance with all applicable safety requirements.
- D. The site-specific safety and health program must at a minimum include and address implementation of the following to the degree they are applicable to the scope of work:
  1. Description of planned work including task hazard breakdown where appropriate
  2. Responsibilities and lines of authority for the planned work including Competent Persons list for area required by OSHA.
  3. Method for identifying job hazards and control methods.
  4. Personal protective equipment (PPE) required for the planned work (Note if respiratory protection is required, a "Respiratory Protection Program" must be included).
  5. Employee orientation and required job training.
  6. Safety and health inspections.
  7. Safety and health goals and expectations.
  8. Disciplinary policy for violation of safety rules.
  9. Fire Prevention and Protection including contingency planning.
  10. Rules of Conduct and/or Standard Operating Procedures as required for the work.
  11. Security and site control measures.
  12. Sanitation and on-site medical support services.
  13. Owner-specified safety requirements.
  14. Accident Reporting, Root Cause Investigation, and Corrective Actions.
  15. Recordkeeping
  16. Hazard Communication and training
- E. Contractor will develop a job hazard analysis (JHA) that identifies the hazards before commencing each major phase or activity at the site or as required by the Project

Manager. The analysis will also describe the planned work and assign responsibility for Hazard prevention or control of identified hazards, and state corrective action to prevent Injury. See Attachment A as an example format for Job Hazard Analysis.

F. FIRST AID AND EMERGENCY MEDICAL CARE

1. Contractor is responsible for providing first aid trained personnel and emergency medical care for its employees and agents.

G. TRANSPORTATION AND ENVIRONMENTAL COMPLIANCE

1. If activities of the Contractor involve transportation or shipping of Hazardous Materials (as defined by the Department of Transportation) or if the work requires Environmental Controls or potential for spills and/or releases, a designated person will be available to provide necessary compliance support. In the event of a transportation incident or environmental release, the designated person will provide necessary coordination of response activities for the Contractor. This person will also provide notification of insurance carriers and HAZMAT response for any Contractor incidents.

H. SAFETY MEETINGS

1. Contractor will conduct regularly scheduled safety meetings with its employees and/or supervision as necessary to ensure that safety is adequately addressed in its work planning and execution. Contractor will provide written notice of the time, place, and subject of these meetings and provide GCRTA Project Manager the opportunity to observe.

I. PERSONAL PROTECTIVE EQUIPMENT

1. Contractor will provide, at its own expense, all required personal protective equipment for its employees and all required safety equipment and supplies as needed. Contractor is required to ensure that employee are wearing appropriate personal protective equipment as specified in applicable OSHA regulatory standards. In accordance with OSHA standards, all employees shall be required to wear personal protective equipment during working hours and on the project premises, including Non-metallic ANSI Z89.1-1997 approved hard hat and ANSI Z 1987.1-1989 approved protective eye wear with peripheral protection. Employees performing welding, cutting, grinding or similar operations must utilize protective head gear in conjunction with other required protective equipment while performing such operations.
2. Employees working in designated "Hearing Protection Required" areas or when noise is identified as a potential job hazard in the pre-task JHA, must be provided with adequate hearing protection including either approved Earplugs, Canal Caps or Ear Muffs as required to meet OSHA, MSHA, or USACOE requirements.
3. A written documentation of identification of task specific PPE is required under OSHA requirement 29 CFR 1910.132(d) or as specified in 29 CFR 1926 Subpart E. Contractor is responsible for compliance as required for the task. In addition, the Job Hazard Analysis for each task must specify required PPE for the task as part of the task specific planning process.

J. FALL PROTECTION

1. Construction/Contractor work which requires the use of fall protection and fall arrest equipment and supplies, shall be considered hazardous work, and shall be required to have the contractor provide a written assessment (JHA) and plan explaining:
  - a. What fall hazard(s) exist on the project, and how each will be abated;
  - b. In the event the abatement involves personal fall arrest system, an explanation of how rescue shall be performed if a fall event occurs.
2. Fall protection shall be required to be worn on all aerial lift equipment, bucket truck equipment, and on scissors lift equipment if the scissor lift has manufacturer installed fabricated tie off points.

K. HAZARD COMMUNICATION (HAZCOM) / Right to Know

1. Contractor shall adequately educate, train and provide proper personal protective equipment and resources (including eye flushing means and skin rinsing means) to all employees performing work with hazardous chemicals. Hazardous chemicals include but are not limited to chemicals that may irritate and/or damage body tissue if contact is made with the chemical.
2. Contractors shall be required to maintain at the site an up to date, accurate, readily accessible set of MSDS/SDS for each of all chemicals being used/applied. Contractors shall immediately make available for review any MSDS/SDS requested by a contractor or GCRTA.

L. HOT WORK

1. Hot Work shall be defined as any activity involving welding of any type (MIG,TIG,Stick), any activity involving oxy/fuel gas burning, or use of any powered tool that generates sparks and heat (grinding, dry cutting, etc.)
2. All hot work activity, with the exception of outdoor track work, requires that a hot work permit be issued on a job by job basis, and required to be obtained from the hot work permitting authority (the general contractor, subcontractor leader or GCRTA, etc.) prior to starting such activity. Each hot work permit shall be only as long as the task specified lasts or an 8 hour work shift whichever is shorter.
3. All hot work performed must have a continuous fire watch during hot work activity and a mandatory 1 hour fire watch occur after the hot work specified in each permit has ended, regardless of time of day, time of completion of task, location of task or weather conditions.
4. Any fires regardless of size that occur as a result of hot work being performed shall be required to be reported to the GCRTA Project Manager.
5. The contractor shall be required to keep on file a copy of all issued hot work permits, and shall make them available for review by the Project Manager or a GCRTA safety department representative.



### 1.3 SAFETY REPRESENTATIVES

- A. Contractors required to submit a Schedule 18-Safety Program/Plan shall be required to designate a qualified Safety Representative that has the authority and support of his/her management to conduct and coordinate its subcontractors' safety and health program and/or policies. The duties and responsibilities of the Safety Representative shall be specified in the site-specific Safety Plan. The Safety Representative shall be granted "stop-work" authority, along with the responsibility and organizational freedom necessary to implement and enforce the safety and health program.
- B. Prior to commencement of work the Contractor shall provide the GCRTA Project Manager with the name and qualifications of the Safety Representative for approval. Once approved, the Safety Supervisor/Representative will not be changed without the approval of the GCRTA Project Manager. A Safety Representative must be present on the project site whenever work is being performed.

### 1.4 WORKER'S COMPENSATION

- A. Worker's Compensation as required under applicable laws must be provided and administrated by the Contractor for their employees and agents. The GCRTA Project Manager will not assume any responsibility for the administration of Worker's Compensation insurance, the submittal of reports, processing of claims or any other related activity.

### 1.5 INSPECTIONS

- A. Contractor is responsible for conducting daily and documented weekly jobsite inspections for unsafe conditions and work practices. The GCRTA Project Manager or designee will conduct a monthly documented inspection.
- B. Contractor shall prohibit the use of unsafe machinery, tools, materials, or equipment and shall conduct pre-job and as-required inspections on same in accordance with manufacturer's recommendations and appropriate regulations. All heavy equipment shall have a documented safety inspection prior to being used on the project. All equipment, tools, and appliances shall be used according to manufacturer specifications. Modifications or alternative uses must be approved by the manufacturer prior to planned use.
- C. Contractor will immediately notify the GCRTA Project Manager of any and all OSHA inspections and shall afford GCRTA Project Manager the opportunity to observe the inspection. Contractor will provide GCRTA Project Manager a copy of all citations received and all Contractor responses issued as a result of such inspections within two working days of receipt or issuance.
- D. Contractor will perform periodic safety inspections of Subcontractor's work. Subcontractor's safety representative will accompany Contractor's safety supervisor during these inspections and take prompt action to correct all identified deficiencies. Contractor's management will participate in any scheduled safety walk-through with GCRTA Project Manager. Such inspections and identification of deficiencies by

GCRTA Project Manager does not relieve Contractor from its responsibility to comply with all applicable safety regulations and rules.

## 1.6 EMPLOYEE ORIENTATION AND TRAINING

- A. Contractor shall instruct each employee required to handle or use flammable liquids, gases, toxic materials, poisons, radiological materials, and other harmful substances in safe handling and use. Employees shall be made aware of the potential hazards, the necessary personal hygiene, and the personal protective measures provided. In addition employees must receive training on appropriate spill control measures as part of site-specific Emergency training.
- B. All personnel working on or near the right of way will be required to attend "Rail Operations Rulebook Level C" training. All personnel that will be utilized for flagging duties shall attend Right of Way Worker Protection training and possess a current certification issued by GCRTA.
- C. Contractor shall permit only qualified employees, by training or experience to operate equipment or machinery, and should verify the employee's ability to operate such equipment through visual observations for appropriate time periods.
- D. All new jobsite employees, upon their day of employment or initial entrance onto the project site, will be required to attend a jobsite orientation. This orientation program shall include the Contractor's:
  - 1. Project rules
  - 2. Emergency and first aid procedures.
  - 3. Work rules and procedures
  - 4. Security procedures.
  - 5. Fire prevention and protection.
  - 6. Use of personal protective equipment, and other subjects related to the employee's responsibilities and duties.
  - 7. Smoking Prohibition
    - a. Board Resolution 2006-193 was passed on Tuesday, October 17, 2006, expanding the areas where smoking is prohibited to include all indoor and outdoor locations owned or under the control of the Authority. This change will become effective January 1, 2007. The areas affected by the change include: 1) indoor and outdoor areas open to the public and to customers, such as rail stations, transit centers, park & ride facilities, and bus shelters located on GCRTA property, 2) outdoor portions of employee workplaces including private vehicles on GCRTA property and 3) motor and rail vehicles not in revenue service.
- E. Contractor will provide safety training for its employees at its own expense, and such training will be documented and copies provided to the GCRTA Project Manager upon request. Safety training will include, but not be limited to:
  - 1. Orientation to the safety policies and rules stipulated by the Contractor prior to each employee's initial work assignment on the project.

2. Orientation of supervisors to the safety policies, rules, and their responsibility to enforce it.
  3. Weekly "Toolbox Talks" on an appropriate safety subject, for all employees.
  4. Hazardous materials training (HAZCOM).
  5. Personal protective equipment
  6. Personal safe work practices
  7. Special safety training for those affected, including but not limited to, confined space entry, respiratory protection, hot work permits, fire watch, trenching/excavation, fall protection, scaffolding, aerial lift operation etc.
- F. Unsafe acts by employees or repeated unsafe considered serious and will not be tolerated. Contractor will uniformly enforce a policy that states the disciplinary action to be applied when employees violate safety rules. This policy will be consistent with project and/or Contractor's safety enforcement policy.

## 1.7 SAFETY VIOLATIONS

- A. Contractor is responsible for promptly correcting all violations of safety and health standards, potential hazards and other such safety related problems within their area of responsibility. In the event an apparent violation is observed by the GCRTA Project Manager, the Contractor will be notified.
- B. If the GCRTA Project Manager notifies the Contractor of any non-compliance with the provisions of the project's safety and health program, GCRTA policy or other statutory requirements, Contractor shall take prompt action and make all reasonable efforts to correct the unsafe or unhealthy condition(s) or act(s). Satisfactory compliance shall be made within a reasonable, specified time. If Contractor refuses to correct unsafe or unhealthy conditions or acts, the GCRTA Project Manager will initiate appropriate actions in accordance with the contract provisions and may take one or more of the following steps:
1. Cease the operation or a portion thereof (particularly in the case of an imminent danger).
  2. Correct the situation and back-charge Contractor.
  3. Invoke contract penalties and/or terminate the contract.
- C. Willful and repeated failure to comply could result in the shutdown of the work, or portions thereof. No part of the time lost due to any such modification of operations or stop orders shall be made the subject of claim or extension of time or for increased costs of damage by the Contractor.

## 1.8 REPORTS AND SUBMITTALS

- A. Contractor will report all injuries recordable on its OSHA 300 log, all accidents resulting in property damage and all environmental incidents to the GCRTA Project Manager promptly, and follow up in writing within 24 hours. Within one working day, Contractor will provide GCRTA with a written report documenting the root cause(s) of the accident and action(s) taken, or planned to be taken, to preclude recurrence.

- B. All job hazard analyses (JHAs), work permits, training records, inspection reports, and daily safety reports must be available for review by the GCRTA Project Manager. Contractor will maintain records of all first aid cases, work related injuries/illnesses and property damage according to OSHA requirements and the representative insurance carrier requirements. These records may be reviewed by the GCRTA Project Manager as required and permitted by law.
- C. On monthly basis, the contractor will complete and submit the GCRTA Monthly Safety Report that summarizes injuries and manhours for the project.
- D. Contractor will provide to the GCRTA Safety Department copies of Material Safety Data Sheets (MSDS) for materials that Contractor brings on the jobsite. This information will be provided prior to arrival of the materials on the project site.

## PART 2 - PRODUCTS

### 2.1 NOT APPLICABLE

## PART 3 - EXECUTION

### 3.1 NOT APPLICABLE

## PART 4 - Measurement and payment

- 4.1 No separate measurement or payment will be made for the work under this item, the cost of which shall have been included under other items of work.

END OF SECTION 014500

**SPECIFICATION 014500**

**SAFETY PROCEDURES**

**Attachment A**

**Sample Job Hazard Analysis Form**

Title of JHA: \_\_\_\_\_

Project Name/Number: \_\_\_\_\_

Name of Person(s) Completing JHA: \_\_\_\_\_

Date Completed: \_\_\_\_\_ Date Reviewed: \_\_\_\_\_

Basic Job Steps	Identified Hazards Associated With Job Steps	Hazard Controls and Personal Protective Equipment Required



SECTION 015010 - MAINTENANCE OF RAIL TRAFFIC AND RESUMPTION OF REVENUE SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work must be carried out on an operating transit system. RTA will maintain revenue service on the affected portion of the line throughout the duration of the contract unless as noted in the Supplemental General Conditions. The current scheduled regular operating hours and track availability periods are as follows:

<u>Area</u>	<u>Date</u>	<u>Days</u>	<u>Regular Operating Hours</u>	<u>Track Availability Periods</u>
Red Line:	Year Round	7-days/Week	3:00 a.m. to 2:00 a.m.	2:00 a.m. to 3:00 a.m.
Blue Line:	Year Round	7-days/Week	3:30 a.m. to 1:15 a.m.	1:15 a.m. to 3:30 a.m.
Green Line:	Year Round	7-days/Week	5:00 a.m. to 10:00 p.m.	10:00 p.m. to 5:00 a.m.
Waterfront Line:	*Sept 15 to May 15	Mon. thru Fri. Sat. & Sun.	6:15 a.m. to 7:15 p.m. 9:00 a.m. to 7:15 p.m.	7:15p.m. to 6:15 a.m. 7:15 p.m. to 9:00 a.m.
E. 55th St. Yard:	Year Round	7 days a week	24 hours a day	None

\* Note: The Waterfront Line is subject to an increase in scheduled operating hours during the summer months from May 15 to September 15.

- GCRTA reserves the right to restrict or deny track availability when GCRTA deems it necessary to expand the hours of service to accommodate special events.
  - Generally after the last train exits a proposed work area the Control Center Supervisor will authorize occupancy for work.
  - Track outage times provided by GCRTA include the time required for the Contractor to arrive on scene and request the shut-down, as well as the time for GCRTA to arrive and shut-down the track. The time spent waiting for the shut-down will be borne by the Contractor.
- B. Contractor must not interfere with the normal transit system operations. Work may only be performed by permit as delineated in this section of these specifications.
- C. The Owner retains authority over all rail traffic operations. The Owner shall reserve the right to approve (or reject) the adequacy of the Contractor's protective measures to assure continuity of the Authority operations.

- D. Single tracking during non-rush hours may be permitted. However, it is not guaranteed, and the Contractor may not rely on having access to track areas during Regular Operating Hours. When permitted, it may be allowed under the following:
  - 1. The Contractor has justified why the single tracking request is needed.
  - 2. The Contractor has indicated the time frames in the original construction schedule.
- E. The requested occupancy will not be granted and can be revoked, even after being issued, under the following conditions and at GCRTA's discretion:
  - 1. Conflict with Special Events
  - 2. Conflict with the RTA system maintenance and/or emergency work
  - 3. Conflict with other ongoing construction projects
  - 4. When snowfall exceeds or is forecast to exceed 5", when freezing rain is forecast, or when snow trains must be operated
  - 5. When visibility is poor, creating an unsafe working environment for both work crews and GCRTA operations
- F. Any occupancy of the Rail right-of-way requires an approved occupancy permit. Work or occupancy within 10 feet of the centerline of any track requires an approved occupancy permit and generally daytime work hours are only available from 9:30 am to 2:30 pm.

## PART 2 - PRODUCTS

### 2.1 NOT APPLICABLE

## PART 3 - EXECUTION

### 3.1 RESTRICTIONS BY GCRTA

- A. The Contractor must receive a permit prior to starting work that may affect GCRTA property and facilities. Each Contractor must submit requests through the Engineering and Project Development's (E&PD) Project Manager for prior authority approval for occupying the rail right-of-way. These requests will be of the following types:
  - 1. Wayside work - Required for all work performed on the rail right-of-way, not between the tracks and more than 10 feet from the centerline of any track.
  - 2. Active Track Occupancy Permit - Required for all work performed on the rail right-of-way using hand tools and within 10 feet from the centerline of any track.
  - 3. Track Outage Permit - Required for any single tracking operation where one track is taken out of service.
  - 4. Power Outage Permit - Required for any work on the rail right-of-way that is within 10 feet of the energized catenary conductor wire; however, when power outages are not feasible, the Contractor may proceed with the work based on the Contractor's compliance with all OSHA regulations. These regulations include,

- but are not limited to, distance relating to qualified and unqualified personnel as defined by OSHA when working around the Authority's 600-volt catenary system.
5. Track Shutdown Permit - Required for any termination of rail service i.e. complete shutdown of service on track(s). This application must be submitted by 11:00 am Wednesday four weeks before the week of the track(s) shutdown. All requests must be submitted in writing to the E&PD Project/ Construction Manager no later than 11:00 AM of the preceding Wednesday for consideration by the Director of Service Management or their designate. Due to other ongoing construction and maintenance projects, there is no guarantee that any request will be approved. All requests will be approved or disapproved in writing.
  - B. In the event of a reversal by either GCRTA or the Contractor of any Track or Power Outage permit, a good faith effort must be made to notify the other party prior to the scheduled outage. Contractor cancellation of permits for work after 7:45 PM shall be no later than 3:30 pm that day, and any failure to cancel 12 hours prior to the scheduled outage shall result in the Contractor being assessed Liquidated Damages in the amount of \$500 for each occurrence. This cost must be paid directly by the Contractor to GCRTA. Failure to pay will result in rejection of all future outage requests. GCRTA will make a good faith effort to notify the Contractor 12 hours prior to any cancellation. However, it is understood that emergencies may occur which may prevent GCRTA from canceling within this time frame.
  - C. Power outages will not be allowed during the following conditions:
    1. On holidays or during Special Events
    2. Where weather conditions are such that icing of the catenary may occur (For example: RTA has experienced icing conditions when the temperature is between 25 and 35 degrees Fahrenheit with a chance of precipitation)
    3. To confirm if weather conditions might be affecting rail operations, the Contractor may call either the Control Center Supervisor at 216-356-3008 or 216-356-3009 or Central Communications at 216-566-5135.
  - D. Any unexpected effects upon the operations of scheduled/unscheduled train movements shall be immediately called into the Control Center Supervisor at 216-356-3008 or 216-356-3009.
  - E. The Contractor must receive the proper outage permit prior to lifting of any bridge span, or other such material, over GCRTA tracks. GCRTA Rail personnel shall be present in the area to ensure a safe and clear area after span lift. Demolition work shall stop when trains pass through a demolition area or trains shall be stopped at a safe distance if imminent danger is shown.
  - F. All work over GCRTA tracks shall be done with the overhead power off unless authorized by both District Director-Rail and Director of E&PD or their designates. If any Contractor or Utility requires the de-energization of the overhead power to the Catenary System, a power outage permit must be approved per the above methods.

### 3.2 RESUMPTION OF REVENUE SERVICE

- A. The track must be returned to the Authority a minimum of one-half hour before the start of scheduled revenue service at that location or as indicated on the Outage Request Form. At the completion of the week night shift and at the completion of weekend work, the Contractor is to inspect and subsequently release the work zone back to the Authority for resumption of revenue service. This will require the Contractor to adhere to the following procedures:
  - 1. Prior to release of a work zone, the Contractor is to clear his equipment, manpower and materials from the right-of-way, an area defined as at least 10 feet from the centerline of each track.
  - 2. The Contractor, along with the Engineer, will inspect the entire work zone to assure that the work completed complies with the requirements of the Authority for the resumption of revenue service within the work zone. The construction, at a minimum, must comply with FRA Class 4 Safety Standards for track or compliance with these construction tolerances.
  - 3. Other requirements may be imposed by the Authority based on AREA construction tolerances, procedures and/or practices. Imposition of slow orders and other means can be requested by the Contractor in order to assure the resumption of safe revenue operations.
  - 4. When each item above has been completed, the Contractors Employee in Charge shall notify the appropriate Control Center Supervisor of the release of the work zone back to the Authority.
  - 5. At the completion of each night shift and weekend work, the Contractor must inspect work site and release it to RTA in an aesthetically pleasing manner as determined by the Engineer.
- B. The Contractor must comply with the provisions of these General Requirements as representing an integral part of his legal obligation under this contract.

### 3.3 TEMPORARY FALSEWORK AND PROTECTIVE STRUCTURES

- A. In order to protect GCRTA traffic (passengers, personnel and property) against harm and damage from falling material and debris during any demolition or construction overhead, the Contractor shall furnish and erect an electrically insulated rigid temporary structure under the spans that are directly over the GCRTA tracks.
- B. The flooring and siding of the temporary structure shall have no cracks or openings through which material particles may fall. As a minimum, one layer of 3/4-inch plywood with lapped joints or an equivalent design shall be placed between the lower flanges of the structural steel beams above the track bed and the shoulders of the GCRTA tracks.
- C. The temporary falsework shall be suitable for attachment of the live catenary wire system, and all signal, power and communication cables. The falsework shall be removed by Contractor when work is completed.
- D. Details of the temporary falsework and protective structures including the proposed temporary under clearances to the GCRTA tracks, shall be prepared by a Professional Engineer for approval by the GCRTA Director of E&PD, or their designate, prior to starting any demolition or construction work.

- E. This protective work shall be performed at the Contractor's cost.
- F. Before starting the work of erecting the temporary falsework, the Contractor must have a special meeting with the Project Manager for the purpose of developing a plan for making arrangements to move, protect and reattach the fiber optic cable. Before any such work is started, the Control Center Supervisor will be notified at:
  - 1. Control Center Supervisor, West Office Phone (216) 356-3009
  - 2. Control Center Supervisor, East Office Phone (216) 356-3008

### 3.4 SPECIAL GCRTA REQUIREMENTS

- A. Rules for work performed within ten (10) feet of the GCRTA overhead propulsion power cables:
  - 1. Some of the work contemplated by this agreement may be performed within ten (10) feet of the overhead propulsion power cables (catenary lines) providing 600-volt D.C. power to the GCRTA Rapid Transit.
  - 2. In order to provide continual public transit service to meet the needs of the riding public, the Authority desires to keep to a minimum any power outages that may adversely affect regularly scheduled public transit on the GCRTA Rapid Transit.
  - 3. Overhead propulsion power cables (600-volts D.C.) shall always be considered energized. The Contractor must not assume the power is shut-off until actually confirmed by GCRTA on a daily basis that shutdown has actually been accomplished. Despite power shut-off, the overhead propulsion cables are always to be considered hot.
  - 4. All work shall be performed in accordance with rules, regulations, procedures and safe practices of the GCRTA, OSHA and all other governmental agencies having jurisdiction over this project, including, but not limited to, applicable OSHA regulations pertaining to work performed within proximity of energized conductors. (29 CFR)
  - 5. It is the responsibility of the Contractor to know and comply with all governmental regulations pertaining to work performed in proximity to electrical power cables providing 600-volts D.C. (29 CFR)
  - 6. It is the Contractor's responsibility to provide qualified persons who meet all governmental standards, including, but not limited to, OSHA standards that enable them to perform the scope of work within proximity of overhead propulsion power cables providing 600 volts D.C.
  - 7. The Contractor and/or individual employees of the Contractor shall be required to present evidence upon demand that they have been trained and are otherwise properly qualified to perform work required by this agreement in accordance with applicable OSHA regulations or any other governmental regulations or standards required by this agreement.
  - 8. The Contractor shall provide GCRTA with a safety program plan that shall address, in part, the need to perform work within 10 feet of overhead power propulsion lines providing 600-volts D.C.
- B. GCRTA aerial lines on GCRTA property may be relocated by GCRTA personnel if required. The Contractor shall use all precautions necessary to see that the lines are not disturbed during the construction stage and shall cooperate with GCRTA in



relocation of these lines. The cost of all wire relocation shall be paid for through a Force Account funded by the organization responsible for the project.

- C. No equipment or material shall be suspended or erected above, within 16.0 feet vertically above top of rail or higher based on existing catenary heights, or within 7.5 feet horizontally from the center of the track over which trains are operating, unless otherwise approved by GCRTA's Director of E&PD in advance.
- D. Track ballast must be protected from contamination during demolition and construction. Signal equipment must also be protected. The Contractor must furnish details at least 30 days well in advance of starting the work for approval on how they plan to protect both items.
- E. No excavation, removal of existing pier foundations or constructing new foundations adjacent to GCRTA tracks is permitted without approval of GCRTA. Sheeting may be required to prevent undermining of tracks. If sheeting is required, it is the responsibility of the Contractor to provide and install such sheeting. Proposed sheeting shall be prepared by a Professional Engineer for approval by GCRTA Director of E&PD, or his designate, prior to starting any excavation or demolition work.
- F. If proposed construction is in the vicinity of a rapid station, pedestrian traffic to the GCRTA station shall be maintained at all times by the Contractor. Structurally sound fencing, barricades, and/or shelters shall be provided to protect GCRTA users at the station entrances and platforms. The Contractor shall submit details of the protection system for approval by GCRTA's Director of E&PD, or his designate, before demolition is started.
- G. No construction activity shall take place within GCRTA construction clearance limits while track is active except with flaggers and the proper Outage Permit. During complete shutdown, Contractor is cautioned to the possibility of track utilization by RTA work trains and other service equipment.
- H. No at-grade crossing of GCRTA tracks is permitted by vehicles or equipment, without prior approval of the District Director-Rail or his designate.
- I. The Contractor shall provide, install, erect and maintain suitable lighting and protections for safe and efficient progress and for any work that is to be performed after daylight hours.
- J. Flaggers shall be provided by the Contractor, either through companies who supply certified flaggers (obtain list from GCRTA) or by training and certifying its own employees through GCRTA. For flagging procedures, flagger training, and set-up of work zones, see Section 015020 - Standard Rail Flagging Procedures.
- K. Any violation of GCRTA construction restrictions by the Contractor may result in immediate shutdown of construction activities until the violation is corrected.
- L. These procedures are applicable whenever any personal or equipment of any Contractor are on Authority rail property and/or more specifically, within a distance of 10 feet from the centerline of each track, including any and all work performed over tracks and work being performed on overhead (highway) structures.

PART 4 - MEASUREMENT AND PAYMENT

4.1 GENERAL

- A. No separate measurement or payment will be made for work required under this section.

END OF SECTION 015010

## SECTION 015020 - STANDARD RAIL FLAGGING PROCEDURES

### PART 1 - GENERAL

#### 1.1 INTRODUCTION

- A. These procedures are applicable whenever any personnel or equipment of any contractor, subcontractor or consultant (hereinafter called Contractor) are on GCRTA Rail Right-of-Way (ROW). Special care is required when within an operating envelope around the tracks, the outer limit being a vertical plane located a distance of 10 feet from the centerline of each track, including any and all work performed over tracks including work being performed on overhead highway structures.
- B. Contractors are responsible to know and comply with all April 2019 GCRTA Right-of-Way Worker Protection Plan safety rules and procedures, including the following:
  - 1. On-site personnel shall wear EH rated safety shoes, hardhats, safety glasses, and high visibility fluorescent yellow-green safety apparel at all times.
  - 2. Before crossing any tracks, STOP, LISTEN and LOOK for trains or vehicles approaching from either direction. Do not cross tracks unless you have time to walk normally, and do not take chances that would make a misstep serious. Do not step on the head of the rail. Never cross the track within switches, can which be operated at any time.
  - 3. Do not walk on tracks except when absolutely necessary. When walking alongside the tracks, face the normal direction of traffic.
  - 4. Consider all tracks as operating tracks and be on the alert for trains operating in either direction on any track at any time.
  - 5. As a train approaches, move to a position of at least 10 feet from the centerline of the running rail while facing the approaching train. When standing beside the tracks in a confined space, be sure that you have allowed sufficient space for the train to pass safely without touching your body, clothing, or any other object you may have in your possession.
  - 6. Do not step into the first 20 feet of the track area behind or in front of a stopped train. Always maintain a safe distance from the train, which could begin moving in either direction at any time.
  - 7. The overhead wires of the 600-volt catenary system should always be considered as energized. Utilize the 10' Rule and refrain from performing work near the energized catenary system. Do not work closer to the wires than allowed under OSHA regulations and other applicable codes and standards.
  - 8. Cell phone or other personal electronic device use is strictly forbidden while working on active track. It is highly encouraged that all non-essential electronic devices are powered down while working on the ROW. Taking photos for investigation purposes is permitted.
  - 9. "Hot Rail" is the accepted practice to verbally communicate within a work crew to alert each other of an approaching train.
- C. Personnel deemed as unsuitable by GCRTA shall be removed immediately by the Contractor and will be barred from the GCRTA premises.

## 1.2 RESPONSIBILITY

- A. Contractor is responsible for compliance with all elements of these procedures, including all training, drug testing, certification and re-certification.
- B. Contractor is responsible for all employee wages associated with the training, certification, re-certification and use as Flaggers.
- C. GCRTA will not be responsible for "no shows," late arrivals or delays to Contractor due to the failure to comply with the current GCRTA Right-of-Way Worker Protection Plan, or the certification and use of Flaggers.
- D. A Work Zone and/or Single Tracking request may be denied or revoked for failure of the Contractor to comply with these requirements.
- E. Failure of the Contractor to have qualified Flaggers will be grounds for the Authority to have the Contractor cease operations until such personnel are available. Claims for lost wages and productivity will not be honored.
- F. The Contractor will provide a Work Zone Plan that depicts the location and layout of all protective equipment and flag personnel. The plan shall be based on Diagrams 1-11 in Work Zone Appendix.

## PART 2 - PRODUCTS

### 2.1 REQUIRED EQUIPMENT

- A. The required equipment listed below shall be provided by the Contractor to the Flaggers at the beginning of each shift of work. The Contractor will remain responsible for ensuring that all work tools and equipment are available to each Flagger.
- B. Clothing worn by the Flaggers shall be compatible with the weather conditions. Shorts, tennis shoes and other inappropriate clothing will not be allowed. Clothing shall not be loose fitting; safety boots with hard arch shank and toes are required for Flaggers and must be worn at all times. In accordance with OSHA 1910.136, safety shoes must comply with "ASTM F2413, American Society for Testing and Materials" and carry an Electrical Hazard (EH) Rating. Shoes that comply with these requirements will have "ASTM F2413" and "EH" printed on the label inside each shoe.
- C. Whereas Flaggers are Contractor's employees, GCRTA retains certain jurisdiction over flag personnel. Flaggers must be trained and certified by GCRTA. No persons shall perform flag duties unless so qualified. The Contractor has all other jurisdiction, including wages, employment benefits, and day-to-day supervision.
- D. Each Flagger must carry the following prescribed and Authority approved materials and equipment as listed below. The Contractor shall provide this material and equipment. The Contractor shall have spare expendable materials such as air canisters and flashlight batteries available at all times.

1. The following minimum, GCRTA approved, PPE MUST BE WORN AT ALL TIMES WHILE ON DUTY:
    - a. High visibility yellow-green safety apparel (ANSI Class II or III)
    - b. EH rated safety footwear (ASTM F2413)
    - c. Safety Eyewear (ASNI Z87)
    - d. Hard hat (ANSI Z89 Type I Class E or G)
    - e. Additional PPE as determined by use of the Job Hazard Analysis found in specifications section 014500 "Safety Procedures."
  2. Flags - One red and one yellow. Flag shall be a minimum of 17" square on a 24" wood handle.
  3. Flashlight - For night, tunnel and underground operations. Flashlight shall be powered by a minimum of two "D" cells and be clearly visible from a minimum distance of 500 feet.
  4. A Coast Guard approved whistle
  5. Air horn with spare full canister. Note: Air horn can only be used when temperatures are above +20 degrees F. The horn canister shall be 6 ounces minimum.
  6. Signs - One orange "W" and one green "R" (Resume), both made with reflective material. Each sign shall be placed in a clearly visible position (to the train operator) and should be within eight feet of the centerline of the track the Flagger is protecting. Signs shall be a minimum of twelve inches wide and eleven inches high on 1/2" plywood or aluminum highway sign stock. "W" letter shall be a minimum of six inches in height. Letter "R" shall be a minimum of six inches high. If highway cones are used for mounting, they shall be safety orange, twenty-four inches in height, with a heavy base plate with a minimum size of fourteen inches square. In windy conditions, a more secure mounting may be required. See Diagrams 10 and 11 in Work Zone Appendix.)
  7. Note pad and pen
  8. GCRTA supplied radios issued to the Contractor shall be carried by Flaggers. The radios shall be used for the passing of information to the flagmen regarding the operations of trains, as well as emergency situations.
  9. Portable Trip Arms and Trip Stops as shown and required in the Work Zone Diagrams. Trip arm fabrication plans provided upon request to the Engineer.
    - a. Portable Trip Arm – the trip arm can be raised and lowered.
    - b. Portable Trip Stop – the trip arm cannot be raised and lowered.
- E. Prior to the start of flagging operations, the Contractor must inspect and replace all defective, lost or stolen equipment. A daily check of all flagging materials and devices must be performed by the Contractor. A checklist shall be maintained and signed by the Contractor for inspection by GCRTA or its designated Representatives of the devices and a test of each to ensure they are working.
- F. In addition to the equipment listed above, the GCRTA Rail District personnel will furnish and install ProTracker Devices for the Contractor unless the devices are resident at the project site, in which case the Contractor shall install. These devices are designed to warn workers of approaching rail traffic. The ProTracker devices are to be considered as a secondary warning device to flag personnel. The ProTracker device locations are as shown on the Work Zone plans.



## PART 3 - EXECUTION

### 3.1 WORK ZONES

- A. A Work Zone is a section of track protected by the use of warning signs and one or more Flaggers through which trains operate. See Diagram 1 through 9 in the Work Zone Appendix of 015020). It provides protection for work crews, passengers, trains, equipment, tools and property. Any work performed by a Contractor on or within 10 feet of GCRTA tracks must utilize a Work Zone and accompanying Flagger(s). If right-of-way occupancy will be outside of the 10-foot envelope of each track, but encroachment of equipment, materials or workers is possible, then one or more Flag Person will still be required.
- B. GCRTA may, at its own discretion, require additional Flaggers if specific situations warrant the additional Flaggers (such as poor visibility, extremely loud equipment, around curves, etc.) The cost of additional Flaggers will be borne by the Contractor.
- C. Contractors must follow contractual and the current GCRTA Right-of-Way Worker Protection Plan provisions for requesting a Work Zone on/or adjacent to the tracks. They must report their location and Work Zone limits to the Control Center Supervisor (CCS) for permission to set up the Work Zone.
- D. The Contractor shall designate an Employee in Charge (EIC). This person shall be a qualified employee responsible for the ROW safety for all workers and work crews within their working limits.
  - 1. The EIC must be present on-site at all times during Work Zone operations.
  - 2. The EIC must be certified in both GCRTA Right-of-Way Worker Protection and GCRTA Flagging.
- E. Only the Control Center Supervisor may authorize the Contractor to set up a Work Zone.

### 3.2 PREPARING FOR THE WORK ZONE

- A. The Contractor shall contact the West (Red Line: Airport to E. 29th interlocking and Waterfront Line) or East (Red Line: E. 29th to Windermere and the Shaker Lines) Control Center Supervisor (CCS) by radio daily before the start of work to inform the Control Center Supervisor of the work location, the nature of the work to be done and any other pertinent information. The Control Center can be reached at the following numbers: Control Center Supervisor West 216-356-3009, and Control Center Supervisor East 216-356-3007. In the event the Control Center Supervisor cannot be contacted, the Central Communications may be called at 216-566-5135. For Work Zones within the Central Rail Storage Facility at E. 55th Street contact Yard Control at 216-356-3008.
- B. The Contractor must have an approved Rail Right-of-Way Occupancy Permit before the Work Zone is set up. The Control Center Supervisor (CCS) will announce the specific type of Work Zone on the radio with the start and end points to all Operators

before the Work Zone is set up. The Contractor is responsible for ensuring that the Work Zone is set up properly.

1. The Contractor's Employee in Charge (EIC) will notify the control Center Supervisor by radio after the Work Zone setup is complete and that the work is commencing under a specific type of Work Zone. The CCS will acknowledge that the specific type of Work Zone has been set up.
- C. The Contractor will be responsible for obtaining, removing and maintaining all the required signs for the Work Zone. Contractor will be responsible for providing transport of their Flaggers to each work site.
- D. An EIC can only flag in the case of an emergency.
- E. The EIC shall ensure the proper placement of the signs and Flagger(s) as required and as shown on Work Zone diagrams.
- F. The EIC must send a Flagger sufficient distance ahead against traffic to act as a lookout while the Work Zone is being set up.
- G. The Contractor is responsible for having Flaggers at the project site and will specify when meal and other breaks are to be taken. Flaggers are NOT PERMITTED UNDER ANY CIRCUMSTANCES to leave their assignment without a replacement. Leaving a Work Zone without flag protection may result in serious injury and in project shutdown.
- H. If a Flagger leaves the Work Zone without a replacement, the workers must immediately leave the right-of-way, close the Work Zone, and advise the CCS immediately by telephone or radio.
- I. The Contractor is responsible to ensure that the Flagger has all required equipment in serviceable condition and that the Flagger and all other work crew members are wearing approved hardhats, safety glasses, EH rated safety footwear, high visibility fluorescent yellow-green safety apparel, and other required personal protective equipment. Failure to comply will be cause for project shutdown.
- J. The EIC will adjust the Work Zone dimensions or number of Flaggers whenever necessary to ensure adequate visibility of the Flagger to both the train operators and work crew. In certain locations, clear visibility from the orange work zone "W" sign to the work area may not be available due to curves or obstructions. In these cases, additional Flaggers are required. The EIC will position the Flagger at locations so that the first Flagger has clear sight of the orange warning sign, and the second Flagger is between the first Flagger and the work crew and has clear sight of both the first Flagger and the work crew. The second Flagger's duty will then be to relay (repeat) signals given by the first Flagger to and from the work crew. In all cases, a minimum 330-foot distance from the first Flagger to the Work Zone will be maintained.
- K. When visibility is less than 1,000 feet (due to fog or other conditions), the EIC shall close the Work Zone, vacate the right-of-way, and report clear to the CCS in accordance with the requirements in the GCRTA Rail Operating Rule Book and Right-of-Way Worker Protection Plan.

- L. When setting up the Work Zone, position the EIC at the work site. The Flagger will then test the whistle and air horn. If the work crew cannot easily hear the whistle, the air horn shall be used along with the whistle. Test of whistle and air horn must be documented on Checklist, per section 2.1E.
- M. After the EIC has set up the approved Work Zone, the Flagger should stand, if possible, approximately 3 to 4 feet to the side of the outer rail of the track, continually watching for oncoming trains.
- N. The use of personal radios, cell phones and/or headphones, or similar devices, is prohibited while performing flagging duties.
- O. Signals are to be given by the use of flags when outside during daylight hours. Always give signals at right angle to the track while facing the oncoming train and standing between three and four feet from the outer rail. Flags of prescribed color must be used. The flag signals are:
  - 1. Stop – move the red flag back and forth in a horizontal motion at waist level.
  - 2. Proceed – swing the yellow flag up and down in a vertical motion, with the flag away from the Flagger's body.
- P. A flashlight is used in place of the flags during hours of darkness, when the Flagger's location is in a tunnel or other similar dark area, and when daylight signals cannot be plainly seen. The procedures are the same as flag signals, with the exception being that the movement of the light indicates the signal given.
- Q. In the case of single tracking, a Flagger must be positioned at each end of the Work Zone facing the direction of oncoming traffic. Work Zone shall be signed for both directions.
- R. Any time the Work Zone is to be vacated for more than 20 minutes, the Work Zone is to be removed (see Part 3.3-C, F and I).

### 3.3 HOW THE DIFFERENT WORK ZONES FUNCTION

- A. SINGLE TRACK WORK ZONE – SEE DIAGRAM 1 IN WORK ZONE APPENDIX
  - 1. SINGLE TRACK WORK ZONE IN A CURVE – SEE DIAGRAM 2
  - 2. SINGLE TRACK WORK ZONE – NON-CAB SIGNAL TERRITORY – SEE DIAGRAM 8
  - 3. Definition: A Single Track Work Zone is used when the type of work on one of the two tracks prohibits Revenue Train movement (changing ties, changing overhead catenary, replacing rail etc.). One track is taken out of service but the remaining track can be used for Revenue Train movement.
    - a. A Single Track Work Zone is required when the track cannot be cleared of personnel, material, and equipment within 30 seconds of approaching rail traffic.
- B. Setting Up a Single Track Work Zone

1. The Employee in Charge (EIC) calls Control Center Supervisor (CCS) by radio requesting a Single Track Work Zone, giving the CCS starting and ending points using crossover locations.
2. After CCS grants permission and makes the announcement of the Single Track Work Zone from Points A to B to all Operators on the radio, the EIC will send a flag person 1,000 feet in each direction to act as lookouts while the Single Track Work Zone is being set up. In Non-Cab Signal Territory the CCS will notify Switch Tenders and issue instructions on setting of the crossover turnouts.
3. GCRTA Rail District personnel shall provide and install the ProTracker as shown unless the ProTracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the ProTracker in a position to warn the workers.
  - a. The EIC will notify the CCS by radio after the Single Track Work Zone setup is complete and that the work is commencing under a Single Track Work Zone. The CCS will acknowledge that the Single Track Work Zone has been set up.
4. On the track used by trains, set up the X Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. Refer to Diagrams.
5. Set up orange W-signs 1000 feet if normal speed is < 45 mph or if normal speed is 46-60 mph distance is 1350 feet in advance of the Flagger on the track used by trains. Refer to Diagrams.
6. Install portable trip stops adjacent to the W-signs on the track not used by trains (track out of service). Refer to Diagrams.
7. Install derailer 350 feet in both directions in advance of the Work Zone on the track that is to be worked on. Refer to Diagrams.
8. Set up green R-signs and trip arms 330 feet beyond the exiting ends of the Work Zone on the track used by trains. Refer to Diagrams.
9. Station the flaggers at the restricted speed signs 330 feet from Work Zone in each direction, in a position of safety and visibility, adjacent to the track to control all approaching train movements on any track. The flaggers must be equipped with a personal ProTracker device.
10. EIC will notify CCS after the Work Zone setup is completed.
  - a. Curvature or grade restricts visibility; additional flag person(s) are required. See diagrams in Work Zone Appendix).
11. When a train is approaching the Work Zone, the flagger shall display the red flag and sound horn to notify the work crew of approaching train.
  - a. Flaggers must stop all trains approaching the work zone.
  - b. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, air horn or any other method.
12. After train has come to a complete stop and work crew has cleared right-of-way, the flagger will lower the trip arm and then display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.

13. When the train has passed the R-sign, the flagger will reset the trip arm and the operator may return to normal operation.

C. Removal of a Single Track Work Zone

1. The EIC ensures that all equipment, tools and materials are removed from the work area.
2. Workers shall clear the work area.
3. The ProTracker devices are to be removed by the GCRTA Rail District personnel unless the ProTracker is resident on the project, in which case the Contractor shall remove. The removal of the ProTrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.
4. Trackside signs, trip arms, trip stops and derailleurs will be removed by a worker with a flag person providing protection and notification of approaching trains.
5. Once all workers, devices, equipment, signs and flag personnel are clear of the track to a safe location, the EIC will contact the CCS by radio to inform them that the Single Track Work Zone has been removed and the track is clear.
  - a. In Non-Cab Signal Territory the CCS will contact switch tenders and arrange for work equipment to clear the work zone.
6. The CCS will acknowledge the EIC and make a radio announcement that the Single Track Work Zone is removed and the track is clear.

D. ONE-TRACK WORK ZONE – SEE DIAGRAM 3 IN WORK ZONE APPENDIX

1. Definition: A One Track Work Zone is utilized when rail vehicles may pass unimpeded through the work zone. Work can be done on one track only, which includes 10 feet from the centerline of the track on the field side of the track. Workers and equipment may not be in the devil strip (area between tracks) or on the adjacent track or Right-of-Way. The Work Zone must be cleared within 30 seconds of approaching rail traffic.

E. Set Up of a One-Track Work Zone

1. The Employee in Charge (EIC) calls Control Center Supervisor (CCS) requesting a One-Track Work Zone, giving the CCS starting and ending points by catenary or crossover points A and B.
2. After permission is given by the CCS, and after the announcement has been made by the CCS that a One Track Work Zone is in affect from Point A to Point B on the radio, EIC will send a flagger in each direction, 1,000 feet each, to act as lookouts while the Work Zone is being set up.
3. GCRTA Rail District personnel shall provide and install the ProTracker as shown unless the ProTracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the ProTracker in a position to warn the workers.
  - a. The EIC will notify the CCS by radio after the One Track Work Zone setup is complete and that the work is commencing under a One Track Work Zone. The CCS will acknowledge that the One Track Work Zone has been set up.



4. Set up the X Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. See Diagram 3.
5. Set up orange W-signs 1,000 feet if normal speed is < 45 mph or if normal speed is 46-60 mph distance is 1,350 feet in advance of the Flagger in both directions.
6. Set up green R-signs 330 feet past the Work Zone in both directions.
7. Station a flagger and trip arm at the restricted speed sign on the track to be worked on. The flagger must be equipped with a personal ProTracker device.
8. After the Work Zone setup is completed, notify CCS that work will commence.
9. When a train is approaching the Work Zone, the flagger shall display the red flag and sound horn to notify the work crew of approaching train.
  - a. Flaggers must stop all trains approaching the work zone.
  - b. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, air horn or any other method.
10. After train has come to a complete stop and work crew has cleared right-of-way, the flagger will lower the trip arm and display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.
11. When the train has passed the R-sign, the flagger will reset the trip arm and the operator may return to normal operation.

F. Removal of a One-Track Work Zone

1. The EIC ensures that all equipment, tools and materials are removed from the work area.
2. Workers shall clear the work area.
3. The ProTracker devices are to be removed by the GCRTA Rail District personnel unless the ProTracker is resident on the project in which case the Contractor shall remove. The removal of the ProTrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.
4. Trackside signs and trip arms will be removed by a worker with a flagger providing protection and notification of approaching trains.
5. Once all workers, devices, equipment, signs, and flaggers are clear of the track to a safe location, the EIC will contact the CCS to inform him that the One-Track Work Zone has been removed and the track is clear.
6. The CCS will acknowledge the EIC and make a radio announcement that the One-Track Work Zone has been removed and the track is clear.

G. TWO-TRACK WORK ZONE – SEE DIAGRAM 4

1. Definition: A Two Track Work Zone is utilized when rail vehicles may pass unimpeded though the Work Zone. Work can be performed within 10 feet of the centerline of both tracks and includes the devil strip (area between the tracks). The Work Zone must be cleared within 30 seconds of approaching rail traffic.

H. Set Up of a Two Track Work Zone

1. The Employee in Charge (EIC) calls Control Center Supervisor (CCS) by radio requesting a Two-Track Work Zone, giving the CCS starting and ending points using catenary numbers or crossover points A and B.
  2. After CCS grants permission and makes the announcement of the Two Track Work Zone on the radio, the EIC will send a flagger 1,000 feet in each direction to act as lookouts while the Work Zone is being set up.
  3. GCRTA Rail District personnel shall provide and install the ProTracker as shown unless the ProTracker is resident on the project, in which case the Contractor shall install. The Contractor must keep the ProTracker in a position to warn the workers.
    - a. The EIC will notify the CCS by radio after the Two Track Work Zone setup is complete and that the work is commencing under a Two Track Work Zone. The CCS will acknowledge that the Two Track Work Zone has been set up.
  4. Set up the X Restricted Speed Zone signs 330 feet in advance of the Work Zone in both directions. Refer to Diagram 4.
  5. Set up orange W-signs 1,000 feet if speed is < 45 mph or if normal speed is 46-60 mph distance is 1,350 feet in advance of the Flagger in both directions. Refer to Diagram 4.
  6. Set up green R-signs 330 feet past the Work Zone in both directions. Refer to Diagram 4.
  7. Station a flagger and trip arm at each restricted speed sign, in a position of safety and visibility, adjacent to the track to signal all approaching train movements on any track. The flaggers must be equipped with a personal ProTracker device.
  8. EIC will notify CCS after the Work Zone setup is completed.
    - a. When curvature or grade restricts visibility, additional flagger(s) are required. Refer to Diagram 2.
  9. When a train is approaching the Work Zone, the flagger shall display the red flag and sound horn to notify the work crew of approaching train.
    - a. Flaggers must stop all trains approaching the work zone.
    - b. If the operator does not show any signs of recognizing the signal, the flag person will alert the work crew immediately using a continuous blast of the whistle, air horn or any other method.
  10. After the train has come to a complete stop and work crew has cleared right-of-way, the flagger will lower the trip arm and display yellow flag, allowing train to proceed through Work Zone at Restricted Speed.
  11. When the train has passed the R-sign, the flagger will reset the trip arm and the operator may return to normal operation.
- I. Removal of a Two-Track Work Zone
1. The EIC ensures that all equipment, tools and materials are removed from the work area.
  2. Workers shall clear the work area.

3. The ProTracker devices are to be removed by the GCRTA Rail District personnel unless the ProTracker is resident on the project, in which case the Contractor shall remove. The removal of the ProTrackers will be verified by the Contractor in either case prior to the removal of the Work Zone.
  4. Trackside signs and trip arms will be removed by a worker with a flagger providing protection and notification of approaching trains.
  5. Once all workers, devices, equipment, signs and flag personnel are clear of the track to a safe location, the EIC will contact the CCS by radio to inform him that the Two-Track Work Zone has been removed and the tracks are clear.
  6. The CCS will acknowledge the EIC and make a radio announcement that the Two-Track Work Zone is removed and the tracks are clear.
- J. TOTAL SHUTDOWN WORK ZONE – SEE DIAGRAM 5 IN WORK ZONE APPENDIX
1. Definition: A Total Shut Down Work Zone is used when the work to be accomplished prohibits Revenue Train movement on all tracks. A Total Shutdown closes the rail line between two points. This not only includes both track but may also include overhead power.
    - a. Vigilance must be utilized by any worker working within the Total Shut Down Work Zone. There may be work equipment movement on the tracks.
- K. Setting up a Total Shutdown Work Zone
1. The Employee in Charge (EIC) contacts the Control Center Supervisor (CCS) via radio and requests permission to occupy the Track from point A to point B.
  2. Location of personnel and equipment between point A and B is given to the CCS.
  3. The CCS gives permission to the EIC to occupy the track and the CCS notifies the Operators that the Total Shutdown Work Zone is in affect from Point A to Point B.
  4. The EIC acknowledges that the track has been released from the CCS and given to the EIC and will notify the CCS when trip stops and derailleurs will be installed.
  5. The Line Department executes the power outage procedures. Ground straps are applied. This ends with the Power Outage Form signed and acknowledging that power has been turned off.
  6. The EIC informs the CCS that the trip stops, Work Zone stop sign and ground strap have been installed. Trip stop is placed 1,000 feet if normal speed is < 45 mph or 1,350 feet if speed is 46-60 mph in advance of the derailleurs on both tracks on both ends of the work location.
  7. Rail traffic moving into the total shutdown Work Zone limits need to request permission of the EIC and granted by the EIC, not the CCS. Trip stops and derails will then be removed by the Contractor. Personnel and equipment will be cleared for the safe passage through the work limits.
  8. In certain locations, switches are clamped by the GCRTA Signal Department (SD) so that movements cannot be sent into the total shutdown work zone area. The CCS informed by the SD that the clamps are in place.
- L. Removal of a Total Shutdown Work Zone
1. The EIC will verify that the track is in a condition to be returned to revenue service.
  2. The EIC will verify that personnel and equipment have been removed from the track.

3. The EIC will verify that the signs, trip stops and derailleurs have been removed from the track.
4. The EIC will contact the CCS and inform them that the track is being returned to the CCS stating limits, and that all personnel, equipment, and material are clear of the track. All trip stops and derailleurs have been removed from the track. Track is returned to the CCS.
5. Service Quality Rail Supervisor, along with the EIC and Contractor, will inspect the Total Shutdown Work Zone to verify that the stop signs, derailleurs, and trip stops have been removed from the track for the resumption of rail service.
6. The power outage form is signed by EIC acknowledging that the personnel, equipment, and material are removed from the track.
7. Line Department begins the re-energization of the overhead power. Ground straps are removed. Locks are removed from devices.
8. Central Communications transmits via radio that the overhead power is being restored in the total shutdown work zone area. Power is restored.
9. If installed, clamps are removed from the switches by the RTA Signal Department to allow movement on the track. CCS informed by the RTA Signal Department that the clamps have been removed from the switches.

### 3.4 WORKERS NOT GOVERNED BY WORK ZONES

#### A. MOVING INSPECTION ZONE – SEE DIAGRAM 6 IN WORK ZONE APPENDIX

1. Definition: A Moving Inspection Zone is to be used for inspection of the right-of-way, with no work being performed.
  - a. Under special conditions, when a Work Zone is not required as approved by the Engineer in advance, and an inspection is to be performed on or within 10 feet of the track, the following procedures will apply: Work Zone Signs are not required. See Diagram 6.

#### B. Setting up a Moving Inspection Zone

1. The Employee in Charge (EIC) will be responsible for the group following these procedures and requirements.
  - a. One flagman is required with one up to two Inspectors.
  - b. Two flagmen are required when there are three or more Inspectors.
2. All Inspectors and Flaggers must wear an approved high visibility fluorescent yellow-green safety apparel, hardhat, safety glasses, EH rated safety footwear, and other required personal protective equipment (PPE).
3. The inspection should always move towards approaching traffic.
4. The EIC will notify by radio the Control Center Supervisor (CCS) of the location and limits, the work being performed, and any other pertinent information regarding work activities. The Inspection Group must have the approval of the CCS and will wait until a Moving Inspection Zone has been announced before the inspection can begin. Extra caution is required when depending solely on a Moving Inspection Zone without having Work Zone signs in place.
5. Facing approaching trains; a Flagger will be positioned 330 feet ahead of the Inspection Group. If two flaggers are required one will be positioned ahead of the Inspection Group and one positioned behind the Inspection Group. The Flagger(s) must have all required equipment in serviceable condition. Since

- there are no Work Zone signs, trip arms, trip stops, and ProTrackers, the use of the air horn/whistle is extremely important.
6. As work may progress along the track, the Flagger(s) must remain 330 feet away from the Inspection Group at all times.
  7. The flagger should be equipped with a personal ProTracker device if available.
  8. As the train approaches, follow the procedures listed in section 3.3 B, E & H.
  9. Trains will slow to 15 mph on both tracks while moving through the Moving Inspection Zone.
  10. When the inspection is completed, the EIC will notify the CCS by radio that the track is clear of all personnel through the limits of the Moving Work Zone and the Moving Work Zone can be cancelled.
  11. The CCS will acknowledge this and make an announcement to all trains that the Moving Inspection Zone is cancelled.

### 3.5 PIGGYBACK (SECODARY) WORK ZONE – SEE DIAGRAM 7 IN WORK ZONE APPENDIX

- A. Definition: A Piggyback Work Zone is a group of Work Zones within a Work Zone Limit that has been established by the Primary Work Zone.
- B. Piggyback work zones shall only be permitted under a Total Shutdown Work Zone or Single Track Work Zone.
- C. The Primary Work Zone Employee in Charge (EIC) will contact the Control Center Supervisor (CCS) and request permission to set up the Work Zone. See Diagram 7.
- D. Additional Work Zones may be established within the Primary Work Zone Limits with the permission of the Primary Work Zone EIC.
  1. Each Work Zone that is within the Primary Work Zone Limit is responsible to set up and provide the appropriate signs and equipment for their Work Zone per sections as per sections 3.3 B, E & H.
  2. Communication and coordination must be established and maintained between all Work Zones within the Piggyback Work Zone Limits.
  3. Work time within the Piggyback Work Zone is limited to the time granted to the Primary Work Zone.
- E. Removal of the Piggyback Work Zones
  1. All Work Zones within the Work Zone Limit must report to the Primary Work Zone EIC and the CCS that they have removed their Work Zone and that all work has been completed and that they are clear of the Right-of-Way.
  2. Each Work Zone EIC shall inspect their work zone to ensure that all work crews, equipment and materials have been removed and that the tracks are clear and in good condition for rail traffic.
  3. All Work Zones must be clear of the Right-of-Way when and if the Primary Work Zone has completed their work and has cleared the Right-of-Way.

3.6 RTA LINE CAR/HIGH-RAIL WORK ZONE – SEE DIAGRAM 9 IN WORK ZONE  
APPENDIX

- A. Definition: The RTA Line Car/High-Rail Work Zone is required when the subject vehicles are necessary and work personnel remain on the vehicle.
- B. The Employee in Charge (EIC) calls Control Center Supervisor (CCS) requesting Line Car/High-Rail Work Zone, giving the CCS starting and ending points using crossover or catenary pole locations.
  - 1. After CCS gives authorization and broadcasts the Line Car/High-Rail Work Zone from Points A to B on the radio, the EIC will have a stop sign set-up 330 feet before the start of the work Zone.
    - a. The EIC will notify the CCS after the STOP sign is placed. The CCS will acknowledge that the Line Car/High-Rail Work Zone has been set up.
    - b. Trains will slow to restricted speed while passing the Line Car/High-Rail Work Zone.
    - c. When the work is completed the EIC again calls the CCS and then STOP sign is retrieved.
    - d. When CCS acknowledges the Line Car/High-Rail follows Control Center instructions for clearing the line.

3.7 SPECIAL PROCEDURES

- A. Any orders, instructions or procedures that are found to be confusing, contradictory, unsafe, or difficult to follow must be brought to the attention of the EIC. Any object waved violently by anyone on or near the tracks must be treated as a signal to stop.
- B. In any instance where a train operator does not comply with the provisions governing Work Zones, Slow Orders, and especially flag or flashlight signals, the Flagger should note that train's car number, block number, direction, time and location. This information must be recorded and reported immediately to the Engineer and the CCS.
- C. During all signaling procedures, whether stationary or moving, always avoid working or traveling in the median area between the eastbound and westbound tracks. This area, commonly known as the "devil strip," is extremely dangerous. Under certain circumstances, i.e., two trains passing, there is no way to escape and, in many cases, insufficient space for a person to occupy. If work or travel in the devil strip is required; an individual should be extremely alert to approaching trains and/or work equipment on any track in any direction, as in many cases there is insufficient space between two trains for a person to occupy. The sound and/or distraction of one train can easily drown out the sound of or distract attention from the other approaching train.
- D. Walking or standing between or directly on the rails is to be avoided at all times.
- E. Special precaution is to be taken where GCRTA right-of-way is bound by other railroads' tracks adjacent to the GCRTA right-of-way.



### 3.8 FLAGGER TRAINING AND CERTIFICATION

- A. Each Contractor is required to hire its own employees and/or temporaries to perform the duties of Flaggers. These employees shall be given a training session on flagging techniques and procedures by the GCRTA. These training sessions shall be supplemented with actual in-field training. The training sessions will be 8 hours total per person. The Contractor shall follow the procedures explained in the attached "Program A" for Certification and "Program B" for Recertification.
- B. Each employee is to bring his own equipment to the training sessions. All alcohol and drug testing results must be completed and accepted by GCRTA prior to the first class.
- C. Training classes are conducted periodically by the GCRTA, as needed, to maintain the availability of sufficient flagging personnel. Contractors should contact the GCRTA regarding the availability of classes.
- D. Additionally, all Contractors shall have their superintendents, foremen, and other supervisory field personnel trained in flagging procedures and the current GCRTA Right-of-Way Worker Protection Plan prior to the beginning of construction.
- E. Only trained personnel of the Contractor will be certified for the prescribed time period and issued a GCRTA Flagger certification card.
- F. Certification cards, valid annually, will be issued by the Training Department to each Flagger who successfully completes GCRTA Flagging Training. The certification card will also serve as verification of identity and contain the following: Name, ID number, date of expiration, and signature of training supervisor.
- G. All Flaggers are required, when flagging, to carry the GCRTA Flagger certification card and a driver's license or state issued identification card.
- H. The GCRTA will retain a certified flagging personnel list. Flaggers must be recertified annually before their certification expires.

### 3.9 DRUG AND ALCOHOL TESTING

- A. All flagging personnel must submit to and pass a drug screen performed by a laboratory that is certified by Health and Human Services (HHS) under the National Laboratory Certification Program prior to an offer of employment for this service.
- B. The Contractor must certify at least one week before the start of training that the Flaggers are drug-free and fit for work. All costs associated with the testing will be the Contractor's responsibility.
- C. The Contractor shall use appropriate selection criteria and candidate screening per 49 CFR Part 40 specifically §40.25 before employing person to performing flagging services.

- D. The Contractor will ensure that all Flaggers meet all U.S. Department of Transportation and Federal Transit Administration regulations including criminal record check and satisfactory completion of a periodic drug/alcohol screen.
- E. In addition to pre-employment drug screening, such tests shall be conducted for Flaggers as defined in 49 CFR Part 655 under the following circumstances:
  - 1. Through the random selection testing process.
  - 2. As soon as practical following involvement in any accident as defined by §655.44 where his/her actions, in-actions or activities may have contributed to the accident or cannot be discounted as contributing to the accident.
  - 3. At any time when there is reasonable suspicion of an employee drug/alcohol use as follows:
    - a. When a supervisor or company official has reasonable suspicion based on personal, observable and articulable, abnormal behavior by an employee, including appearance, behavior, speech, or breath odor, which objectively indicates drug or alcohol impairment.
    - b. Direct observation of an employee for drug use or possession by any supervisor.
- F. If the Contractor has a “second chance” policy, testing must also be performed prior to return to work after rehabilitation and also follow up testing as described by the Substance Abuse Professional.
- G. If there is evidence that an on-duty Flagger is under the influence of drugs and/or alcohol, the Flagger will be removed immediately from service and the Engineer and/or GCRTA Transit Police summoned.
- H. The Contractor shall provide GCRTA with a copy of their written Substance Abuse Policy which complies with the Department of Transportation Regulation 49 CFR Part 40 “Procedures for Transportation Workplace Drug and Alcohol Testing Programs” and 49 CFR Part 655 “Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations”.
- I. The Contractor shall provide GCRTA’s Occupational Health Department with a monthly report of the number of tests conducted in each of the above categories and the results. All testing shall be conducted pursuant to applicable Federal and State requirements, including but not limited to those set forth in 49 CFR Part 40.
- J. The Contractor shall complete the annual Management Information System (MIS) report per Federal Transit Administration (FTA) Regulation 49 CFR Part 655 and provide the report to GCRTA’s Occupational Health Department prior to March 10th of each year of the contract.
- K. The Contractor will provide GCRTA’s Occupational Health Department with verification of employee and supervisor training in Substance Abuse and policy distribution in accordance to 49 CFR 655, as well as identifying a drug and alcohol program manager.

- L. The Contractor will be subject to record audits for compliance with the Substance Abuse regulations. Drug and alcohol test results will be maintained in a confidential, separate file and retained according to the recordkeeping guidelines as outlined in §655.71. Failure to comply with DOT and/or FTA Substance Abuse regulations could result in the delay of payment for services or the termination of the contract.

END OF SECTION 015020

## **FLAGGER TRAINING AND CERTIFICATION**

### **PROGRAM A – INITIAL CERTIFICATION**

#### **A. New Flaggers:**

1. The Contractor will be associated with a collection site that can perform DOT drug collections. All drug specimens will be sent to a laboratory that is certified under the Department of Health and Human Services (HHS) by the Substance Abuse and Mental Health Services Administration (SAMHSA). The contractor will retain the services of a Medical Review Officer who will review all drug test results.
2. At the Contractor's expense, all new Flaggers will be sent for DOT pre-employment drug testing. The Contractor will receive all test results and will maintain records per DOT Regulation 49 CFR Part 40. All new Flaggers must have negative drug test results to be eligible for Flagger training.
3. A "GCRTA Drug and Alcohol Eligibility List Form" will be faxed to GCRTA's Occupational Health Department at (216) 350-5289 listing the following information: (See page 015020-A4 for copy of form)
  - a. The full name of the candidate
  - b. An identification number (either Social Security number or Driver's License number)
  - c. Date of the drug test
  - d. Results of the test
  - e. The Project number, Project name and name of GCRTA's Project Manager
  - f. The name of the company representative responsible for the Drug & Alcohol Program
  - g. The signature of the company representative and date of GCRTA notification
  - h. On the form check the appropriate initial certification or recertification box.
4. GCRTA's Occupational Health Department will communicate with the GCRTA Project Manager to provide the necessary information and to proceed with the request to schedule flag training.
5. Contractor shall also fax a notarized "Request for Flag Training and/or Right-of-Way Worker Protection Training Form" to the GCRTA Project Manager or Director of Project Development & Engineering, Fax No. (216) 350-5283, requesting training for the Flaggers. The form must contain the following information: (See page 015020-A3 for copy of form)
  - a. Contractor must fill out all contact information at the top of the form.
  - b. List the names of eligible candidates. Any Contractor who issues a false list of candidates may be deemed non-responsive for future GCRTA Projects.
  - c. Contractor must specify training class desired. Note: New Flaggers require Certification Training (classroom and in the field) and then must be recertified (classroom only) every 12 months.
  - d. Form must be notarized in section provided at bottom and faxed to Engineering and Project Development department to start the process.

- e. Original notarized form must be mailed to address provided at the bottom of the form.
- 6. The GCRTA Project Manager or Director of Project Development & Engineering will contact the Training Department to request a training date. The Contractor will be advised of the scheduled date and location of training via e-mail.
- 7. A maximum of three (3) Flaggers per trainer can be certified in the field at any one GCRTA Flagger training session.
- 8. The training will last 8 hours and includes both classroom and in the field on-the-job training.
- 9. The trainees must show up for the training session at the proper time. Tardiness will not be permitted. Tardy students will be released at the discretion of the Training Supervisor.
- 10. Trainees must come to class with appropriate equipment for both classroom and field training. These include: EH rated safety footwear, air horn, whistle, red and yellow flags, flashlights or lantern, high visibility fluorescent yellow-green safety apparel, safety glasses, hardhat and appropriate clothing for weather.
- 11. After the classroom and field training, the successful candidates shall be certified by the GCRTA Training Supervisor and issued an ID card.
- 12. The Training Supervisor will also issue a letter to the Contractor with a copy to the GCRTA Project Manager and the Director of Engineering & Project Development indicating the names of certified Flaggers and the expiration date of the certification.
- 13. The Flagger must carry the ID card together with an Ohio ID or driver's license whenever he/she is on GCRTA property performing his/her flagging duties.
- 14. GCRTA certification is valid for a period of 12 months. After this period, the Flagger must be recertified.
- 15. The GCRTA certification does not warrant a free bus or train ride to the Flagger.
- 16. There will be periodic/random checks on the performance and physical conditions of the Flaggers by GCRTA staff and/or their agents.
- 17. Any Flaggers who are found to violate the flagging rules outlined in the Flagging Procedures will be removed from the project, and/or their agent(s).
- 18. A Flagger discharged for violation of the rules (maximum of two violations) will be barred from GCRTA projects and denied future certifications. All such violations must be reported to the Director of Engineering & Project Development in writing.

**REQUEST FOR FLAG TRAINING AND/OR RIGHT-OF-WAY WORKER PROTECTION  
TRAINING FORM**

**FAX TO: Cynthia Darko, GCRTA Engineering and Project Development Dept.  
GCRTA Fax No: (216) 350-5283 (cdarko@gcrt.org)**

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
(Company Name) (Contact Person) (E-Mail Address & Telephone #)

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_  
(RTA Project Name) (RTA Project No.) (RTA Project Manager)

The contracting company (as indicated above) requests that a training session be scheduled for our flag personnel, supervisory personnel and/or operators who have negative urine, drug and alcohol results and are 18 years of age or older. **Note: New Flaggers require Certification Training (classroom and in the field) and then must be re-certified (classroom only) every 12 months.**

**Specify Training Class(s) Desired**

	<u>Eligible Candidates</u>	<u>Flag Training</u> <u>Certification</u>	<u>Recertif.</u>	<u>ROWWP</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____

(Notary Stamp)	_____ Company President	_____ Date
	_____ Notary	_____ Date

**PLEASE SEND ORIGINAL NOTARIZED FORM VIA U.S. MAIL TO:  
GCRTA, ENGINEERING & PROJECT DEVELOPMENT DEPT. – ATTN: C. Darko  
1240 W. 6th Street, Cleveland, Ohio 44113-1331**



### GCRTA DRUG AND ALCOHOL ELIGIBILITY LIST FORM

GCRTA Project Title: \_\_\_\_\_ GCRTA Project No.: \_\_\_\_\_ GCRTA Project Manager: \_\_\_\_\_

Contracting Company: \_\_\_\_\_ Company Contact Name: \_\_\_\_\_

Phone #: \_\_\_\_\_ E-Mail Address: \_\_\_\_\_ Proj Start Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_

Flagger Name	ID number	Date of testing	Pre-employment	Random	Post Accident	Reasonable Suspicion	Test Results	Certification	Recertification

**FAX FORM TO GCRTA OCCUPATIONAL HEALTH @ (216) 350-5289**

Submitted by: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

## **FLAGGER TRAINING RECERTIFICATION**

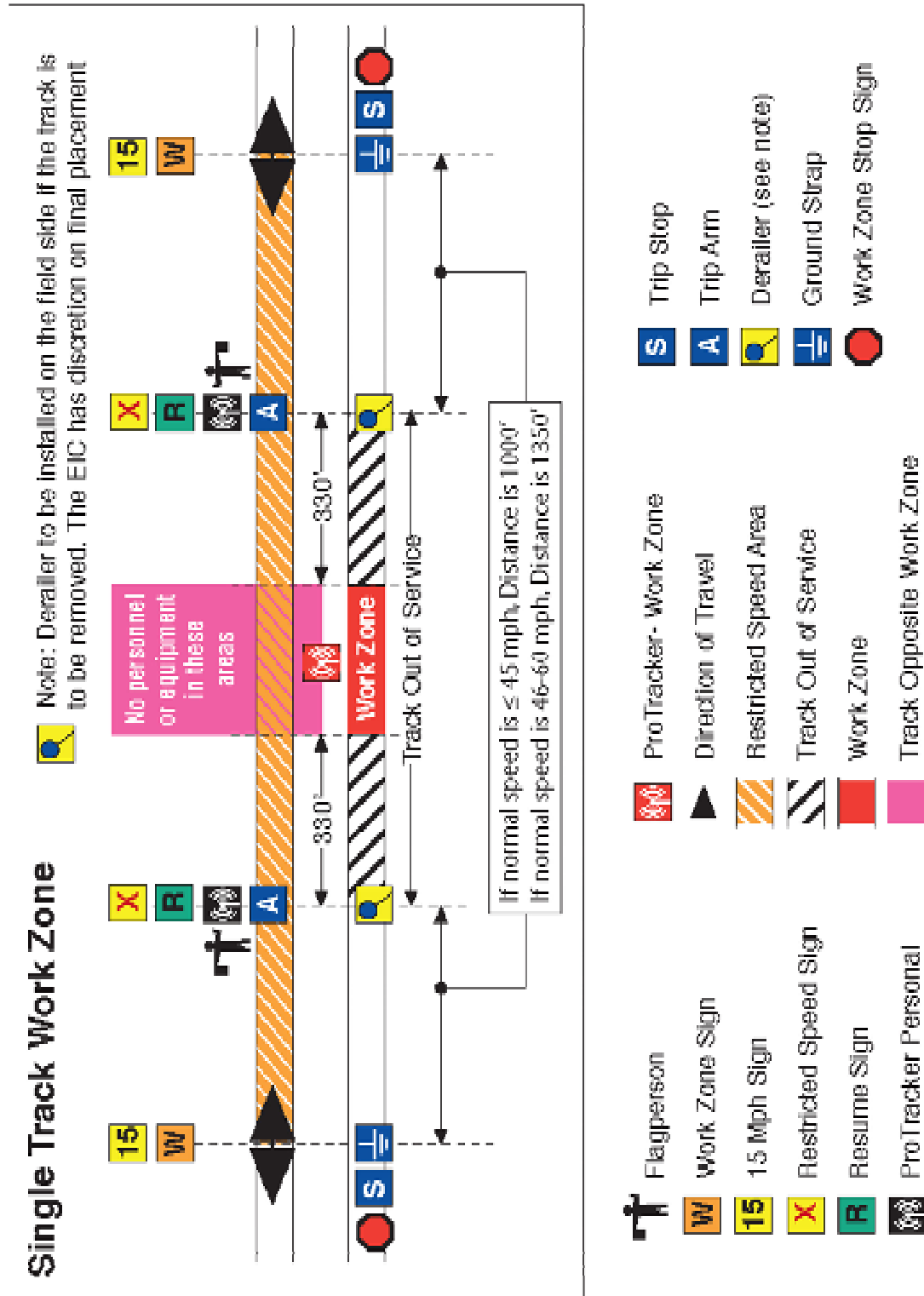
### **PROGRAM B – RECERTIFICATION**

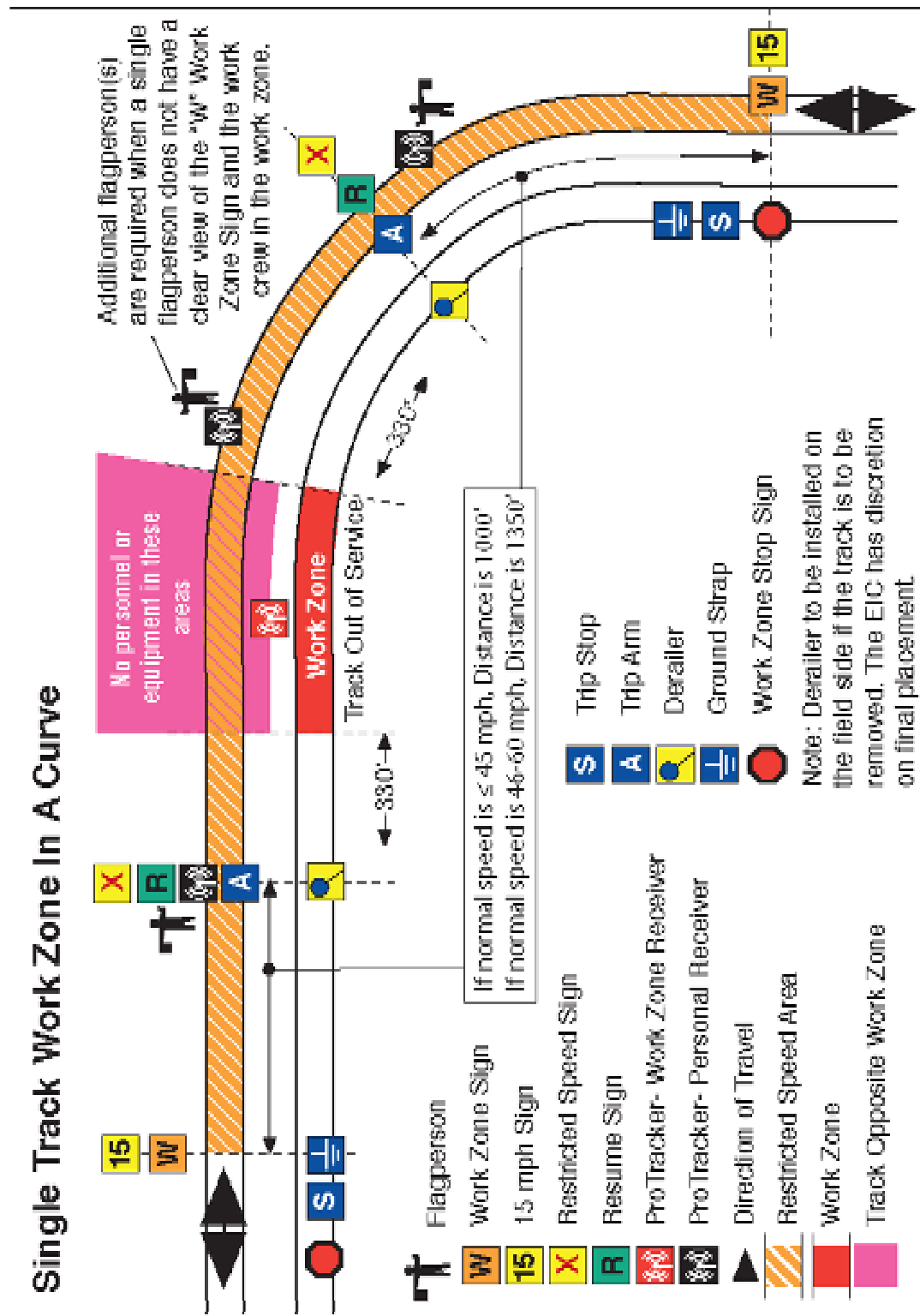
A. Recertification:

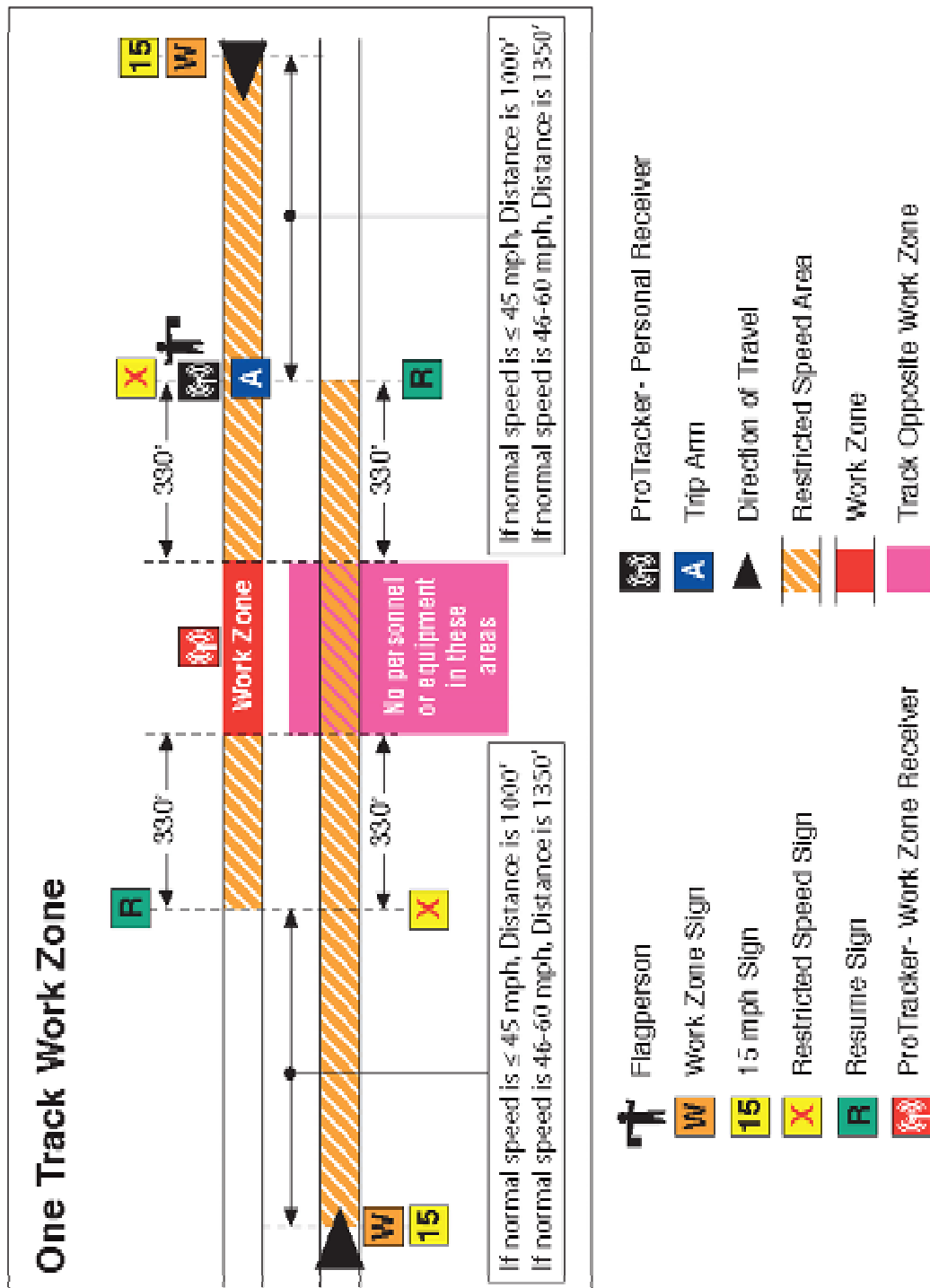
1. A Flagger must be re-certified every twelve months.

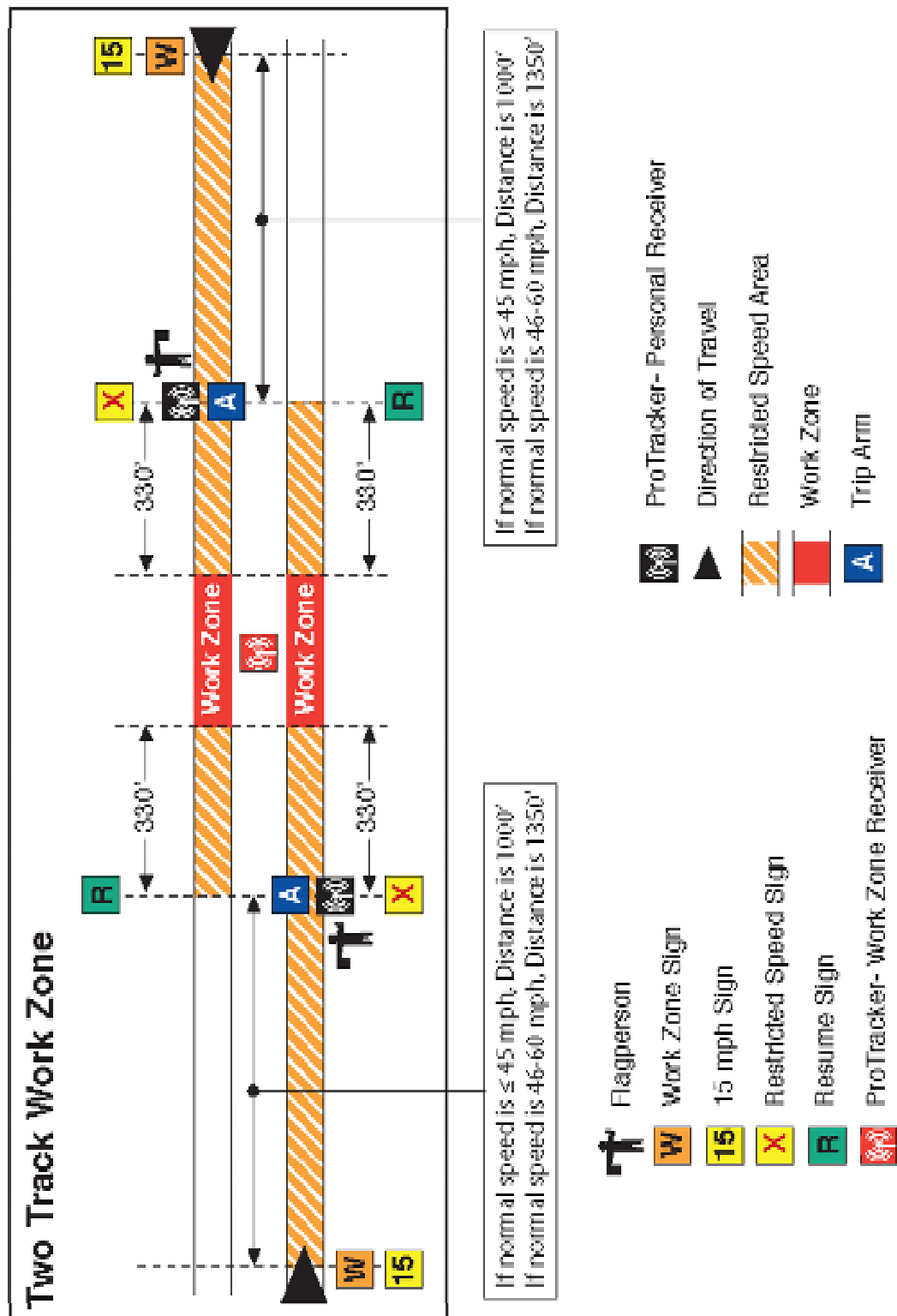
B. Procedure for Recertification:

1. As prerequisites for recertification, follow steps in Program A-2 (with modifications as noted below), A-3 and A-5 as listed in Program A. Check the recertification box on the GCRTA Drug and Alcohol Eligibility List Form. A two (2) hour classroom training for recertification is offered by the GCRTA Training Department.
2. The Contractor will provide a "GCRTA Drug and Alcohol Eligibility List Form" as noted in A-showing evidence of DOT random drug/alcohol testing within the last 30 days or the Flagger will be sent for DOT pre-employment testing. The report will be faxed to GCRTA's Occupational Health Department at least one week before the recertification training class is attended.
3. The candidate for recertification must be equipped as in Program A above.
4. Candidates who successfully complete the two (2) hour classroom training will be recertified and can be deployed immediately. Recertification is valid for a period of 12 consecutive months.
5. Program A - Paragraphs 13 through 18 also apply.
6. Candidates with more than 12 months of inactivity must go through Program A above and be certified.

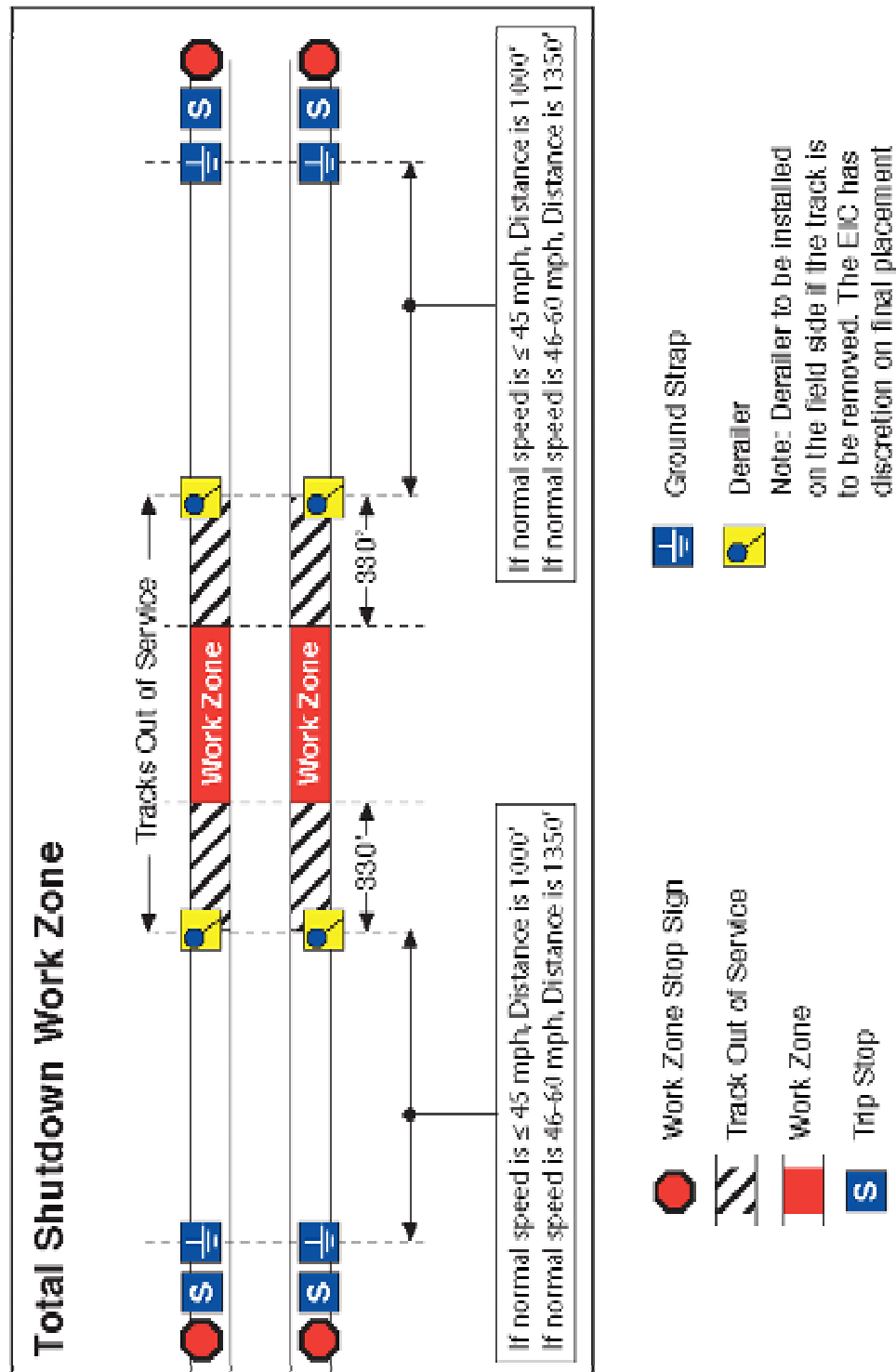


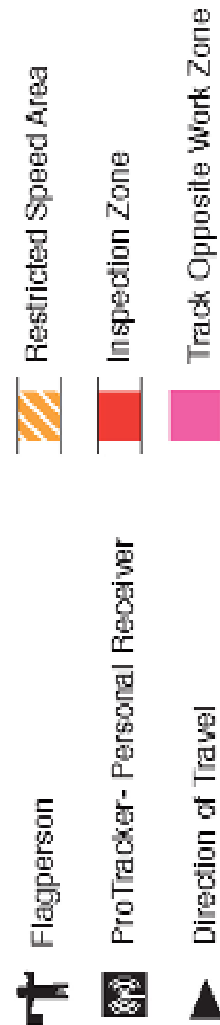
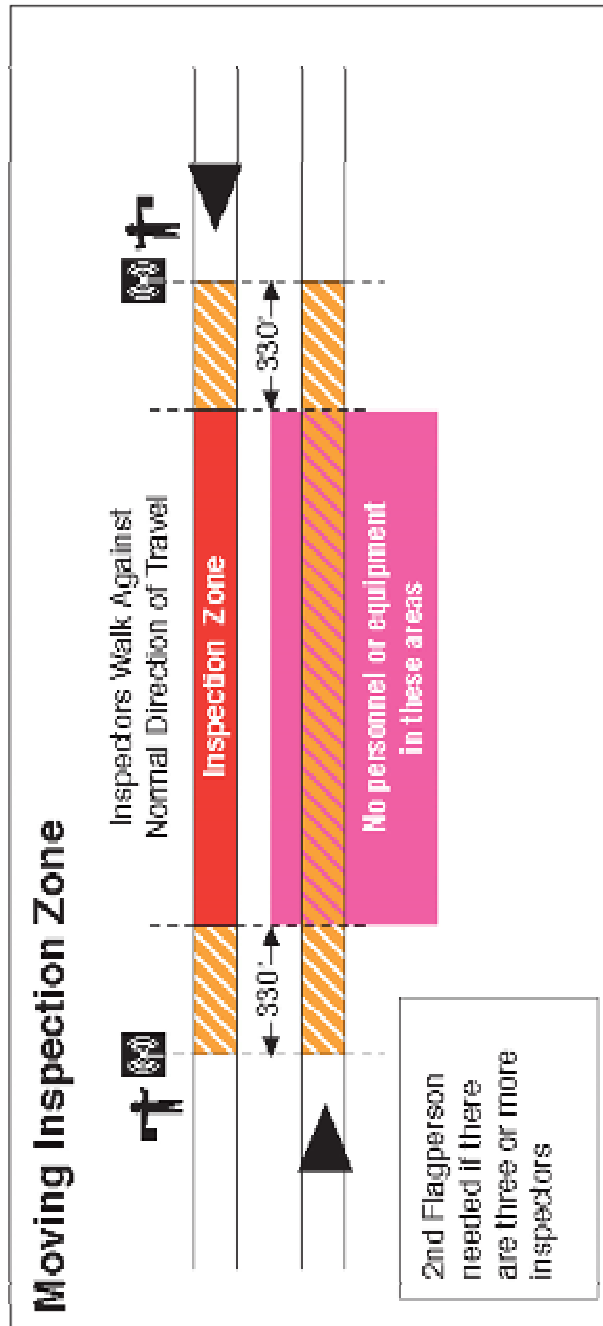


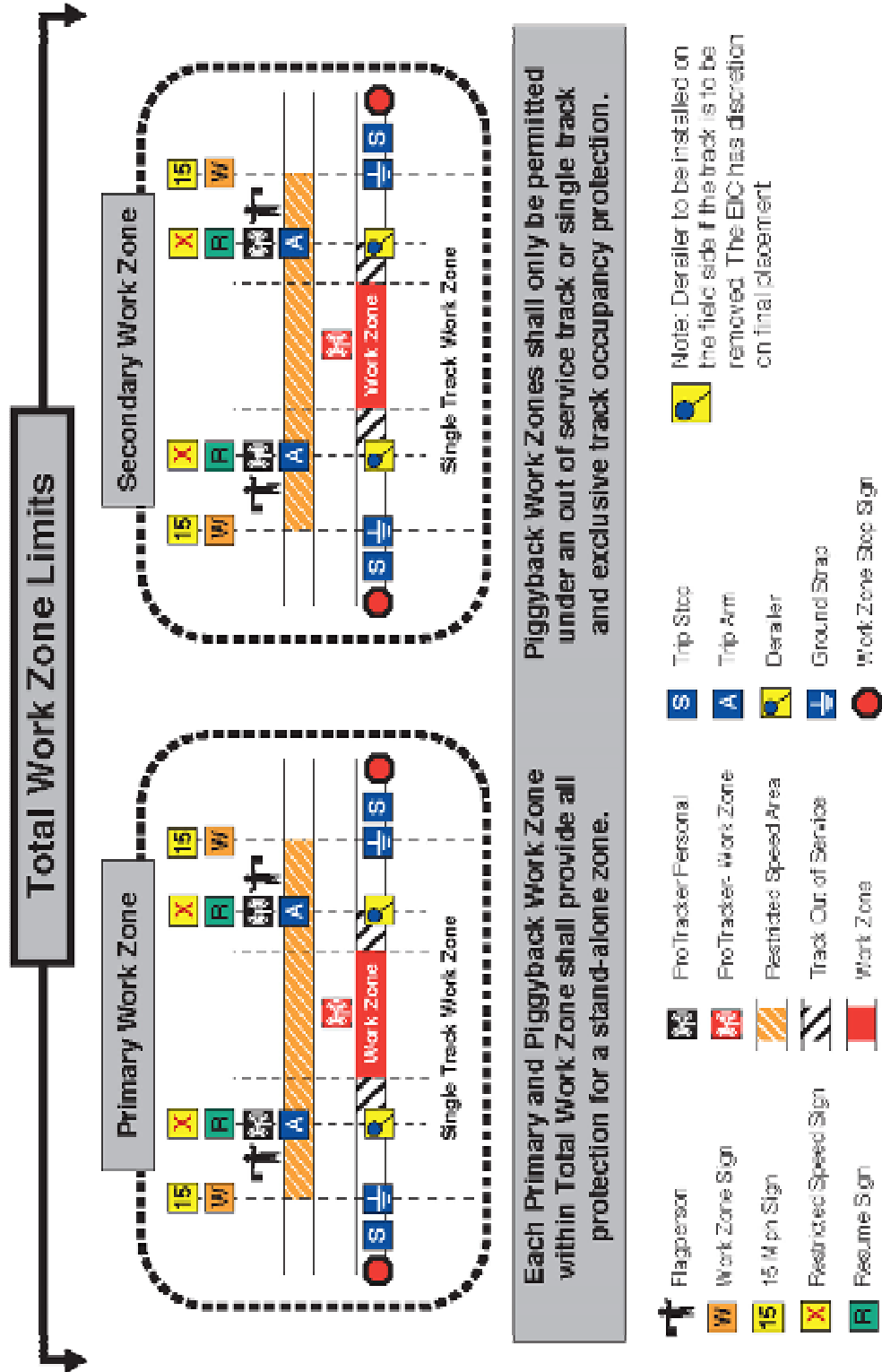


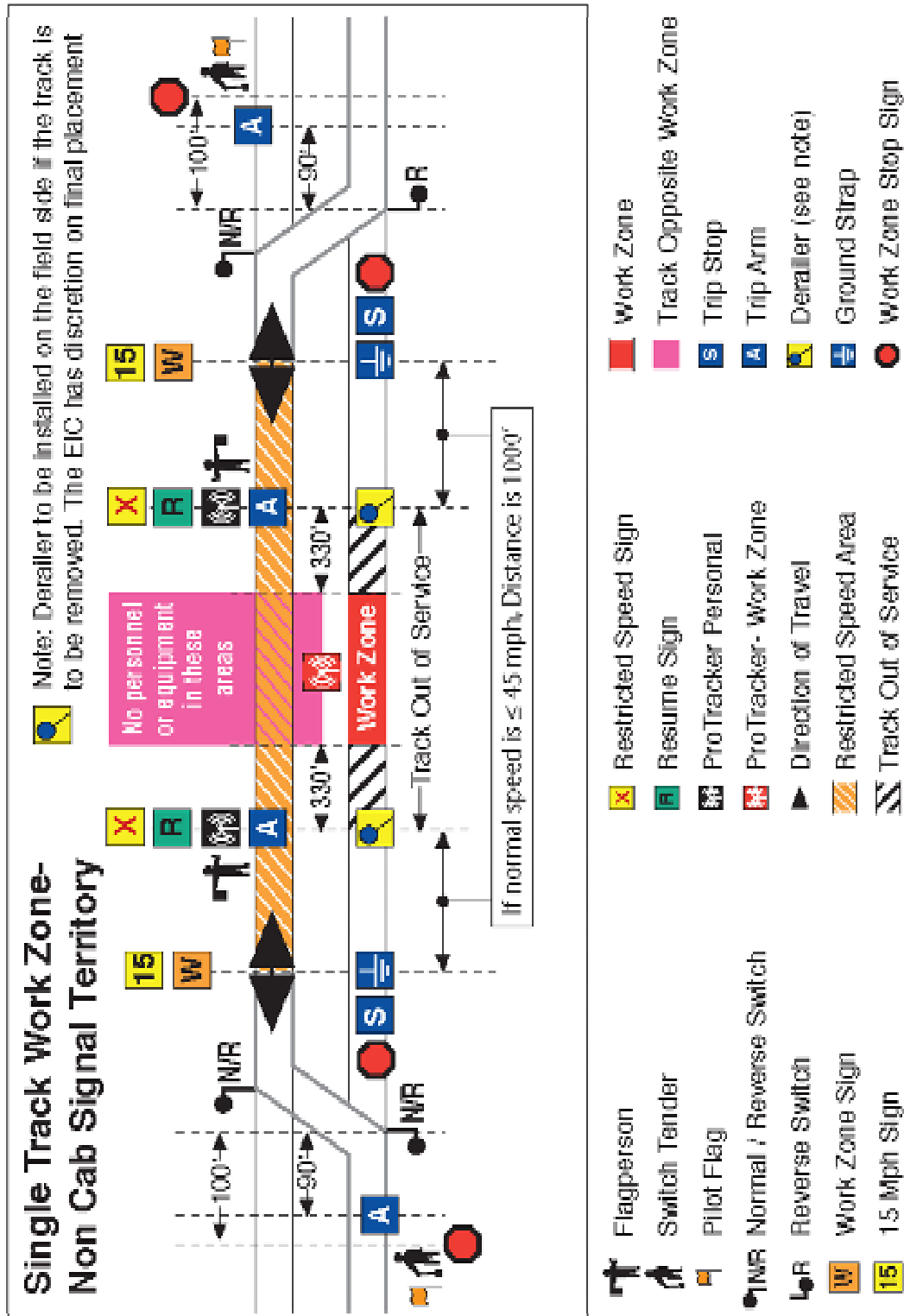


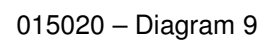












## Trackside Signs



### End of Cab Signal Sign

The sign that indicates the end of cab signal protection.

**White Background, Black Letters**



### Yard Limit Sign

The sign that indicates the beginning or end of a yard.

**Yellow Background, Black Letters**



### Spring Switch Sign

The sign that indicates the location of Spring-and-Return switch.

**Yellow Background, Black Letters**



### Speed Limit Sign (Approaching)

The sign that indicates the maximum speed in miles per hour that may not be exceeded through a permanent Restricted Speed zone.

**White Background, Black Letters**



### Stop Sign

The sign that indicates the location and point a train or equipment is to make a complete stop.

**Red Background, Black Letters**



### Work Zone Speed Limit Sign

The sign that indicates the speed through a work zone or temporary speed limit zone. (Sign will designate maximum speed through work zone or temporary speed limit zone.)

**Yellow Background, Black Letters**



### Restricted Speed

A speed not to exceed fifteen (15) miles per hour, controlling movement of any rail vehicle to permit stopping within one half the range of vision short of another train, broken rail, improperly aligned switch, derails set in the derailling position, any signal requiring a stop, motor vehicles at grade crossings, or other obstruction.

**Red X on a Yellow Background**



## Trackside Signs



### Work Zone Sign

The Sign that indicates a Work Zone ahead.

**Orange Background, Black Letter**



### Speed Limit Sign

The sign that indicates the start of a temporary speed limit area.

**Yellow Background, Black Letter**



### Resume Speed Sign

The sign that indicates the end of a Restricted Speed zone.

**Green Background, Black Letter**



### Blue Flag

The sign indicating a track or equipment out of service.

**Blue Background, White Letters**



### Cab Signal Test Loop

The sign that indicates the Location of the Cab Signal Test

**White Background, Black Letters**



### End of Block Sign

The sign that indicates the entrance to an area not under signal protection.

**White Background, Black Letters**



### End of Cab Signal Sign

The sign that indicates the end of cab signal protection.

**White Background, Black Letters**

Note: For size of signs, see Section 2.1.D.6

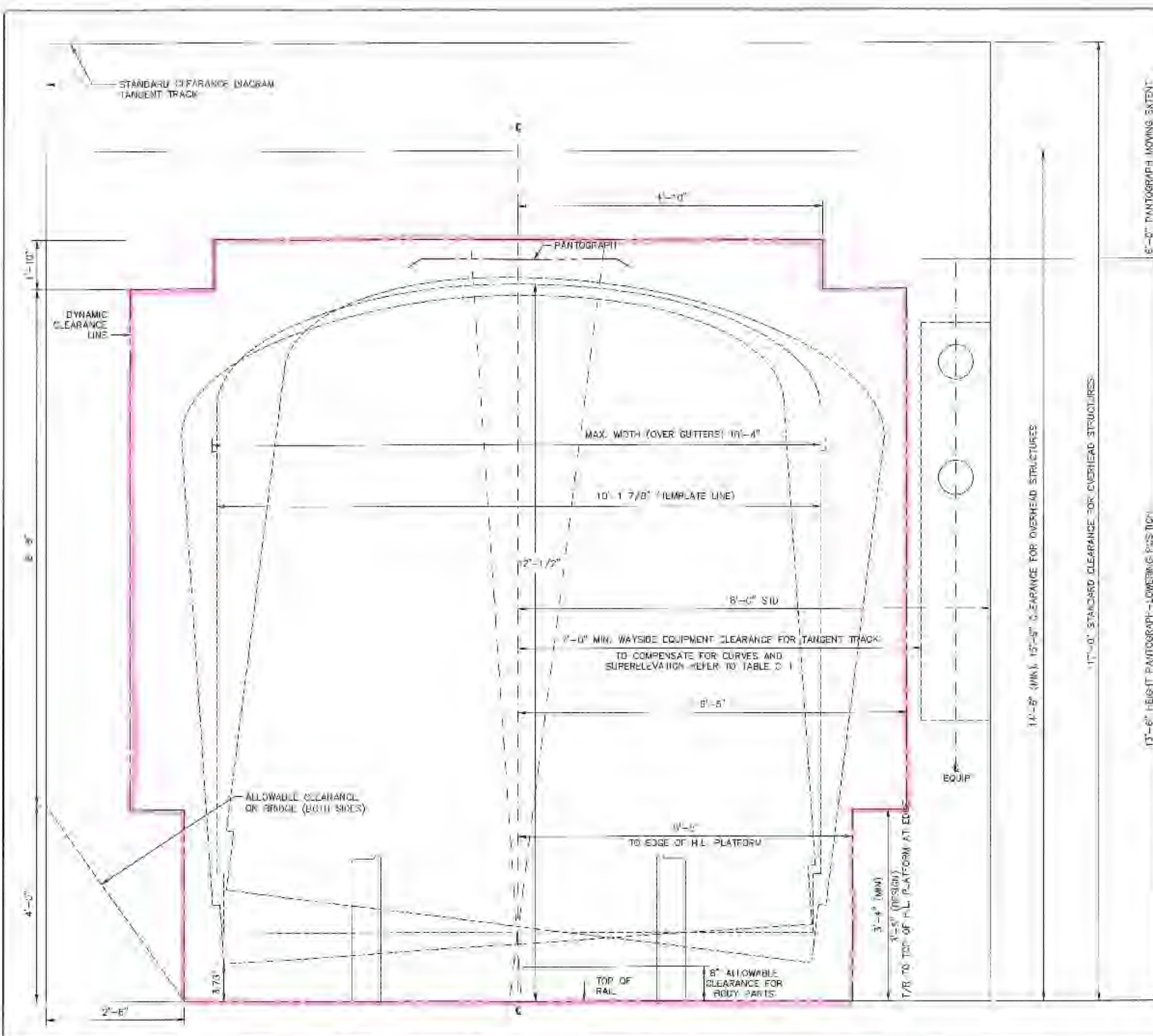


TABLE C-1  
CLEVELAND UNION TERMINAL  
TRACK CLEARANCE ADDITIONS FOR CURVES

NOTE: ADDITIONS FOR TRACK SUPERELEVATION MUST BE SEPARATELY ADDED

CURVATURE DEGREE	RADIUS FEET	3 CAR WIDTH FEET	MODIFY OVERHEAD (FT FROM CAR ONLY)	ACTUAL WIDTH (FT) WITH BROKEN AIR SPRING (2)	OVERHEAD CLEARANCE (2) (FT FROM O.C.)	ABSOLUTE MIN CLEARANCE (2)(B) (FT FROM O.C.)
TANGENT	1145	5.17	0.47	5.64	9.00	7.00
500'	573	5.17	0.77	5.94	8.57	7.47
1000'	286	5.17	0.77	5.94	8.57	7.47
1500'	191	5.17	0.77	5.94	8.57	7.47
2000'	143	5.17	0.77	5.94	8.57	7.47
2500'	114	5.17	0.77	5.94	8.57	7.47
3000'	95	5.17	0.77	5.94	8.57	7.47
3500'	82	5.17	0.77	5.94	8.57	7.47
4000'	72	5.17	0.77	5.94	8.57	7.47
4500'	64	5.17	0.77	5.94	8.57	7.47
5000'	57	5.17	0.77	5.94	8.57	7.47
5500'	51	5.17	0.77	5.94	8.57	7.47
6000'	46	5.17	0.77	5.94	8.57	7.47
6500'	41	5.17	0.77	5.94	8.57	7.47
7000'	37	5.17	0.77	5.94	8.57	7.47
7500'	33	5.17	0.77	5.94	8.57	7.47
8000'	30	5.17	0.77	5.94	8.57	7.47
8500'	27	5.17	0.77	5.94	8.57	7.47
9000'	25	5.17	0.77	5.94	8.57	7.47
9500'	23	5.17	0.77	5.94	8.57	7.47
10000'	21	5.17	0.77	5.94	8.57	7.47
10500'	19	5.17	0.77	5.94	8.57	7.47
11000'	18	5.17	0.77	5.94	8.57	7.47
11500'	16	5.17	0.77	5.94	8.57	7.47
12000'	15	5.17	0.77	5.94	8.57	7.47
12500'	14	5.17	0.77	5.94	8.57	7.47
13000'	13	5.17	0.77	5.94	8.57	7.47
13500'	12	5.17	0.77	5.94	8.57	7.47
14000'	11	5.17	0.77	5.94	8.57	7.47
14500'	10	5.17	0.77	5.94	8.57	7.47
15000'	9	5.17	0.77	5.94	8.57	7.47
15500'	8	5.17	0.77	5.94	8.57	7.47
16000'	7	5.17	0.77	5.94	8.57	7.47
16500'	6	5.17	0.77	5.94	8.57	7.47
17000'	5	5.17	0.77	5.94	8.57	7.47
17500'	4	5.17	0.77	5.94	8.57	7.47
18000'	3	5.17	0.77	5.94	8.57	7.47
18500'	2	5.17	0.77	5.94	8.57	7.47
19000'	1	5.17	0.77	5.94	8.57	7.47

- NOTES:
- BROKEN AIR SPRING-HRV (R 50") = 0.77 FT.  
DISPLACEMENT AT CLEARANCE POINT OF CAR EAVE  
BROKEN AIR SPRING-LRV (2.24") = 0.74 FT.  
DISPLACEMENT AT CLEARANCE POINT OF CAR EAVE
  - TANGENT TRACK CLEARANCE FROM GORTA STANDARDS
  - ABSOLUTE MINIMUM PERMITTED CLEARANCE SHALL NOT BE USED WITHOUT WRITTEN PERMISSION OF THE ENGINEER
  - DYNAMIC CLEARANCE LINE IS BASED UPON TOKYO HEAVY RAIL VEHICLES. DESIGNS FOR RRTDA (RRT) RAIL VEHICLES SHALL CONFORM TO THIS DIAGRAM WITH THE EXCEPTION OF PLATFORM HEIGHT CLEARANCE

**TOTAL SHUTDOWN REQUEST and PERMIT**  
Greater Cleveland Regional Transit Authority

*Approved  
5/15/11  
for*

*16.90*

REQUEST INFORMATION				PERMIT INFORMATION			
Occupancy/Outage Request No. : <u>R- 090920 / 0</u>				Permit No. : <u>P -</u>			
Requested Yes    No		RTA contact: L. Beabes Requestor: S. Kendrick (Arcadis) Phone: 330-701-0083		Project # 16.90 CuyCoArcadisBInsp Date 9/8/2020 E-Mail <u>shelly.kendrick@arcadis.com</u> Fax #		Approval Yes    No    As Noted	
<input type="checkbox"/>		<b>Wayside Occupancy Request:</b> all work is to be performed 10 feet or more from centerline of track <u>Location</u> _____ <u>Dates and times</u> _____				<input type="checkbox"/>	
<input type="checkbox"/>		<b>Active Track Occupancy Request:</b> any work performed within 10 feet of centerline of track <u>Location</u> _____ <u>Dates and times</u> _____				<input type="checkbox"/>	
<b>Work Zone Type:</b> <u>Enter Here</u>							
<input checked="" type="checkbox"/>		<b>Total Shutdown Request:</b> <u>Location</u> _____ <u>Dates and times</u> _____				<input checked="" type="checkbox"/>	
		Red Line West (W. 140th St. & W. 150th St. Bridges)		After Service Friday, 09/18/2020, until Start of Service Monday, 09/21/2020.			
<b>Work Zone Type:</b> <u>Total Shutdown of All Required Tracks and Power</u>							
<b>Comments:</b>							
Piggy-back on ODOT Shutdown for I-90 Bridges over the RTA Red Line West near the Triskett RTS.							
Consultant will be conducting bridge inspections for Cuyahoga County for the street bridges at West 140th & West 150th over the Red Line West.							
<b>Time Extension Information:</b> _____ <b>Time Effective:</b> _____ <b>Controller Initials:</b> _____							
<b>Piggy-Back Information:</b> _____ <b>Time Effective:</b> _____ <b>Controller Initials:</b> _____							

Job site contact person: Frank Getz

Job site phone number: 330-416-7363

Requestor's Signature: *Shelly Kendrick*

GCRTA Approval Signature: *[Signature]*

THIS FORM MUST BE TYPED

*9-9-20*

Rev-3/28/11





**CONTRACTOR BRIEFING**  
**TOTAL SHUTDOWN, BETWEEN WEST 117<sup>th</sup> STREET RAPID STATION AND AIRPORT RAPID STATION**  
**WEST SIDE RAIL (RED LINE)**  
**SEPTEMBER 19-20, 2020**

**GCRTA Proj. 16.90 – Cuyahoga County Bridge Inspections @ West 140<sup>th</sup> & West 150<sup>th</sup>**  
**GCRTA Proj. 17.88 – ODOT 200163, I-90 @ Triskett Bridge Painting**

**Important Reminders:**

1. This is a Total Rail (Red Line) Shutdown. The Red Line West Rail will be shutdown (no revenue service, no catenary power) from the West 117<sup>th</sup> Street Rapid Station to the Airport Rapid Station. After approximately 3:00am, Saturday, 09/19/2020, the power will be shut off.
2. All Contractors utilizing the shutdown must have a representative at the Outage Meeting on **Saturday, September 19, 2020 at 1:30am** at the RTA Triskett Rapid Station/Bus Garage, refer attached location map. If no representative is present, you will not be permitted to work. Contractors must bring a padlock and tag for the lockout-tagout procedure. If you want verification that the power has been de-energized at your location, let the outage meeting leader know at the meeting. RTA Power and Way personnel will meet Contractors at the RTA Triskett Rapid Station/Bus Garage at **1:30am, Monday, 09/21/2020** to release Contractor locks.
3. All Contractors must have a work zone set up with stop signs and Type 3 or A barricades placed over each track at each end of the work zone for the Total Shutdown.
4. **Please Note:** Contractors must contact **BOTH** Central Communications (216.566.5135) and Control Center West (216.356.3009), or by radio, when you first enter and set-up your work zone and then at the end when you exit/clear your work zone. This is to confirm that you are still working in your zone.
5. There may be multiple projects going on during the total shutdown. Be extremely careful at all times. It is always possible that Work Equipment could be moving through the Shutdown Area, be vigilant for the unexpected. Monitor communications with RTA Control Center on your radio for any equipment or workers that may be approaching your work zone. Any equipment desiring passage through a work zone must stop at the work zone and request passage. The equipment cannot move through the zone until tracks are clear and passage is approved by the Contractor's representative. Please use appropriate safety precautions when working in these areas.
6. If the tracks, ballast, overhead lines or underground lines are damaged stop work and immediately notify Central Communications (also called Load Dispatch) at 216-566-5135 or by radio. If someone is injured broadcast "EMERGENCY, EMERGENCY, EMERGENCY" on your RTA radio or contact the Control Center East by phone (216.356.3009).
7. In an emergency, broadcast "EMERGENCY, EMERGENCY, EMERGENCY" on your RTA radio or contact the Control Center East by phone (216.356.3009).
8. Contractors must be clear of active track no later than **midnight/12:00am, Sunday into Monday, 09/21/2020.** Make sure your work zone is clear of equipment, materials and debris. **Please Note: After you have ensured that your work zone is clear, you must contact BOTH Control Center West (216.356.3009) and Central Communications (216.566.5135), or by radio, and cancel your work zone.**
9. RTA representatives will be on site periodically.

OCU C. D. M.  
FL 16.90  
CC: AUSA (RM)



Greater Cleveland  
Regional Transit Authority

1240 West 6th Street  
Cleveland, Ohio 44113-1302  
Phone: 216-566-5100  
riderta.com

I have received the following radios and accessories in good condition and understand that I am responsible for them until they are returned to RTA or reissued to another employee.

DEPARTMENT: ENGINEERING

RTA: EN #2

BATTERY: YES ☒

CHARGER: YES ☒ No

CASE: ~~YES~~ No

RECEIVED BY: Frank Getz

PRINT NAME: Frank Getz

RTA ID#: nla

DATE: 09/19/2020 ± 8am

ISSUED TO: McCADIS  
(COMPANY NAME)

RETURNED: 09/19/2020 ± 530pm RTA, MS

RTA PROJ# & NAME: 16.90 Cuyahoga County Block Inspections



## OUTSIDE AGENCY PROJECT INITIATION PACKAGE

An Outside Agency is an entity which has no affiliation with the Greater Cleveland Regional Transit Authority (RTA). Examples of Outside Agencies are municipalities, County organizations, the Ohio Department of Transportation, Northeast Ohio Regional Sewer District, utility companies, etc. An Outside Agency must obtain permission to enter or work within RTA Right-of-Way (ROW). Additionally, the Outside Agency must comply with RTA safety procedures and protocols within the ROW. This Project Initiation Package (PIP) is designed to help Outside Agencies obtain permission to enter or work within RTA ROW legally and safely and to help RTA understand the type of work to be performed within the ROW to protect its interests and assets. Complete the following items and submit the package to your RTA Project Manager.

### I. OUTSIDE AGENCY INFORMATION

Name of Outside Agency \_\_\_\_\_

Outside Agency's Project Manager \_\_\_\_\_ Phone No. \_\_\_\_\_

E-mail \_\_\_\_\_

Name of Outside Agency's Contractor \_\_\_\_\_

Contractor's Project Manager \_\_\_\_\_ Phone No. \_\_\_\_\_

E-mail \_\_\_\_\_

### II. PROJECT INFORMATION

- A. Provide a Project Location Map
- B. Provide construction plans, details and specifications
- C. Provide a general description of the project

D. Describe the work to be performed within RTA ROW.

1. Provide a detailed construction procedure

2. List materials that will be place *permanently* on RTA ROW

3. List materials and equipment that will be placed *temporarily* on RTA ROW

4. List equipment to be used to perform the work

a. Will equipment be driven across RTA tracks?

b. Will equipment be operated within 10 ft. of the centerline of the tracks?

c. Will equipment be operated within a 10 ft. radius of the Overhead Catenary System (OCS) or other overhead utility lines?

d. Is it likely that construction debris or materials will fall onto the tracks?

e. Will the work threaten the safety of passengers waiting at stations?

E. Anticipated dates and times work is to be performed.

### III. PROJECT INITIATION PACKAGE CHECKLIST

The following checklists provide items that must be completed to obtain and maintain approval to enter or work within RTA ROW. Many of the documents required to initiate these items have been included in this package. If an item is missing, contact the RTA Project Manager. Also, the RTA Project Manager can provide additional information on any of the items listed when requested by the Outside Agency's Project Manager.

#### A. PIP CHECKLIST

- ☐ Submit Project Initiation Package to RTA Project Manager at least 30 days prior to anticipated start date
- ☐ Obtain Temporary Right-of-Entry (ROE)
- ☐ Obtain and submit Insurances required by ROE for RTA approval
- ☐ Read RTA General Requirements Sections 014500, 015010 and 015020
- ☐ Complete Rulebook C Training
- ☐ Submit Occupancy or Outage Request forms as required by Section 015010
- ☐ Obtain Contractor ID Badges
- ☐ Obtain Contractor Radio
- ☐ Submit a Contact Information, Construction Procedure and Schedule to RTA Project Manager at least 14 days prior to anticipated start date
- ☐ Obtain written Notice-to-Proceed from RTA
- ☐ Read the Contractor Briefing

#### B. OCCUPANCY DURING REVENUE SERVICE CHECKLIST

- ☐ Complete items listed above under PIP CHECKLIST
- ☐ Submit Occupancy Request form as required by Section 015010
- ☐ Obtain RTA approval of Occupancy Request
- ☐ Hire RTA-certified flagging subcontractor (if work is to be performed within Active Track during Revenue Service)
- ☐ Contact the Integrated Control Center (ICC) by radio or phone to request permission to occupy your work zone
- ☐ Upon approval for ICC, get flaggers in place, set up work zone as require in General Requirements Section 015020 and proceed with work
- ☐ In the event of an emergency such as damage to the OCS, tracks or station or injured personnel broadcast "Emergency, emergency, emergency" on your RTA Radio.
- ☐ Upon completion of the work ensure the following
  - ☐ Clear the work zone of all debris, materials, equipment and personnel
  - ☐ Remove work zone items such as trip stops, de-railers, etc.
  - ☐ Contact ICC to return the track to RTA control
- ☐ Contact RTA Project Manager with a project status report at the end of each work day

## C. WEEKEND SHUTDOWN CHECKLIST

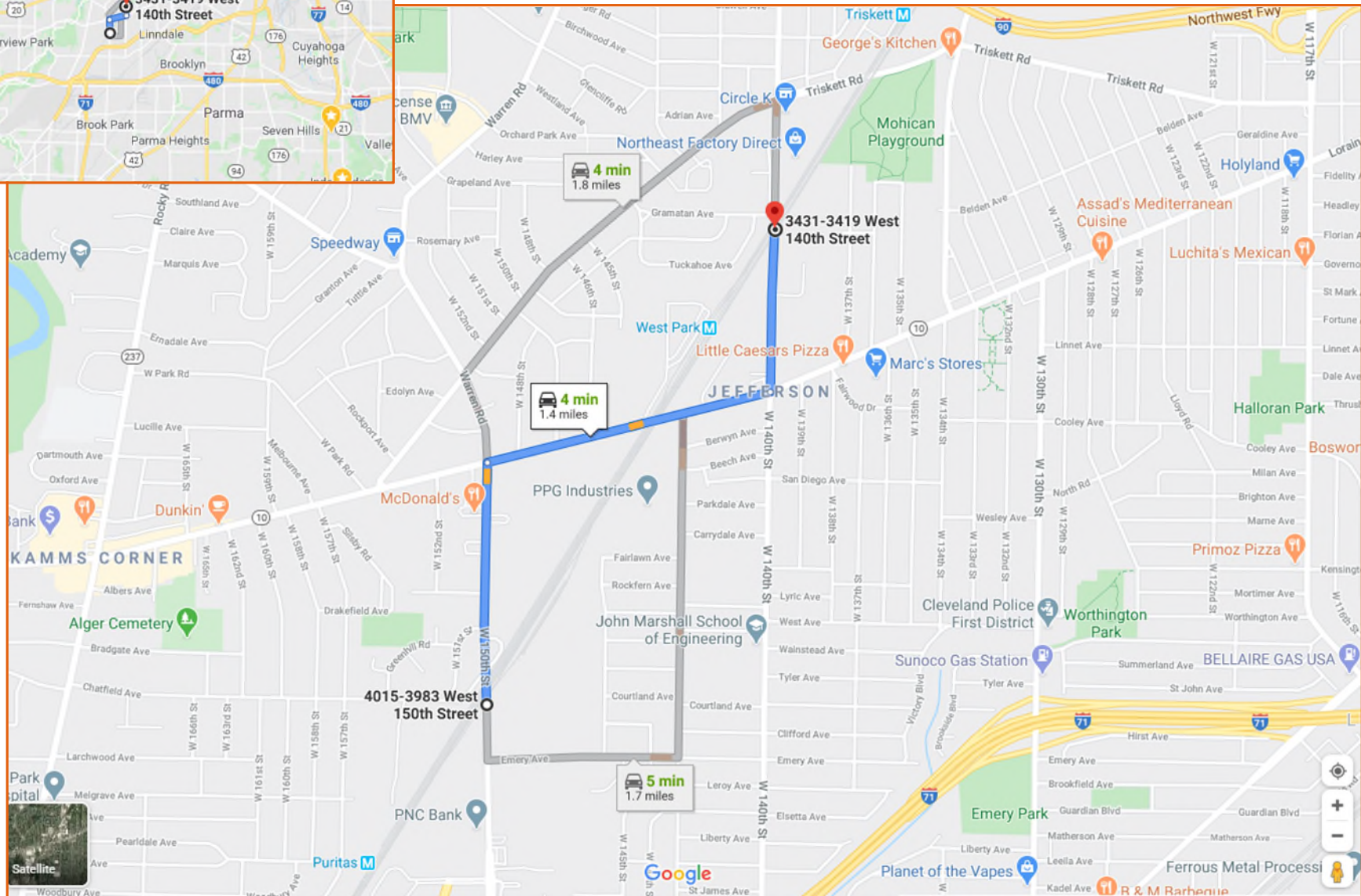
- ❑ Complete items listed above under PIP CHECKLIST
- ❑ Railroad Agreement
- ❑ Force Account
- ❑ Submit Outage Request form four (4) weeks in advance of anticipated weekend shutdown
- ❑ Obtain RTA approval of Outage Request
- ❑ Attend Outage Meeting typically held Saturday at 1:30AM on the weekend of the shutdown
  - Location will be designated by RTA Power & Way
  - Provide two locks to Outage Meeting leader for Lockout-Tagout procedure
  - Request verification that the Overhead Catenary System is de-energized in your work zone
  - Sign the Outage Confirmation form
  - Wait for notification from Outage Meeting leader that work may proceed
- ❑ Contact the Integrated Control Center (ICC) by radio or phone and Central Communications by phone to let them know you will now occupy your work zone
- ❑ Turn on your RTA radio and leave it on to listen for equipment requesting permission to pass through your work zone, for emergency announcements, etc.
- ❑ Set up work zone by placing Type III barricades across all tracks in all directions 200 ft. from your work zone
- ❑ In the event of an emergency such as damage to the OCS, tracks or station or injured personnel broadcast "Emergency, emergency, emergency" on your RTA Radio
- ❑ Upon completion of the work ensure the following
  - Clear the work zone of all debris, materials, equipment and personnel
  - Remove work zone barricades
  - Contact ICC and Central Communications to return the track to RTA control
- ❑ Attend Power Restoration Meeting typically held Monday at 1:30AM at the same location as the Outage Meeting the weekend of the shutdown
  - Sign confirmation that you are clear of your work zone and that power and service may be restored
  - Obtain locks from RTA Power & Way
- ❑ Contact RTA Project Manager with a project status report Monday during business hours

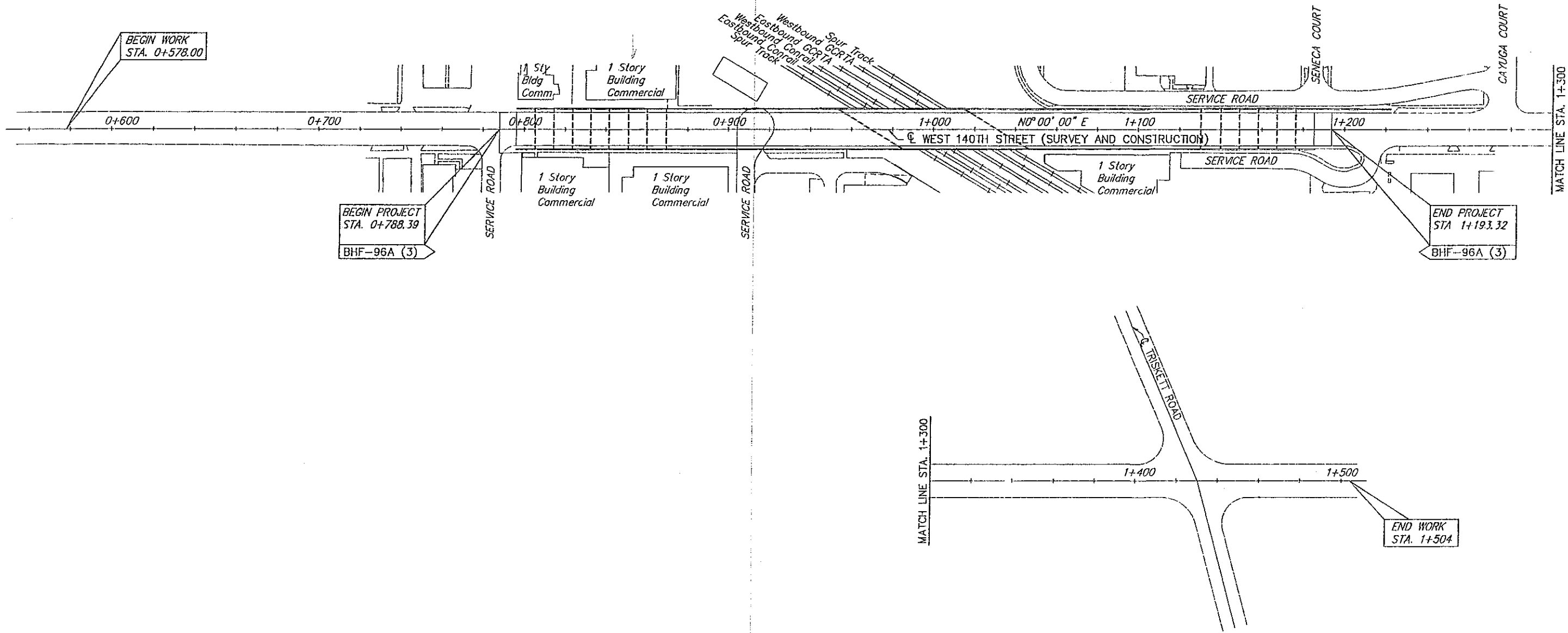
## APPENDICES



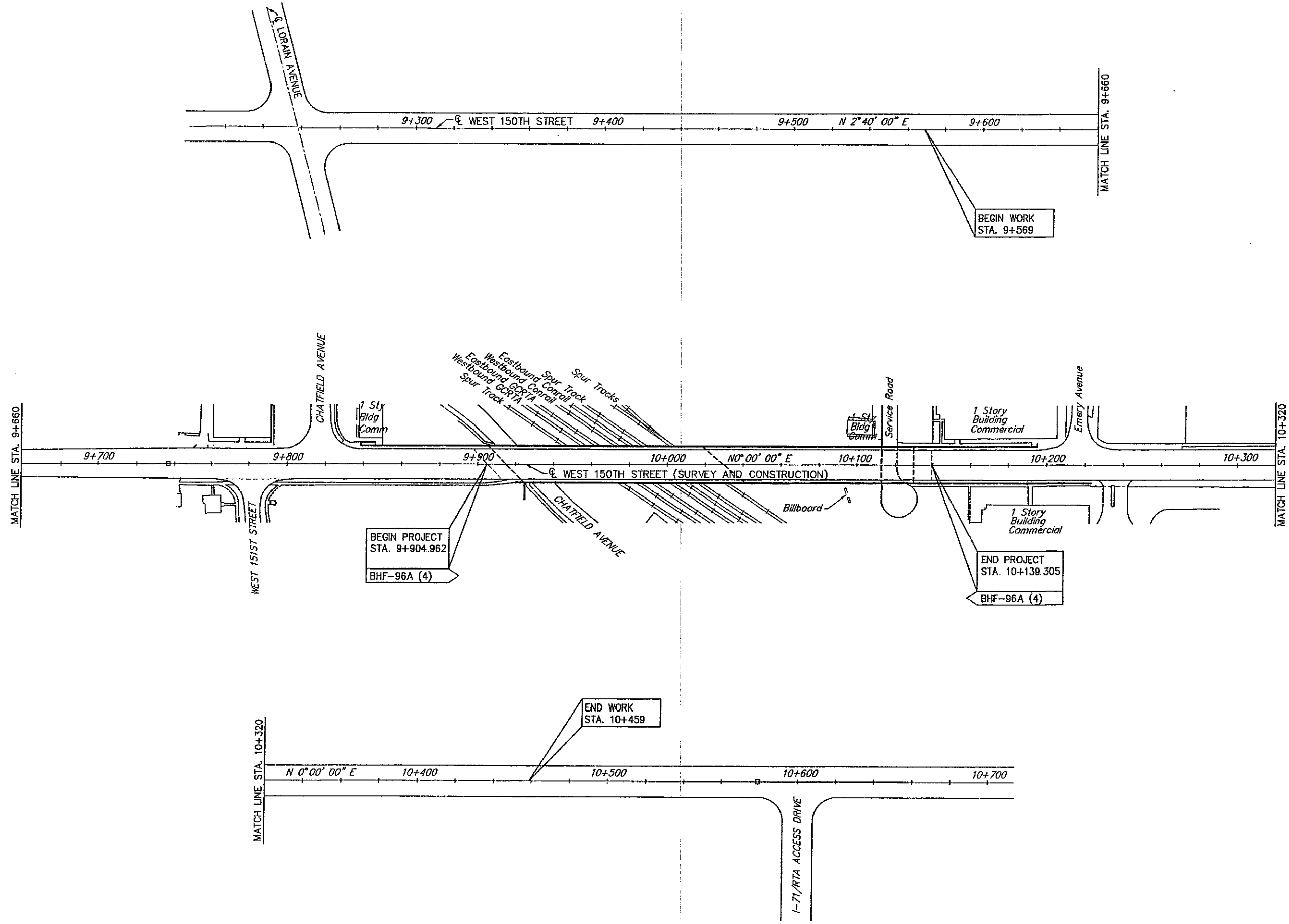
## LOCATION MAP

Arcadis – Cuyahoga County – W. 140<sup>th</sup> & W. 150<sup>th</sup> Street Bridges over GCRTA





 0 20 40 HORIZONTAL SCALE IN METERS	CALCULATED NINB	
	CHECKED EPS	<b>SCHEMATIC PLAN</b>
CUY-WEST 140TH STREET		
 2 98		



THIS TEMPORARY RIGHT OF ENTRY, made this 28th day of October, 2020, by and between NORFOLK SOUTHERN RAILWAY COMPANY ("Licensor") and ARCADIS U.S. INC. ("Licensee").

Licensor hereby permits Licensee to enter upon property owned or controlled by Licensor located in CLEVELAND Cuyahoga, Ohio, and being located substantially as shown upon print marked Exhibit "A" attached hereto and made a part hereof.

This Right of Entry is granted upon the following terms and conditions:

1. The Right of Entry is granted only for the purpose of inspection of two (2) bridges - utilizing snoopers from above and manlift/ladders from below for the bridge spans over the NS tracks from November 9, 2020 to January 9, 2021. This Right of Entry does not cover intrusive environmental sampling or soil borings for environmental testing or sampling.

2. Licensor's Dearborn Division Engineer at 343 Emerald Avenue, Toledo, OH 43604 shall be given at least seventy-two (72) hours' advance notice before entry upon the property. The Division Engineer is Rick Meredith, whose telephone number is 419.254.1566 or Lisa Martin at 419.254.1540 [lisa.martin@nscorp.com](mailto:lisa.martin@nscorp.com)

3. All reasonable care shall be exercised and such precautions taken as said Division Engineer, or his authorized representative, may deem necessary to protect Licensor's facilities and operations. Licensor reserves the right to place watchmen, flagmen, inspectors and supervisors for protection purposes during the operations hereunder and the expense thereof, including the expense of any material furnished, shall be promptly paid by Licensee upon receipt of Licensor's bill therefor. In addition to direct wage and material cost, such expense shall include, but shall not be limited to, cost of supervision, traveling expenses, Federal Railroad Retirement and Unemployment Taxes, vacation allowances and all other expense incidental thereto.

4. Licensee shall secure, at its own expense, any permits or licenses required by federal, state, or local laws or ordinances and shall comply with all applicable laws, including without limitation any laws, regulations, standards, and permit requirements relating to potential asbestos or lead paint identification and abatement in its building demolition activities or to occupational health and safety. Licensee shall indemnify and hold harmless Licensor from and against any and all claims arising out of or connected with the violation by Licensee of any law, standard, regulation, or permit requirement.

5. Licensee hereby agrees to indemnify and save harmless Licensor from and against any and all liability, losses, damages, claims, actions, causes of action, costs and expenses (including attorneys' fees) for personal injury (including death) and/or property damage to whomsoever or whatsoever occurring, arising from or growing out of, directly or indirectly, the presence of Licensee, its agents, servants or employees upon or about the property of Licensor or in connection with the privileges herein granted, whether or not such liability, losses, damages, claims, actions, causes of action, costs and expenses shall have been caused or contributed by the negligence of Licensor.

6. Licensee shall, at its expense, obtain and maintain during the period of time when Licensee exercises the rights granted herein, in a form and with companies satisfactory to Licensors.

(a) Commercial General Liability Insurance with a combined single limit of not less than \$2,000,000 per occurrence for injury to or death of persons and damage to or loss or destruction of property. Such policy shall be endorsed to provide products and completed operations coverage and contractual liability coverage for liability assumed under this Agreement. The contractual liability coverage shall be of a form that does not deny coverage for operations conducted within 50 feet of any railroad hazard. In addition, said policy or policies shall be endorsed to name Licensors as an additional insured and shall include a severability of interests provision;

(i) In the event Licensee's Commercial General Liability Insurance Policy does not provide contractual liability coverage for operations conducted within 50 feet of a railroad hazard, Licensee shall, at its expense, also obtain and maintain during the period of time when Licensee exercises the rights granted herein, in a form and with companies satisfactory to Licensors, Railroad Protective Liability Insurance. Said policy shall have limits of not less than a combined single limit of \$2,000,000 each occurrence and \$6,000,000 in the aggregate. In addition, said policy shall name Licensors as the named insured and shall be underwritten on Insurance Services Office (ISO) Form Number CG 00 35 10 01 or an equivalent form satisfactory to Licensors.

(ii) Evidence of such insurance (certificate of insurance for the General Liability insurance and the original policy of Railroad Protective Liability Insurance) shall be furnished to and approved by Licensors's Director Risk Management, Three Commercial Place, Norfolk, Virginia 23510-2191, prior to occupancy of the Property. Said certificate of insurance shall state that coverage shall not be suspended, voided, cancelled, or reduced in coverage or limits without (30) days advance written notice to Licensors.

(iii) In the event Licensee's Commercial General Liability Insurance Policy does not provide contractual liability coverage for operations conducted within 50 feet of a railroad hazard and as an alternative to (b) above, Licensee may contact Licensors's Director Risk Management at the address shown below, and arrange for railroad protective liability insurance under Licensors's "Master Railroad Protective Liability Insurance Policy."

Mr. Gregory Kildare  
Director Insurance Risk Management  
Norfolk Southern Corporation  
Three Commercial Place  
Norfolk, Virginia 23510  
Phone: 757-664-5022

(b) Automobile Liability Insurance have a combined single limit of not less than \$1,000,000 per occurrence. Said policy shall name Company as an additional insured and shall include a severability of interests provision.

(c) The insurance coverage required herein is not intended to and shall not reduce, limit, affect or modify the primary obligations of Licensee under any other provisions of this Agreement.

7. At the termination of this Right of Entry, Licensor's property shall be restored by Licensee to its original condition, or to a condition satisfactory to the Chief Engineer of Licensor, or his authorized representative.

8. No drainage conditions shall be created or allowed to exist which would be adverse to Licensor's property. Licensee's work shall not interfere with the safe and proper support of Company's roadbed and track. All work done hereunder shall occur only during daylight hours at the location of the entry.

9. A minimum clearance of fifteen feet (15') from the centerline of the nearest track shall be maintained at all times for any material, equipment or vehicles of Licensee occupying Licensor's property unless authorized in writing by Licensor or Licensor's Superintendent. With the exception of public grade crossings, Licensee shall not cross the tracks of Licensor with any vehicle unless it shall have executed such separate agreement as shall be provided by Licensor.

10. The license and permission hereby granted is for the sole benefit of Licensee, and Licensor is to receive no benefit therefrom nor any consideration therefor except the covenants, promises and agreements set forth in this Right of Entry.

11. No explosives of any kind shall be used on Licensor's property.

12. No debris will be buried in or burned upon Licensor's property. Licensee will remove from the Property all soil, fill, construction and demolition debris, or other materials (whether solid or liquid) disturbed or created during the activities covered by this Agreement, including any such material that is contaminated and/or potentially contaminated. Licensor assumes no responsibility for any such material and shall not be a signatory on any waste manifests, bills of lading, or other documentation concerning this material.

13. If any mechanics' or materialmen's liens, or similar lien, is asserted against the Property, or any other property of Licensor as a result of the exercise of any license herein granted, Licensee shall immediately satisfy, defend, or obtain the release of such lien, all at Licensee's expense, and Licensee shall indemnify and hold harmless Licensor from and against any claims arising out of or connected with such lien.

14. This Right of Entry (a) shall not be assigned or transferred by Licensee, (b) may be terminated at will by Licensor or Licensee, and (c) shall terminate automatically on January 9, 2021; however, that termination shall not relieve Licensee of any obligation or liability incurred prior to such termination.

15. Where appropriate, the terms when used in this Right of Entry shall be understood to indicate the masculine, feminine or neuter, and the singular or plural, as the case may be. The



word "Licensor" as used herein shall include any other company or companies whose property at the aforesaid location may be leased or operated by Licensor. Said term also shall include any parent company or companies, subsidiary or subsidiaries of Licensor, and the servants, agents or employees of Licensor, and also shall include servants, agents or employees of said parent company or companies or subsidiaries of Licensor, and also shall include tenants, lessees or licensees of Licensor, other than the Licensee herein.

16. If any of the foregoing provisions is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable are severed and deleted from this agreement and that the balance of the agreement remain a binding enforceable agreement to the fullest extent permitted by law.

17. Signature. The parties agree that if an authorized officer of a party fully signs this Agreement in the appropriate location(s) below and then returns that signature to the other party via electronic means with a pdf or similar scanned copy of that signature, then that scanned signature shall serve as that party's signature for the Agreement, and, upon full execution of the Agreement by all parties, shall create a legally binding Agreement.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this Right of Entry in duplicate as of the date first hereinabove written.

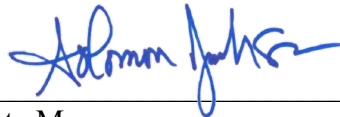
Witness:

*E. Huggins*

As to Licenser

NORFOLK SOUTHERN RAILWAY COMPANY

By



Real Estate Manager

Witness:



Robert B. Beasley, P.E.

As to Licensee

ARCADIS U.S. INC.

By



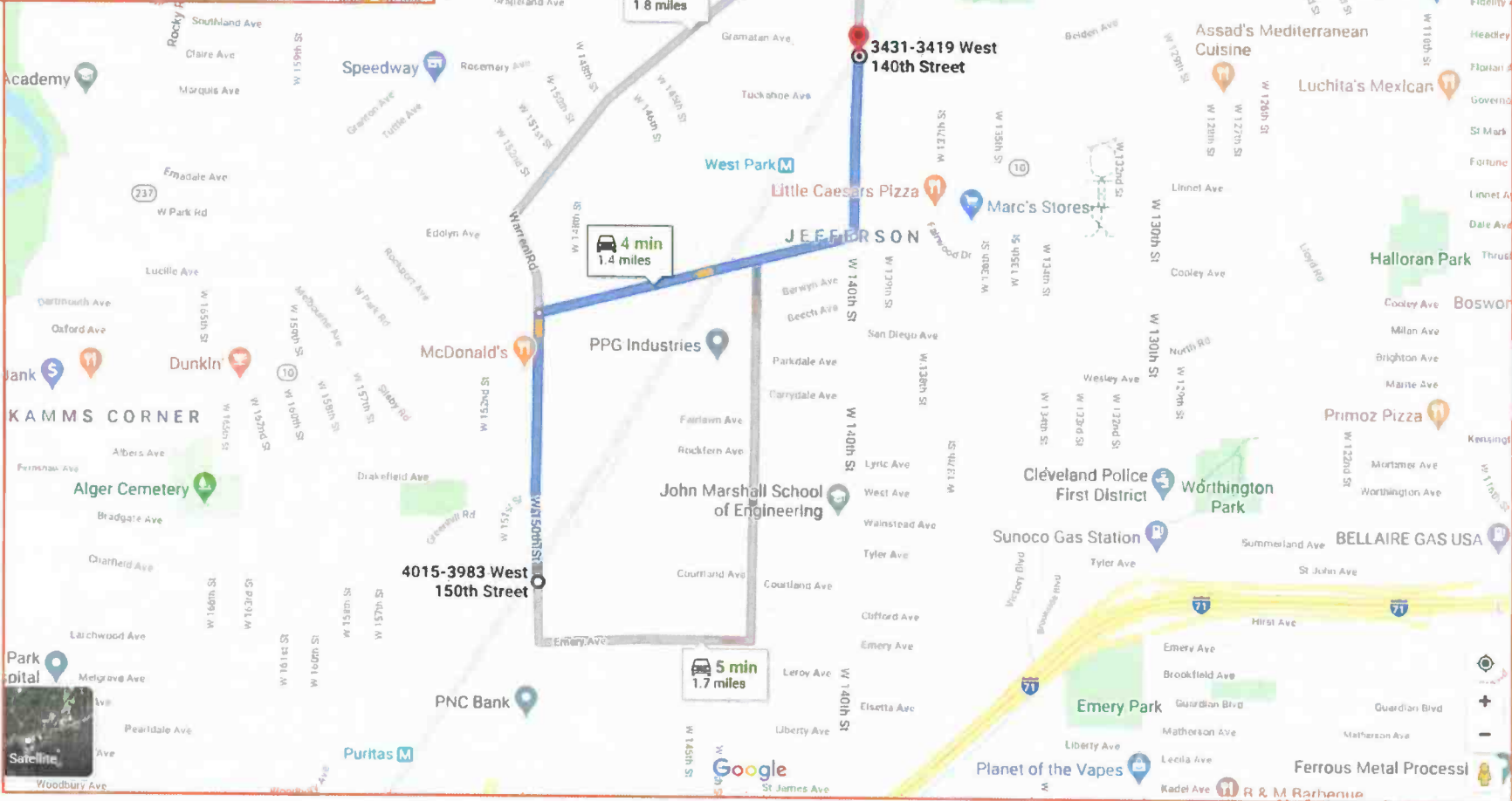
Shelly K. Kendrick, P.E.

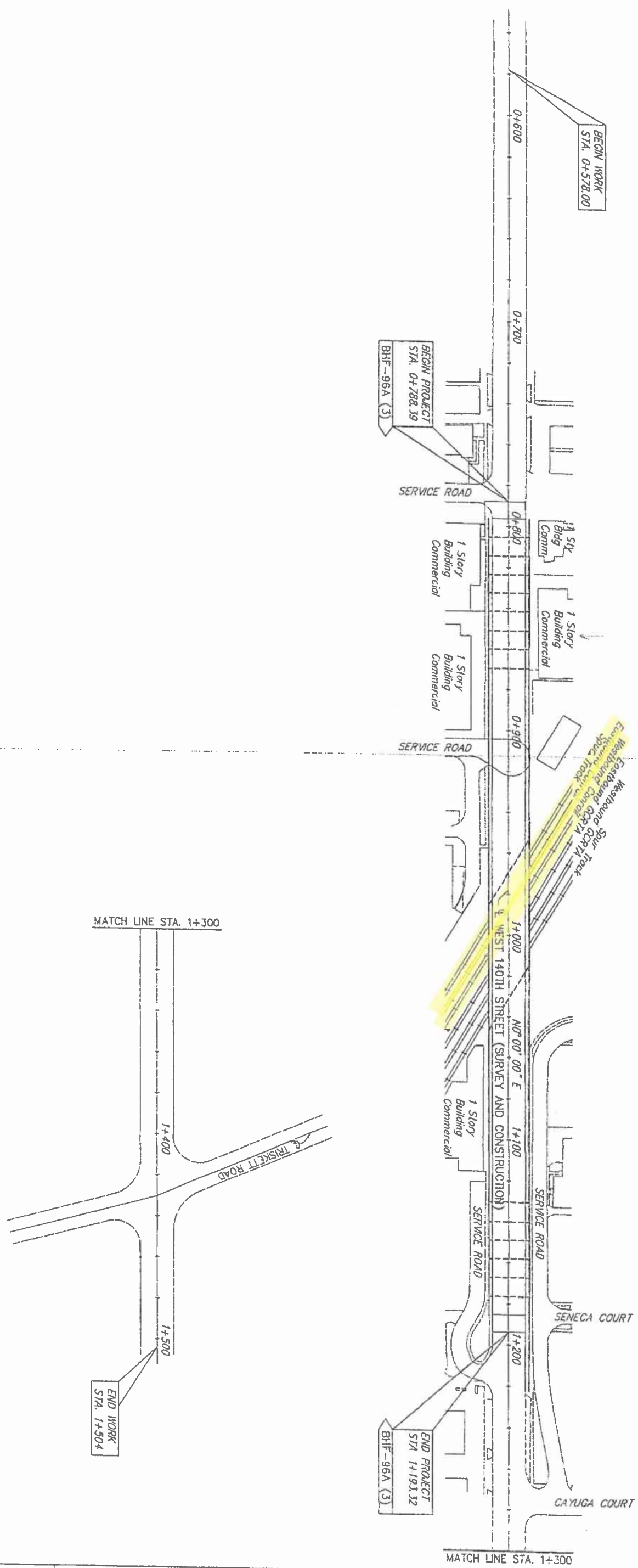
Title: Project Engineer

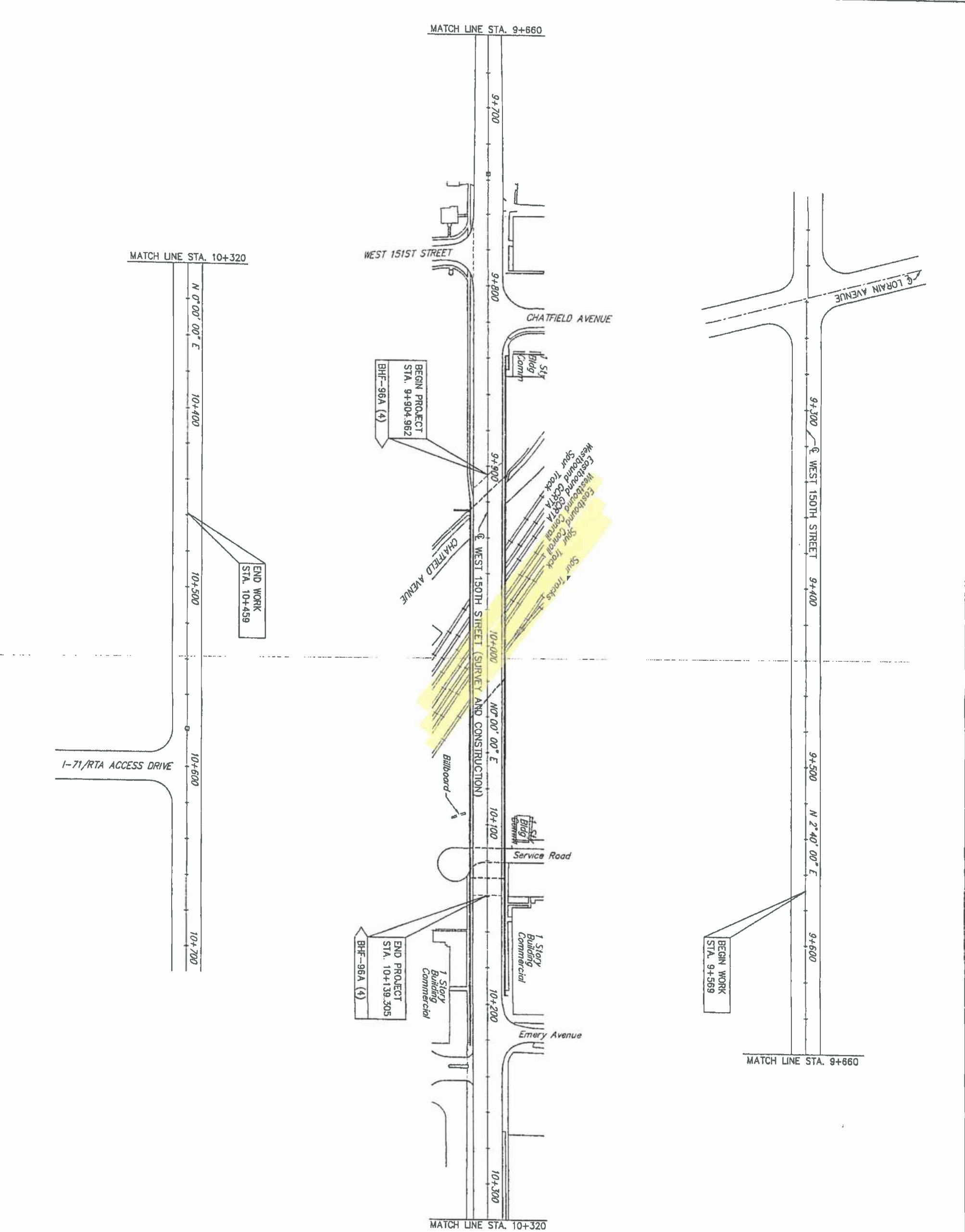
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**LOCATION MAP**

Arcadis – Cuyahoga County – W. 140<sup>th</sup> & W. 150<sup>th</sup> Street Bridges over Norfolk Southern







**INDEMNIFICATION AGREEMENT (Principal)  
AND RIGHT OF ENTRY**

WHEREAS, ARCADIS U.S., INC., ("Principal") has requested that Norfolk Southern Railway Company ("Company") permit Principal to be on or about Company's premises and/or facilities at or in the vicinity of CLEVELAND, Cuyahoga, Ohio (the "Premises") for the sole purpose of BRIDGE INSPECTIONS AT 3431 W 140TH ST (NEAR MP CD 187.41) AND 4015 W 150TH ST (NEAR MP CD 188.51), CLEVELAND, OH, UTILIZING SNOOPER FROM ABOVE AND MANLIFT/LADDERS FROM BELOW during the period of SEPTEMBER 25, 2020, to OCTOBER 25, 2020 (the "Right of Entry").

WHEREAS, Company is willing to grant the Right of Entry subject to the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereby agree as follows.

Company hereby grants Principal the Right of Entry. The Right of Entry shall extend to Principal and to subcontractors and other entities affiliated with Principal who are specifically approved for entry by authorized representatives of Company in writing, as well as to the officers and employees of the foregoing (collectively "Licensees"). The Right of Entry shall apply to those portions of the Premises, and to such equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises, only to the extent specifically designated and approved in writing by authorized representatives of Company (collectively, "Designated Property").

Principal agrees:

- (i) that Licensee's access to the Premises shall be limited to the Designated Property and that Principal shall be liable and fully responsible for all actions of Licensees while on the Premises pursuant to the Right of Entry;
- (ii) that Licensees shall (a) be subject to Company's direction when upon the Premises, and (b) be subject to Company's removal from the Premises, in Company's sole discretion, due to negligence, misconduct, unsafe actions, breach of this agreement or the failure to act respectfully, responsibly, professionally, and/or in a manner consistent with Company's desire to minimize risk and maintain its property with maximum security and minimum distractions or disruptions or for any other lawful reason;
- (iii) that if Principal is a contractor that has been retained to provide services to Company, that Principal shall and shall cause all of the Licensees to conduct their activities in accordance with the Norfolk Southern Operating Guidelines for Contractors, and that it shall be Principal's obligation to request and obtain a copy of such guidelines from Company;
- (iv) to give Company's officer signing this agreement, or his or her authorized representative, advance notification of the presence of Licensees on Designated Property;
- (v) to indemnify and save harmless Company, its officers, agents and employees from and against any and all claims, demands, losses, suits, judgments, costs, expenses (including without limitation reasonable attorney's fees) and liability resulting from (a) injury to or death of any person, including without limitation the Licensees, and damage to or loss of any property, including without limitation that belonging to or in the custody of Licensees (the "Licensee Property"), arising or in any manner growing out of the presence of either the Licensees or the Licensee Property, or both, on or about the Premises, regardless of whether negligence on the part of Company, its officers, agents or employees caused or contributed to said loss of life, personal injury or property loss or damage in whole or in part; (b) any alleged violation of any law, statute, code, ordinance or regulation of the United States or of any state, county or municipal government (including, without limitation, those relating to air, water, noise, solid waste and other forms of environmental protection, contamination or pollution or to discrimination on any basis) that results in whole or in part, directly or indirectly, from the activities of Licensees related in any way to their presence on the Premises or from any other act or omission of Licensees contributing to such violation, regardless of whether such activities, acts or omissions are intentional or negligent, and regardless of any specification by Company without actual knowledge that it might violate such law, statute, code, ordinance or regulation; (c) any



**INDEMNIFICATION AGREEMENT (Principal)  
AND RIGHT OF ENTRY**

allegation that Company is an employer or joint employer of a Licensee or is liable for related employment benefits or tax withholdings; or (d) any decision by Company to bar or exclude a Licensee from the Premises pursuant to subsection (ii)(b) above;

- (vi) to have and keep in effect the following kinds of insurance, with insurance companies satisfactory to Company, during the entire time Licensees or Licensee Property, or both, is on the Premises:

1. Worker's Compensation and Employers' Liability Insurance – coverage to meet fully the Statutory or regulatory requirements applicable in connection with death, disability or injury to Principal's employees;
2. General Liability Insurance having a combined single limited of not less than \$2,000,000 per occurrence. The policy shall include Products and Completed Operations coverage and contractual liability coverage to cover the obligations assumed under this agreement and shall not deny coverage for operations conducted within 50 feet of any Railroad hazard. Company shall be named as an additional insured;
3. In the event Principal cannot obtain contractual liability insurance to cover the obligation assumed in this agreement, Principal shall furnish Company with a Railroad Protective Liability Policy having a combined single limit of \$2,000,000 per occurrence;
4. Automobile Liability Insurance having a combined single limit of \$1,000,000 per occurrence. Company shall be named as an additional insured;

and to provide certificates of insurance showing the foregoing coverage, as well as any endorsements or other proper documentation showing and any change or cancellations in the coverage to the Company officer signing this agreement or to his or her authorized representative;

- (vii) to reimburse Company for any material, labor, supervisory and protective costs (including flagging) and related taxes and overhead expenses required or deemed necessary by Company because of the presence of either Licensees or Licensee Property on the Premises;
- (viii) to exercise special care and precautions to protect the Premises and equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises (whether or not constituting Designated Property) and to avoid interference with Company's operations;
- (ix) to not create and not allow drainage conditions which would be adverse to the Premises or any surrounding areas;
- (x) to maintain a minimum clearance of fifteen feet (15') from the center line of the nearest track for any of the Licensee Property unless otherwise authorized in writing by Company;
- (xi) to refrain from the disposal or release of any trash, waste, and hazardous, dangerous or toxic waste, materials or substances on or adjacent to the Premises and to clean up or to pay Company for the cleanup or any such released trash, waste, materials or substances; and
- (xii) to restore the Premises and surrounding areas to its original condition or to a condition satisfactory to the Company officer signing this agreement or to his or her authorized representative (ordinary wear and tear to rolling stock and equipment excepted) upon termination of Licensees' presence on the Premises.

As a part of the consideration hereof, Principal further hereby agrees that Company shall mean not only Norfolk Southern Railway Company but also Norfolk Southern Corporation and any and all subsidiaries and affiliates of Norfolk Southern Railway Company or Norfolk Southern Corporation, and that all of Principal's indemnity commitments in this agreement in favor of Company also shall extend to and indemnify Norfolk Southern Corporation and any subsidiaries and affiliated companies of Norfolk Southern Railway Company or Norfolk Southern Corporation and its and/or their directors, officers, agents and employees.

**INDEMNIFICATION AGREEMENT (Principal)  
AND RIGHT OF ENTRY**

It is expressly understood that the indemnification obligations set forth herein cover claims by Principal's employees, agents, independent contractors and other representatives, and Principal expressly waives any defense to or immunity from such indemnification obligations and/or any subrogation rights available under any applicable state constitutional provision, laws, rules or regulations, including, without limitation, the workers' compensation laws of any state. Specifically (i) in the event that all or a portion of the Premises is located in the State of Ohio, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code"; and (ii) in the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to the Pennsylvania Workers' Compensation Act, 77 P.S. 481".

This agreement shall be governed by the internal laws of the Commonwealth of Virginia, without regard to otherwise applicable principles of conflicts of laws. If any of the foregoing provisions is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable be severed and deleted from this agreement and that the balance of this agreement remain a binding enforceable agreement to the fullest extent permitted by law.

This agreement may be amended only in a writing signed by authorized representatives of the parties.

ARCADIS U.S., INC.

Name of Principal

By: Shelly K. KendrickName: Shelly K. KendrickTitle: Project EngineerDate: September 24, 2020

NORFOLK SOUTHERN RAILWAY COMPANY

By: Rick Meredith / LMM

Name: Rick Meredith

Title: Division Engineer

Date: Sept. 25, 2020APPROVED AS TO FORM AND LEGALITY  
TRANSPORTATION CABINET

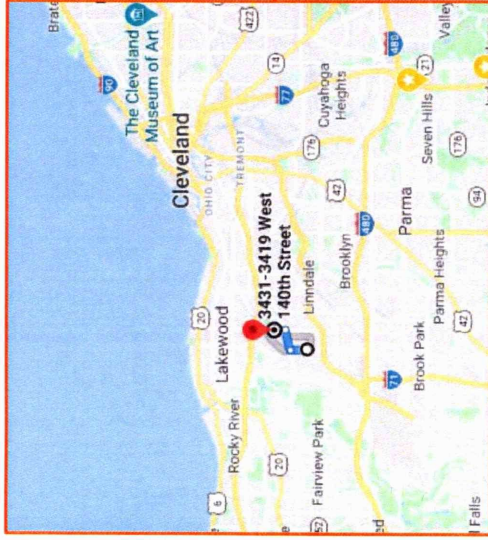
By: \_\_\_\_\_

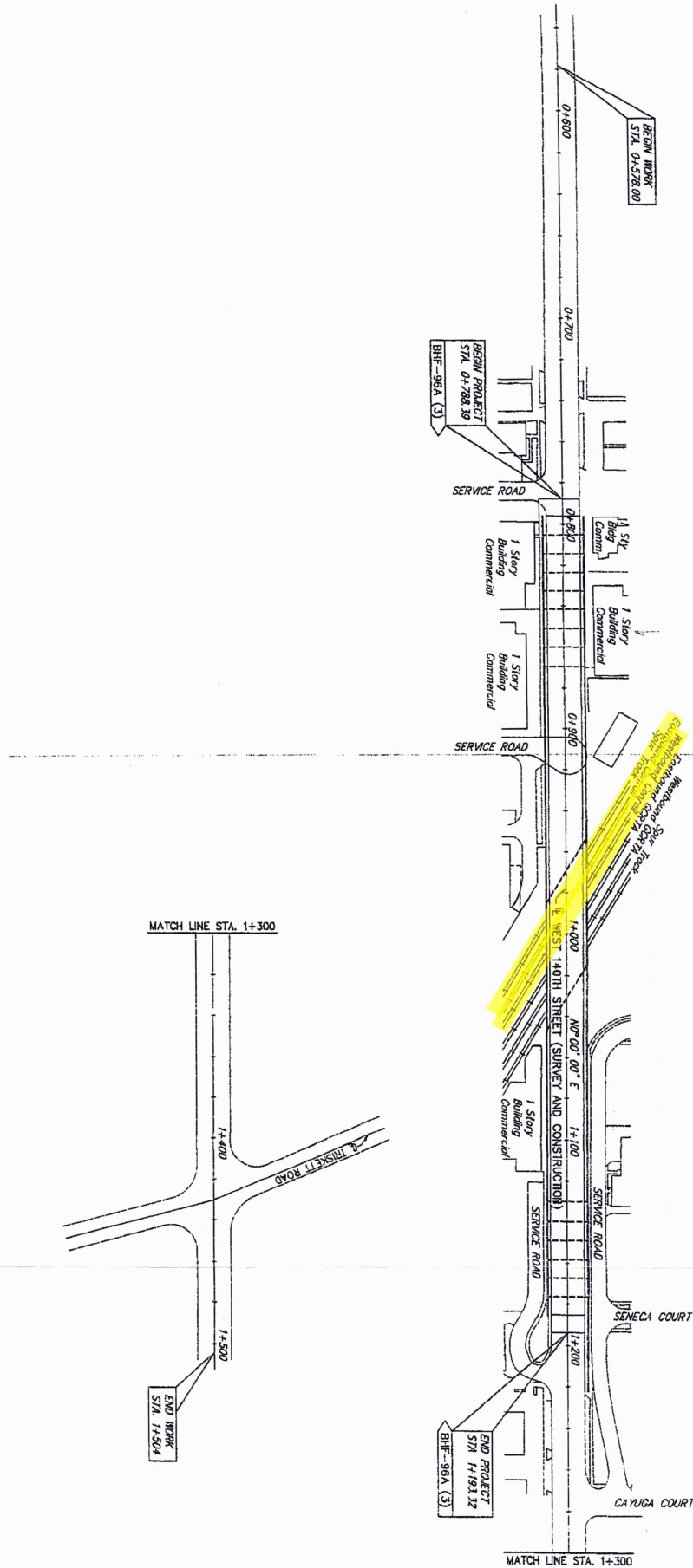
Office of Legal Services

LMM Thursday, September 24, 2020 1287999

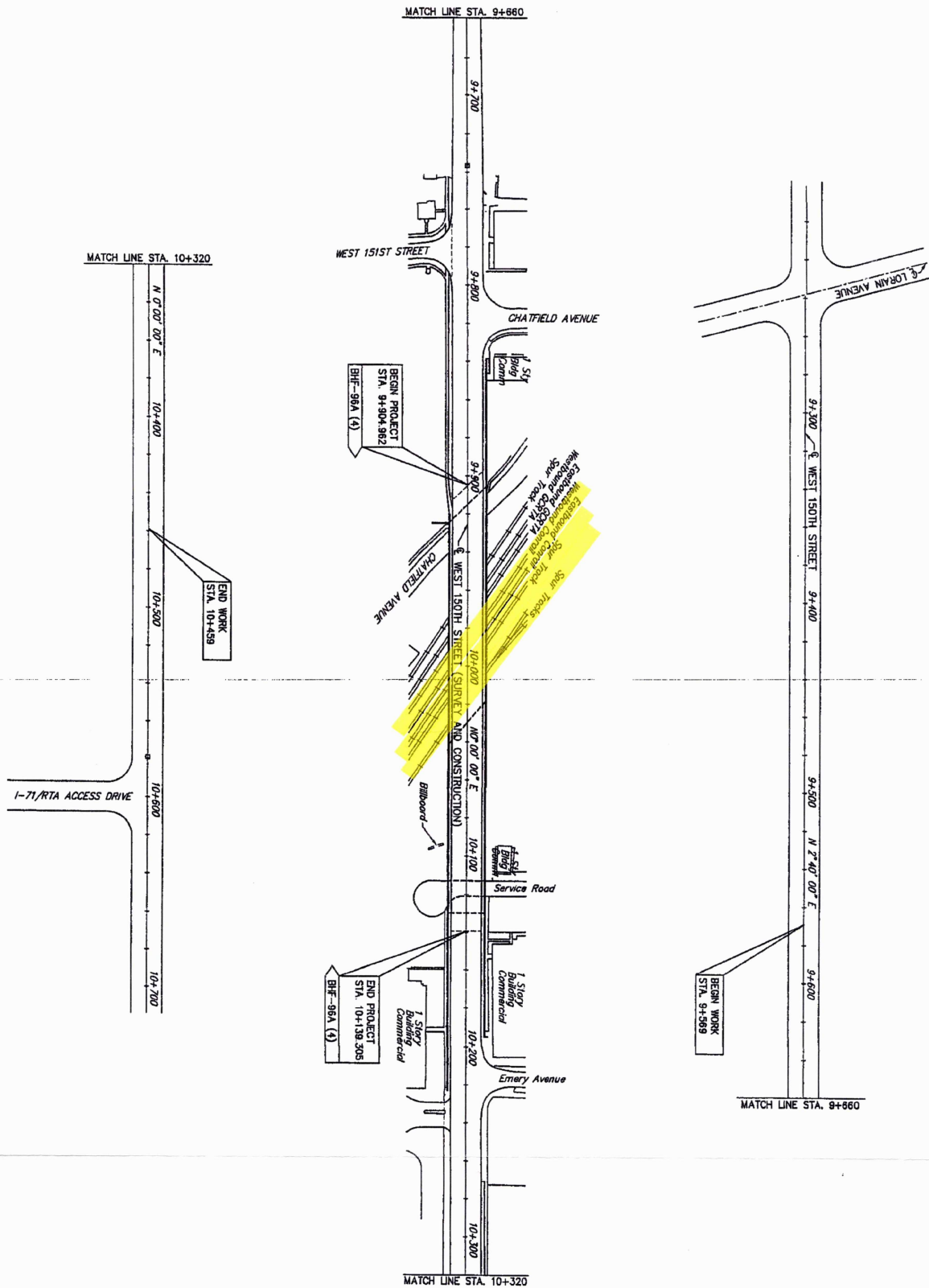
## LOCATION MAP

Arcadis – Cuyahoga County – W. 140th & W. 150th Street Bridges over Norfolk Southern











Norfolk Southern Corporation  
4860 W.150<sup>th</sup> St.  
Cleveland, OH 441354

Tele: 216-898-5064 Lead Clerk  
Tele: 216-898-5104 Trainmaster  
Fax: 216-898-4102

TO: TOM MURPHY  
TERMINAL SUPT.  
CLEVELAND, OH

**ALL TRANSPORTATION FLAGGERS MUST WORK AT LEAST 8 HOURS!!**

DATE: 10/28/2020

ESTIMATED BEGIN DATE: 11/17/2020 ESTIMATED END DATE: 11/20/2020

TIME NEEDED: 9:00 am – 3:30 pm (Anticipate 2-3 days needed) (AM/PM)

CUSTOMER NUMBER: (IF ANY) \_\_\_\_\_ FED AID: N (Y/N)

CUSTOMER NAME: Shelly Kendrick, Arcadis U.S., Inc.

ADDRESS: 222 S. Main St., Ste. 200

CITY: Akron STATE: Ohio ZIP CODE: 44308

ON SITE CUSTOMER CONTACT: Frank Getz

PHONE: 330.416.7363 FAX: N/A

BILL TO NAME: Arcadis U.S., Inc.

ADDRESS: 222 S. Main St., Ste. 200

CITY: Akron STATE: Ohio ZIP CODE: 44308

BILLING CONTACT NAME: Shelly Kendrick

BILLING CONTACT PHONE NUMBER: 330.701.0083 FAX: 330.374.1095

LOCATION OF WORK: MP near MP\_CD 187.41 CITY: Cleveland STATE: Ohio

JOB DESCRIPTION: Inspection of two bridges by using snooper truck from above and manlift/ladders below.

Bridges are W. 140<sup>th</sup> St. and W. 150<sup>th</sup> St. over NS RR. Permit: ROE Activity No. 1882215.

REQUESTOR'S SIGNATURE: 

TITLE: Project Engineer

/csr  
7/1/20  
Operating Subsidiary: Norfolk Southern Railway Company





Norfolk Southern Corporation  
4860 W.150<sup>th</sup> St.  
Cleveland, OH 441354

Tele: 216-898-5064 Lead Clerk  
Tele: 216-898-5104 Trainmaster  
Fax: 216-898-4102

TO: TOM MURPHY  
TERMINAL SUPT.  
CLEVELAND, OH

**ALL TRANSPORTATION FLAGGERS MUST WORK AT LEAST 8 HOURS!!**

DATE: 10/5/2020

ESTIMATED BEGIN DATE: 10/12/2020 ESTIMATED END DATE: 10/12/2020

TIME NEEDED: 9:00 am – 3:30 pm (Only 1 day needed) (AM/PM)

CUSTOMER NUMBER: (IF ANY) \_\_\_\_\_ FED AID: N (Y/N)

CUSTOMER NAME: Shelly Kendrick, Arcadis U.S., Inc.

ADDRESS: 222 S. Main St., Ste. 200

CITY: Akron STATE: Ohio ZIP CODE: 44308

ON SITE CUSTOMER CONTACT: Frank Getz

PHONE: 330.416.7363 FAX: N/A

BILL TO NAME: Arcadis U.S., Inc.

ADDRESS: 222 S. Main St., Ste. 200

CITY: Akron STATE: Ohio ZIP CODE: 44308

BILLING CONTACT NAME: Shelly Kendrick

BILLING CONTACT PHONE NUMBER: 330.701.0083 FAX: 330.374.1095

LOCATION OF WORK: MP near MP\_CD 187.41 CITY: Cleveland STATE: Ohio

JOB DESCRIPTION: Bridge Repair: Repair of small +-4" hole in concrete bridge deck over NS tracks.

Bridge is W. 140<sup>th</sup> St. over NS RR. Permit: ROE Activity No. 1287999.

REQUESTOR'S SIGNATURE: 

TITLE: Project Engineer

/csr  
7/1/20  
Operating Subsidiary: Norfolk Southern Railway Company

**NORFOLK SOUTHERN CORPORATION**  
**NON-ENVIRONMENTAL RIGHT OF ENTRY APPLICATION FORM**

**APPLICANT INFORMATION**      The Application fee of \$1,250 is enclosed (mail-in applications only). Check # \_\_\_\_\_

Legal Name of Applicant (party to agreement) \_\_\_\_\_ Tax ID \_\_\_\_\_

**Mailing Information**

**Billing Information** (if same leave blank)

Street Address \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Name of Contact \_\_\_\_\_

Billing Contact \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Phone # (\_\_\_\_\_) \_\_\_\_\_ Fax # (\_\_\_\_\_) \_\_\_\_\_

Phone # (\_\_\_\_\_) \_\_\_\_\_ Fax # (\_\_\_\_\_) \_\_\_\_\_

E-Mail Address \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Applicant is a: (Provide state of formation for Corporation and Partnerships, and name of owner for Sole Proprietorship)

<input type="checkbox"/> Corporation- State _____ <input type="checkbox"/> Limited Partnership- State _____ <input type="checkbox"/> General Partnership- State _____ <input type="checkbox"/> Sole Proprietorship - State _____ Owner _____	<input type="checkbox"/> Non-Profit <input type="checkbox"/> Individual <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Government Entity- State _____ Gov't Dept: _____	<input type="checkbox"/> Contractor Working Solely for Applicant SubContractor: _____  <input type="checkbox"/> Contractor Working Solely for NS NS Dept: _____
--	--	---

**PROPERTY INFORMATION**

Location of property Street Address (if applicable) \_\_\_\_\_ Railroad Milepost \_\_\_\_\_

Nearest Town \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_ Latitude/Longitude \_\_\_\_\_ / \_\_\_\_\_

Railroad Line Name \_\_\_\_\_ Division (if known) \_\_\_\_\_

*A sketch of the property you wish to enter is REQUIRED. Provide Lat/Long coordinates if available.*

Time period to occupy From \_\_\_\_/\_\_\_\_/\_\_\_\_ To \_\_\_\_/\_\_\_\_/\_\_\_\_

Work to be performed is within \_\_\_\_\_ Ft of the tracks. (If within 25ft of center of the rail, a flagman is required at your expense.)

**Applicant's intended purpose for this right-of-entry (be specific)** \_\_\_\_\_

Approximate area of property to be occupied (specify square feet or acres) \_\_\_\_\_ SQFT \_\_\_\_\_ AC

Were services to be performed requested by Norfolk Southern Corporation or its subsidiaries? ☐ Yes ☐ No

Requested by whom? \_\_\_\_\_

Are there railroad tracks located on the land? ☐ Yes ☐ No

How will property be accessed? ☐ Public road adjacent ☐ Across Railroad Property not covered by this license

☐ Across Railroad tracks ☐ Other (specify) \_\_\_\_\_

Are you aware of any existing or former agreements covering this property? ☐ Yes ☐ No

If yes, provide licensee's name & company \_\_\_\_\_

Are there any existing improvements (buildings, pavement, fences, billboards, etc.) on the property? ☐ Yes ☐ No

If yes, specify \_\_\_\_\_ Who owns them? \_\_\_\_\_

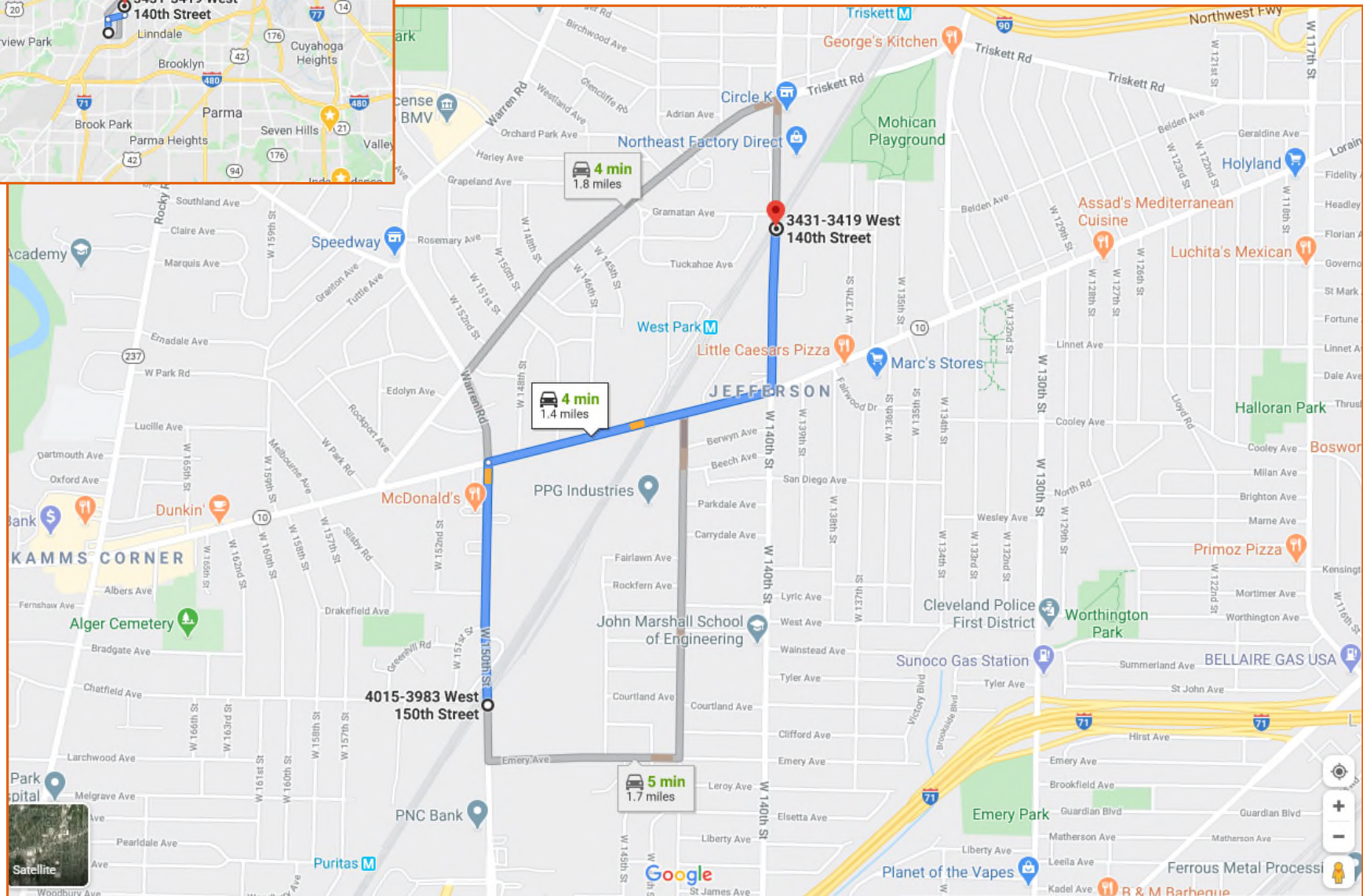
*I/We understand that submission of this application does not authorize occupation of or entry on the property.  
Exact fees and insurance requirements will be forwarded after the application has been reviewed and approved by NS.*

Signed Robert B. Buef

Date \_\_\_\_/\_\_\_\_/\_\_\_\_

## LOCATION MAP

Arcadis – Cuyahoga County – W. 140<sup>th</sup> & W. 150<sup>th</sup> Street Bridges over Norfolk Southern



# U. S. DOT CROSSING INVENTORY FORM

## DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk \* denotes an optional field.

<b>A. Revision Date</b> (MM/DD/YYYY) 10 / 16 / 2019	<b>B. Reporting Agency</b> <input checked="" type="checkbox"/> Railroad <input type="checkbox"/> Transit <input type="checkbox"/> State <input type="checkbox"/> Other	<b>C. Reason for Update</b> (Select only one) <input checked="" type="checkbox"/> Change in Data <input type="checkbox"/> New Crossing <input type="checkbox"/> Closed <input type="checkbox"/> Re-Open <input type="checkbox"/> Date Change Only <input type="checkbox"/> Change in Primary Operating RR <input type="checkbox"/> No Train Traffic <input type="checkbox"/> Quiet Zone Update <input type="checkbox"/> Admin. Correction	<b>D. DOT Crossing Inventory Number</b> 524300M
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### Part I: Location and Classification Information

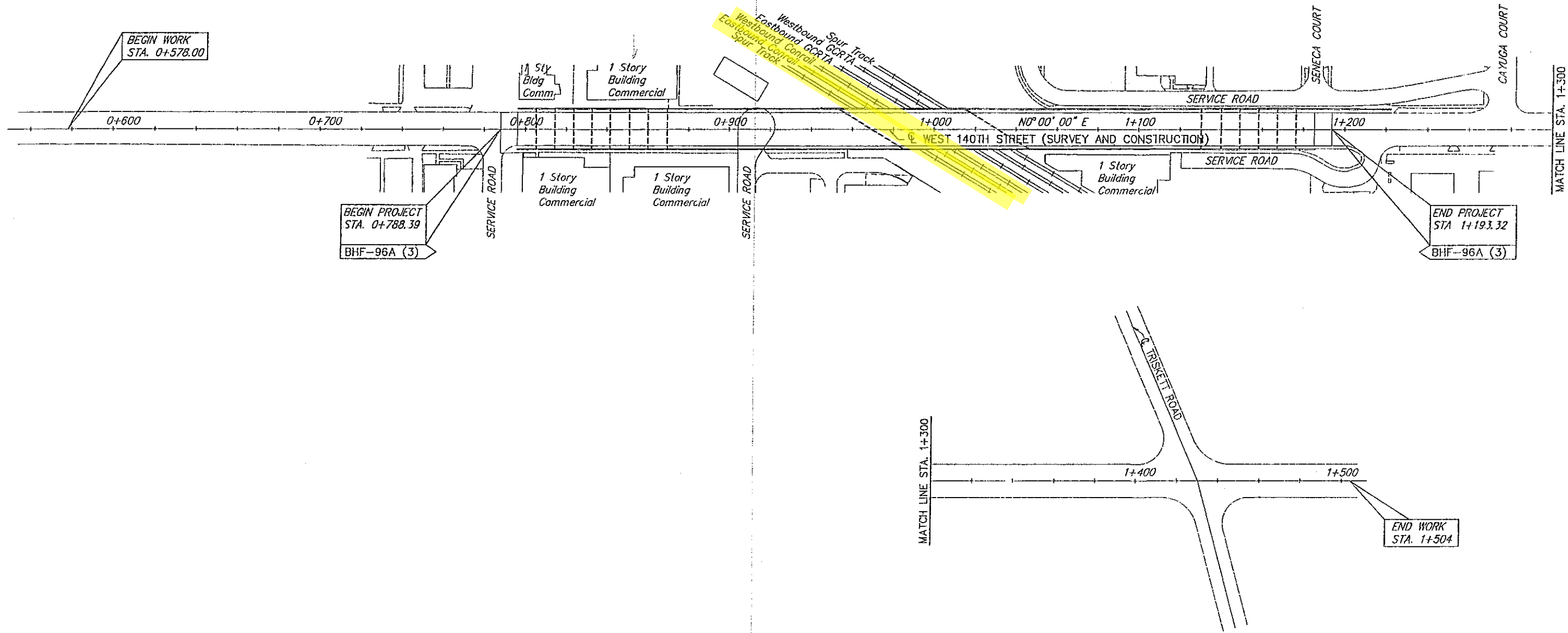
<b>1. Primary Operating Railroad</b> Norfolk Southern Railway Company [NS]		<b>2. State</b> OHIO		<b>3. County</b> CUYAHOGA	
<b>4. City / Municipality</b> <input checked="" type="checkbox"/> In <input type="checkbox"/> Near CLEVELAND		<b>5. Street/Road Name &amp; Block Number</b> W 150TH ST (Street/Road Name) * (Block Number)		<b>6. Highway Type &amp; No.</b> LS	
<b>7. Do Other Railroads Operate a Separate Track at Crossing?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR			<b>8. Do Other Railroads Operate Over Your Track at Crossing?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Specify RR		
<b>9. Railroad Division or Region</b> <input type="checkbox"/> None PITTSBURGH		<b>10. Railroad Subdivision or District</b> <input type="checkbox"/> None LAKE ERIE		<b>11. Branch or Line Name</b> <input type="checkbox"/> None CLOGGSVILLE LINE	
<b>12. RR Milepost</b> GZ 0492.200 (prefix)   (nnnn.nnn)   (suffix)					
<b>13. Line Segment</b> * MP 1822		<b>14. Nearest RR Timetable Station</b> * CLEVELAND		<b>15. Parent RR</b> (if applicable) <input checked="" type="checkbox"/> N/A	
<b>16. Crossing Owner</b> (if applicable) <input checked="" type="checkbox"/> N/A					
<b>17. Crossing Type</b> <input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	<b>18. Crossing Purpose</b> <input checked="" type="checkbox"/> Highway <input type="checkbox"/> Pathway, Ped. <input type="checkbox"/> Station, Ped.	<b>19. Crossing Position</b> <input type="checkbox"/> At Grade <input type="checkbox"/> RR Under <input checked="" type="checkbox"/> RR Over	<b>20. Public Access</b> (if Private Crossing) <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>21. Type of Train</b> <input checked="" type="checkbox"/> Freight <input type="checkbox"/> Intercity Passenger <input type="checkbox"/> Commuter <input type="checkbox"/> Transit <input type="checkbox"/> Shared Use Transit <input type="checkbox"/> Tourist/Other	<b>22. Average Passenger Train Count Per Day</b> <input type="checkbox"/> Less Than One Per Day <input type="checkbox"/> Number Per Day 0
<b>23. Type of Land Use</b> <input type="checkbox"/> Open Space <input type="checkbox"/> Farm <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Institutional <input type="checkbox"/> Recreational <input type="checkbox"/> RR Yard					
<b>24. Is there an Adjacent Crossing with a Separate Number?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Provide Crossing Number			<b>25. Quiet Zone</b> (FRA provided) <input checked="" type="checkbox"/> No <input type="checkbox"/> 24 Hr <input type="checkbox"/> Partial <input type="checkbox"/> Chicago Excused Date Established		
<b>26. HSR Corridor ID</b> <input checked="" type="checkbox"/> N/A	<b>27. Latitude in decimal degrees</b> (WGS84 std: nn.nnnnnnn) 41.423401		<b>28. Longitude in decimal degrees</b> (WGS84 std: -nnn.nnnnnnn) -81.820396		<b>29. Lat/Long Source</b> <input type="checkbox"/> Actual <input checked="" type="checkbox"/> Estimated
<b>30.A. Railroad Use</b> *			<b>31.A. State Use</b> * STRUREF:GZ-491.82		
<b>30.B. Railroad Use</b> *			<b>31.B. State Use</b> *		
<b>30.C. Railroad Use</b> *			<b>31.C. State Use</b> *		
<b>30.D. Railroad Use</b> *			<b>31.D. State Use</b> *		
<b>32.A. Narrative</b> (Railroad Use) * STRUCTURE TYPE: STL BEAM STRUCTURE LI			<b>32.B. Narrative</b> (State Use) * STRUCTURE TYPE: STL BEAM STRUCTURE LEN		
<b>33. Emergency Notification Telephone No.</b> (posted) 800-946-4744		<b>34. Railroad Contact</b> (Telephone No.) 800-946-4744		<b>35. State Contact</b> (Telephone No.) 614-466-0407	

### Part II: Railroad Information

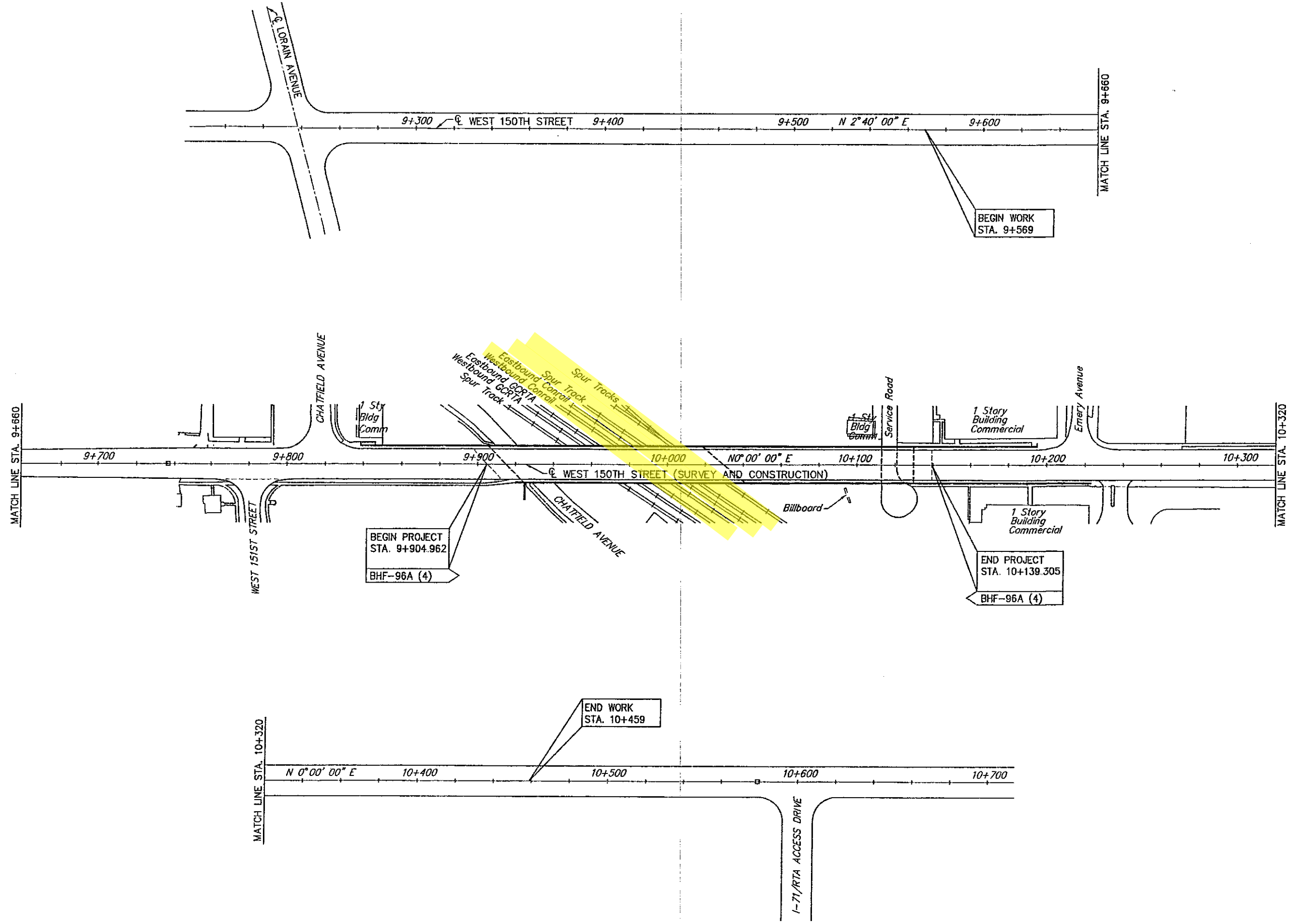
<b>1. Estimated Number of Daily Train Movements</b>				
<b>1.A. Total Day Thru Trains</b> (6 AM to 6 PM) 5	<b>1.B. Total Night Thru Trains</b> (6 PM to 6 AM) 5	<b>1.C. Total Switching Trains</b> 5	<b>1.D. Total Transit Trains</b> 0	<b>1.E. Check if Less Than One Movement Per Day</b> <input type="checkbox"/> How many trains per week? _____
<b>2. Year of Train Count Data</b> (YYYY) 2017		<b>3. Speed of Train at Crossing</b> 3.A. Maximum Timetable Speed (mph) 30 3.B. Typical Speed Range Over Crossing (mph) From 20 to 30		
<b>4. Type and Count of Tracks</b> Main 2 Siding 0 Yard 2 Transit 0 Industry 0				
<b>5. Train Detection</b> (Main Track only) <input type="checkbox"/> Constant Warning Time <input type="checkbox"/> Motion Detection <input type="checkbox"/> AFO <input type="checkbox"/> PTC <input type="checkbox"/> DC <input type="checkbox"/> Other <input checked="" type="checkbox"/> None				
<b>6. Is Track Signaled?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<b>7.A. Event Recorder</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>7.B. Remote Health Monitoring</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

# U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 10/16/2019		PAGE 2		D. Crossing Inventory Number (7 char.) 524300M	
<b>Part III: Highway or Pathway Traffic Control Device Information</b>					
1. Are there Signs or Signals?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 0		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count)	2.D. Advance Warning Signs (Check all that apply; include count) <input checked="" type="checkbox"/> None <input type="checkbox"/> W10-1 <input type="checkbox"/> W10-3 <input type="checkbox"/> W10-11 <input type="checkbox"/> W10-2 <input type="checkbox"/> W10-4 <input type="checkbox"/> W10-12	
2.E. Low Ground Clearance Sign (W10-5) <input type="checkbox"/> Yes (count _____) <input type="checkbox"/> No		2.F. Pavement Markings <input type="checkbox"/> Stop Lines <input type="checkbox"/> Dynamic Envelope <input type="checkbox"/> RR Xing Symbols <input checked="" type="checkbox"/> None		2.G. Channelization Devices/Medians <input type="checkbox"/> All Approaches <input type="checkbox"/> Median <input type="checkbox"/> One Approach <input type="checkbox"/> None	
2.H. EXEMPT Sign (R15-3) <input type="checkbox"/> Yes <input type="checkbox"/> No		2.I. ENS Sign (I-13) Displayed <input type="checkbox"/> Yes <input type="checkbox"/> No		2.J. Other MUTCD Signs <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	
2.K. Private Crossing Signs (if private)  <input type="checkbox"/> Yes <input type="checkbox"/> No		2.L. LED Enhanced Signs (List types)			
<b>3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)</b>					
3.A. Gate Arms (count)  Roadway 0 Pedestrian 0		3.B. Gate Configuration <input type="checkbox"/> 2 Quad <input type="checkbox"/> Full (Barrier) Resistance <input type="checkbox"/> 3 Quad <input type="checkbox"/> Median Gates <input type="checkbox"/> 4 Quad		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 <input type="checkbox"/> Incandescent Not Over Traffic Lane 0 <input type="checkbox"/> LED	
3.D. Mast Mounted Flashing Lights (count of masts) 0 <input type="checkbox"/> Incandescent <input type="checkbox"/> LED <input type="checkbox"/> Back Lights Included <input type="checkbox"/> Side Lights Included		3.E. Total Count of Flashing Light Pairs 0		3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> Not Required	
3.G. Wayside Horn  <input type="checkbox"/> Yes Installed on (MM/YYYY) ____/____/____ <input checked="" type="checkbox"/> No		3.H. Highway Traffic Signals Controlling Crossing <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		3.I. Bells (count) 0	
3.J. Non-Train Active Warning <input type="checkbox"/> Flagging/Flagman <input type="checkbox"/> Manually Operated Signals <input type="checkbox"/> Watchman <input type="checkbox"/> Floodlighting <input checked="" type="checkbox"/> None				3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____	
4.A. Does nearby Hwy Intersection have Traffic Signals?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		4.B. Hwy Traffic Signal Interconnection <input checked="" type="checkbox"/> Not Interconnected <input type="checkbox"/> For Traffic Signals <input type="checkbox"/> For Warning Signs		4.C. Hwy Traffic Signal Preemption <input type="checkbox"/> Simultaneous <input type="checkbox"/> Advance	
5. Highway Traffic Pre-Signals <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Storage Distance * 0 Stop Line Distance * 0		6. Highway Monitoring Devices (Check all that apply) <input type="checkbox"/> Yes - Photo/Video Recording <input type="checkbox"/> Yes - Vehicle Presence Detection <input checked="" type="checkbox"/> None			
<b>Part IV: Physical Characteristics</b>					
1. Traffic Lanes Crossing Railroad <input type="checkbox"/> One-way Traffic <input type="checkbox"/> Two-way Traffic Number of Lanes _____ <input type="checkbox"/> Divided Traffic		2. Is Roadway/Pathway Paved?  <input type="checkbox"/> Yes <input type="checkbox"/> No		3. Does Track Run Down a Street?  <input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) <input type="checkbox"/> Yes <input type="checkbox"/> No		5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * _____ Length * _____ <input type="checkbox"/> 1 Timber <input type="checkbox"/> 2 Asphalt <input type="checkbox"/> 3 Asphalt and Timber <input type="checkbox"/> 4 Concrete <input type="checkbox"/> 5 Concrete and Rubber <input type="checkbox"/> 6 Rubber <input type="checkbox"/> 7 Metal <input type="checkbox"/> 8 Unconsolidated <input type="checkbox"/> 9 Composite <input type="checkbox"/> 10 Other (specify) _____			
6. Intersecting Roadway within 500 feet?  <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, Approximate Distance (feet) _____		7. Smallest Crossing Angle  <input type="checkbox"/> 0° - 29° <input type="checkbox"/> 30° - 59° <input type="checkbox"/> 60° - 90°		8. Is Commercial Power Available? *  <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Part V: Public Highway Information</b>					
1. Highway System  <input type="checkbox"/> (01) Interstate Highway System <input type="checkbox"/> (02) Other Nat Hwy System (NHS) <input type="checkbox"/> (03) Federal AID, Not NHS <input type="checkbox"/> (08) Non-Federal Aid		2. Functional Classification of Road at Crossing <input type="checkbox"/> (0) Rural <input type="checkbox"/> (1) Urban <input type="checkbox"/> (1) Interstate <input type="checkbox"/> (5) Major Collector <input type="checkbox"/> (2) Other Freeways and Expressways <input type="checkbox"/> (3) Other Principal Arterial <input type="checkbox"/> (6) Minor Collector <input type="checkbox"/> (4) Minor Arterial <input type="checkbox"/> (7) Local		3. Is Crossing on State Highway System? <input type="checkbox"/> Yes <input type="checkbox"/> No 5. Linear Referencing System (LRS Route ID) * 6. LRS Milepost *	
7. Annual Average Daily Traffic (AADT) Year 1970 AADT _____		8. Estimated Percent Trucks _____%		9. Regularly Used by School Buses? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Average Number per Day _____	
10. Emergency Services Route  <input type="checkbox"/> Yes <input type="checkbox"/> No					
<b>Submission Information - This information is used for administrative purposes and is not available on the public website.</b>					
Submitted by _____ Organization _____ Phone _____ Date _____  Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					







**NORFOLK SOUTHERN CORPORATION**  
**NON-ENVIRONMENTAL RIGHT OF ENTRY APPLICATION FORM**

**APPLICANT INFORMATION**      The Application fee of \$1,250 is enclosed (mail-in applications only). Check # \_\_\_\_\_

Legal Name of Applicant (party to agreement) \_\_\_\_\_ Tax ID \_\_\_\_\_

**Mailing Information**

**Billing Information** (if same leave blank)

Street Address \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Name of Contact \_\_\_\_\_

Billing Contact \_\_\_\_\_

Title \_\_\_\_\_

Title \_\_\_\_\_

Phone # (\_\_\_\_\_) \_\_\_\_\_ Fax # (\_\_\_\_\_) \_\_\_\_\_

Phone # (\_\_\_\_\_) \_\_\_\_\_ Fax # (\_\_\_\_\_) \_\_\_\_\_

E-Mail Address \_\_\_\_\_

E-Mail Address \_\_\_\_\_

Applicant is a: (Provide state of formation for Corporation and Partnerships, and name of owner for Sole Proprietorship)

<input type="checkbox"/> Corporation- State _____ <input type="checkbox"/> Limited Partnership- State _____ <input type="checkbox"/> General Partnership- State _____ <input type="checkbox"/> Sole Proprietorship - State _____ Owner _____	<input type="checkbox"/> Non-Profit <input type="checkbox"/> Individual <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Government Entity- State _____ Gov't Dept: _____	<input type="checkbox"/> Contractor Working Solely for Applicant SubContractor: _____  <input type="checkbox"/> Contractor Working Solely for NS NS Dept: _____
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**PROPERTY INFORMATION**

Location of property Street Address (if applicable) \_\_\_\_\_ Railroad Milepost \_\_\_\_\_

Nearest Town \_\_\_\_\_ County \_\_\_\_\_ State \_\_\_\_\_ Latitude/Longitude \_\_\_\_\_ / \_\_\_\_\_

Railroad Line Name \_\_\_\_\_ Division (if known) \_\_\_\_\_

*A sketch of the property you wish to enter is REQUIRED. Provide Lat/Long coordinates if available.*

Time period to occupy From \_\_\_\_/\_\_\_\_/\_\_\_\_ To \_\_\_\_/\_\_\_\_/\_\_\_\_

Work to be performed is within \_\_\_\_\_ Ft of the tracks. (If within 25ft of center of the rail, a flagman is required at your expense.)

**Applicant's intended purpose for this right-of-entry (be specific)** \_\_\_\_\_

Approximate area of property to be occupied (specify square feet or acres) \_\_\_\_\_ SQFT \_\_\_\_\_ AC

Were services to be performed requested by Norfolk Southern Corporation or its subsidiaries? ☐ Yes ☐ No

Requested by whom? \_\_\_\_\_

Are there railroad tracks located on the land? ☐ Yes ☐ No

How will property be accessed? ☐ Public road adjacent ☐ Across Railroad Property not covered by this license

☐ Across Railroad tracks ☐ Other (specify) \_\_\_\_\_

Are you aware of any existing or former agreements covering this property? ☐ Yes ☐ No

If yes, provide licensee's name & company \_\_\_\_\_

Are there any existing improvements (buildings, pavement, fences, billboards, etc.) on the property? ☐ Yes ☐ No

If yes, specify \_\_\_\_\_ Who owns them? \_\_\_\_\_

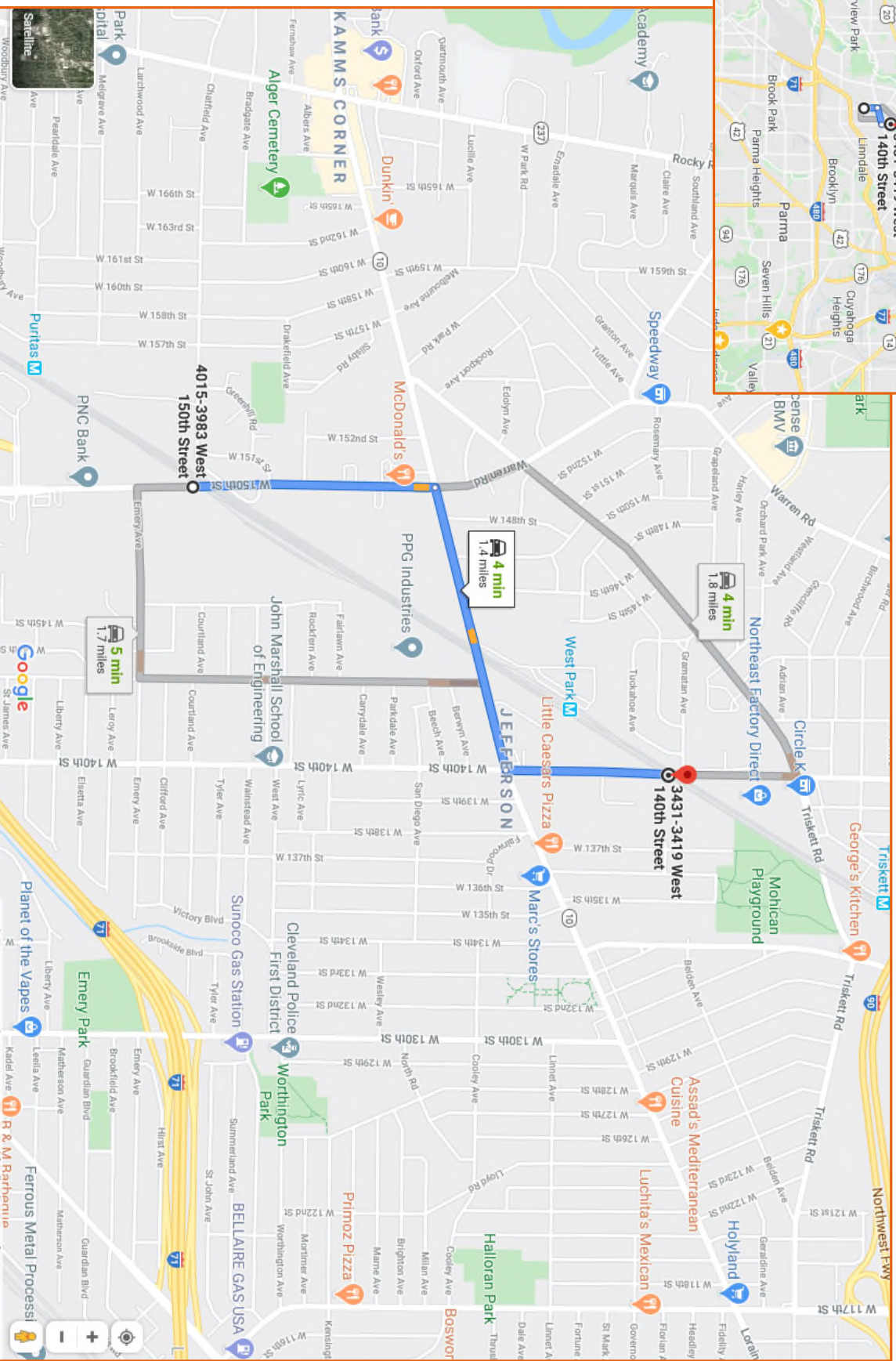
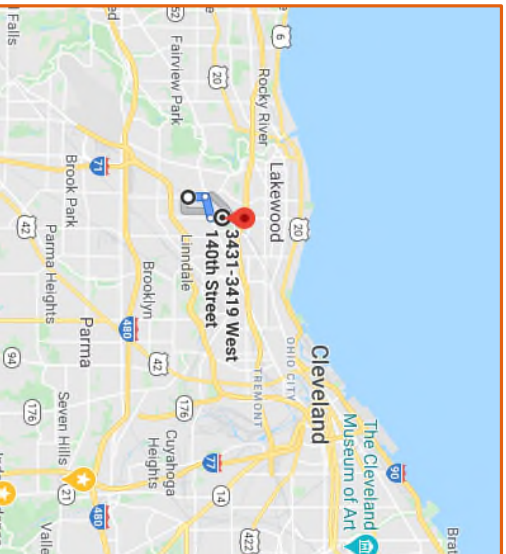
*I/We understand that submission of this application does not authorize occupation of or entry on the property.  
Exact fees and insurance requirements will be forwarded after the application has been reviewed and approved by NS.*

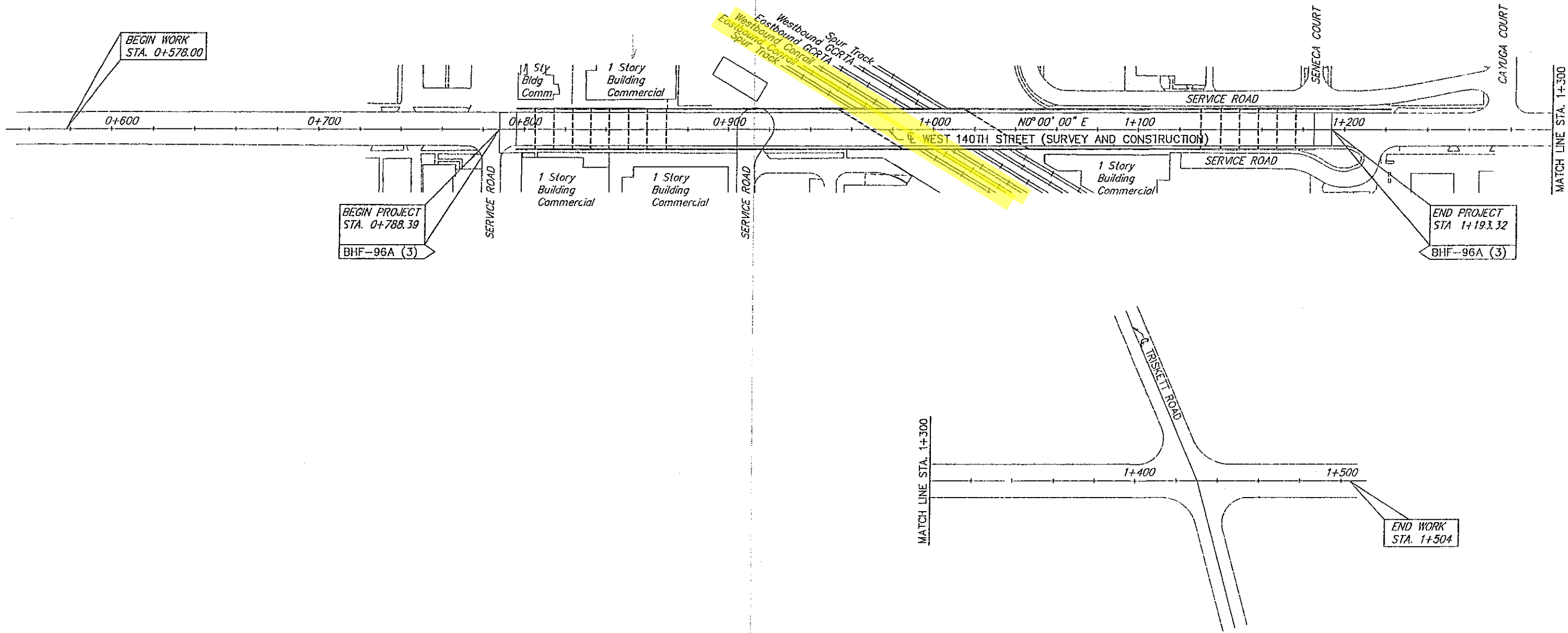
Signed       Ruth B. Brey      

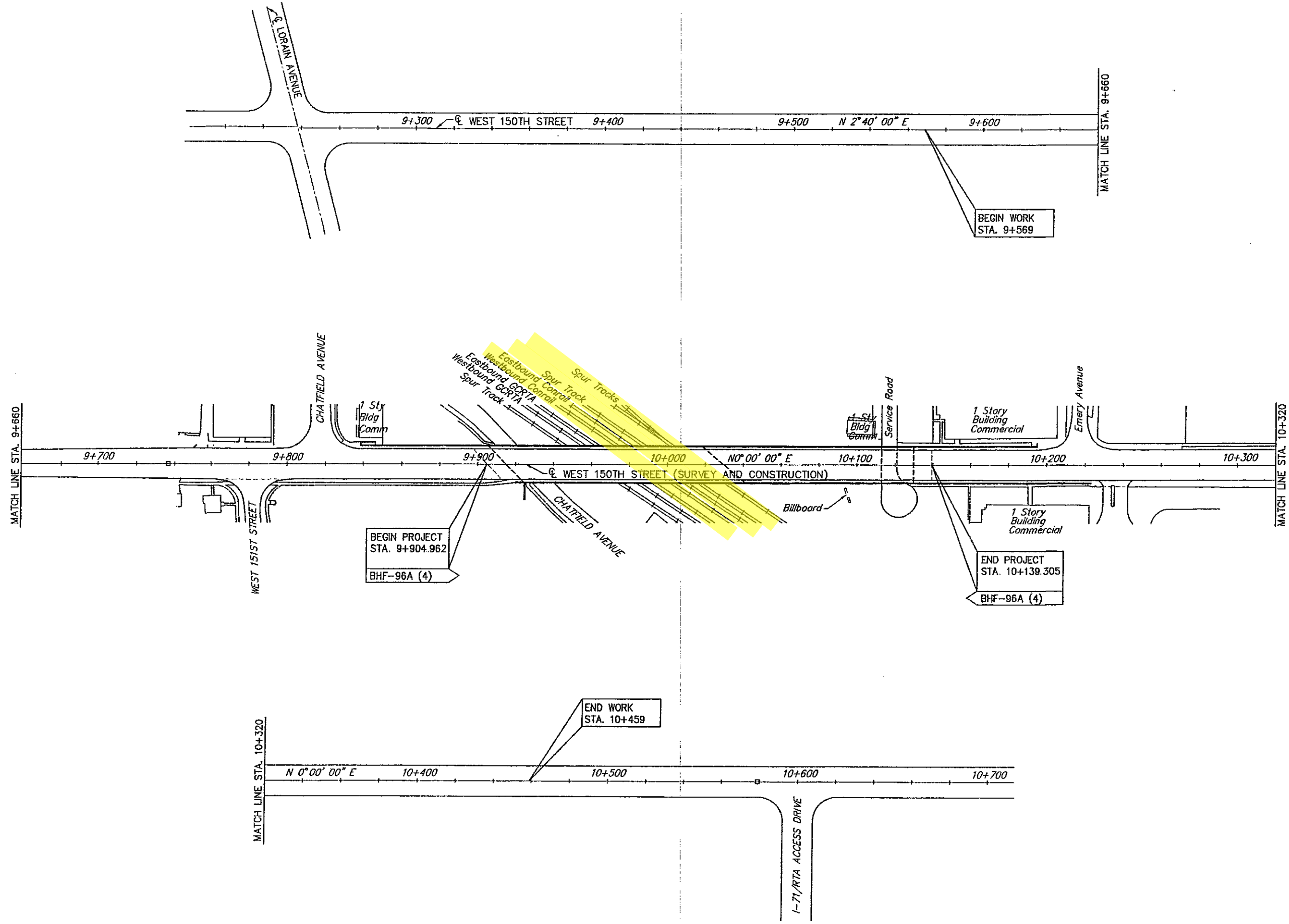
Date \_\_\_\_/\_\_\_\_/\_\_\_\_

## LOCATION MAP

Arcadis – Cuyahoga County – W. 140th & W. 150th Street Bridges over Norfolk Southern











# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
09/17/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b> <b>PHONE (A/C. No. Ext):</b> (866) 283-7122 <b>FAX (A/C. No.):</b> (800) 363-0105 <b>E-MAIL ADDRESS:</b>														
<b>INSURED</b> Norfolk Southern Railway 1200 Peachtree Street NE Box 165 Atlanta GA 30309 USA	<table><tr><td><b>INSURER(S) AFFORDING COVERAGE</b></td><td><b>NAIC #</b></td></tr><tr><td>INSURER A: Indian Harbor Insurance Company</td><td>36940</td></tr><tr><td>INSURER B:</td><td></td></tr><tr><td>INSURER C:</td><td></td></tr><tr><td>INSURER D:</td><td></td></tr><tr><td>INSURER E:</td><td></td></tr><tr><td>INSURER F:</td><td></td></tr></table>	<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>	INSURER A: Indian Harbor Insurance Company	36940	INSURER B:		INSURER C:		INSURER D:		INSURER E:		INSURER F:	
<b>INSURER(S) AFFORDING COVERAGE</b>	<b>NAIC #</b>														
INSURER A: Indian Harbor Insurance Company	36940														
INSURER B:															
INSURER C:															
INSURER D:															
INSURER E:															
INSURER F:															

**COVERAGES** **CERTIFICATE NUMBER:** 570083909722 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
	<b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:						EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below <input type="checkbox"/> Y/N <input type="checkbox"/> N/A						PER STATUTE <input type="checkbox"/> OTH <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT
A	RR Protect Liab			US00102590LI20A RRP - Norfolk Southern Ra	09/16/2020	01/15/2021	Policy Aggregate Each Occurrence \$10,000,000 \$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
Contractor: Arcadis U.S., Inc., 222 S. Main Street, Suite 200, Akron, OH 44308  
Desc of Job: Two bridges to be inspected.  
Location of Job: Cleveland, OH

## CERTIFICATE HOLDER

## CANCELLATION

Norfolk Southern Railway 1200 Peachtree Street NE Box 165 Atlanta GA 30309 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE  <i>Aon Risk Services South Inc.</i>
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# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
09/30/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<table><tr><th>INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A: Hartford Fire Insurance Co.</td><td>19682</td></tr><tr><td>INSURER B: Hartford Casualty Insurance Co</td><td>29424</td></tr><tr><td>INSURER C: Hartford Accident &amp; Indemnity Company</td><td>22357</td></tr><tr><td>INSURER D: Twin City Fire Insurance Company</td><td>29459</td></tr><tr><td>INSURER E:</td><td></td></tr><tr><td>INSURER F:</td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Hartford Fire Insurance Co.	19682	INSURER B: Hartford Casualty Insurance Co	29424	INSURER C: Hartford Accident & Indemnity Company	22357	INSURER D: Twin City Fire Insurance Company	29459	INSURER E:		INSURER F:	
INSURER(S) AFFORDING COVERAGE	NAIC #														
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INSURER E:															
INSURER F:															

**COVERAGES****CERTIFICATE NUMBER:** 570084290551**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			20ECSOL5318 SIR applies per policy terms & conditions	10/01/2020	10/01/2021	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> Property Damage to <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY			20 UEN OL5319	10/01/2020	10/01/2021	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
B	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10,000			20XHUOL5322	10/01/2020	10/01/2021	EACH OCCURRENCE \$1,000,000 AGGREGATE \$1,000,000
C	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			20WNOL5323 AOS 20WPROL5321 WI	10/01/2020	10/01/2021	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000
D							

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Project Number: 30056244 - Cuyahoga County W. 140th & 150th Bridge Inspections. Norfolk Southern Rail Corporation is included as Additional Insured in accordance with the policy provisions of the General Liability policy.

**CERTIFICATE HOLDER****CANCELLATION**

Norfolk Southern Rail Corporation and Its Subsidiaries Three Commercial Place Norfolk VA 23510-2191 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. <b>AUTHORIZED REPRESENTATIVE</b> <i>Aon Risk Services South Inc.</i>
--	---



**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **NOTICE OF CANCELLATION TO CERTIFICATE HOLDER(S)**

This policy is subject to the following additional Conditions:

- A.** If this policy is cancelled by the Company, other than for nonpayment of premium, notice of such cancellation will be provided at least thirty (30) days in advance of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.
- B.** If this policy is cancelled by the Company for nonpayment of premium, or by the insured, notice of such cancellation will be provided within (10) days of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.

If notice is mailed, proof of mailing to the last known mailing address of the certificate holder(s) on file with the agent of record or the Company will be sufficient proof of notice.

Any notification rights provided by this endorsement apply only to active certificate holder(s) who were issued a certificate of insurance applicable to this policy's term.

Failure to provide such notice to the certificate holder(s) will not amend or extend the date the cancellation becomes effective, nor will it negate cancellation of the policy. Failure to send notice shall impose no liability of any kind upon the Company or its agents or representatives.



**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **NOTICE OF CANCELLATION TO CERTIFICATE HOLDER(S)**

This policy is subject to the following additional Conditions:

- A.** If this policy is cancelled by the Company, other than for nonpayment of premium, notice of such cancellation will be provided at least thirty (30) days in advance of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.
- B.** If this policy is cancelled by the Company for nonpayment of premium, or by the insured, notice of such cancellation will be provided within (10) days of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.

If notice is mailed, proof of mailing to the last known mailing address of the certificate holder(s) on file with the agent of record or the Company will be sufficient proof of notice.

Any notification rights provided by this endorsement apply only to active certificate holder(s) who were issued a certificate of insurance applicable to this policy's term.

Failure to provide such notice to the certificate holder(s) will not amend or extend the date the cancellation becomes effective, nor will it negate cancellation of the policy. Failure to send notice shall impose no liability of any kind upon the Company or its agents or representatives.



**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **NOTICE OF CANCELLATION TO CERTIFICATE HOLDER(S)**

This policy is subject to the following additional Conditions:

- A.** If this policy is cancelled by the Company, other than for nonpayment of premium, notice of such cancellation will be provided at least thirty (30) days in advance of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.
- B.** If this policy is cancelled by the Company for nonpayment of premium, or by the insured, notice of such cancellation will be provided within (10) days of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.

If notice is mailed, proof of mailing to the last known mailing address of the certificate holder(s) on file with the agent of record or the Company will be sufficient proof of notice.

Any notification rights provided by this endorsement apply only to active certificate holder(s) who were issued a certificate of insurance applicable to this policy's term.

Failure to provide such notice to the certificate holder(s) will not amend or extend the date the cancellation becomes effective, nor will it negate cancellation of the policy. Failure to send notice shall impose no liability of any kind upon the Company or its agents or representatives.



**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **NOTICE OF CANCELLATION TO CERTIFICATE HOLDER(S)**

**Policy Number:** 20 WN OL5323

**Endorsement Number:**

**Effective Date:** Effective hour is the same as stated on the Information Page of the policy.

**Named Insured and Address:** ARCADIS U.S., INC.

630 PLAZA DR STE 200

LITTLETON

CO

This policy is subject to the following additional Conditions:

- A. If this policy is cancelled by the Company, other than for non-payment of premium, notice of such cancellation will be provided at least thirty (30) days in advance of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.
- B. If this policy is cancelled by the Company for non-payment of premium, or by the insured, notice of such cancellation will be provided within ten (10) days of the cancellation effective date to the certificate holder(s) with mailing addresses on file with the agent of record or the Company.

If notice is mailed, proof of mailing to the last known mailing address of the certificate holder(s) on file with the agent of record or the Company will be sufficient proof of notice.

Any notification rights provided by this endorsement apply only to active certificate holder(s) who were issued a certificate of insurance applicable to this policy's term.

Failure to provide such notice to the certificate holder(s) will not amend or extend the date the cancellation becomes effective, nor will it negate cancellation of the policy. Failure to send notice shall impose no liability of any kind upon the Company or its agents or representatives.

Ms. Kelly Stanton  
Norfolk Southern Corporation  
Engineering Department  
Pittsburgh, PA

Arcadis U.S., Inc.  
222 South Main Street  
Suite 200  
Akron  
Ohio 44308  
Tel 330 434 1995  
Fax 330 374 1095  
www.arcadis.com

Subject:  
Cleveland, Cuyahoga County, OH  
W. 140<sup>th</sup> & W. 150<sup>th</sup> Bridge Inspections  
Over Norfolk Southern Tracks

INFRASTRUCTURE

Date:  
September 9, 2020

Dear Ms. Stanton:

Contact:  
Shelly Kendrick

Arcadis U.S., Inc. has been contracted by the Cuyahoga County Department of Public Works in Ohio to perform an inspection of the two referenced bridges. This letter serves as the scope of work for the portions of the bridges spanning over the Norfolk Southern tracks.

Phone:  
330.515.5699

#### LOCATION

Email:  
shelly.kendrick@arcadis.com

These bridges are located at the coordinates listed below, which appears to be over the Norfolk Southern Cloggsville Line.

Our ref:  
30056244

Road Name	Latitude	Longitude
W. 140 <sup>th</sup> St.	41.459845	-81.790044
W. 150 <sup>th</sup> St.	41.446278	-81.80141

#### WORK, EQUIPMENT AND ACCESS:

Trained bridge inspectors will access the Norfolk Southern property to inspect the bridge piers and overhead steel beams. They will utilize a manlift and ladders to inspect the bridge piers, and a snoop truck on top of the bridge to access the bridge beams. The manlift or any other vehicle will NOT be driven over the NS tracks. Inspectors will walk across (foul) the tracks, carrying ladders, cameras, and clipboards. Vehicular equipment will access the spans as needed from other properties that are not NS properties. There will be no destructive testing of these bridge spans. These bridge inspectors have current certifications through the Norfolk Southern Roadway Worker Training and eRailSafe.



Ms. Kelly Stanton  
Norfolk Southern Corporation  
September 9, 2020

**DISTANCE OF WORK FROM TRACKS:**

Piers will be inspected within 5'-10' of the tracks utilizing ladders and manlift. Beams to be inspected above tracks utilizing snooper truck. Existing beams appear to have a clearance of approximately 21' over NS rails. Again, vehicular equipment will not foul the tracks. Inspectors will walk across the tracks.

**TIME FRAME:**

It is planned to spend 4 – 8 hours at each of these bridges, totaling 1 – 2 days for all work at NS tracks. Preferred time frame is 1 – 2 days within these dates: 9/21/20 – 9/25/20.

If you have any questions, please do not hesitate to contact me at 330.515.5699 or [shelly.kendrick@arcadis.com](mailto:shelly.kendrick@arcadis.com).

Sincerely,

Arcadis U.S., Inc.



Shelly K. Kendrick, P.E.  
Project Coordinator



Robert B. Beasley, P.E.  
Project Manager

Copies:  
File



CITY OF CLEVELAND  
Mayor Frank G. Jackson

**CITY OF CLEVELAND**  
MAYOR'S OFFICE OF CAPITAL PROJECTS

**PERMIT**

*This Permit must be on the job site at all times*

**PERMIT NO: STP2002560**

**EFFECTIVE DATE:** FROM: 09/21/2020 TO: 10/31/2020

**LOCATION:** 3905 W. 150TH ST. (TO 4031 W. 150TH)

**PERMIT HOLDER:** FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

**CUSTOMER NO:**

**PURPOSE:** OBSTRUCTION

**SPECIAL INSTRUCTIONS:**

OCCUPYING; RIGHT LANES (NB & SB), SIDEWALK

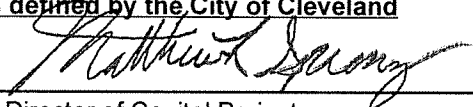
HOURS: 9:00 AM TO 3:30 PM. Inspection required. Contact Brett Kuharik @ 216-857-1393

MOT: SIGNS TO DIRECT PEDESTRIANS TO NEAREST CROSSWALK.

City of Cleveland  
Mayor's Office of Capital Projects  
**VALID  
PERMIT**

I agree to the stipulations of this permit as defined by the City of Cleveland

\_\_\_\_\_  
Signature of Permittee

  
\_\_\_\_\_  
Director of Capital Projects

**Date Issued: 9/18/2020**



**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

DEPARTMENT OF FINANCE  
DIVISION OF ASSESSMENTS AND LICENSES  
BILLING OFFICE 216-664-2174  
601 LAKESIDE AVE - Room 127  
CLEVELAND, OHIO 44114-1015

# INVOICE

**Customer No.:**

ARCADIS U.S., INC.  
FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

**Work Order No:** N/A

Invoice No.	STP2002560
Invoice Date:	9/18/2020
Terms:	Due Immediately
Due Date:	10/18/2020

Date of Service	Description	Amount
9/14/2020	Inspection	\$100.00
9/14/2020	Obstruction	\$20.00
9/14/2020	Street Opening 30 Day	\$205.00
TOTAL:		\$325.00

Should you fail to make payment in full as specified, the city will take action pursuant to  
CITY ORDINANCE

**\*\*PLEASE RETURN BOTTOM PORTION OF INVOICE WITH PAYMENT\*\***

**Customer No.:**

ARCADIS U.S., INC.  
FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

Invoice No.	STP2002560
Invoice Date:	9/18/2020
Due Date:	10/18/2020
Amount Due:	\$325.00
Amount Enclosed:	\$

**MAKE CHECK PAYABLE TO THE CITY OF CLEVELAND - INCLUDE INVOICE NUMBER ON CHECK**

**Remit To:**

City of Cleveland  
601 Lakeside Ave - Room 127  
Cleveland, OH 44114



# STREET OPENING, SIDEWALK AND/OR OBSTRUCTION REQUEST FOR EXTENSION OF PERMIT

**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

DEPARTMENT OF FINANCE  
DIVISION OF ASSESSMENTS AND LICENSES  
601 Lakeside Avenue, Room 122, Cleveland, OH 44114-1015  
216.664.2174 / [DALPermits@city.cleveland.oh.us](mailto:DALPermits@city.cleveland.oh.us)

BE ADVISED THAT FAXED APPLICATIONS AND/OR DOCUMENTS ARE NOT ACCEPTED.  
CURRENT PERMIT MUST BE ATTACHED.  
PLEASE PRINT OR TYPE APPLICATION.

## SECTION A: APPLICANT INFORMATION

Date:	11/3/2020	Current Permit STP number:	STP 2002560
Name of Applicant:	FRANK GETZ		
Contractor/Company Name:	ARCADIS-US INC.		
Email:	frank.getz@arcadis.com	Phone:	330-515-5677

## SECTION B: JOB SITE INFORMATION

DESCRIPTIVE LOCATION OF JOB SITE:	W. 150 <sup>TH</sup> Street Bridge over Norfolk Southern Railroad and GCRTA.
	3905 W. 150 <sup>TH</sup> St. to 4031 W. 150 <sup>TH</sup> St.

Have the project limits and scope of work changed from previous application?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, provide updated information.		

Permit Delivery Type:	<input type="checkbox"/> Counter Pick-up
Automatic Payment Authorization must be on file.	<input checked="" type="checkbox"/> Email

Permit Extension Length Requested:	<input type="checkbox"/> 15 Day [or less]	<input type="checkbox"/> 30 Day [more than 15 or less than 30 days]
	<input checked="" type="checkbox"/> Other [more than 30 days]	thru 12/31/2020


APPLICANT SIGNATURE

## OFFICE USE ONLY

COMMENTS AND/OR PROVISIONS THAT MUST BE MET TO ACQUIRE A PERMIT.

EXTENSION STP NUMBER:		
APPROVAL OF DEPARTMENTS LISTED BELOW IS NECESSARY.		
	SIGNATURE	DATE
Engineering and Construction		
Mayor's Office of Capital Projects		
Assessments and Licenses		



CITY OF CLEVELAND  
Mayor Frank G. Jackson

**CITY OF CLEVELAND**  
MAYOR'S OFFICE OF CAPITAL PROJECTS

**PERMIT**

*This Permit must be on the job site at all times*

**PERMIT NO: STP2002560**

**EFFECTIVE DATE:** FROM: 09/21/2020 TO: 10/31/2020

**LOCATION:** 3905 W. 150TH ST. (TO 4031 W. 150TH)

**PERMIT HOLDER:** FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

**CUSTOMER NO:**

**PURPOSE:** OBSTRUCTION

**SPECIAL INSTRUCTIONS:**

OCCUPYING; RIGHT LANES (NB & SB), SIDEWALK  
HOURS: 9:00 AM TO 3:30 PM. Inspection required. Contact Brett Kuharik @ 216-857-1393  
MOT: SIGNS TO DIRECT PEDESTRIANS TO NEAREST CROSSWALK.

City of Cleveland  
Mayor's Office of Capital Projects

**VALID  
PERMIT**

I agree to the stipulations of this permit as defined by the City of Cleveland

\_\_\_\_\_  
Signature of Permittee

  
\_\_\_\_\_  
Director of Capital Projects

**Date Issued: 9/18/2020**



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
10/01/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b>	
	<b>PHONE (A/C. No. Ext):</b> (866) 283-7122	<b>FAX (A/C. No.):</b> 800-363-0105
<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<b>E-MAIL ADDRESS:</b>	
	<b>INSURER(S) AFFORDING COVERAGE</b>	
	<b>NAIC #</b>	
	INSURER A: Hartford Fire Insurance Co. 19682	
	INSURER B:	
	INSURER C:	
INSURER D:		
INSURER E:		
INSURER F:		

**COVERAGES** **CERTIFICATE NUMBER:** 570084315972 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			20ECSOL5318 SIR applies per policy terms & conditions	10/01/2020	10/01/2021	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	<input type="checkbox"/> A <input checked="" type="checkbox"/> N/A				PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
RE: Project Number: 30056244, Cuyahoga County W. 140th & 150th Bridge Inspections.

**CERTIFICATE HOLDER****CANCELLATION**

The City of Cleveland 601 Lakeside Ave. Cleveland OH 44114 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  <i>Aon Risk Services South Inc.</i>

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Holder Identifier :

Certificate No : 570084315972





CITY OF CLEVELAND  
Mayor Frank G. Jackson

**CITY OF CLEVELAND**  
MAYOR'S OFFICE OF CAPITAL PROJECTS

**PERMIT**

*This Permit must be on the job site at all times*

**PERMIT NO: STP2002561**

**EFFECTIVE DATE:** FROM: 09/21/2020 TO: 10/31/2020

**LOCATION:** 15000 CHATFIELD AVE. (TO 15010 CHATFIELD)

**PERMIT HOLDER:** FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

**CUSTOMER NO:**

**PURPOSE:** OBSTRUCTION

**SPECIAL INSTRUCTIONS:**

OCCUPYING; RIGHT LANES (NB & SB), SIDEWALK

HOURS: 9:00 AM TO 3:30 PM

MOT: SIGNS TO DIRECT PEDESTRIANS TO NEAREST CROSSWALK.

City of Cleveland  
Mayor's Office of Capital Projects

**VALID  
PERMIT**

I agree to the stipulations of this permit as defined by the City of Cleveland

\_\_\_\_\_  
Signature of Permittee

  
\_\_\_\_\_  
Director of Capital Projects

**Date Issued: 9/18/2020**



DEPARTMENT OF FINANCE  
DIVISION OF ASSESSMENTS AND LICENSES  
BILLING OFFICE 216-664-2174  
601 LAKESIDE AVE - Room 127  
CLEVELAND, OHIO 44114-1015

# INVOICE

ARCADIS U.S., INC.  
FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

Invoice No.	STP2002561
Invoice Date:	9/18/2020
Terms:	Due Immediately
Due Date:	10/18/2020

**Work Order No: N/A**

Date of Service	Description	Amount
9/11/2020	Obstruction	\$20.00
	<b>TOTAL:</b>	<b>\$20.00</b>

**Should you fail to make payment in full as specified, the city will take action pursuant to  
CITY ORDINANCE**

**\*\*PLEASE RETURN BOTTOM PORTION OF INVOICE WITH PAYMENT\*\***

ARCADIS U.S., INC.  
FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308

Invoice No.	STP2002561
Invoice Date:	9/18/2020
Due Date:	10/18/2020
Amount Due:	\$20.00
Amount Enclosed:	\$

**MAKE CHECK PAYABLE TO THE CITY OF CLEVELAND - INCLUDE INVOICE NUMBER ON CHECK**

**Remit To:**  
City of Cleveland  
601 Lakeside Ave - Room 127  
Cleveland, OH 44114



**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

**STREET OPENING, SIDEWALK AND/OR OBSTRUCTION  
REQUEST FOR EXTENSION OF PERMIT**

DEPARTMENT OF FINANCE  
DIVISION OF ASSESSMENTS AND LICENSES  
601 Lakeside Avenue, Room 122, Cleveland, OH 44114-1015  
216.664.2174 / [DALPermits@city.cleveland.oh.us](mailto:DALPermits@city.cleveland.oh.us)

BE ADVISED THAT FAXED APPLICATIONS AND/OR DOCUMENTS ARE NOT ACCEPTED.  
**CURRENT PERMIT MUST BE ATTACHED.**  
PLEASE PRINT OR TYPE APPLICATION.

**SECTION A: APPLICANT INFORMATION**

Date:	11/3/2020	Current Permit STP number:	STP 2002561
Name of Applicant:	FRANK GETZ		
Contractor/Company Name:	ARCADIS-US INC		
Email:	frank.getz@arcadis.com	Phone:	330-515-5677

**SECTION B: JOB SITE INFORMATION**

DESCRIPTIVE LOCATION OF JOB SITE:	Chatfield Ave directly under W. 150TH St. Bridge
	15000 Chatfield Ave to 15010 Chatfield Ave

Have the project limits and scope of work changed from previous application?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If yes, provide updated information.		

Permit Delivery Type:	<input type="checkbox"/> Counter Pick-up
Automatic Payment Authorization must be on file.	<input checked="" type="checkbox"/> Email

Permit Extension Length Requested:	<input type="checkbox"/> 15 Day [or less]	<input type="checkbox"/> 30 Day [more than 15 or less than 30 days]
	<input checked="" type="checkbox"/> Other [more than 30 days]	thru 12/31/2020

  
APPLICANT SIGNATURE

**OFFICE USE ONLY**

COMMENTS AND/OR PROVISIONS THAT MUST BE MET TO ACQUIRE A PERMIT.

EXTENSION STP NUMBER:

APPROVAL OF DEPARTMENTS LISTED BELOW IS NECESSARY.

	SIGNATURE	DATE
Engineering and Construction		
Mayor's Office of Capital Projects		
Assessments and Licenses		



**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

**CITY OF CLEVELAND**  
MAYOR'S OFFICE OF CAPITAL PROJECTS

**PERMIT**

*This Permit must be on the job site at all times*

**PERMIT NO: STP2002561**

**EFFECTIVE DATE:** FROM: 09/21/2020 TO: 10/31/2020  
**LOCATION:** 15000 CHATFIELD AVE. (TO 15010 CHATFIELD)  
**PERMIT HOLDER:** FRANK GETZ  
222 S. MAIN ST., STE. 300  
AKRON, OH 44308  
**CUSTOMER NO:**  
**PURPOSE:** OBSTRUCTION

**SPECIAL INSTRUCTIONS:**

OCCUPYING; RIGHT LANES (NB & SB), SIDEWALK  
HOURS: 9:00 AM TO 3:30 PM  
MOT: SIGNS TO DIRECT PEDESTRIANS TO NEAREST CROSSWALK.

City of Cleveland  
Mayor's Office of Capital Projects

**VALID  
PERMIT**

I agree to the stipulations of this permit as defined by the City of Cleveland

\_\_\_\_\_  
Signature of Permittee

  
\_\_\_\_\_  
Director of Capital Projects

**Date Issued: 9/18/2020**



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
10/01/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must have **ADDITIONAL INSURED** provisions or be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

**PRODUCER**  
Aon Risk Services South, Inc.  
Franklin TN Office  
501 Corporate Centre Drive  
Suite 300  
Franklin TN 37067 USA

**CONTACT NAME:**  
**PHONE (A/C. No. Ext):** (866) 283-7122 **FAX (A/C. No.):** 800-363-0105  
**E-MAIL ADDRESS:**

**INSURER(S) AFFORDING COVERAGE**NAIC #  
19682

**INSURED**  
Arcadis U.S., Inc.  
630 Plaza Drive  
Suite 200  
Highlands Ranch CO 80129 USA

**INSURER A:** Hartford Fire Insurance Co.  
**INSURER B:**  
**INSURER C:**  
**INSURER D:**  
**INSURER E:**  
**INSURER F:**

**COVERAGES****CERTIFICATE NUMBER:** 570084315972**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDITIONAL INSURED	SUBROGATION	WARRANTY	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC OTHER:				20EC5015318 SIR applies per policy terms & conditions	10/01/2020	10/01/2021	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY							COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION							EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			<input type="checkbox"/> Y / <input checked="" type="checkbox"/> N / A				PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

RE: Project Number: 30056244, Cuyahoga County W. 140th &amp; 150th Bridge Inspections.

**CERTIFICATE HOLDER****CANCELLATION**

The City of Cleveland  
601 Lakeside Ave.  
Cleveland OH 44114 USA

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

*Aon Risk Services South Inc.*

Holder Identifier :

Certificate No : 570084315972

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# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

**CITY OF CLEVELAND**  
**DEPARTMENT OF FINANCE**  
Division of Assessments & Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

Phone: 216.664.2174

Hours of Operation:  
8am to 5pm Weekdays

DALPermits@city.cleveland.oh.us

**BE ADVISED THAT FAXED APPLICATIONS AND/OR DOCUMENTS ARE NOT ACCEPTED.**  
**PLEASE PRINT OR TYPE APPLICATION**

## SECTION A: APPLICANT INFORMATION

Date:	STP number: (internally assigned)		
Name of Applicant:			
<input type="checkbox"/> Company	<input type="checkbox"/> Contractor	<input type="checkbox"/> Owner	<input type="checkbox"/> Other

Name and Address of Company/Owner		Name and Address of Contractor	
Company		Contractor	
Address		Address	
City, ST, Zip		City, ST, Zip	
Phone		Phone	
Email		Email	
Contact		Contact	

Business ID, Tax ID or Social Security number of Contractor (If applicable):	
Contractor Registration number (If applicable):	

Is Contractor's current insurance policy on file?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is Contractor's bond on file?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Note: If No is selected, proof of insurance and bond must be submitted at the time of application and prior to permit approval.

Permit Delivery Method:	<input type="checkbox"/>	Counter Pick-up
Automatic Payment Authorization must be on file.	<input type="checkbox"/>	Email

Permit Time-Frame:	<input type="checkbox"/>	15 day [or less]	<input type="checkbox"/>	30 day [more than 15 or less than 30 days]
	<input type="checkbox"/>	Other [more than 30 days]		





# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

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## SECTION B: JOB SITE INFORMATION

WORK ORDER NUMBER

DESCRIPTIVE LOCATION OF JOB SITE:

JOB SITE START LOCATION	
Address	
City, ST, Zip	

JOB SITE END LOCATION	
Address	
City, ST, Zip	

<input type="checkbox"/>	Pavement area curb-to-curb
<input type="checkbox"/>	Above ground work

<input type="checkbox"/>	Sidewalk area including tree lawn
<input type="checkbox"/>	Below ground work

Restoration work:	<input type="checkbox"/>	Company/contractor will recap/reseal asphalt	Patch 4" dia. bridge deck cores
	<input type="checkbox"/>	City will recap/reseal asphalt for an additional fee	
	<input type="checkbox"/>	Not Applicable [only applies to non-disruption of asphalt]	

Proposed dates of work:	Start		Finish	
Proposed hours of work:	Start		Finish	

**ALL APPLICATIONS MUST BE SUBMITTED TO THE DIVISION OF ASSESSMENTS & LICENSES WITH PROPOSED START AND FINISH DATES, AS WELL AS PROPOSED HOURS OF WORK. PLEASE NOTE APPLICATION MUST BE SUBMITTED AT A MINIMUM OF 12 TO 14 BUSINESS DAYS PRIOR TO THE PROPOSED START DATE OF WORK. APPLICATIONS SUBMITTED WITHOUT A PROPOSED START AND FINISH DATE, INCLUDING TBD; OR PROPOSED HOURS OF WORK; OR LESS THAN THE 12 TO 14 DAY MINIMUM WILL NOT BE ACCEPTED.**



# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

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## SECTION C: DESCRIPTION OF WORK

1. Description and type of work to be performed (check all that apply):

<input type="checkbox"/>	Utility installation			
<input type="checkbox"/>	<input type="checkbox"/>	Above ground work		
<input type="checkbox"/>	<input type="checkbox"/>	Below ground work (complete Section C-2)		
<input type="checkbox"/>	Sidewalks			
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>	replacement
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	restoration
<input type="checkbox"/>	Pavement			
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>	replacement
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	restoration
<input type="checkbox"/>	Curb	<input type="checkbox"/>	removal	linear feet
<input type="checkbox"/>	<input type="checkbox"/>	replacement	<input type="checkbox"/>	restoration
<input type="checkbox"/>	Driveway aprons			
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>	replacement
<input type="checkbox"/>	Tree lawn			
<input type="checkbox"/>	Obstructions, including but not limited to traffic lanes and/or sidewalks			
<input type="checkbox"/>	Parking meter heads	<input type="checkbox"/>	single	<input type="checkbox"/>
<input type="checkbox"/>		<input type="checkbox"/>	double	
<input type="checkbox"/>		<input type="checkbox"/>	number	<input type="checkbox"/>
<input type="checkbox"/>	Other (Explain)	Obtain 12 - 4" dia. concrete bridge deck cores from the existing county owned bridge. All cores will be patched prior to opening lane to traffic.		

2. If underground, check all that apply:

<input type="checkbox"/>	Water Main			
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>	Hydrant
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Valve
<input type="checkbox"/>	Sewer Main			
<input type="checkbox"/>	<input type="checkbox"/>	Lateral	<input type="checkbox"/>	Catch Basin
<input type="checkbox"/>	Gas Main			
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>	Regulator
<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	Vault
<input type="checkbox"/>	Electrical Conduit			
<input type="checkbox"/>	<input type="checkbox"/>	Duct	<input type="checkbox"/>	Vault
<input type="checkbox"/>	<input type="checkbox"/>	Telephone	# of conduits	
<input type="checkbox"/>	<input type="checkbox"/>	Cable Television Conduit	# of conduits	
<input type="checkbox"/>	<input type="checkbox"/>	Telecommunications	# of conduits	
<input type="checkbox"/>	Steam			
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>	Chilled Water Main
<input type="checkbox"/>	Other (Explain)			



**STREET OPENING AND/OR  
SIDEWALK OBSTRUCTION PERMIT  
APPLICATION**

**CITY OF CLEVELAND  
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Phone: 216.664.2174

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If this is a new facility or relocation/rehabilitation of an existing facility please attach plans and specifications for the construction.

**SECTION D: OBSTRUCTION**

Will you obstruct the street?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, which lanes?		Size of opening		
Will you obstruct the sidewalk?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Size of opening				

**SECTION E: MAINTENANCE OF TRAFFIC AND MAINTENANCE OF TRAFFIC REGULATIONS**

<p>Traffic shall be maintained and directed by the Commissioner of Traffic Engineering. MOT <b>MUST BE PROVIDED</b> with this application. Please complete and submit the <b>WORK LOCATION AND PROPOSED OBSTRUCTION SKETCH</b> form on Page 7 of this application indicating your work location and which areas will be obstructed. All MOT devices shall be installed according to Part VI, "Work Zones" of the Manual on Uniform Traffic Control Devices (MUTCD – Millennium Edition). Federal Highway Administration website: <a href="http://www.mutcd.fhwa.dot.gov">www.mutcd.fhwa.dot.gov</a></p>
<p>1. The MOT plan shall include the following information:</p> <ul style="list-style-type: none"><li>a. All existing pavement markings</li><li>b. Curb-to-curb width of all affected streets</li><li>c. Distances from work zone to nearest intersections</li><li>d. Lateral distance from edge of work zone to curb line</li></ul>
<p>2. Work that will back up the flow of traffic shall not be performed between the following hours:</p> <ul style="list-style-type: none"><li>a. Monday through Friday, inclusive, 7:00 am to 9:00 am</li><li>b. Monday through Friday, inclusive, 3:30 pm to 6:00 pm</li></ul>
<p>3. The contractor shall furnish competent flagmen (off-duty police officers may be used) when needed to assist the flow of traffic and for the safe maneuvering of equipment and trucks.</p>
<p>4. Pedestrian travel will be accommodated across any sidewalk work area. In the event pedestrian travel is blocked, proper signage will be installed by the contractor that will indicate the closure and direct pedestrians to cross at the nearest signalized intersection (unless directed otherwise by Traffic Engineering). Pedestrian walkways may be necessary as dictated by the Division of Traffic Engineering.</p>
<p>5. All trenches and cavities shall be plated during non-working hours.</p>



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Describe your plans for maintaining pedestrian traffic.

Describe your plans for maintaining automobile traffic.

**APPLICANT SIGNATURE**



**STREET OPENING AND/OR  
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APPLICATION**

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**OFFICE USE ONLY**

COMMENTS AND/OR PROVISIONS THAT MUST BE MET TO ACQUIRE A PERMIT.

**TYPES OF PERMITS REQUIRED.**

☐ Street Opening (includes curb cut, street opening, and/or sidewalk area)

☐ Moratorium Street (special restoration requirements)

☐ Obstruction

☐ Sidewalk

☐ Pre-pour inspection required

EXCEPT AS NOTED, APPROVAL OF ALL DEPARTMENTS LISTED BELOW IS NECESSARY.

		SIGNATURE	DATE
<input type="checkbox"/>	Engineering and Construction		
<input type="checkbox"/>	Engineering and Construction Inspection Section		
<input type="checkbox"/>	Bureau of Sidewalks		
<input type="checkbox"/>	Traffic Engineering		
<input type="checkbox"/>	Mayor's Office of Capital Projects		
<input type="checkbox"/>	Assessments and Licenses		
<input type="checkbox"/>	Police Traffic		
<input type="checkbox"/>	Water Engineering (CWD)		
<input type="checkbox"/>	Sewer Engineering (WPC)		
<input type="checkbox"/>	Electrical Engineering (CPP)		

NOTE: CHECKED BOX REQUIRES SIGNATURE.



# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

CITY OF CLEVELAND  
DEPARTMENT OF FINANCE  
Division of Assessments & Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

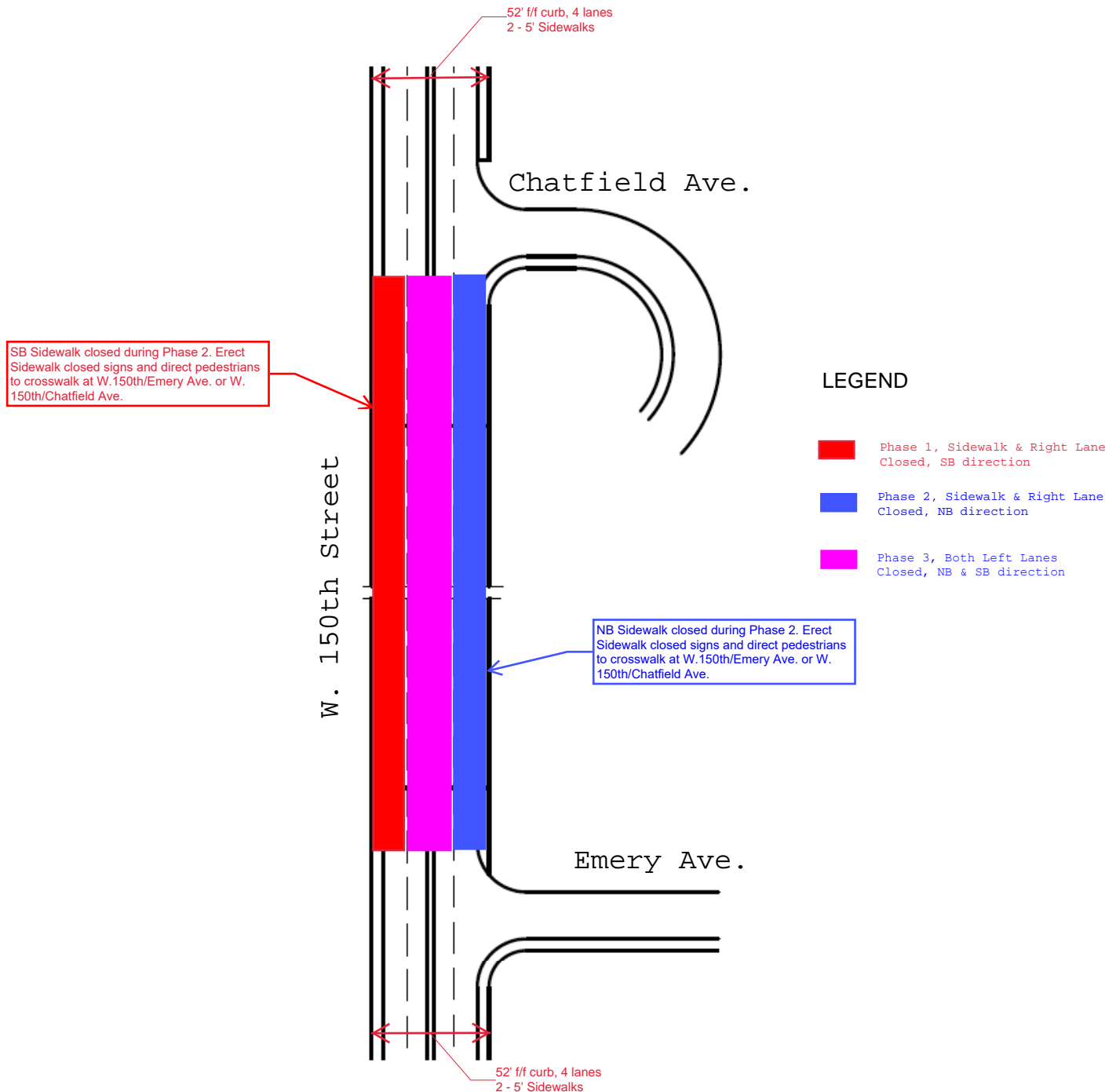
Phone: 216.664.2174

Hours of Operation:  
8am to 5pm Weekdays

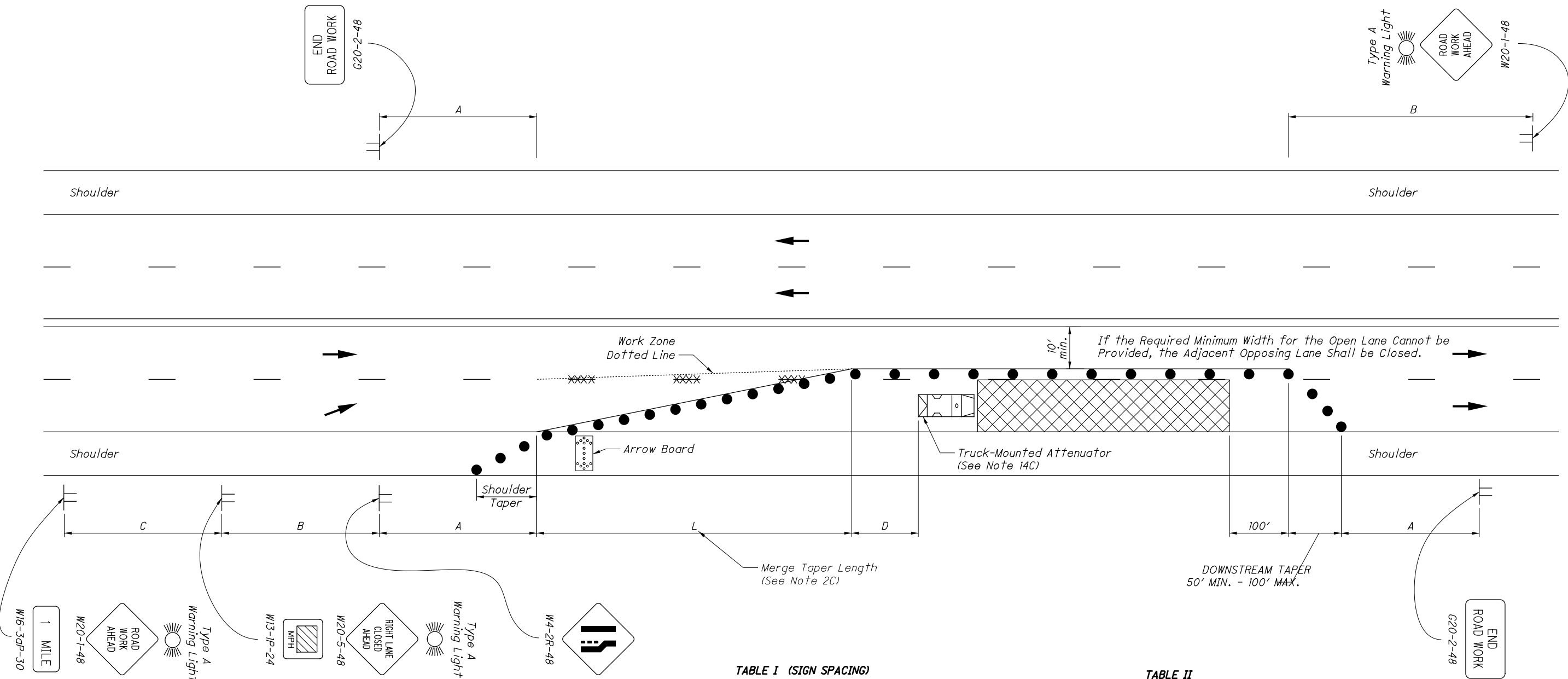
DALPermits@city.cleveland.oh.us



## WORK LOCATION AND PROPOSED OBSTRUCTION SKETCH







**LEGEND**

WORK AREA

DRUMS/CONES

REMOVE EXISTING MARKINGS

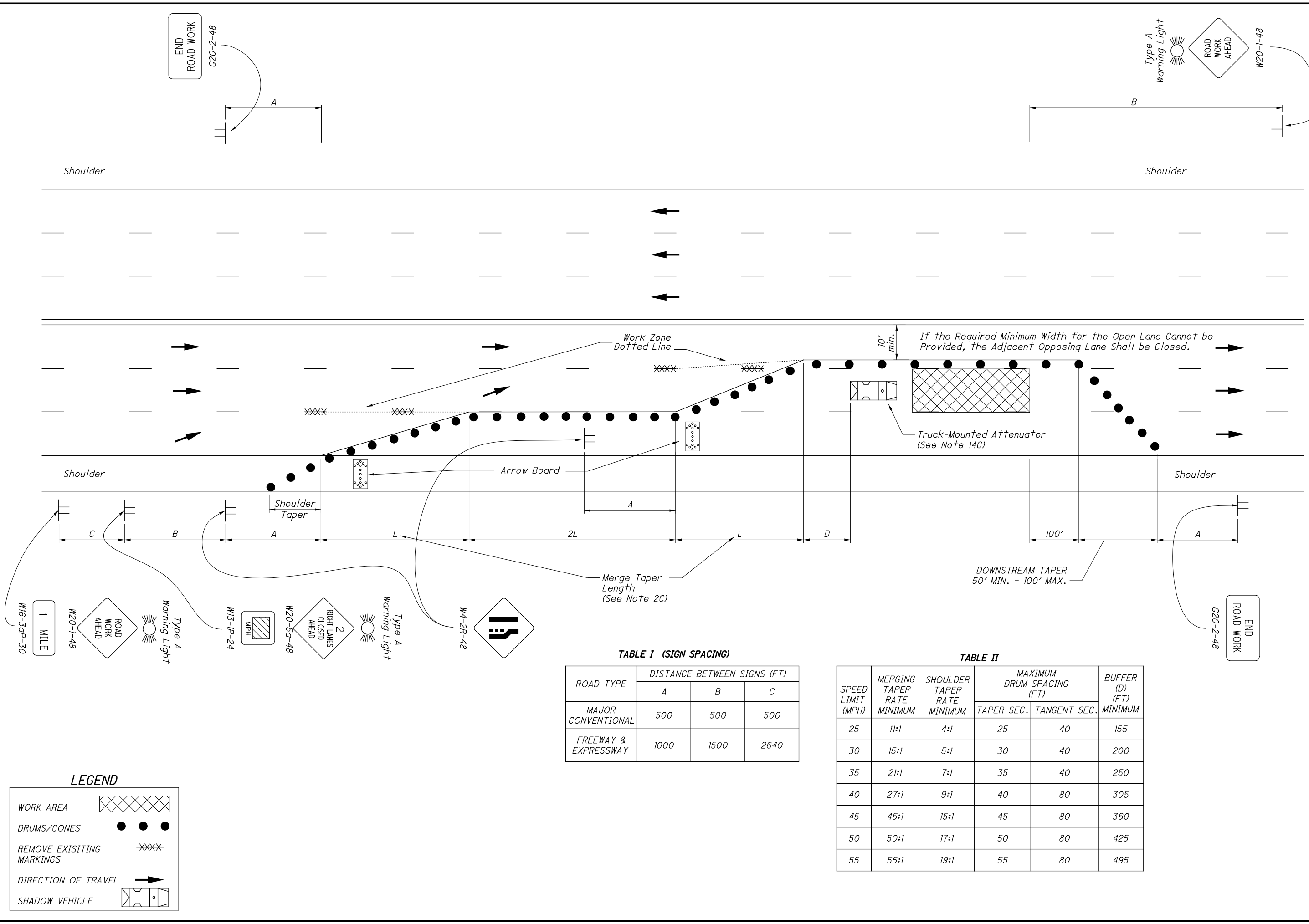
DIRECTION OF TRAVEL

SHADOW VEHICLE

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
MAJOR CONVENTIONAL	500	500	500
FREEWAY & EXPRESSWAY	1000	1500	2640

SPEED LIMIT (MPH)	MERGING TAPER RATE MINIMUM	SHOULDER TAPER RATE MINIMUM	MAXIMUM DRUM SPACING (FT)		BUFFER (D) (FT) MINIMUM
			TAPER SEC.	TANGENT SEC.	
25	11:1	4:1	25	40	155
30	15:1	5:1	30	40	200
35	21:1	7:1	35	40	250
40	27:1	9:1	40	80	305
45	45:1	15:1	45	80	360
50	50:1	17:1	50	80	425
55	55:1	19:1	55	80	495

THIS DRAWING REPLACES MT-95.31 DATED 01-20-2017.



NOTES:

DESIGN SPEED

1. The design speed used for taper rates should typically be the permanent legal speed. However, on construction projects for which the speed limit is reduced, the reduced speed may be used in determining the taper rate when the taper is not the first active construction area within the project.

TAPERS

- 2A. The minimum acceptable length for the merge taper shall be determined by multiplying the width of offset by the merge taper rate. The merge taper rate is provided in Table II.
- 2B. The minimum acceptable length for the shoulder taper shall be determined by multiplying the width of the shoulder by the shoulder taper rate. The shoulder taper rate is provided in Table II.
- 2C. The tangent Section between the two tapers should be two times the longer of the two merge tapers.

SIGN SPACING

- 3A. The work zone sign spacings shown in Table I are minimums. Maximum spacing should not be greater than 1.5 times the distances shown in Table I.
- 3B. Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds 50 mph or greater.

ADJUSTMENTS FOR SIGHT DISTANCE

4. The location of the merging taper and the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.

BASIC SIGNING

- 5A. ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.
- 5B. END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. It is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.
- 5C. Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any W20-1 or G20-2 signs which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.

SIGNING DETAILS

- 6A. The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.
- 6B. When the approach speed limit is 40 mph or less, 36" warning signs may be used.
- 6C. The distance plaque W16-3aP (or W16-2aP if the distance shown is in feet) shall indicate the distance to the beginning of the merging taper. Distances less than 1 mile may be expressed in feet. The plaque may be omitted if Extra Advance Sign Groups are not used.
- 6D. Provide signing on the inactive side of the highway, as shown, when specified in the plans.

EXTRA ADVANCE WARNING SIGNING

7. Extra Advance Warning Sign Groups consisting of ROAD WORK AHEAD (W20-1), LANE CLOSED AHEAD (W20-5), LANES CLOSED AHEAD (W20-5a), and WATCH FOR STOPPED TRAFFIC (W3-H4b) signs plus Distance plaques may be specified in the plans or may be required to be erected, as determined by the Engineer (See Standard Construction Drawing (SCD) MT-95.50).

PAVEMENT MARKINGS / RPMs

- 8A. If the construction operation requires a lane closure for more than 1 day, the existing conflicting reflectors shall be removed from the raised pavement markers (RPMs).
- 8B. Additionally, if a lane closure of greater than 3 days is required, the following shall be performed:
- a) The appropriate color work zone edge lines shall be applied along the taper and tangent sections.
- b) The existing conflicting pavement markings shall be removed or covered per CMS 614.11G.
- c) Work zone dotted lines, 3' in length separated by 9' gaps, shall be provided to identify the merge.
- 8C. Work zone pavement markings which would conflict with final traffic lanes shall be removable tape (CMS 740.06, Type I) unless the area will be resurfaced prior to project completion.
- 8D. After completion of the work, pavement markings other than CMS 740.06, Type I shall be removed in accordance with CMS 614.11 I. The original markings and raised pavement marker reflectors shall be restored at no additional cost unless separately itemized in the plans.

(RESERVED FOR FUTURE USE)

- 9A. (intentionally blank)

ARROW BOARD

10. The arrow board shall be chosen from the ODOT approved list and follow the guidelines in Supplemental Specification 821.

FLASHING WARNING LIGHTS

11. Type A flashing warning lights shown on the ROAD WORK AHEAD (W20-1) signs and on the LANE CLOSED AHEAD (W20-5) signs are required whenever a night lane closure is necessary.

INTERSECTION / DRIVEWAY ACCESS

12. Within the length of the closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:
- a) Place across the closed lane, either 3 drums (cones) or barricades, and/or
- b) Provide an additional flagger at every public street intersection and major driveway.

Drums (cones) placed across the closed lane shall be located 25' beyond the projected pavement edges of the driveway or cross highway, as shown in SCD MT-97.11. For barricades, see SCD MT-101.60.

Existing STOP signs shall be relocated as necessary to assure proper location for the traffic conditions.

The method of control shall be subject to the approval of the Engineer.

DRUMS / CONES

- 13A. The maximum drum spacing along tapers and along tangent sections shall be as shown in Table II. A minimum of 5 drums shall be used to close the upstream shoulder. The downstream taper drum spacing shall be approximately 20'.
- 13B. Cones may be substituted for drums as follows:
- a) Use of cones is permissible for either daytime operation or for nighttime operation, but shall not be used continuously, day and night. Upon completion of work within the work period, the cones shall be removed. They may again be placed on the highway in order to resume work in the following such work period.
- b) Cones used for daytime traffic control shall have a minimum height of 28".
- c) Cones used for nighttime traffic control shall have a minimum height of 42".
- d) Use of cones at night shall be prohibited along tapers.
- e) Cone spacing at night shall be at a maximum of 40'.
- f) Where cones are substituted for drums along tangents, intermixing of channelizing devices within the same run will not be permitted. Either cones shall be used for the entire length of the tangent section, or drums shall be used for the entire length.
- 13C. Provisions shall be made to stabilize the cones and drums to prevent them from blowing over.
- 13D. All drums and cones should have a minimum offset from the edge of the traveled lanes of 1.5 feet.

SHADOW VEHICLE

- 14A. The shadow vehicle shall be in place and unoccupied whenever workers are in the work area. This vehicle shall be removed from the pavement whenever workers are not in the work area.
- 14B. The shadow vehicle shall be equipped with a high-intensity yellow rotating, flashing, oscillating, or strobe light(s).
- 14C. The shadow vehicle shall be equipped with a truck-mounted attenuator when specified in the plans.

BUFFER SPACE

- 15A. Where space constraints do not allow for the buffer space, a shorter length may be used.



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
09/02/2020

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<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b> <b>PHONE (A/C. No. Ext):</b> (866) 283-7122 <b>FAX (A/C. No.):</b> 800-363-0105 <b>E-MAIL ADDRESS:</b>
<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> Greenwich Insurance Company <b>INSURER B:</b> <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>

Holder Identifier :

**COVERAGES** **CERTIFICATE NUMBER:** 570083793131 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			GEC001076118 SIR applies per policy terms & conditions	10/01/2019	10/01/2020	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	N/A				PER STATUTE <input type="checkbox"/> OTH <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT

570083793131

Certificate No :

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
RE: Project Number: 30056244, Cuyahoga County W. 140th & 150th Bridge Inspections.

## CERTIFICATE HOLDER

## CANCELLATION

The City of Cleveland 601 Lakeside Ave. Cleveland OH 44114 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. <b>AUTHORIZED REPRESENTATIVE</b> <i>Aon Risk Services South Inc.</i>
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**AUTOMATIC  
PAYMENT  
AUTHORIZATION**

**CITY OF CLEVELAND  
DEPARTMENT OF FINANCE**  
Division of Assessments and Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

Phone: 216.664.2174

Hours of Operation: 8am to 5pm Weekdays

Secured Fax: 216.420.7804

Application Type (i.e. Food, License, Street Permit, Tow Truck, Vendor)

Billing Type (i.e. Assessments, Taxes, EMS, Vacant Properties, Weights & Measures)

Applicant / Business Name:

<input type="checkbox"/>	One-Time Transaction Only
<input checked="" type="checkbox"/>	Payment Information on File (Applicable Only to Street Permits)

**ACCOUNT HOLDER INFORMATION**

Name on Account/Card: Frank Getz Account Address: 6069 Emerald Lakes Dr.  
Company Name: Contact Arcadis Meding, OH  
Email: frank.getz@arcadis.com 44256  
Invoice or Record Number: Account Phone: 330-416-7363

**ACCOUNT INFORMATION**

**Credit Card**

Credit Card Type: VISA  
Credit Card Number: 4388 5400 6352 9191  
Expiration Date: 07/25

**TERMS**

I, the above named Account Holder (see "Account Holder Information") authorize the City of Cleveland, Ohio ("City") to automatically charge my account (see "Account Information") or initiate scheduled deductions in the amount due and owing for any permit fee and/or service charges that may already exist or hereinafter accrue. I authorize the financial institution identified by the credit card or routing number (see "Account Information") to accept the charges or post entries to the account stated above. I represent that I am the owner and/or authorized signer of the account. This authorization shall be valid for all future payments that may become due, until this agreement is cancelled.

I understand that the City will not send me a bill before scheduled payments are processed and that it is my responsibility to ensure sufficient credit or funds are available at the time of each scheduled payment. I also understand that in addition to any fees charged by my bank, the City will charge a NSF fee of up to \$25.00 if my payment is dishonored or returned for any reason. On such an event, I may be removed from the automatic monthly payment authorization program in the full and complete discretion of the City. This authorization is to remain in full force and effect until the City receives a written request from me to cancel the authorization or until the City elects to cancel this Agreement.

I understand that if any due date falls on a weekend or holiday, the City will process the payment on the following business day. I agree to hold the City harmless against all claims related to the processing of payments pursuant to this authorization that I may now have or hereafter accrue. By signing below, I acknowledge that I have read and understand this Agreement.

**ACCEPTANCE**

I, the above named Account Holder, accept, acknowledge, and agree to the terms contained in this authorization Agreement.

OFFICE USE ONLY	
Date Received:	
Tracking Number:	
Processed By:	

Signature Frank J. Getz  
Print Name Frank J. Getz  
Date 9/4/2020

**STREET OPENING, SIDEWALK  
AND/OR OBSTRUCTION  
INSTRUCTIONS FOR APPLICATION**

**CITY OF CLEVELAND  
DEPARTMENT OF FINANCE**  
Division of Assessments & Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

Phone: 216.664.2174

Hours of Operation:  
8am to 5pm Weekdays

DALPermits@city.cleveland.oh.us

**APPLICATION INSTRUCTIONS**

<b>SECTION A: APPLICANT INFORMATION</b>		All requested information must be provided.
Date:		Current date of the application.
STP number:		Leave blank. This is an internal number and is auto-assigned by City of Cleveland.
Name of Applicant:		The person who is filing for permit.
		Check the appropriate box (can be more than one box):
Company	<input type="checkbox"/>	if you represent the Company
Contractor	<input type="checkbox"/>	if you are the Contractor
Owner	<input type="checkbox"/>	if you are the Owner
Other	<input type="checkbox"/>	if other, please provide
Name and address of Company/Owner:		Name and address of Company/Owner
Phone number of Company/Owner:		Phone number of Company/Owner
Email of Company/Owner:		Email address of Company/Owner
Contact:		Contact
Name and address of Contractor:		Name and address of Contractor
Phone number of Contractor:		Phone number of Contractor
Email of Contractor:		Email address of Contractor
Contact:		Contact
Business ID, Tax ID or Social Security number of Contractor (if applicable):		Enter Business ID, Tax ID, (E.I.N) or Social Security number of applying Contractor (if applicable).
Contractor Registration number:		Vendor's license number is requested.
Is Contractor's current insurance policy on file?	<input type="checkbox"/>	Check yes or no box.
Is Contractor's bond on file?	<input type="checkbox"/>	Check yes or no box
		If no, <input checked="" type="checkbox"/> is selected for either, proof of insurance must be submitted at the time of application and prior to permit approval.
Permit delivery method:		Permit can either be picked-up at City Hall Counter or emailed.
Automatic Payment Authorization must be on file.		<input checked="" type="checkbox"/> Check box to pick up at counter - City Hall 601 Lakeside Avenue, Division of Assessments and Licenses, Room 122, Cleveland, Ohio 8 am-5:00 pm.
<ul style="list-style-type: none"> <li>Counter pick-up</li> <li>Email</li> </ul>	<input checked="" type="checkbox"/>	Check box for email.
Permit time frame:		Check the box to the one that applies:
15 day	<input checked="" type="checkbox"/>	Check the box for work 15 days or less
30 day	<input checked="" type="checkbox"/>	Check the box for work more than 15 or less than 30 days
Other	<input checked="" type="checkbox"/>	Check the box for more than 30 days then indicate



**STREET OPENING, SIDEWALK  
AND/OR OBSTRUCTION  
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**SECTION B – JOB SITE INFORMATION**

Descriptive location of job site:	Address where work is to be performed. If multiple addresses please furnish start and end address.
<input checked="" type="checkbox"/> Pavement area curb to curb. <input checked="" type="checkbox"/> Sidewalk area including tree lawn. <input checked="" type="checkbox"/> Above ground work. <input checked="" type="checkbox"/> Below ground work.	Indicate which areas will be affected. <input checked="" type="checkbox"/> Check all that apply.
Work Order number	Enter your work order number here.
Restoration work:	<input checked="" type="checkbox"/> Check appropriate box. Indicate who will be doing the final restoration work. Company or City Of Cleveland. (Note: the City of Cleveland may do the cap/reseal asphalt at an additional cost. If the Company is doing the restoration work it must comply with all of The City of Cleveland standard drawings and specifications).
Proposed dates of work:	Indicate the start and finish dates of this project. Please read disclosure caption.
Proposed hours of work:	Indicate the hours this project will be ongoing. Start and finish time. Please read disclosure caption.

**SECTION C – DESCRIPTION OF WORK**

1. Description and type of work being performed:	<input checked="" type="checkbox"/> Check ALL that apply. If utility installations please indicate above or below ground. If underground see C-2. List all parking meter heads that are to be bagged with meter number. <input checked="" type="checkbox"/> Check if they are single or double.
2. Underground work:	<input checked="" type="checkbox"/> Check all boxes that apply to underground work.

**SECTION D – OBSTRUCTION**

Obstruction:	This section is for obstructions in the street or sidewalk. Includes all right-of-ways.
Will you obstruct the street?	<input checked="" type="checkbox"/> Check yes or no box. If yes, indicate which lanes and size of opening.
Will you obstruct the sidewalk?	<input checked="" type="checkbox"/> Check yes or no box. If yes indicate size of obstruction.

**SECTION E – MAINTENANCE OF TRAFFIC AND MAINTENANCE OF TRAFFIC REGULATIONS**

Maintenance of Traffic:	MOT MUST BE COMPLETED. Please describe your plans for maintaining pedestrian and automobile traffic.
Work Location and Proposed Obstruction Sketch	This form must be completed and submitted along with your application.
Applicant Signature	Please sign your application.



# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

**CITY OF CLEVELAND**  
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**BE ADVISED THAT FAXED APPLICATIONS AND/OR DOCUMENTS ARE NOT ACCEPTED.**  
**PLEASE PRINT OR TYPE APPLICATION**

## SECTION A: APPLICANT INFORMATION

Date:		STP number: (internally assigned)	
Name of Applicant:			
<input type="checkbox"/>	Company	<input type="checkbox"/>	Contractor
<input type="checkbox"/>		<input type="checkbox"/>	Owner
<input type="checkbox"/>		<input type="checkbox"/>	Other

Name and Address of Company/Owner		Name and Address of Contractor	
Company		Contractor	
Address		Address	
City, ST, Zip		City, ST, Zip	
Phone		Phone	
Email		Email	
Contact		Contact	

Business ID, Tax ID or Social Security number of Contractor (If applicable):	
Contractor Registration number (If applicable):	

Is Contractor's current insurance policy on file?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Is Contractor's bond on file?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Note: If No is selected, proof of insurance and bond must be submitted at the time of application and prior to permit approval.

Permit Delivery Method: Automatic Payment Authorization must be on file.	<input type="checkbox"/>	Counter Pick-up
	<input type="checkbox"/>	Email

Permit Time-Frame:	<input type="checkbox"/>	15 day [or less]	<input type="checkbox"/>	30 day [more than 15 or less than 30 days]
	<input type="checkbox"/>	Other [more than 30 days]		



# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

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## SECTION B: JOB SITE INFORMATION

WORK ORDER NUMBER

DESCRIPTIVE LOCATION OF JOB SITE:

JOB SITE START LOCATION	
Address	
City, ST, Zip	

JOB SITE END LOCATION	
Address	
City, ST, Zip	

<input type="checkbox"/>	Pavement area curb-to-curb
<input type="checkbox"/>	Above ground work

<input type="checkbox"/>	Sidewalk area including tree lawn
<input type="checkbox"/>	Below ground work

Restoration work:	<input type="checkbox"/>	Company/contractor will recap/reseal asphalt
	<input type="checkbox"/>	City will recap/reseal asphalt for an additional fee
	<input type="checkbox"/>	Not Applicable [only applies to non-disruption of asphalt]

Proposed dates of work:	Start		Finish	
Proposed hours of work:	Start		Finish	

**ALL APPLICATIONS MUST BE SUBMITTED TO THE DIVISION OF ASSESSMENTS & LICENSES WITH PROPOSED START AND FINISH DATES, AS WELL AS PROPOSED HOURS OF WORK. PLEASE NOTE APPLICATION MUST BE SUBMITTED AT A MINIMUM OF 12 TO 14 BUSINESS DAYS PRIOR TO THE PROPOSED START DATE OF WORK. APPLICATIONS SUBMITTED WITHOUT A PROPOSED START AND FINISH DATE, INCLUDING TBD; OR PROPOSED HOURS OF WORK; OR LESS THAN THE 12 TO 14 DAY MINIMUM WILL NOT BE ACCEPTED.**



# STREET OPENING AND/OR SIDEWALK OBSTRUCTION PERMIT APPLICATION

**CITY OF CLEVELAND**  
**DEPARTMENT OF FINANCE**  
Division of Assessments & Licenses  
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Phone: 216.664.2174

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## SECTION C: DESCRIPTION OF WORK

1. Description and type of work to be performed (check all that apply):

<input type="checkbox"/>	Utility installation		
<input type="checkbox"/>	<input type="checkbox"/>	Above ground work	
<input type="checkbox"/>	<input type="checkbox"/>	Below ground work (complete Section C-2)	
<input type="checkbox"/>	Sidewalks		
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	replacement	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	restoration	
<input type="checkbox"/>	Pavement		
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	replacement	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	restoration	
<input type="checkbox"/>	Curb	<input type="checkbox"/>	removal
<input type="checkbox"/>	<input type="checkbox"/>	linear feet	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	replacement	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	restoration	
<input type="checkbox"/>	Driveway aprons		
<input type="checkbox"/>	<input type="checkbox"/>	removal	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	replacement	
<input type="checkbox"/>	Tree lawn		
<input type="checkbox"/>	Obstructions, including but not limited to traffic lanes and/or sidewalks		
<input type="checkbox"/>	Parking meter heads	<input type="checkbox"/>	single
<input type="checkbox"/>	<input type="checkbox"/>	double	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	number	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	number	<input type="checkbox"/>
<input type="checkbox"/>	Other (Explain)		

2. If underground, check all that apply:

<input type="checkbox"/>	Water Main		
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Hydrant	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Valve	
<input type="checkbox"/>	Sewer Main		
<input type="checkbox"/>	<input type="checkbox"/>	Lateral	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Catch Basin	
<input type="checkbox"/>	Gas Main		
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Regulator	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Vault	
<input type="checkbox"/>	Electrical Conduit		
<input type="checkbox"/>	<input type="checkbox"/>	Duct	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Vault	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Telephone	# of conduits
<input type="checkbox"/>	<input type="checkbox"/>	Cable Television Conduit	# of conduits
<input type="checkbox"/>	<input type="checkbox"/>	Telecommunications	# of conduits
<input type="checkbox"/>	Steam		
<input type="checkbox"/>	<input type="checkbox"/>	Connection	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Chilled Water Main	
<input type="checkbox"/>	Other (Explain)		



**STREET OPENING AND/OR  
SIDEWALK OBSTRUCTION PERMIT  
APPLICATION**

**CITY OF CLEVELAND  
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If this is a new facility or relocation/rehabilitation of an existing facility please attach plans and specifications for the construction.

**SECTION D: OBSTRUCTION**

Will you obstruct the street?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
If yes, which lanes?		Size of opening		
Will you obstruct the sidewalk?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Size of opening				

**SECTION E: MAINTENANCE OF TRAFFIC AND MAINTENANCE OF TRAFFIC REGULATIONS**

Traffic shall be maintained and directed by the Commissioner of Traffic Engineering. MOT MUST BE PROVIDED with this application. Please complete and submit the **WORK LOCATION AND PROPOSED OBSTRUCTION SKETCH** form on Page 7 of this application indicating your work location and which areas will be obstructed. All MOT devices shall be installed according to Part VI, "Work Zones" of the Manual on Uniform Traffic Control Devices (MUTCD – Millennium Edition). Federal Highway Administration website: [www.mutcd.fhwa.dot.gov](http://www.mutcd.fhwa.dot.gov)

1. The MOT plan shall include the following information:
  - a. All existing pavement markings
  - b. Curb-to-curb width of all affected streets
  - c. Distances from work zone to nearest intersections
  - d. Lateral distance from edge of work zone to curb line
2. Work that will back up the flow of traffic shall not be performed between the following hours:
  - a. Monday through Friday, inclusive, 7:00 am to 9:00 am
  - b. Monday through Friday, inclusive, 3:30 pm to 6:00 pm
3. The contractor shall furnish competent flagmen (off-duty police officers may be used) when needed to assist the flow of traffic and for the safe maneuvering of equipment and trucks.
4. Pedestrian travel will be accommodated across any sidewalk work area. In the event pedestrian travel is blocked, proper signage will be installed by the contractor that will indicate the closure and direct pedestrians to cross at the nearest signalized intersection (unless directed otherwise by Traffic Engineering). Pedestrian walkways may be necessary as dictated by the Division of Traffic Engineering.
5. All trenches and cavities shall be plated during non-working hours.



**STREET OPENING AND/OR  
SIDEWALK OBSTRUCTION PERMIT  
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Describe your plans for maintaining pedestrian traffic.

Describe your plans for maintaining automobile traffic.

**APPLICANT SIGNATURE**





**STREET OPENING AND/OR  
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**OFFICE USE ONLY**

COMMENTS AND/OR PROVISIONS THAT MUST BE MET TO ACQUIRE A PERMIT.


**TYPES OF PERMITS REQUIRED.**

<input type="checkbox"/>	Street Opening (includes curb cut, street opening, and/or sidewalk area)
<input type="checkbox"/>	Moratorium Street (special restoration requirements)
<input type="checkbox"/>	Obstruction <input type="checkbox"/> Sidewalk <input type="checkbox"/> Pre-pour inspection required <input type="checkbox"/>

EXCEPT AS NOTED, APPROVAL OF ALL DEPARTMENTS LISTED BELOW IS NECESSARY.

	SIGNATURE	DATE
Engineering and Construction		
Engineering and Construction Inspection Section		
Bureau of Sidewalks		
Traffic Engineering		
Mayor's Office of Capital Projects		
Assessments and Licenses		
Police Traffic		
Water Engineering (CWD)		
Sewer Engineering (WPC)		
Electrical Engineering (CPP)		

NOTE: CHECKED BOX REQUIRES SIGNATURE.



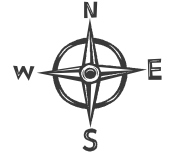
**STREET OPENING AND/OR  
SIDEWALK OBSTRUCTION PERMIT  
APPLICATION**

**CITY OF CLEVELAND  
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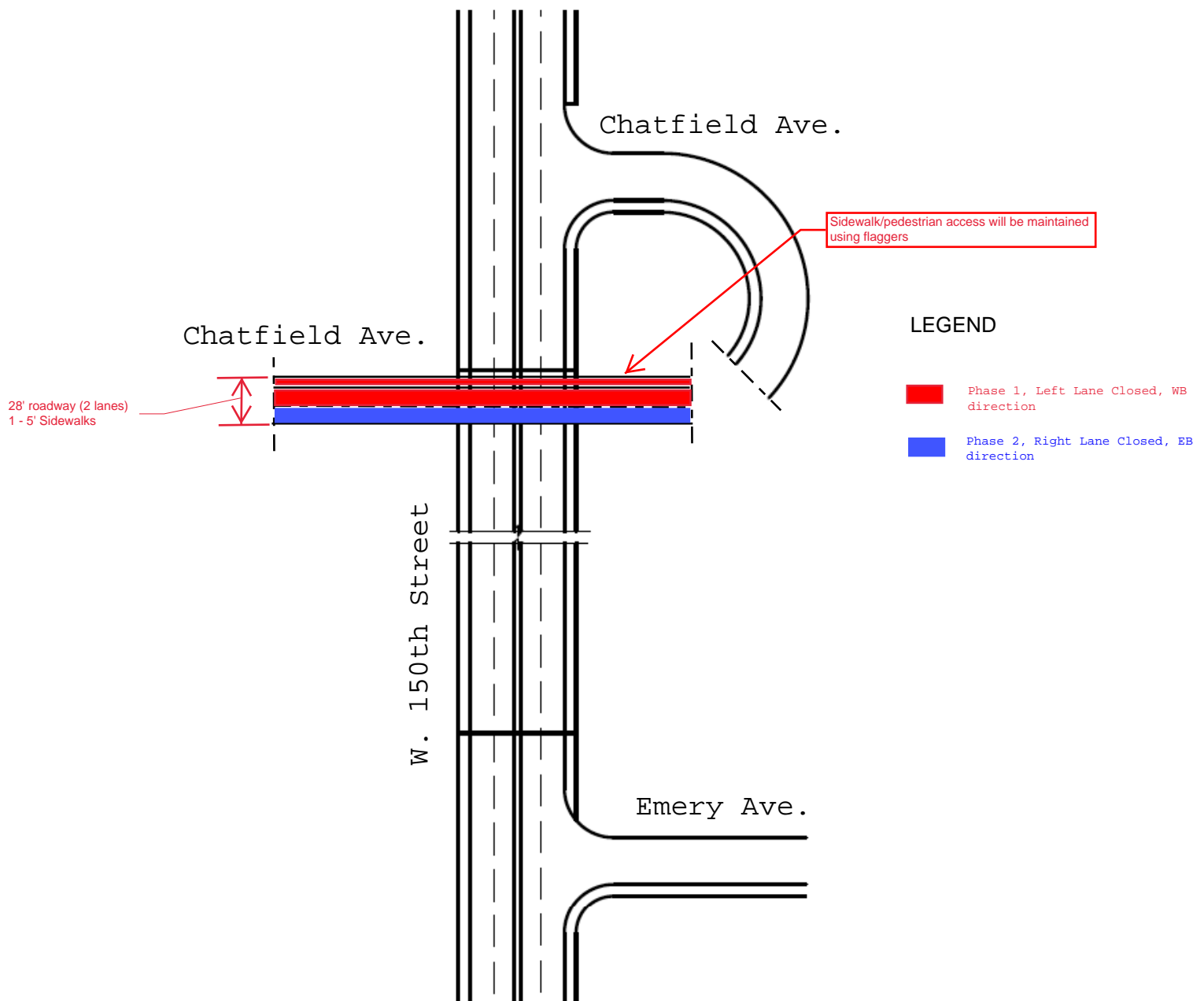
Phone: 216.664.2174

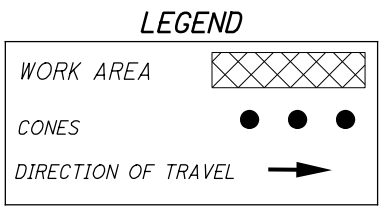
Hours of Operation:  
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**WORK LOCATION AND PROPOSED OBSTRUCTION SKETCH**





ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
Two Lane ≤ 40 MPH	100	100	100
Two Lane 45-50 MPH	350	350	350
Two Lane 55-60 MPH	500	500	500

<i>SPEED LIMIT (MPH)</i>	<i>BUFFER (D) (FT) MIN.</i>
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570

STANDARD ROADWAY CONSTRUCTION DRAWING

STANDARD ROADWAY CONSTRUCTION DRAWING

**FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY  
FOR PAVING OPERATIONS (NON-FED ONLY)**

**MT-97.11**

STDS.  
ENGINEER

Soisson

STATE OF OHIO DEPARTMENT OF  
TRANSPORTATION ADMINISTRATOR

David L. Holstein

REVISION DATE

01-20-2017

NOTES:

FLAGGERS

1. *Flaggers, one for each direction, shall be used to control traffic continuously for as long as a one lane operation is in effect. The flaggers shall be able to communicate with each other at all times.*

LENGTH OF CLOSURE

2. *It is required that the length of closure be kept to a minimum at all times, as directed by the Engineer, with a maximum allowable length of 5000'.*

*When the ambient temperature exceeds 80 degrees Fahrenheit the Engineer may increase the maximum allowable length of closure to allow for sufficient cooling of new pavement.*

*The Engineer may shorten the maximum allowable length of closure to relieve excessive traffic backups or to improve traffic operation.*

SIGN LOCATION AND SPACING

- 3A. *The minimum spacing between work zone signs is shown in Table I. Maximum spacing should not be greater than 1.5 times the distances shown in Table I.*
- 3B. *Sign spacing should be adjusted to avoid conflict with existing signs. Minimum spacing to existing signs shall be 200' for speeds of 45 mph or less and a minimum of 400' for speeds of 50 mph or greater.*
- 3C. *The location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

ADJUSTMENTS FOR SIGHT DISTANCE

4. *The location of the flagger station and the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment.*

BASIC SIGNING

- 5A. *ROAD WORK AHEAD (W20-1) signs shall be provided on entrance ramps or roadways entering the work limits.*
- 5B. *END ROAD WORK (G20-2) signs are only required for lane closures of more than 1 day. If is intended that these signs be placed on the mainline, on all exit ramps, and on roadways exiting the work limits.*
- 5C. *Overlapping of signing for adjacent projects should be avoided where the messages could be confusing. Any ROAD WORK AHEAD or END ROAD WORK sign which falls within the limits of another traffic control zone shall be omitted or covered during the period when both projects are active.*

SIGNING DETAILS

- 6A. *The Advisory Speed (W13-1P) plaque shall be used when specified in the plan.*
- 6B. *36" warning signs may be used when the approach speed limit is 40 mph or less.*

FLASHING WARNING LIGHTS

7. *Type A flashing warning lights shown on the ROAD WORK AHEAD (W20-1) signs and on the LANE CLOSED AHEAD (W20-5) signs are required whenever a night lane closure is necessary.*

CONES

- 8A. *Cone spacing shall be as follows:*

- a) Spacing along the buffer shall be 40' center-to-center.*  
*b) Spacing along the approach taper shall be 10' center-to-center.*

- 8B. *Cone sizes shall be as follows:*

- a) Cones used for daytime traffic control shall have a minimum height of 28".*  
*b) Cones used for nighttime traffic control shall have a minimum height of 42".*

- 8C. *Provisions shall be made to stabilize the cones to prevent them from blowing over.*

- 8D. *A minimum of two cones shall be used to close the paved shoulder.*

(RESERVED FOR FUTURE USE)

- 9A. *(intentionally blank)*

AREA ILLUMINATION

- 10A. *Adequate area illumination of each flagger station shall be provided at night. Use of portable flood lighting is acceptable.*

- 10B. *To ensure the adequacy of floodlight placement and the elimination of glare, the Contractor and the Engineer shall drive through the worksite each night when the lighting is in place. Light placement and shielding shall be adjusted to the satisfaction of the Engineer.*

INTERSECTION / DRIVEWAY ACCESS

11. *Within the length of closure, provision shall be made to control traffic entering from intersecting streets and major drives as necessary to prevent wrong-way movements and to keep vehicles off of new pavement not ready for traffic. The Contractor shall:*

- a) Place across the closed lane, either three cones or barricades, and/or*  
*b) Provide an additional flagger at every public street intersection and major driveway.*

*Cones placed across the closed lane shall be located 25' beyond the projected pavement edges of the driveway or cross highway. For barricades, see Standard Construction Drawing MT-101.60.*

*Existing STOP signs shall be relocated as necessary to assure proper location for the traffic conditions.*

*The method of control shall be subject to the approval of the Engineer.*

CHIP SEAL OPERATION

12. *For chip seal operations, additional signing shall be incorporated in accordance with CMS 422.09.*

THIS DRAWING REPLACES MT-97.11 DATED 07-18-2014.

SCD NUMBER

MT -97.11

FLAGGER CLOSING 1 LANE OF A 2-LANE HIGHWAY FOR PAVING OPERATIONS (NON-FED ONLY)

OFFICE OF  
ROADWAY  
ENGINEERING

STATUS:  
ENGINEER  
Soisson

STATE OF OHIO DEPARTMENT OF  
TRANSPORTATION ADMINISTRATOR  
David L. Holstein

REVISION DATE  
01-20-2017



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)  
09/02/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services South, Inc. Franklin TN Office 501 Corporate Centre Drive Suite 300 Franklin TN 37067 USA	<b>CONTACT NAME:</b> <b>PHONE (A/C. No. Ext):</b> (866) 283-7122 <b>FAX (A/C. No.):</b> 800-363-0105 <b>E-MAIL ADDRESS:</b>
<b>INSURED</b> Arcadis U.S., Inc. 630 Plaza Drive Suite 200 Highlands Ranch CO 80129 USA	<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> Greenwich Insurance Company <b>INSURER B:</b> <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>

Holder Identifier :

**COVERAGES** **CERTIFICATE NUMBER:** 570083793131 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

Limits shown are as requested

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			GEC001076118 SIR applies per policy terms & conditions	10/01/2019	10/01/2020	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)
	<b>UMBRELLA LIAB</b> <input type="checkbox"/> OCCUR <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION						EACH OCCURRENCE AGGREGATE
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	N/A				PER STATUTE <input type="checkbox"/> OTH <input type="checkbox"/> E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
RE: Project Number: 30056244, Cuyahoga County W. 140th & 150th Bridge Inspections.

570083793131

Certificate No :

**CERTIFICATE HOLDER****CANCELLATION**

The City of Cleveland 601 Lakeside Ave. Cleveland OH 44114 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. <b>AUTHORIZED REPRESENTATIVE</b> <i>Aon Risk Services South Inc.</i>
--	---



**AUTOMATIC  
PAYMENT  
AUTHORIZATION**

**CITY OF CLEVELAND**  
**DEPARTMENT OF FINANCE**  
Division of Assessments and Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

Phone: 216.664.2174

Hours of Operation: 8am to 5pm Weekdays

Secured Fax: 216.420.7804

Application Type (i.e. Food, License, Street Permit, Tow Truck, Vendor)

Billing Type (i.e. Assessments, Taxes, EMS, Vacant Properties, Weights & Measures)

Applicant / Business Name:

<input type="checkbox"/>	One-Time Transaction Only
<input checked="" type="checkbox"/>	Payment Information on File (Applicable Only to Street Permits)

**ACCOUNT HOLDER INFORMATION**

Name on Account/Card: Frank Getz Account Address: 6069 Emerald Lakes Dr.  
Company Name: Contact Arcadis Meding, OH  
Email: frank.getz@arcadis.com 44256  
Invoice or Record Number: Account Phone: 330-416-7363

**ACCOUNT INFORMATION**

**Credit Card**

Credit Card Type: VISA  
Credit Card Number: 4388 5400 6352 9191  
Expiration Date: 07/25

**TERMS**

I, the above named Account Holder (see "Account Holder Information") authorize the City of Cleveland, Ohio ("City") to automatically charge my account (see "Account Information") or initiate scheduled deductions in the amount due and owing for any permit fee and/or service charges that may already exist or hereinafter accrue. I authorize the financial institution identified by the credit card or routing number (see "Account Information") to accept the charges or post entries to the account stated above. I represent that I am the owner and/or authorized signer of the account. This authorization shall be valid for all future payments that may become due, until this agreement is cancelled.

I understand that the City will not send me a bill before scheduled payments are processed and that it is my responsibility to ensure sufficient credit or funds are available at the time of each scheduled payment. I also understand that in addition to any fees charged by my bank, the City will charge a NSF fee of up to \$25.00 if my payment is dishonored or returned for any reason. On such an event, I may be removed from the automatic monthly payment authorization program in the full and complete discretion of the City. This authorization is to remain in full force and effect until the City receives a written request from me to cancel the authorization or until the City elects to cancel this Agreement.

I understand that if any due date falls on a weekend or holiday, the City will process the payment on the following business day. I agree to hold the City harmless against all claims related to the processing of payments pursuant to this authorization that I may now have or hereafter accrue. By signing below, I acknowledge that I have read and understand this Agreement.

**ACCEPTANCE**

I, the above named Account Holder, accept, acknowledge, and agree to the terms contained in this authorization Agreement.

<b>OFFICE USE ONLY</b>	
Date Received:	
Tracking Number:	
Processed By:	

Signature Frank J. Getz  
Print Name Frank J. Getz  
Date 9/4/2020





**CITY OF CLEVELAND**  
Mayor Frank G. Jackson

# STREET OPENING, SIDEWALK AND/OR OBSTRUCTION INSTRUCTIONS FOR APPLICATION

**CITY OF CLEVELAND**  
**DEPARTMENT OF FINANCE**  
Division of Assessments & Licenses  
601 Lakeside Avenue, Room 122  
Cleveland, Ohio 44114

Phone: 216.664.2174

Hours of Operation:  
8am to 5pm Weekdays

DALPermits@city.cleveland.oh.us

## APPLICATION INSTRUCTIONS

SECTION A: APPLICANT INFORMATION		All requested information must be provided.
Date:	Current date of the application.	
STP number:	Leave blank. This is an internal number and is auto-assigned by City of Cleveland.	
Name of Applicant:	The person who is filing for permit.	
	Check the appropriate box (can be more than one box):	
Company	<input checked="" type="checkbox"/> if you represent the Company	
Contractor	<input checked="" type="checkbox"/> if you are the Contractor	
Owner	<input checked="" type="checkbox"/> if you are the Owner	
Other	<input checked="" type="checkbox"/> if other, please provide	
Name and address of Company/Owner:	Name and address of Company/Owner	
Phone number of Company/Owner:	Phone number of Company/Owner	
Email of Company/Owner:	Email address of Company/Owner	
Contact:	Contact	
Name and address of Contractor:	Name and address of Contractor	
Phone number of Contractor:	Phone number of Contractor	
Email of Contractor:	Email address of Contractor	
Contact:	Contact	
Business ID, Tax ID or Social Security number of Contractor (if applicable):	Enter Business ID, Tax ID, (E.I.N) or Social Security number of applying Contractor (if applicable).	
Contractor Registration number:	Vendor's license number is requested.	
Is Contractor's current insurance policy on file?	<input checked="" type="checkbox"/> Check yes or no box.	
Is Contractor's bond on file?	<input checked="" type="checkbox"/> Check yes or no box	
	If no, <input checked="" type="checkbox"/> is selected for either, proof of insurance must be submitted at the time of application and prior to permit approval.	
Permit delivery method: Automatic Payment Authorization must be on file.	Permit can either be picked-up at City Hall Counter or emailed.	
• Counter pick-up	<input checked="" type="checkbox"/> Check box to pick up at counter - City Hall 601 Lakeside Avenue, Division of Assessments and Licenses, Room 122, Cleveland, Ohio 8 am-5:00 pm.	
• Email	<input checked="" type="checkbox"/> Check box for email.	
Permit time frame:	Check the box to the one that applies:	
15 day	<input checked="" type="checkbox"/> Check the box for work 15 days or less	
30 day	<input checked="" type="checkbox"/> Check the box for work more than 15 or less than 30 days	
Other	<input checked="" type="checkbox"/> Check the box for more than 30 days then indicate	

**STREET OPENING, SIDEWALK  
AND/OR OBSTRUCTION  
INSTRUCTIONS FOR APPLICATION**

**CITY OF CLEVELAND**  
**DEPARTMENT OF FINANCE**  
Division of Assessments & Licenses  
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Phone: 216.664.2174

Hours of Operation:  
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DALPermits@city.cleveland.oh.us

**SECTION B – JOB SITE INFORMATION**

Descriptive location of job site:	Address where work is to be performed. If multiple addresses please furnish start and end address.
<input checked="" type="checkbox"/> Pavement area curb to curb. <input checked="" type="checkbox"/> Sidewalk area including tree lawn. <input checked="" type="checkbox"/> Above ground work. <input checked="" type="checkbox"/> Below ground work.	Indicate which areas will be affected. <input checked="" type="checkbox"/> Check all that apply.
Work Order number	Enter your work order number here.
Restoration work:	<input checked="" type="checkbox"/> Check appropriate box. Indicate who will be doing the final restoration work. Company or City Of Cleveland. (Note: the City of Cleveland may do the cap/reseal asphalt at an additional cost. If the Company is doing the restoration work it must comply with all of The City of Cleveland standard drawings and specifications).
Proposed dates of work:	Indicate the start and finish dates of this project. Please read disclosure caption.
Proposed hours of work:	Indicate the hours this project will be ongoing. Start and finish time. Please read disclosure caption.

**SECTION C – DESCRIPTION OF WORK**

1. Description and type of work being performed:	<input checked="" type="checkbox"/> Check ALL that apply. If utility installations please indicate above or below ground. If underground see C-2. List all parking meter heads that are to be bagged with meter number. <input checked="" type="checkbox"/> Check if they are single or double.
2. Underground work:	<input checked="" type="checkbox"/> Check all boxes that apply to underground work.

**SECTION D – OBSTRUCTION**

Obstruction:	This section is for obstructions in the street or sidewalk. Includes all right-of-ways.
Will you obstruct the street?	<input checked="" type="checkbox"/> Check yes or no box. If yes, indicate which lanes and size of opening.
Will you obstruct the sidewalk?	<input checked="" type="checkbox"/> Check yes or no box. If yes indicate size of obstruction.

**SECTION E – MAINTENANCE OF TRAFFIC AND MAINTENANCE OF TRAFFIC REGULATIONS**

Maintenance of Traffic:	MOT MUST BE COMPLETED. Please describe your plans for maintaining pedestrian and automobile traffic.
Work Location and Proposed Obstruction Sketch	This form must be completed and submitted along with your application.
Applicant Signature	Please sign your application.

# APPENDIX B

## Inspection Forms and Photos

# Ohio Bridge Inspection Summary Report

CUY-C0066-01.94 (1833405)

2: District 12 16000 - CLEVELAND (CUY county)  
 21: Major Maint A/B 02 - County Highway Agency /  
 225 Routine Main A/B 02 - County Highway Agency /  
 221 Inspection A/B 02 - County Highway Agency /  
 220: Inv. Location CUY

5A: Inventory Route 1 00066  
 7: Facility On WEST 150TH ST  
 6: Feature Ints N&S RR, RTA & CHATFIELD  
 9: Location 2500' SOUTH OF LORAIN RD

Condition		Structure Type	
<b>58: Deck</b>	<b>7 - Good Condition</b>	43: Bridge Type	4 - Steel continuous
58.01 Wearing Surface	7 - Good (1% distress)		02 - Stringer/Multi-beam or Girder
58.02 Joint	7- Good (no leaking)		N- Not Applicable
<b>59: Superstructure</b>	<b>4 - Poor Condition</b>	45: Spans Main / Approach	10 / 0
59.01 Paint & PCS	2 - Critical PCS (30-40% corr.)	107: Deck Type	1 - Concrete Cast-in-Place
<b>60: Substructure</b>	<b>4 - Poor Condition</b>	408: Composite Deck	N - Non-composite Construction
<b>61: Channel</b>	<b>N</b>	414A Joint Type 1	8 - Elastomeric Strip Seal
61.01 Scour	<b>N - Not Applicable</b>	414B: Joint Type 2	N - None
<b>62: Culverts</b>	<b>N - Not Applicable</b>	108A: Wearing Surface	0 - None
<b>67.01 GA</b>	<b>4</b>		N- Not Applicable

Appraisal		422: WS Date	01/01/1992
36: Rail, Tr, Gd, Term Std	0 0 0 0	423: WS Thick (in)	3.0
72: Approach Alignment	8 - Equal to present desirable criteria	482: Protective Coating	4 - Paint System B
113: Scour Critical	N - Not over waterway	483: PCS Date	01/01/1967
71: Waterway Adequacy	N - Not Applicable	453: Bearing Type 1	2 - Rockers & Bolsters
		455: Bearing Type 2	N - None

Geometric		528: Foundn: Abut Fwd	7 - Steel H Piles (HP 10 x 42)
48: Max Span Length (ft)	91.0	533: Foundn: Abut Rear	7 - Steel H Piles (HP 10 x 42)
49: Structure Length (ft)	708.6	536: Foundn: Pier 1	7 - Steel H Piles (HP 10 x 42)
52: Deck Width, Out-To-Out (ft)	62.3	539: Foundn: Pier 2	N - None (Such as most Culverts)
424: Deck Area (sf)	44111.6		
32: Appr Roadway Width (ft)	52.0		
51: Road Width, Curb-Curb (ft)	52.0		
50A: Curb/SW Width: Left (ft)	5		
50A: Curb/SW Width: Right (ft)	5		
34: Skew (deg)	57		
33: Bridge Median	0 - No median		
54B: Min Vert Underclearance (ft)	21		
336A: Min Vert Clrnce IR Cardinal (ft)	99		
336B: Min V Clr IR Non-Cardinal (ft)	0		
578: Culvert Length (ft)	0		

Load Posting		Age and Service	
41: Op/Post/Closed	A - Open	27: Year Built/ 106 Rehab	1967 / 0000
70: Posting	5 - Equal to or above legal loads	42A: Service On	5 - Highway-pedestrian
70.01: Date		42B: Service Under	4 - Highway - railroad
70.02: Sign Type		28A: Lanes on	04
734: Percent Legal (%)	150	28B: Lanes Under	02
704: Analysis Date	07/01/2009	19: Bypass Length	3
63: Analysis Method	6 - Load Factor (LF) rating reported by rating factor (RF) method using MS18 loading.	29: ADT	23303
		109: % Trucks (%)	8

Inspections	
90: Routine Insp.	Months 18 11/19/2020
92A: FCM Insp.	N 24
92B: Dive Insp.	N 0
92C: Special Insp.	N 0
92D: UBIT Insp.	N
92E: Drone Insp.	
Inspector	Getz, Frank

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 1: Span 1 and 2 In-situ erection bracing bay 8 pier 1**



**Photograph 2: Span 1 and 2 Pier 1 beam 1 2 bearing facing N, ext**



**Photograph 3: Span 1 and 2 Pier 1 beam 2 bearing facing N**



**Photograph 4: Span 1 and 2 pier 1 beam 3 bearing facing N**



**Photograph 5: Span 1 and 2 Pier 1 beam 4 bearing facing N**



**Photograph 6: Span 1 and 2 Pier 1 beam 5 bearing facing N**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 7: Span 1 and 2 Pier 1 beam 6 bearing facing N**



**Photograph 8: Span 1 and 2 Pier 1 beam 8 bearing facing N**



**Photograph 9: Span 1 and 2 Pier 1 Beam 9 bearing facing N**



**Photograph 10: Span 1 and 2 Pier 1 beam 10 bearing facing N**



**Photograph 11: Span 1 and 2 Pier 1 beam7 bearing facing N**



**Photograph 12: Span 1 Bay 1 facing N**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 13: Span 1 Bay 3 facing N**



**Photograph 14: Span 1 Bay 3 leakage @ backwall**



**Photograph 15: Span 1 Bay 4 facing N**



**Photograph 16: Span 1 Bay 5 facing N**



**Photograph 17: Span 1 Bay 6 facing N**



**Photograph 18: Span 1 Bay 7 facing N**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 19: Span 1 Bay 8



Photograph 20: Span 1 Bay 10 facing N



Photograph 21: Span 1 Beam 1 bearing @ rear abut



Photograph 22: Span 1 Beam 1 facing N



Photograph 23: Span 1 Beam 1 web retrofit typ



Photograph 24: Span 1 Beam 2 bearing @ rear abut

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 25: Span 1 Beam 2 bot



Photograph 26: Span 1 Beam 2 bot



Photograph 27: Span 1 Beam 3 bearing @ rear abut



Photograph 28: Span 1 Beam 4 bearing @ rear abut



Photograph 29: Span 1 Beam 5 bearing @ rear abut



Photograph 30: Span 1 Beam 6 bearing @ rear abut

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 31: Span 1 Beam 7 bearing @ rear abut



Photograph 32: Span 1 Beam 9 bearing @ rear abut



Photograph 33: Span 1 Beam 10 bearing @ rear abut



Photograph 34: Span 1 Beam 10 bearing @ rear abut



Photograph 35: Span 1 Beam 10 web retrofit typ



Photograph 36: Span 1 Bearing 8, beam 8 @ rear abut



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 37: Span 1 Buckled cross frame in bay 3, first intermediate



Photograph 38: Span 1 Corrosion @ vandal fence post



Photograph 39: Span 1 Cracking and deterioration in sidewalk



Photograph 40: Span 1 E



Photograph 41: Span 1 E



Photograph 42: Span 1 Map cracking in parapet typ

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 43: Span 1 Missing bot**



**Photograph 44: Span 1 Overall view span 1**



**Photograph 45: Span 1 Parapet map cracking @ SE corner**



**Photograph 46: Span 1 Parapet map cracking typ**



**Photograph 47: Span 1 Parapet spall deterioration 16'x1'x1'**



**Photograph 48: Span 1 Pier 1 S**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 49: Span 1 Pier 1 S**



**Photograph 50: Span 1 Pitting in web near midspan beam 2**



**Photograph 51: Span 1 Rear abut**



**Photograph 52: Span 1 Rear abut**



**Photograph 53: Span 1 Sidewalk and curb typ**



**Photograph 54: Span 1 Waterline with exposed insulation @ rear abut**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 55: Span 2 and 3 Beam 1 bearing on pier 2 facing N**



**Photograph 56: Span 2 and 3 Beam 2 bearing on pier 2 facing N**



**Photograph 57: Span 2 and 3 Beam 3 bearing on pier 2 facing N**



**Photograph 58: Span 2 and 3 Beam 4 bearing on pier 2 facing N**



**Photograph 59: Span 2 and 3 Beam 5 bearing on pier 2 facing N**



**Photograph 60: Span 2 and 3 Beam 6 bearing on pier 2 facing N**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 61: Span 2 and 3 Beam 7 bearing on pier 2 facing N**



**Photograph 62: Span 2 and 3 Beam 8 bearing on pier 2 facing N**



**Photograph 63: Span 2 and 3 Beam 9 bearing on pier 2 facing N**



**Photograph 64: Span 2 and 3 Beam 10 bearing on pier 2 facing N**



**Photograph 65: Span 2 Bay 1, 1st intermediate diaphragm, pitting**



**Photograph 66: Span 2 bay 2 facing N**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 67: Span 2 Bay 3 facing N**



**Photograph 68: Span 2 Bay 4 facing N**



**Photograph 69: Span 2 Bay 4 second interior cross frame broke and buckled**



**Photograph 70: Span 2 Bay 5 facing N**



**Photograph 71: Span 2 Bay 6 facing N**



**Photograph 72: Span 2 bay 7 facing N**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 73: Span 2 Bay 8 facing N**



**Photograph 74: Span 2 Bay 9 facing N**



**Photograph 75: Span 2 Bay 9 fifth interior x frame deterioration**



**Photograph 76: Span 2 Bay 9 third interior x frame broken (2)**



**Photograph 77: Span 2 Bay 9 third interior x frame broken**



**Photograph 78: Span 2 E**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 79: Span 2 East fascia profile facing N



Photograph 80: Span 2 Large spall and shear crack pier 2 S



Photograph 81: Span 2 Missing bolt in VPF base plate



Photograph 82: Span 2 Missing cover in VPF



Photograph 83: Span 2 N



Photograph 84: Span 2 N

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 85: Span 2 Overall view span 2



Photograph 86: Span 2 Pack rust between bottom flange and bot



Photograph 87: Span 2 Parapet map cracking typ



Photograph 88: Span 2 Parapet spall deterioration 7'x2'x1'



Photograph 89: Span 2 Pier 2 South face facing North (East)



Photograph 90: Span 2 Pier 2 south face facing North (West)



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 91: Span 2 Rusting bot**



**Photograph 92: Span 2 Rusting on bot**



**Photograph 93: Span 2 Rusting on bot**



**Photograph 94: Span 2 Rusting on web, bm 6, over pier 1**



**Photograph 95: Span 2 Sidewalk and curb typ**



**Photograph 96: Span 2 Spall, pier 1 N**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 97: Span 2 W**



**Photograph 98: Span 2 W**



**Photograph 99: Span 3 Bad x-frame weld**



**Photograph 100: Span 3 Bay 1 facing N**



**Photograph 101: Span 3 Bay 2 facing N**



**Photograph 102: Span 3 Bay 3 facing N**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 103: Span 3 Bay 4 facing N



Photograph 104: Span 3 Bay 4 looking N



Photograph 105: Span 3 Bay 5 facing N



Photograph 106: Span 3 Bay 5 Looking N



Photograph 107: Span 3 Bay 6 facing N



Photograph 108: Span 3 Bay 6 looking S

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 109: Span 3 Bay 7 facing N**



**Photograph 110: Span 3 Bay 8 facing N**



**Photograph 111: Span 3 Bay 8 top moment plate rusted N**



**Photograph 112: Span 3 Bay 8 top moment plate rusted S**



**Photograph 113: Span 3 Bay 9 facing N**



**Photograph 114: Span 3 Cracking and minor spall in parapet**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 115: Span 3 Looking N



Photograph 116: Span 3 Looking N



Photograph 117: Span 3 Looking N



Photograph 118: Span 3 Looking N



Photograph 119: Span 3 Looking S



Photograph 120: Span 3 Looking S



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 121: Span 3 Looking S



Photograph 122: Span 3 Minor parapet cracking typ



Photograph 123: Span 3 Missing access panel in light pole and vandal fence



Photograph 124: Span 3 Old x-frame location



Photograph 125: Span 3 Sidewalk no problems typ



Photograph 126: Span 3 Sidewall delams 3 locations 1'x1'



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 127: Span 3 Telephone utility connection to beam 1 near pier 2



Photograph 128: Span 3 Utility pipeline



Photograph 129: Span 3 W



Photograph 130: Span 3 W



Photograph 131: Span 3 West bridge profile facing N



Photograph 132: Span 4 Bay 8 moment plate rusted

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 133: Span 4 Bay 9 exp



Photograph 134: Span 4 Beam 1 bearing - 2 anchor bolts pier 3



Photograph 135: Span 4 Beam 1 bearing - broke anchor pier 4



Photograph 136: Span 4 beam 2 bearing - 2 anchor bolts pier 3



Photograph 137: Span 4 Beam 2 bearing pier 4



Photograph 138: Span 4 Beam 3 bearing pier 4



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 139: Span 4 Beam 4 bearing pier 4**



**Photograph 140: Span 4 Beam 5 bearing - 2 anchor bolts pier 3**



**Photograph 141: Span 4 Beam 5 bearing pier 4**



**Photograph 142: Span 4 Beam 6 bearing - 1 anchor bolt pier 3**



**Photograph 143: Span 4 Beam 6 bearing - one anchor pier 4**



**Photograph 144: Span 4 Beam 7 bearing**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 145: Span 4 Beam 7 bearing pier 4



Photograph 146: Span 4 Beam 8 bearing



Photograph 147: Span 4 Beam 8 bearing pier 4



Photograph 148: Span 4 Beam 9 bearing



Photograph 149: Span 4 Beam 9 bearing pier 4



Photograph 150: Span 4 Beam 10 bearing - 1 of 2 bolts broke



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 151: Span 4 Beam 10 bearing - anchor bolt pier 4**



**Photograph 152: Span 4 Beam 10 bearing pier 4**



**Photograph 153: Span 4 Beam bearing 3 - 2 anchor bolts pier 3**



**Photograph 154: Span 4 Beam bearing 4 - 2 anchor bolts pier 3**



**Photograph 155: Span 4 Beam pitting-flange**



**Photograph 156: Span 4 Bent x-frame**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 157: Span 4 Broke x-frame**



**Photograph 158: Span 4 Broke x-frame 2**



**Photograph 159: Span 4 Broken weld @ previous x-frame**



**Photograph 160: Span 4 Broken x-frame**



**Photograph 161: Span 4 Cracking in parapet**



**Photograph 162: Span 4 Gouge in beam**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 163: Span 4 Looking N



Photograph 164: Span 4 Looking N



Photograph 165: Span 4 Looking N



Photograph 166: Span 4 Looking S



Photograph 167: Span 4 Looking S



Photograph 168: Span 4 Looking S



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 169: Span 4 Missing cover for VPF**



**Photograph 170: Span 4 Parapet spall deterioration 4'x2'x1'**



**Photograph 171: Span 4 Parapet spall deterioration 6'x2'x1'**



**Photograph 172: Span 4 Parapet spall deterioration 6'x3'x1'**



**Photograph 173: Span 4 Pitted moment - bottom**



**Photograph 174: Span 4 Pitted moment - side**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 175: Span 4 Sidewalk delam spall 1'x3'



Photograph 176: Span 4 Sidewalk delam spall 3'x1'



Photograph 177: Span 4 Spall W



Photograph 178: Span 4 Splice lose bolts



Photograph 179: Span 4 Splice lose bolts 2



Photograph 180: Span 4 Utility support

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 181: Span 4 W



Photograph 182: Span 4 X-frame bay 9 bowed



Photograph 183: Span 5 Beam 2 pitted flange



Photograph 184: Span 5 Close up of S



Photograph 185: Span 5 Hde in vandal fence bent rail  
@ exp



Photograph 186: Span 5 Left end of pier 5 end cap E



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 187: Span 5 Left side of pier cap E



Photograph 188: Span 5 Look S



Photograph 189: Span 5 Looking E



Photograph 190: Span 5 Looking N



Photograph 191: Span 5 Looking N



Photograph 192: Span 5 Looking N

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 193: Span 5 Looking N



Photograph 194: Span 5 Looking S



Photograph 195: Span 5 Looking S



Photograph 196: Span 5 Looking S



Photograph 197: Span 5 Looking S



Photograph 198: Span 5 Looking S



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 199: Span 5 Middle of cap pier 5 E**



**Photograph 200: Span 5 Middle of cap W**



**Photograph 201: Span 5 Middle of pier cap E**



**Photograph 202: Span 5 Parapet cracking and staining typ**



**Photograph 203: Span 5 Parapet delam and deterioration 3'x1'**



**Photograph 204: Span 5 Pier 5 S**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 205: Span 5 Pier stem pier 5 E



Photograph 206: Span 5 Pier stem pier 5 W



Photograph 207: Span 5 Right end of pier 5 end cap E



Photograph 208: Span 5 Right end of pier 5 end cap W



Photograph 209: Span 5 S



Photograph 210: Span 5 Sidewalk delam and spall  
1'x1'

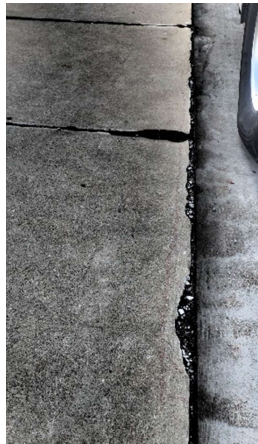


# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 211: Span 5 Sidewalk delam and spall 3'x1'



Photograph 212: Span 5 Sidewalk delam and spall 4'x1'



Photograph 213: Span 5 Sidewalk parapet no problems



Photograph 214: Span 5 Snooper close up (2)



Photograph 215: Span 5 Snooper close up (3)



Photograph 216: Span 5 Snooper close up (4)

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 217: Span 5 Snooper close up (5)



Photograph 218: Span 5 Snooper close up (6)



Photograph 219: Span 5 Snooper close up



Photograph 220: Span 5 Spall W



Photograph 221: Span 6 BM's 1-3 @ pier 5



Photograph 222: Span 6 BM's 1-3 pier 7



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 223: Span 6 BM's 1-4 @ pier 6



Photograph 224: Span 6 BM's 3-5 @ pier 5



Photograph 225: Span 6 BM's 4-5 @ pier 6



Photograph 226: Span 6 BM's 4-6 @ pier 5



Photograph 227: Span 6 BM's 5-6 @ pier 6 (2)



Photograph 228: Span 6 BM's 5-6 @ pier 6

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 229: Span 6 Close up BM's 7=8 pier 7



Photograph 230: Span 6 Close up of BM and paint



Photograph 231: Span 6 Close up pier 7 BM's 6-8



Photograph 232: Span 6 Close up pier 7 BM's 8-10



Photograph 233: Span 6 E



Photograph 234: Span 6 Left end of cap pier 5 W



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 235: Span 6 Left end of pier 5 cap w pier (2)



Photograph 236: Span 6 Left end of pier 5 cap w pier (3)



Photograph 237: Span 6 Left end of pier 5 cap w pier



Photograph 238: Span 6 Long diagonal cracks near exp joint



Photograph 239: Span 6 Looking along E



Photograph 240: Span 6 Looking E

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 241: Span 6 Looking E**



**Photograph 242: Span 6 Looking N**



**Photograph 243: Span 6 Looking S**



**Photograph 244: Span 6 Looking W**



**Photograph 245: Span 6 Looking W**



**Photograph 246: Span 6 Looking W**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 247: Span 6 Missing VPF panel @ light pole**



**Photograph 248: Span 6 N**



**Photograph 249: Span 6 N**



**Photograph 250: Span 6 Parapet spall and deterioration 1'x3'**



**Photograph 251: Span 6 Pier 6 S**



**Photograph 252: Span 6 Pier 7 BM ends 3-5**

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 253: Span 6 Pier 7 S**



**Photograph 254: Span 6 Pier 7 W**



**Photograph 255: Span 6 Pier cap of pier 5 W**



**Photograph 256: Span 6 Pier cap of pier 5 W**



**Photograph 257: Span 6 Pier stem of pier 5**



**Photograph 258: Span 6 S**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 259: Span 6 S



Photograph 260: Span 6 Scaling of sidewalk



Photograph 261: Span 6 Sidewalk and spall 6'x1'



Photograph 262: Span 6 Sidewalk delam and spall 3'x1'



Photograph 263: Span 6 Sidewalk delam and spall 4'x2'



Photograph 264: Span 6 Sidewalk delam and spall 9'x1'



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 265: Span 6 Sidewalk parapet long cracks in sidewalk



Photograph 266: Span 6 Sidewalk parapet minor cracking and scaling



Photograph 267: Span 6 Sidewall delam and spall 2'x1'



Photograph 268: Span 6 Sidewall delam and spall 3'x1'



Photograph 269: Span 6 Snooper picture (2)



Photograph 270: Span 6 Snooper picture

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 271: Span 6 Underside of left superstructure**



**Photograph 272: Span 6 Underside of right superstructure**



**Photograph 273: Span 6 Underside of superstructure**



**Photograph 274: Span 6 Underside superstructure**



**Photograph 275: Span 6 Underside superstructure right structure**



**Photograph 276: Span 6 W**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 277: Span 6 W



Photograph 278: Span 7 Sidewalk delam and spall  
1'x2'



Photograph 279: Span 7 Sidewalk delam and spall  
7'x1'



Photograph 280: Span 7 Sidewalk long cracks minor  
scaling



Photograph 281: Span 7 Sidewalk parapet long cracks  
minor scaling



Photograph 282: Span 7 Sidewalk parapet minor  
cracking and scaling

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 283: Span 8 and 9 E



Photograph 284: Span 8 Bay 1 facing N



Photograph 285: Span 8 Bay 2 facing N (bm 2 and 3)



Photograph 286: Span 8 Bay 3 facing N



Photograph 287: Span 8 Bay 4 facing N



Photograph 288: Span 8 Bay 5 facing N



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 289: Span 8 Bay 6 facing N



Photograph 290: Span 8 Bay 7 facing N



Photograph 291: Span 8 Bay 8 facing N



Photograph 292: Span 8 Bay 9 facing N



Photograph 293: Span 8 Bay between 9 and 10 pier 7



Photograph 294: Span 8 Beam 1 bearing @ pier 9, facing N

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 295: Span 8 Beam 1 bearing pier 7



Photograph 296: Span 8 Beam 2 bearing @ pier 9, facing N



Photograph 297: Span 8 Beam 2 bearing pier 7 (2)



Photograph 298: Span 8 Beam 2 bearing pier 7



Photograph 299: Span 8 Beam 3 bearing @ pier 9, facing N



Photograph 300: Span 8 Beam 3 Bearing pier 7



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 301: Span 8 Beam 4 bearing @ pier 9, facing N



Photograph 302: Span 8 Beam 5 bearing @ pier 9, facing N



Photograph 303: Span 8 Beam 6 bearing @ pier 9, facing N



Photograph 304: Span 8 Beam 6 bearing pier 7



Photograph 305: Span 8 Beam 7 bearing @ pier 9, facing N



Photograph 306: Span 8 Beam 8 bearing @ pier 9, facing N



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 307: Span 8 Beam 9 bearing @ pier 9, facing N



Photograph 308: Span 8 Beam 9 bearing pier 7



Photograph 309: Span 8 Beam 10 bearing @ pier 9, facing N



Photograph 310: Span 8 Beam 10 bearing pier 7 bent bolt



Photograph 311: Span 8 Bearing @ beam 7 pier 7



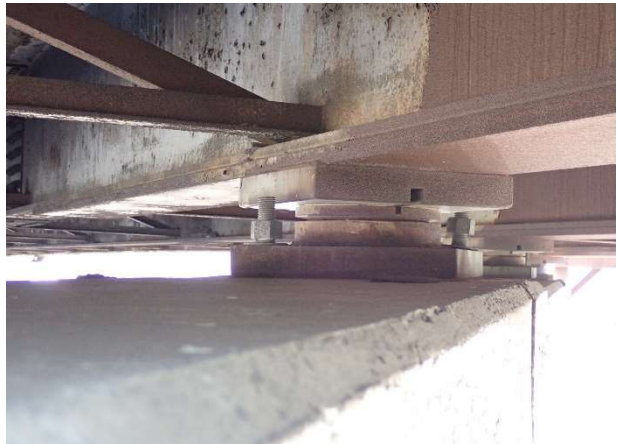
Photograph 312: Span 8 Bearing @ beam 8

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 313: Span 8 Bearing @ beam 9



Photograph 314: Span 8 Bearing beam 3 pier 7



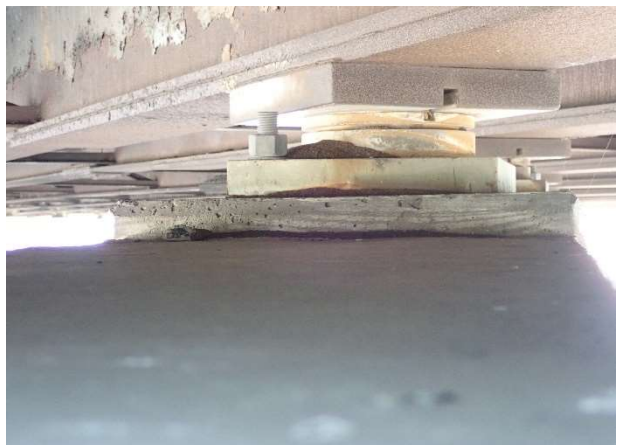
Photograph 315: Span 8 Bearing beam 4



Photograph 316: Span 8 Bearing beam 4 pier 7



Photograph 317: Span 8 Bearing beam 5 missing bolt



Photograph 318: Span 8 Bearing beam 6 pier 7



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 319: Span 8 Bearing beam 7 pier 7



Photograph 320: Span 8 Bent plate @ bm 1 splice



Photograph 321: Span 8 Deterioration @ diaphragm, bay 9, 2 south of pier 7



Photograph 322: Span 8 E



Photograph 323: Span 8 Long cracks in sidewalk x2



Photograph 324: Span 8 Long diagonal cracks in sidewalk



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 325: Span 8 Looking N



Photograph 326: Span 8 Looking N



Photograph 327: Span 8 Looking N



Photograph 328: Span 8 Looking N



Photograph 329: Span 8 Looking N



Photograph 330: Span 8 Looking N



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 331: Span 8 Looking N



Photograph 332: Span 8 Looking N



Photograph 333: Span 8 Looking S



Photograph 334: Span 8 Map cracking and spall on N



Photograph 335: Span 8 Map cracking in pier 8 N



Photograph 336: Span 8 Map cracking in pier 8, N



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 337: Span 8 Misaligned flange splice plate (bm 2) typ



Photograph 338: Span 8 Misalignment bot



Photograph 339: Span 8 Moment weld pier 7 (2)



Photograph 340: Span 8 Moment weld pier 7 (3)



Photograph 341: Span 8 Moment weld pier 7



Photograph 342: Span 8 Overall view of span 8 (2)

# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 343: Span 8 overall view of span 8**



**Photograph 344: Span 8 Parapet and sidewalk minor cracks rust staining**



**Photograph 345: Span 8 Pier 8, N**



**Photograph 346: Span 8 Pier 8, N**



**Photograph 347: Span 8 pier 9, S**



**Photograph 348: Span 8 Pier 9, S**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 349: Span 8 Sidewalk delam and spall 1'x1' (2)**



**Photograph 350: Span 8 Sidewalk delam and spall 1'x1'**



**Photograph 351: Span 8 Sidewalk delam and spall 12'x1'**



**Photograph 352: Span 8 Transverse crack in sidewalk**



**Photograph 353: Span 8 W**

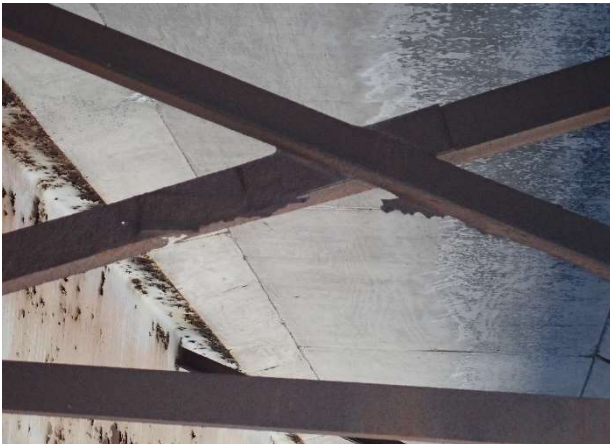


**Photograph 354: Span 8 Waterline insulation in bay 5, near pier 7**



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



**Photograph 355: Span 8 X-frame between 9 and 10**



**Photograph 356: Span 9 E**



**Photograph 357: Span 9 Long transverse crack in sidewalk**



**Photograph 358: Span 9 Parapet horizontal and vertical cracking**



**Photograph 359: Span 9 Sidewalk and parapet long vertical crack and minor scaling**



**Photograph 360: Span 9 Sidewalk delam and spall 1'x1'**



# Photograph Log

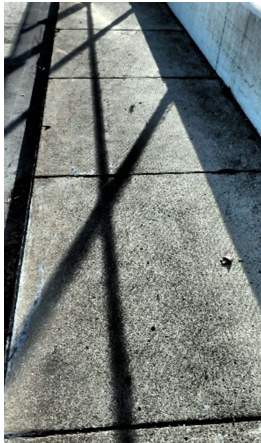
Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 361: Span 9 Sidewalk delam and spall 1'x5'



Photograph 362: Span 9 Sidewalk delam and spall 2'x1'



Photograph 363: Span 10 Long cracking in sidewalk



Photograph 364: Span 10 Long transverse crack in sidewalk



Photograph 365: Span 10 Longitudinal cracking in sidewalk minor spalls @ curb



Photograph 366: Span 10 Parapet and sidewalk minor cracking and rust staining



# Photograph Log

Cuyahoga County – W. 150<sup>th</sup> Street Bridge 01.94



Photograph 367: Span 10 Parapet wall cracking missing hardware @ VPF opening



Photograph 368: Span 10 Sidewalk delam and spall 5'x1'



Photograph 369: Span 10 Sidewalk scaling



Photograph 370: Span 11 Sidewalk delams 2'x2' and 5'x5' wedge

# APPENDIX C

## Concrete Coring & Testing Report

January 13, 2021



Arcadis US, Inc.  
111 Superior Avenue, Suite 1300  
Cleveland, Ohio 44224

Attn: Mr. Frank Getz, PE  
P: (330) 515-5677  
E: Frank.Getz@arcadis.com

Re: Summary Coring Report  
West 140th Bridge 01.82 and West 150th Bridge 01.94  
Inspection and Evaluation  
Cleveland, Ohio  
Terracon Project No. N6201020

Dear Mr. Getz:

We have completed the Coring services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PN6201020 dated January 29, 2020. This report presents the findings of the field exploration and laboratory test results for the project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,  
**Terracon Consultants, Inc.**

A handwritten signature in black ink, appearing to read "Alex Gherghel".

Alex Gherghel  
Project Manager  
Materials Department

A handwritten signature in black ink, appearing to read "David G. Potoma".

David G. Potoma, P.E.  
Manager  
Materials Department



**Coring Report**  
**West 140th Bridge 01.82 and West 150th Bridge 01.94**  
**Inspection and Evaluation**  
**Cleveland, Ohio**  
**Terracon Project No. N6201020**  
**January 13, 2021**

## INTRODUCTION

This report presents the results of our surface exploration of the existing pavement and substructure elements of West 140<sup>th</sup> Bridge 01.82 and West 150<sup>th</sup> Bridge 01.94.

The scope of services for this project included twelve deck pavement cores for each bridge and a total of eleven substructure cores from the West 140<sup>th</sup> Bridge performed on 9/30/2020 and 10/1/2020 and a total of seven substructure cores from the West 150<sup>th</sup> Bridge performed on 10/12/2020 and 10/13/2020.

## SAMPLING METHOD

Core sampling was performed using a portable electric coring machine and a 4-inch diameter, diamond impregnated bit, core barrel.

The coring machine was mounted to a truck rig to extract the road pavement cores and was anchored to the surface of the concrete using a ½" expansion anchor where vertical core sampling was performed for the substructure cores. During the coring process, a water sprayer was connected to the core machine for lubrication and dust control. Upon extraction, the cores were labeled and sealed in containers, following the moisture conditioning procedure of ASTM C42. Prior to the start of the coring procedure, the reinforcing steel layout was determined in an effort to avoid interference. Coring locations were pre-determined and marked out in the field by Arcadis.

Cores were labeled as follows:

Core ID	Location	Bridge No.
D1	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D1A	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D2	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D2A	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D3	Deck core, northbound	West 140 <sup>th</sup> Bridge 01.82
D3A	Deck core, northbound	West 140 <sup>th</sup> Bridge 01.82
D4	Deck core, northbound	West 140 <sup>th</sup> Bridge 01.82

**Coring Report**

West 140th Bridge 01.82 and West 150th Bridge 01.94 Inspection and Evaluation  
 Cleveland, Ohio ■ January 13, 2021 ■ Terracon Project No. N6201020



Core ID	Location	Bridge No.
D4A	Deck core, northbound	West 140 <sup>th</sup> Bridge 01.82
D5	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D5A	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
D6	Deck core, northbound	West 140 <sup>th</sup> Bridge 01.82
C1	Deck core, southbound	West 140 <sup>th</sup> Bridge 01.82
A1	Substructure core	West 140 <sup>th</sup> Bridge 01.82
A2	Substructure core	West 140 <sup>th</sup> Bridge 01.82
C2	Substructure core	West 140 <sup>th</sup> Bridge 01.82
C3	Substructure core	West 140 <sup>th</sup> Bridge 01.82
C4	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P1	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P2	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P4	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P8	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P9	Substructure core	West 140 <sup>th</sup> Bridge 01.82
P11	Substructure core	West 140 <sup>th</sup> Bridge 01.82
D1	Deck core, southbound	West 150th Bridge 01.94
D1A	Deck core, southbound	West 150th Bridge 01.94
D2	Deck core, southbound	West 150th Bridge 01.94
D2A	Deck core, southbound	West 150th Bridge 01.94
D3	Deck core, northbound	West 150th Bridge 01.94
D3A	Deck core, northbound	West 150th Bridge 01.94
D4	Deck core, northbound	West 150th Bridge 01.94
D4A	Deck core, northbound	West 150th Bridge 01.94
D5	Deck core, northbound	West 150th Bridge 01.94
D5A	Deck core, northbound	West 150th Bridge 01.94
D6	Deck core, southbound	West 150th Bridge 01.94
D6A	Deck core, southbound	West 150th Bridge 01.94
P1	Substructure core	West 150th Bridge 01.94
P2	Substructure core	West 150th Bridge 01.94
P3	Substructure core	West 150th Bridge 01.94
P8	Substructure core	West 150th Bridge 01.94
P9	Substructure core	West 150th Bridge 01.94
A1	Substructure core	West 150th Bridge 01.94
A2	Substructure core	West 150th Bridge 01.94



## Coring Report

West 140th Bridge 01.82 and West 150th Bridge 01.94 Inspection and Evaluation  
Cleveland, Ohio ■ January 13, 2021 ■ Terracon Project No. N6201020



## LABORATORY TESTING

The purpose of these services were to collect concrete core samples for laboratory testing in the following categories:

- Water Soluble Chlorides (ASTM C1218)
- Bond Shear Strength (Iowa Test Method 406B)
- Concrete Permeability (ASTM D5084)
- Compressive Strength (ASTM C42)

Prior to testing, the cores were photographed and measured. Results of the laboratory testing is presented as attachments as part of this report.

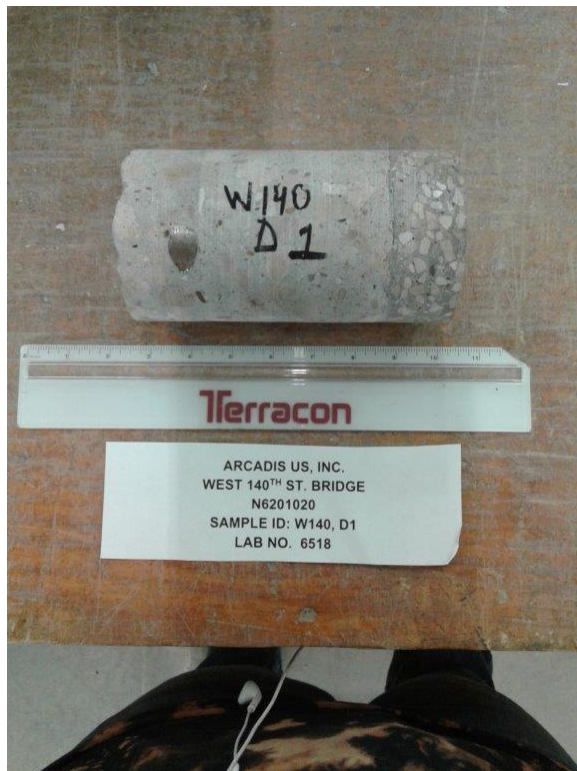
## GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather.

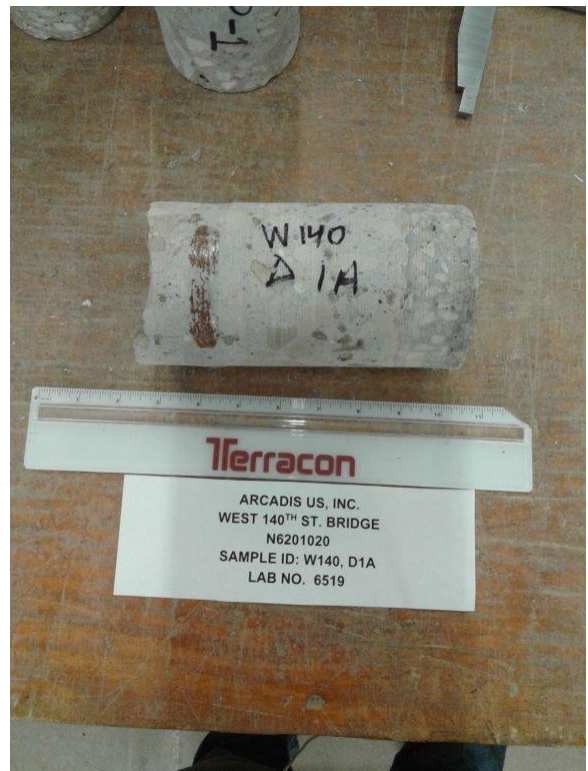
Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

## **ATTACHMENTS**



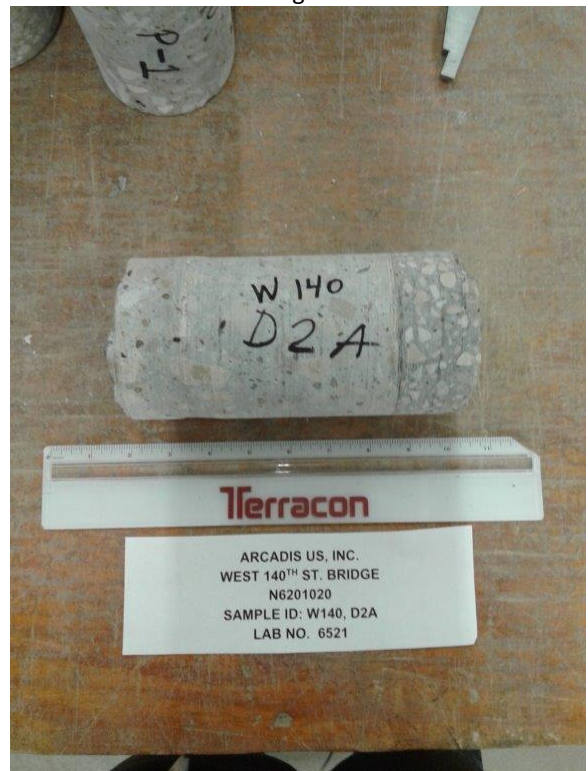
Core length: 6.86"



Core length: 7.00"



Core length: 6.80"



Core length: 7.55"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

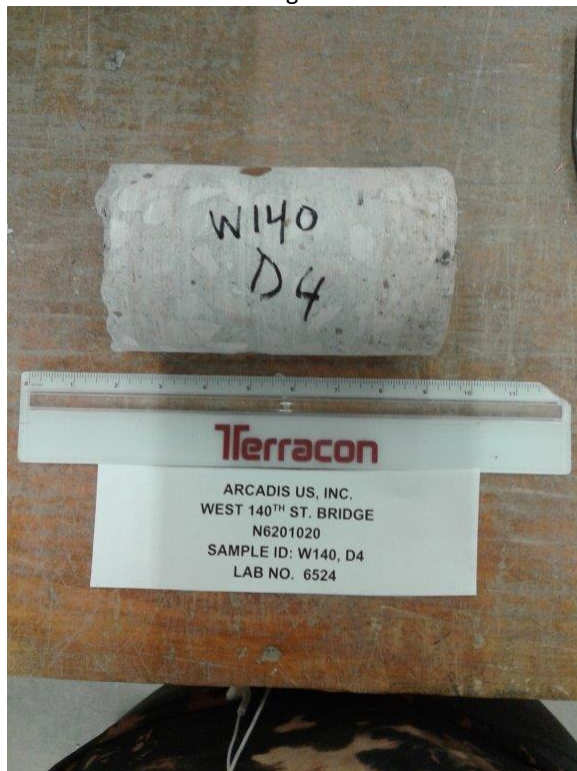




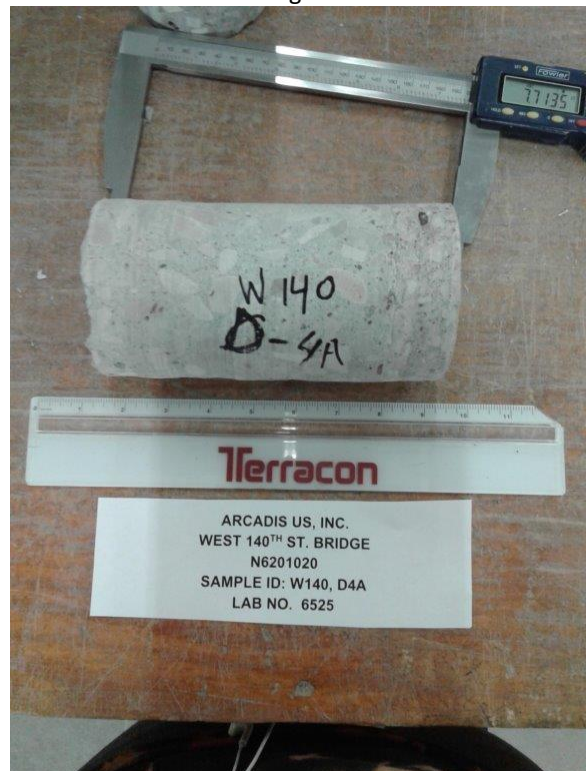
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Core length: 5.89"



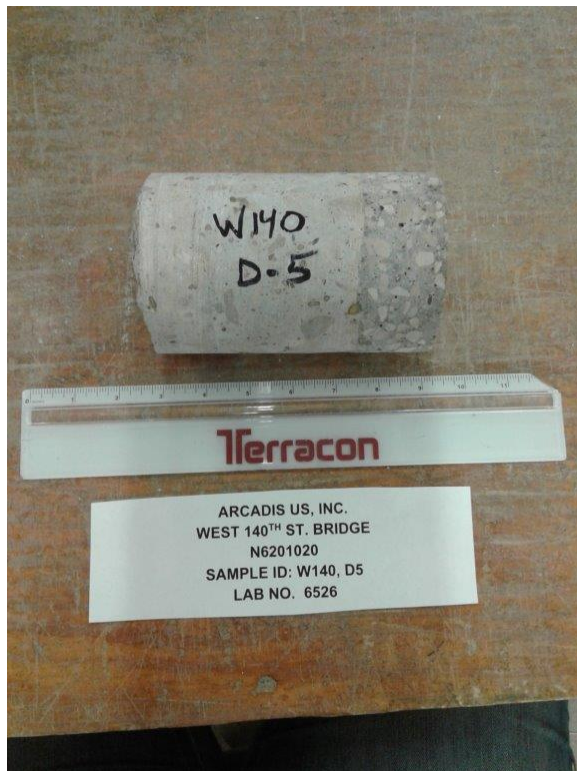
Core length: 6.53"



Core length: 7.21"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

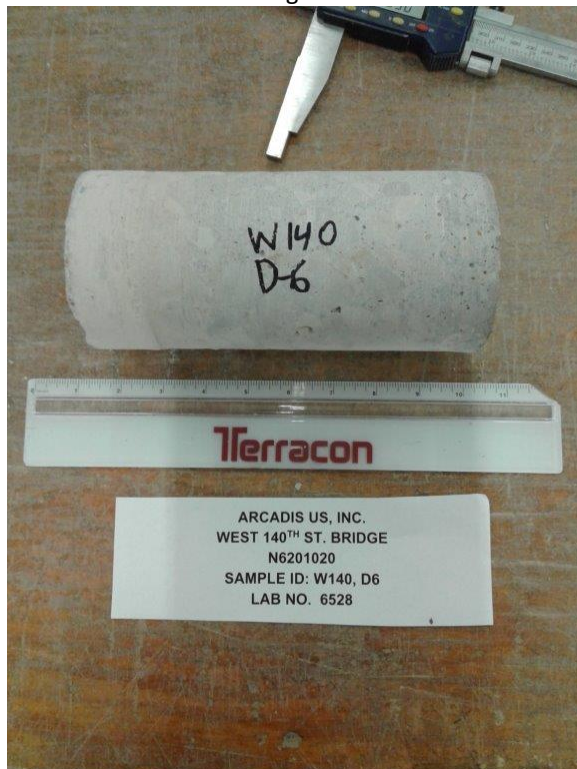




Core length: 5.89"



Core length: 5.71"



Core length: 8.28"



Core length: 7.49"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378





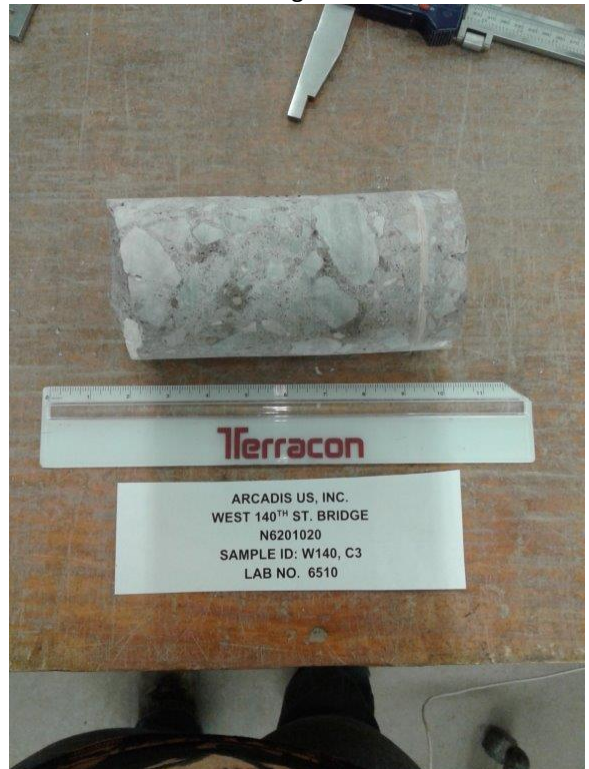
Core length: 7.36"



Core length: 8.16"



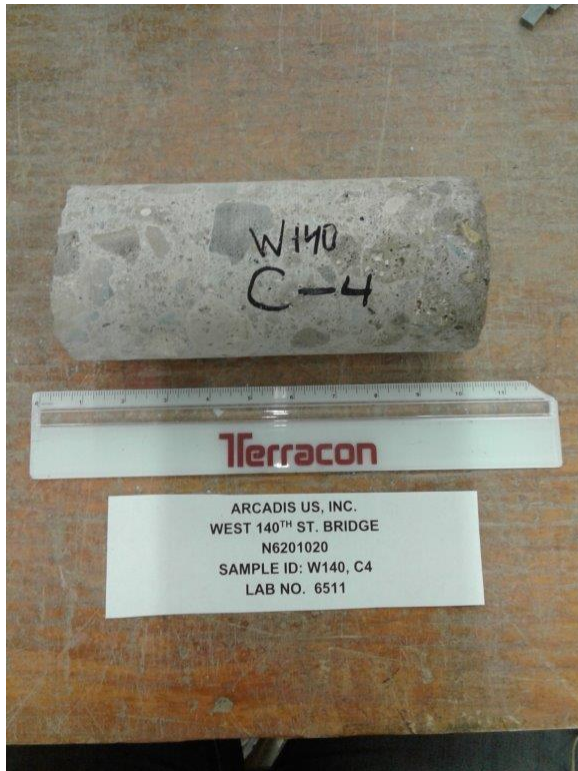
Core length: 8.23"



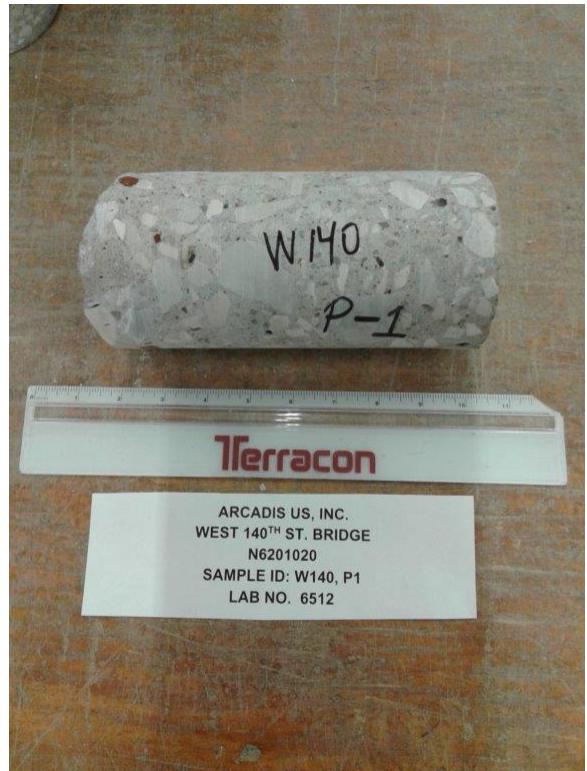
Core length: 7.64"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

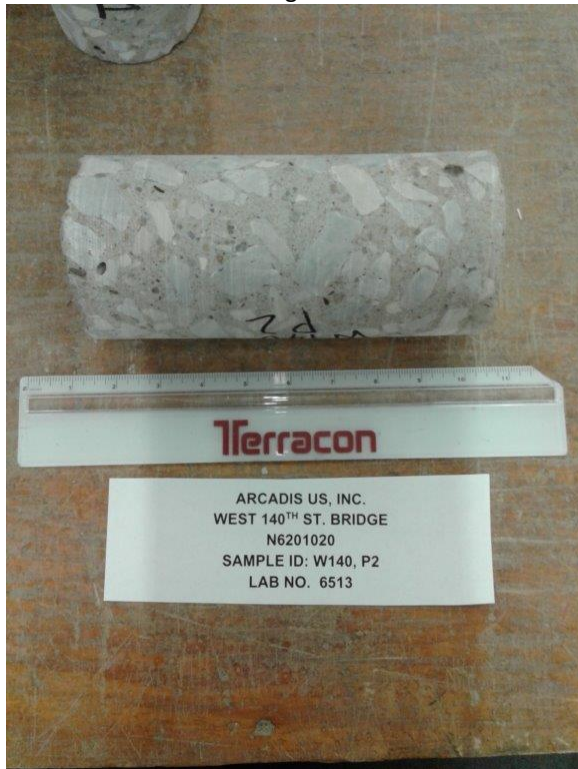




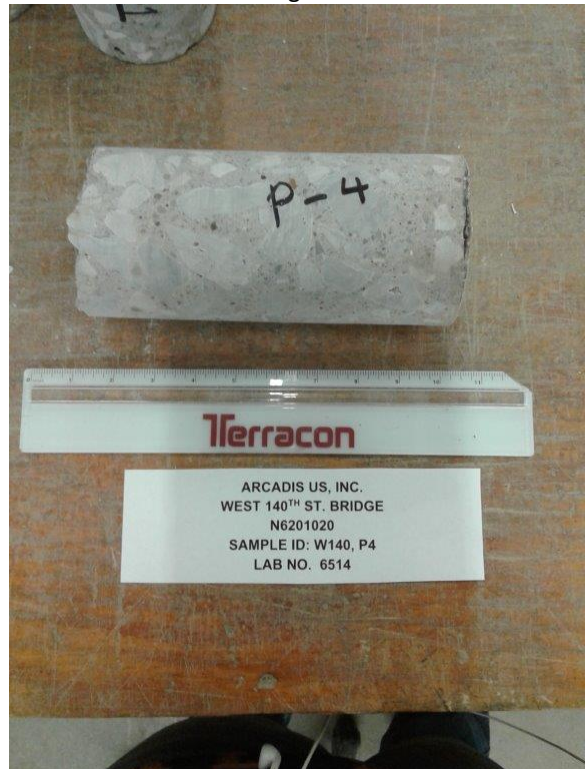
Core length: 8.33"



Core length: 7.79"



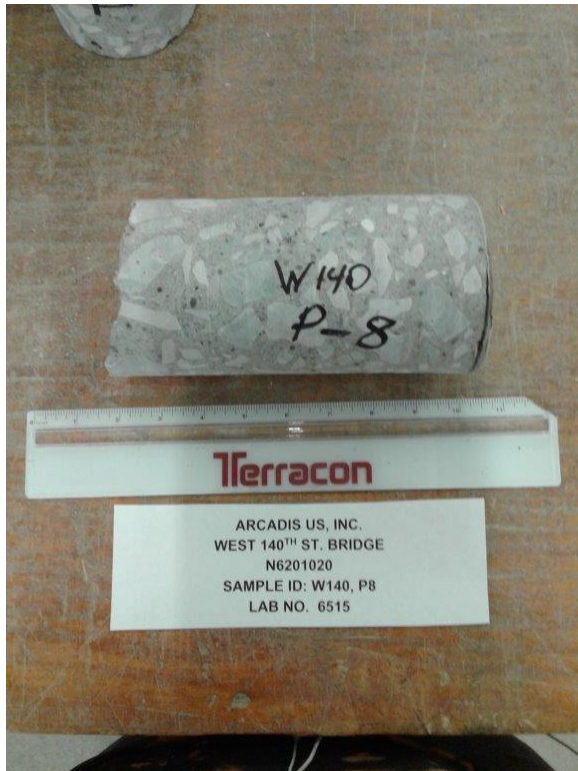
Core length: 8.19"



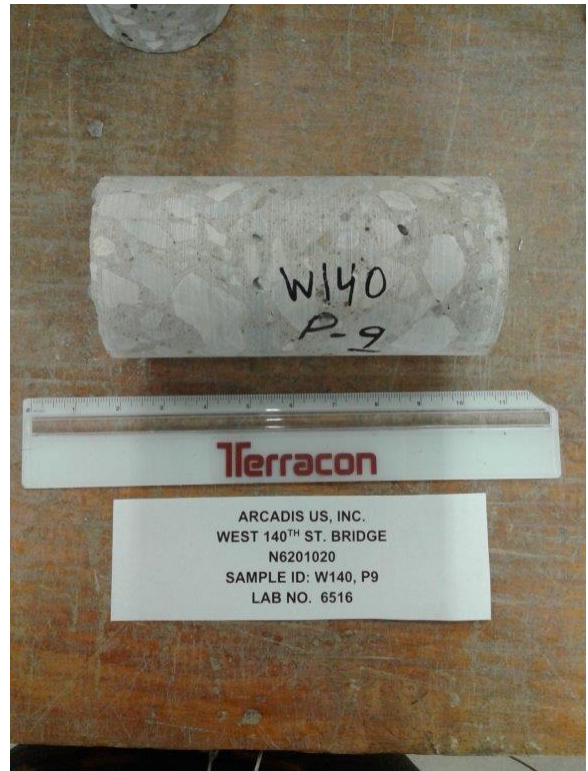
Core length: 7.14"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

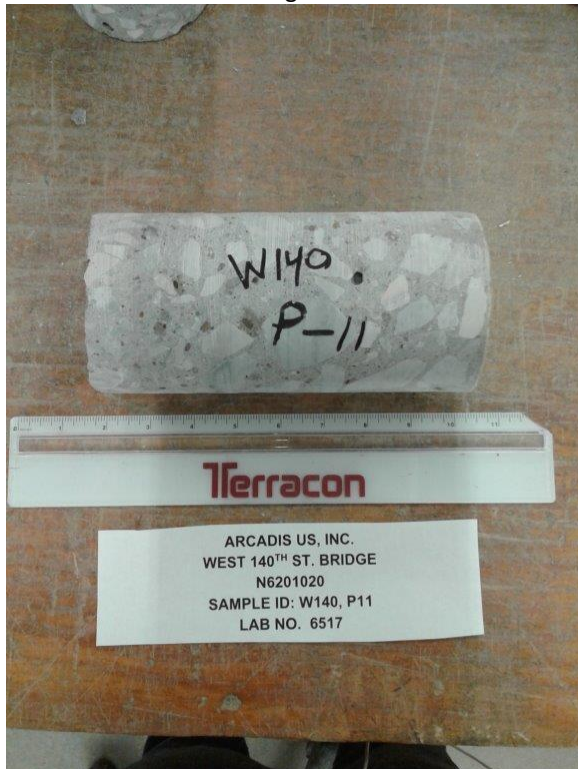




Core length: 7.15"



Core length: 7.86"



Core length: 7.47"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 140 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/1/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

## LABORATORY SERVICES REPORT

**Report Number:** N120MLAB.0140B  
**Service Date:** 12/11/20  
**Report Date:** 12/11/20  
**Task:** N6201020

# Terracon

611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

### Client

ARCADIS US, Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

### Project

West 140th St. Bridge 01.82

Cleveland, OH

Project No. N120MLAB Task No. N6201020

### Laboratory Test Data

Sample ID	Lab No.	Sample Depth, In.	Percent Chloride by Weight of Concrete	Saturated Surface Dry Density, lb/ft <sup>3</sup>	Chloride, lb/ft <sup>3</sup> by Weight of Concrete
P-4	6514	Top	0.005	143.5	0.006
P-2	6513	Top	0.011	126.8	0.014
P-8	6515	Top	0.005	146.1	0.006
P-9	6516	Top	0.005	144.8	0.006
P-11	6517	Top	0.009	146.9	0.012
D-1	6518	Top	0.018	136.8	0.024
D-2	6520	Top	0.014	137.0	0.018
D-3	6522	Top	0.009	137.6	0.013
D-4A	6525	Top	0.014	132.6	0.019
D-5	6526	Top	0.005	130.7	0.006
D-6	6527	Top	0.009	135.8	0.125

**Services:**  
**Terracon Rep:**  
**Reported To:**  
**Contractor:**

### Report Distribution

Reviewed By:



Stewart Abrams  
Staff Geologist

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

## LABORATORY SERVICES REPORT

**Report Number:** N120MLAB.0140B  
**Service Date:** 12/11/20  
**Report Date:** 12/11/20  
**Task:** N6201020

# Terracon

611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

### Client

ARCADIS US, Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

### Project

W140th St. Bridge 01.82

Cleveland, OH

Project No. N120MLAB

### Laboratory Test Data

Sample ID	Lab No.	Sample Depth, In.	Percent Chloride by Weight of Concrete	Saturated Surface Dry Density, lb/ft <sup>3</sup>	Chloride, lb/ft <sup>3</sup> by Weight of Concrete
A-1	6506	Top	0.009	143.6	0.013
A-2	6507	Top	0.005	144.2	0.007
C-1	6508	Top	0.009	129.8	0.012
C-3	6510	Top	0.014	140.7	0.019
C-4	6511	Top	0.009	137.9	0.013
P-1	6512	Top	0.005	146.9	0.007

### Services:

Terracon Rep:

Reported To:

Contractor:

### Report Distribution

Reviewed By:



Stewart Abrams  
Staff Geologist

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.





## BOND SHEAR STRENGTH REPORT

### IOWA TEST METHOD 406B

Client: Arcadis US Inc Order No. N6201020  
Project: West 140<sup>th</sup> ST. Bridge 01.82 Date Typed: 12/2/2020  
Date Drilled: 10/1/2020

Description of Pavement or Structure: Bridge deck

Lab No.	6519	6521	6525	6523
Identification	D-1A	D-2A	D-4A	D-3A
Location of Core				
Condition of Core	Good	Good	Good	Good
Length of Core (in.)				
Concrete Mix Used				
Date Concrete Placed				

#### BOND TENSILE STRENGTH TESTS

Date Tested	11/14/20	11/14/20	11/14/20	11/14/20
Weight, Lbs.				
Age of Concrete				
Trimmed Length (in.)	7.31	7.84	7.52	5.99
Diameter of Core (in.)	3.70	3.70	3.70	3.70
Area of Core (sq.in.)	10.75	10.75	10.75	10.75
Total Load, (lbs.)	6017	4839	6396	5425
Bond Shear Strength (psi)	560	450	595	505
Failure Plane	Interface	Interface	Interface	Interface

Remarks:

Driller: AG

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# BOND SHEAR STRENGTH REPORT

## IOWA TEST METHOD 406B

Client: Arcadis US Inc Order No. N6201020  
Project: West 140<sup>th</sup> ST. Bridge 01.82 Date Typed: 12/2/2020  
Date Drilled: 10/1/2020

Description of Pavement or Structure: Bridge deck

Lab No.	6527	6508		
Identification	D-5A	C-1		
Location of Core				
Condition of Core	Good	Good		
Length of Core (in.)				
Concrete Mix Used				
Date Concrete Placed				

### BOND TENSILE STRENGTH TESTS

Date Tested	11/14/20	11/14/20		
Weight, Lbs.				
Age of Concrete				
Trimmed Length (in.)	5.81	8.22		
Diameter of Core (in.)	3.70	3.70		
Area of Core (sq.in.)	10.75	10.75		
Total Load, (lbs.)	5908	4770		
Bond Shear Strength (psi)	550	445		
Failure Plane	Interface	Interface		

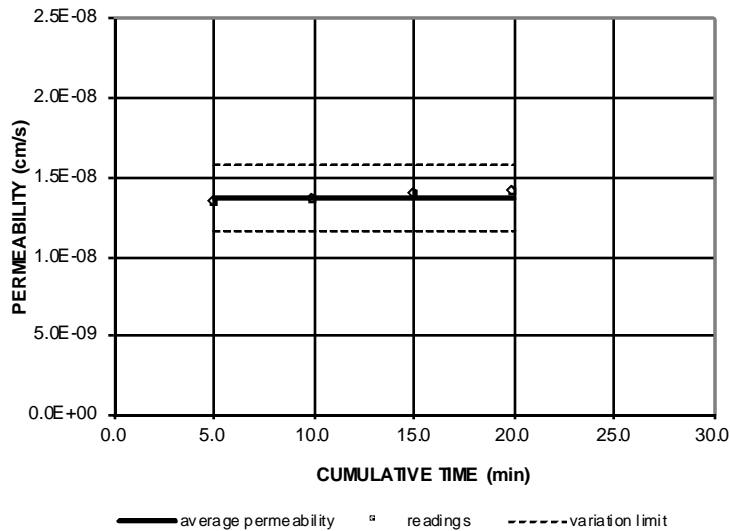
Remarks:

Driller: AG

"AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC, AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATIONS OF STATEMENTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL."



## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

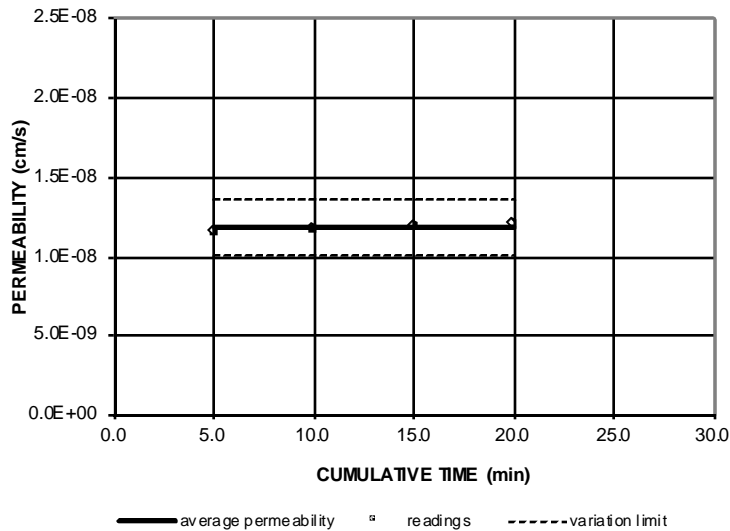
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	11.83	1.34E-08	<b>1.4E-08</b>
21.00	5.00	10.00	11.65	1.36E-08	
21.00	5.00	15.00	11.46	1.38E-08	
21.00	5.00	20.00	11.28	1.40E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		3.05	3.05
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. In.)		32.89	32.89
% Recompct.		Moisture Content, (%)		4.91	5.04
Test Pressures (psi)		Percent Saturation (%)		41.16	42.22
Backpressure	90.00	Wet Mass Density (pcf)		129.91	130.07
Cell pressure	95.00	Dry Mass Density (pcf)		123.83	123.83
Eff. Stress	5.00	Void Ratio		0.31	0.31
Specific Gravity	2.60	Calculated Porosity, %		23.68	23.68

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	D-1A						
Sample Location							
Date	12/15/2020	Lab No.	6519				

## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

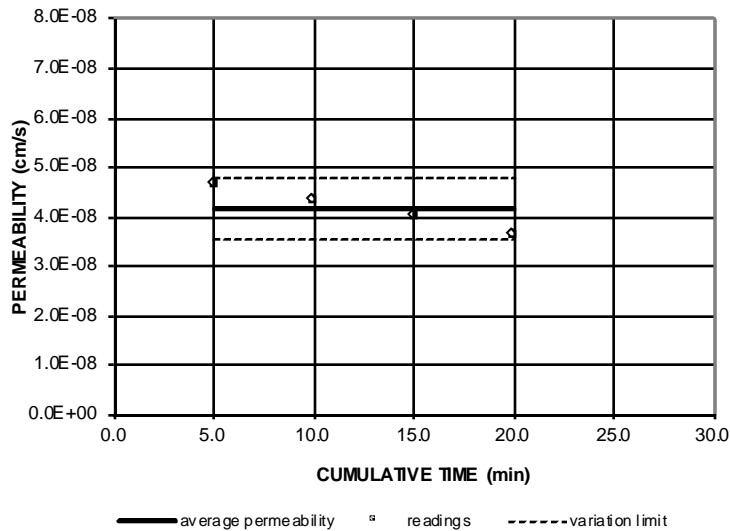
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	13.73	1.16E-08	<b>1.2E-08</b>
21.00	5.00	10.00	13.55	1.17E-08	
21.00	5.00	15.00	13.38	1.19E-08	
21.00	5.00	20.00	13.21	1.20E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		3.20	3.20
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		34.31	34.31
% Recompact.		Moisture Content, (%)		4.70	4.87
Test Pressures (psi)		Percent Saturation (%)		54.06	56.06
Backpressure	90.00	Wet Mass Density (pcf)		138.55	138.78
Cell pressure	95.00	Dry Mass Density (pcf)		132.33	132.33
Eff. Stress	5.00	Void Ratio		0.23	0.23
Specific Gravity	2.60	Calculated Porosity, %		18.43	18.43

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	D-2A						
Sample Location							
Date	12/18/2020	Lab No.	6521				

## FLEXIBLE WALL PERMEABILITY TEST




Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	15.04	4.63E-08	<b>4.2E-08</b>
21.00	5.00	10.00	14.23	4.36E-08	
21.00	5.00	15.00	13.52	4.02E-08	
21.00	5.00	20.00	12.92	3.62E-08	

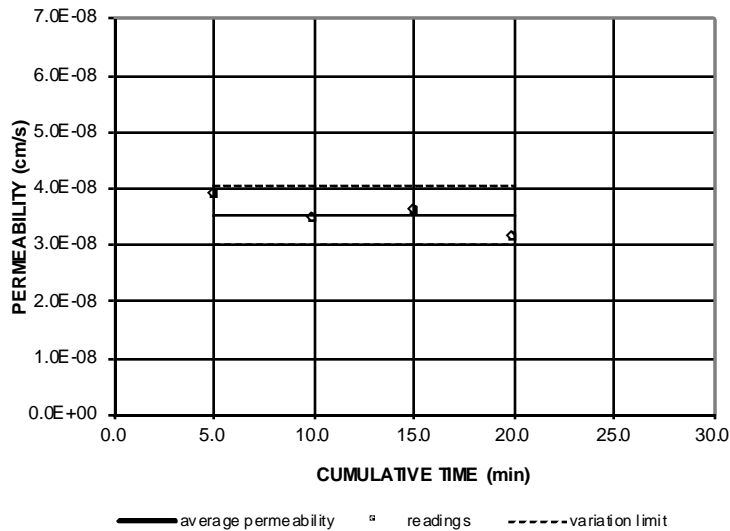
Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.75	3.20
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		29.63	34.42
% Recompct.		Moisture Content, (%)		5.24	10.35
Test Pressures (psi)		Percent Saturation (%)		51.72	57.57
Backpressure	90.00	Wet Mass Density (pcf)		135.15	122.00
Cell pressure	95.00	Dry Mass Density (pcf)		128.42	110.55
Eff. Stress	5.00	Void Ratio		0.26	0.47
Specific Gravity	2.60	Calculated Porosity, %		20.84	31.86

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div></div>		
Sample Number	D-3A						
Sample Location							
Date	12/18/2020	Lab No.	6523				



## FLEXIBLE WALL PERMEABILITY TEST




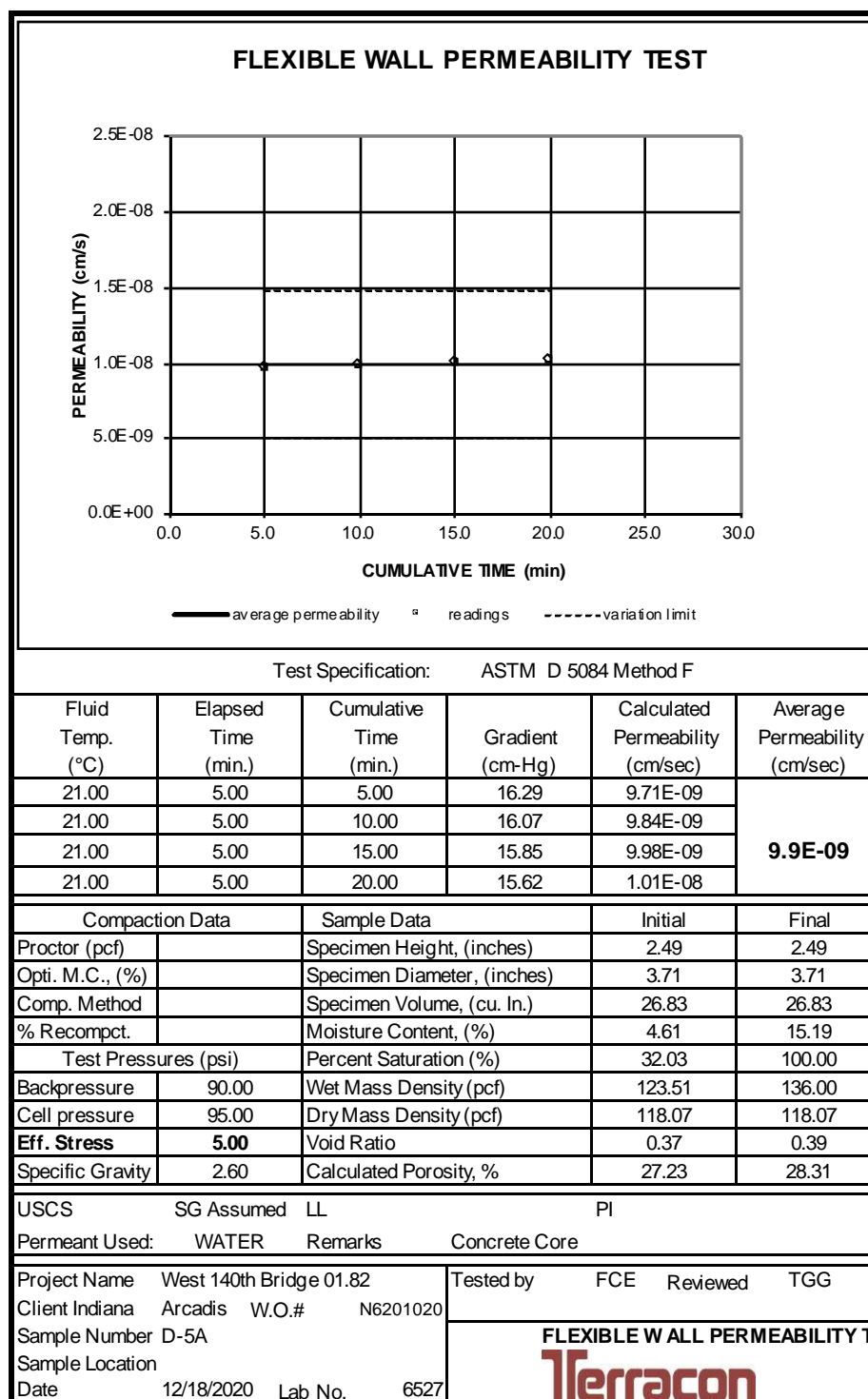
Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	14.12	3.87E-08	<b>3.5E-08</b>
21.00	5.00	10.00	13.54	3.47E-08	
21.00	5.00	15.00	12.96	3.62E-08	
21.00	5.00	20.00	12.48	3.14E-08	

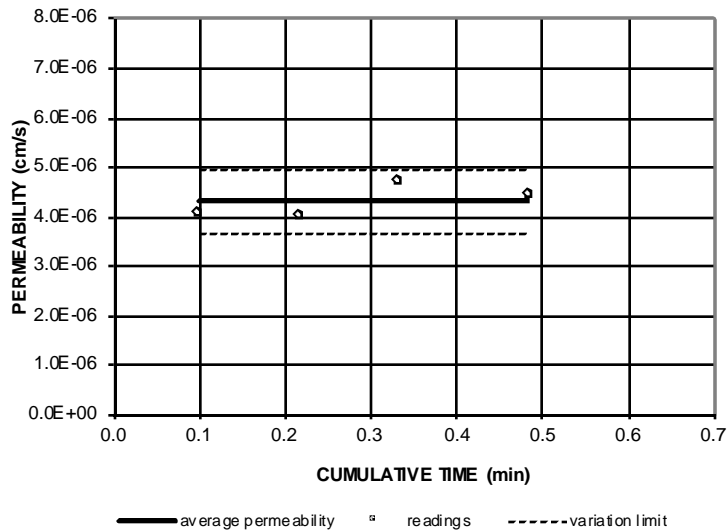
Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.87	2.87
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		30.86	30.86
% Recompct.		Moisture Content, (%)		4.69	4.91
Test Pressures (psi)		Percent Saturation (%)		53.35	55.77
Backpressure	90.00	Wet Mass Density (pcf)		138.23	138.51
Cell pressure	95.00	Dry Mass Density (pcf)		132.03	132.03
Eff. Stress	5.00	Void Ratio		0.23	0.23
Specific Gravity	2.60	Calculated Porosity, %		18.62	18.62

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div></div>		
Sample Number	D-4						
Sample Location							
Date	12/18/2020	Lab No.	6524				



## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

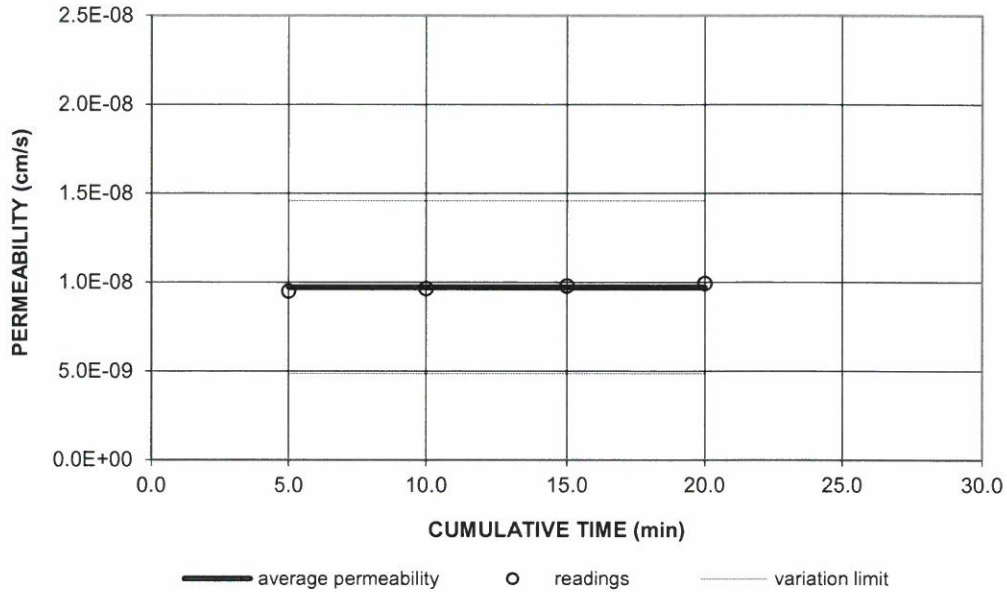
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	0.10	0.10	18.27	4.08E-06	<b>4.3E-06</b>
21.00	0.12	0.22	15.73	4.02E-06	
21.00	0.12	0.33	13.19	4.73E-06	
21.00	0.15	0.48	10.66	4.46E-06	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.19	2.19
Opt. M.C., (%)		Specimen Diameter, (inches)		3.71	3.71
Comp. Method		Specimen Volume, (cu. in.)		23.61	23.61
% Recompact.		Moisture Content, (%)		4.26	4.52
Test Pressures (psi)		Percent Saturation (%)		45.67	48.46
Backpressure	90.00	Wet Mass Density (pcf)		136.15	136.49
Cell pressure	95.00	Dry Mass Density (pcf)		130.60	130.60
Eff. Stress	5.00	Void Ratio		0.24	0.24
Specific Gravity	2.60	Calculated Porosity, %		19.50	19.50

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core (small crack in core)

Project Name    West 140th Bridge 01.82 Client Indiana    Arcadis    W.O.#    N6201020 Sample Number    D-6 Sample Location Date    12/22/2020    Lab No.    6528	Tested by    FCE    Reviewed    TGG  <b>FLEXIBLE WALL PERMEABILITY TEST</b> 
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## FLEXIBLE WALL PERMEABILITY TEST



Test Specification: ASTM D 5084 Method F

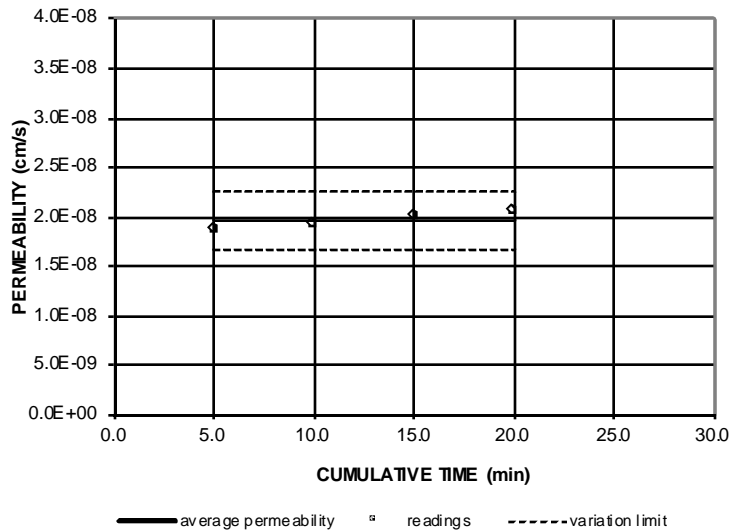
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	16.71	9.51E-09	<b>9.7E-09</b>
21.00	5.00	10.00	16.47	9.65E-09	
21.00	5.00	15.00	16.23	9.79E-09	
21.00	5.00	20.00	15.99	9.94E-09	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.29	3.70
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. In.)		24.59	39.60
% Recompct.		Moisture Content, (%)		5.19	5.36
Test Pressures (psi)		Percent Saturation (%)		62.45	14.52
Backpressure	90.00	Wet Mass Density (pcf)		140.32	87.25
Cell pressure	95.00	Dry Mass Density (pcf)		133.39	82.81
Eff. Stress	5.00	Void Ratio		0.22	0.96
Specific Gravity	2.60	Calculated Porosity, %		17.78	48.96

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core
Project Name	West 140th Bridge 01.82		Tested by
Client Indiana	Arcadis	W.O.#	N6201020
Sample Number	C-1		Reviewed by
Sample Location			TGG
Date	12/17/2020	Lab No.	6509

**FLEXIBLE WALL PERMEABILITY TEST**  


## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	16.73	1.87E-08	<b>2.0E-08</b>
21.00	5.00	10.00	16.23	1.93E-08	
21.00	5.00	15.00	15.73	1.99E-08	
21.00	5.00	20.00	15.23	2.06E-08	

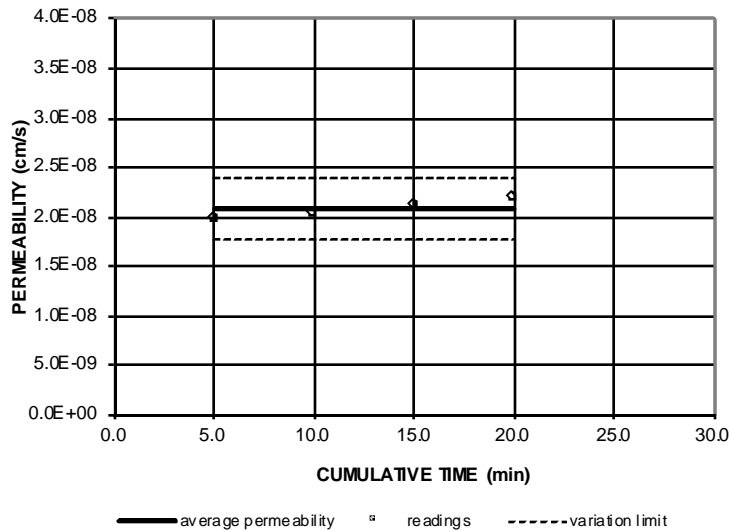
Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.23	2.23
Opti. M.C., (%)		Specimen Diameter, (inches)		3.71	3.71
Comp. Method		Specimen Volume, (cu. in.)		24.01	24.01
% Recompct.		Moisture Content, (%)		6.02	8.01
Test Pressures (psi)		Percent Saturation (%)		70.57	93.87
Backpressure	90.00	Wet Mass Density (pcf)		140.78	143.42
Cell pressure	95.00	Dry Mass Density (pcf)		132.78	132.78
Eff. Stress	5.00	Void Ratio		0.22	0.22
Specific Gravity	2.60	Calculated Porosity, %		18.16	18.16

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	P-2						
Sample Location							
Date	12/15/2020	Lab No.	6516				



## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

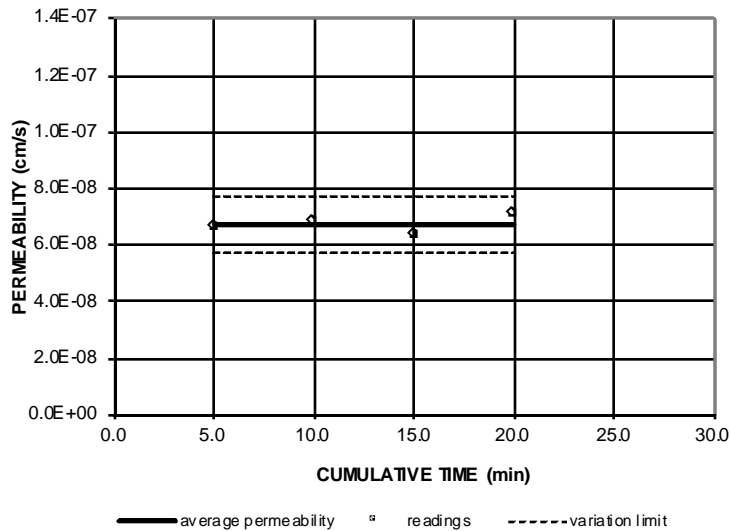
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	19.86	1.97E-08	<b>2.1E-08</b>
21.00	5.00	10.00	19.21	2.04E-08	
21.00	5.00	15.00	18.57	2.11E-08	
21.00	5.00	20.00	17.92	2.18E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.16	2.16
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		23.21	23.21
% Recompct.		Moisture Content, (%)		5.03	5.20
Test Pressures (psi)		Percent Saturation (%)		73.16	75.53
Backpressure	90.00	Wet Mass Density (pcf)		144.54	144.77
Cell pressure	95.00	Dry Mass Density (pcf)		137.62	137.62
Eff. Stress	5.00	Void Ratio		0.18	0.18
Specific Gravity	2.60	Calculated Porosity, %		15.18	15.18

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	P-4						
Sample Location							
Date	12/15/2020	Lab No.	6514				

## FLEXIBLE WALL PERMEABILITY TEST




Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	16.02	6.62E-08	<b>6.7E-08</b>
21.00	5.00	10.00	14.42	6.82E-08	
21.00	5.00	15.00	13.06	6.39E-08	
21.00	5.00	20.00	11.71	7.09E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.26	2.26
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		24.26	24.26
% Recompct.		Moisture Content, (%)		5.09	5.60
Test Pressures (psi)		Percent Saturation (%)		63.91	70.37
Backpressure	90.00	Wet Mass Density (pcf)		141.26	141.95
Cell pressure	95.00	Dry Mass Density (pcf)		134.43	134.43
Eff. Stress	5.00	Void Ratio		0.21	0.21
Specific Gravity	2.60	Calculated Porosity, %		17.14	17.14

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 140th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div></div>		
Sample Number	P-9						
Sample Location							
Date	12/15/2020	Lab No.	6516				

## Concrete Core Test Report

**Report Number:** N120MLAB.0140A  
**Service Date:** 12/09/20  
**Report Date:** 12/10/20  
**Task:** N6201020

**Terracon**

611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

### Client

ARCADIS US, Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

### Project

West 140th St. Bridge 01.82

Cleveland, OH

Project Number: N120MLAB Task Number: N6201020

### Material Information

**Specified Strength:** Unknown  
**Specified Length:**  
**Mix ID:** Unknown  
**Nominal Maximum Size Aggregate:** 1-Inch

### Sample Information

**Placement Date:** Unknown  
**Date Tested:** 11/25/20 **Time:** 1300  
**Sampled By:**  
**Drill Directions:** Vertical  
**Date Core Obtained:** 10/01/20 **Time:** 1000  
**Date Ends Trimmed:** 11/17/20 **Time:** 0900  
**Moisture Conditioning History:** According to ASTM C-42

### Laboratory Test Data

Core ID	Location	Cored Length (in)	Trim Length (in)	Capped Length (in)	Diam. (in)	Area (sq in)	Length / Diam. Ratio	Max Load (lbs)	Corr. Factor	Comp. Strength (psi)	Fracture Type	Density (pcf)	Tested By
1	A-1	8.27	7.39	7.44	3.70	10.75	2.01	74120	1.000	6890	3	143.6	BJM
2	A-2	7.75	7.08	6.14	3.70	10.75	1.66	66550	0.973	6020	4	144.2	BJM
3	C-1	8.16	2.85	3.05	3.70	10.75	0.82	94690	0.870	7260*	3	129.8	BJM
4	C-3	8.10	6.97	7.17	3.70	10.75	1.94	71310	1.000	6630	3	140.7	BJM
5	C-4	8.75	7.40	7.51	3.70	10.75	2.03	81780	1.000	7610	3	137.9	BJM
6	D-1	7.33	6.82	6.94	3.70	10.75	1.88	56580	1.000	5260	3	136.8	BJM
7	D-2	7.44	6.69	6.88	3.70	10.75	1.86	71440	1.000	6640	3	137.0	BJM
8	D-3	8.10	7.36	7.54	3.70	10.75	2.04	83990	1.000	7810	3	137.6	BJM
9	D-4A	7.53	4.85	4.96	3.70	10.75	1.34	90100	0.941	7890	3	132.6	BJM
10	D-5	6.15	5.60	5.77	3.70	10.75	1.56	58800	0.965	5280	3	130.7	BJM
11	D-6	8.29	5.86	6.01	3.70	10.75	1.62	72460	0.970	6540	3	135.8	BJM
12	P-1	8.10	7.39	7.50	3.70	10.75	2.03	62940	1.000	5850	3	146.9	BJM
13	P-11	7.70	7.36	7.42	3.70	10.75	2.01	67400	1.000	6270	3	147.5	BJM
14	P-2	8.37	5.39	5.49	3.70	10.75	1.48	69200	0.958	6170	3	126.8	BJM
15	P-4	7.94	5.38	5.42	3.70	10.75	1.46	55130	0.955	4900	3	143.5	BJM
16	P-8	7.80	6.55	6.72	3.70	10.75	1.82	73570	1.000	6840	3	146.1	BJM
17	P-9	8.01	5.22	5.34	3.70	10.75	1.44	65760	0.953	5830	4	144.8	BJM

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparer similar or identical materials.

## **Concrete Core Test Report**

**Report Number:** N120MLAB.0140A  
**Service Date:** 12/09/20  
**Report Date:** 12/10/20  
**Task:** N6201020

**Terracon**  
611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

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### **Client**

Terracon Consultants, Inc.  
Attn: Accts Payable  
10841 S Ridgeview Rd  
Olathe, KS 66061

### **Project**

MAT Lab Revenue Allocation  
611 Lunken Park Dr  
Cincinnati, OH

Project Number: N120MLAB

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**Comments:** \*Did Not meet 1:1 Ratio.

### **Services:**

### **Reported To:**

### **Contractor:**

### **Report Distribution:**

**Reviewed By:**



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Timothy G. Goodall  
Department Manager II-Technical

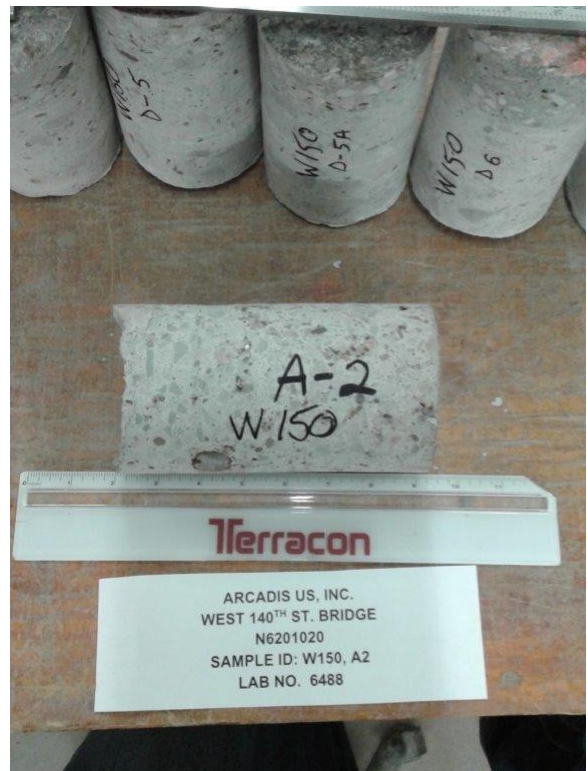
### **Test Methods:**

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparer similar or identical materials.

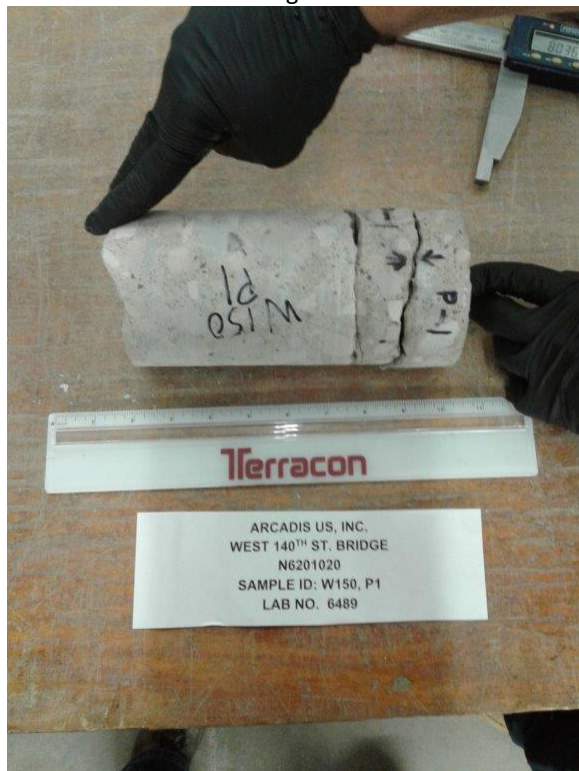




Core length: 7.83"




Core length: 6.51"



Core length: 7.77"



Core length: 5.79"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 150 <sup>th</sup>	 12460 Plaza Dr Parma, OH 44130-1057 (216) 459-8378
West 150th Street	Technician: AG	
Cleveland, OH	Date: 10/13/2020	
	Scale: Not to Scale	

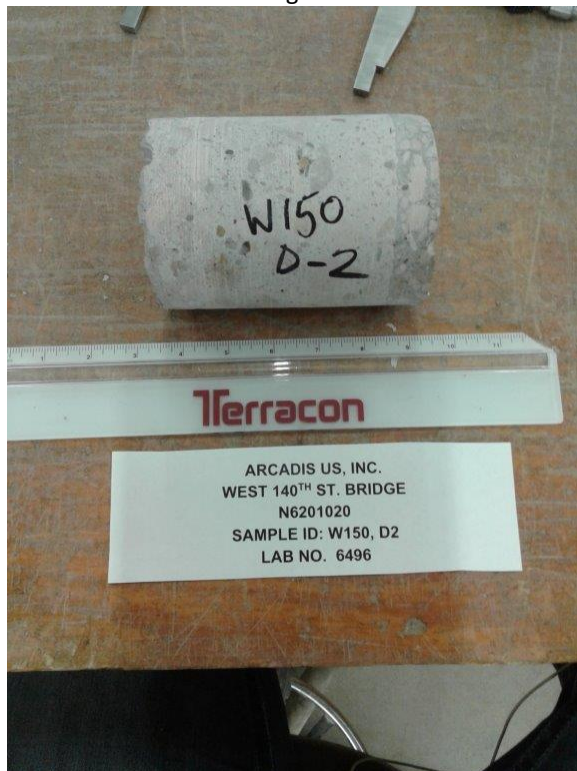




Core length: 6.02"



Core length: 5.28"



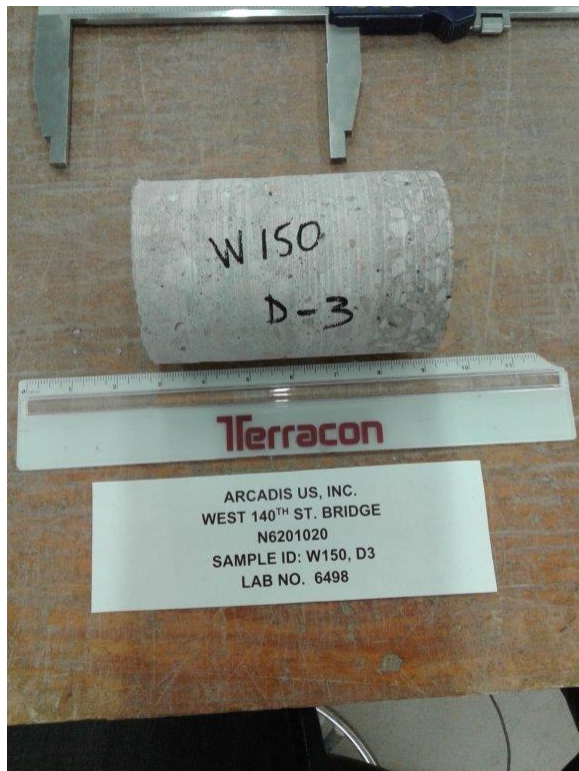
Core length: 5.44"



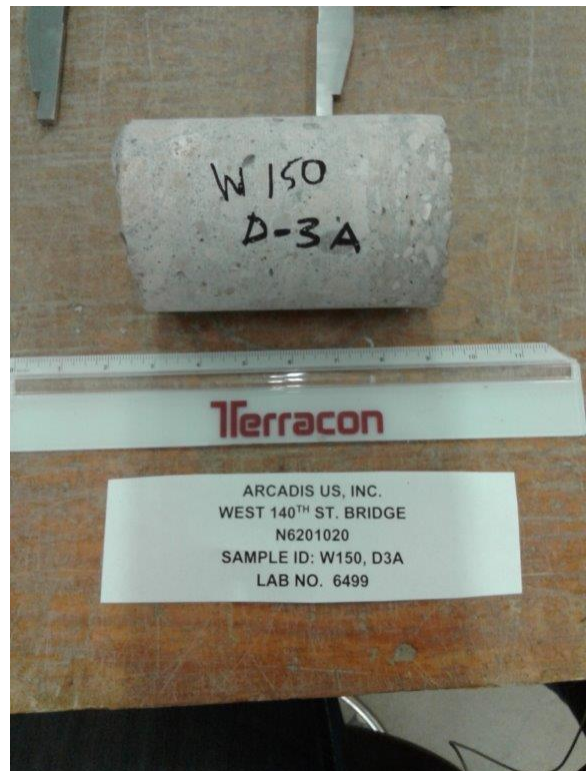
Core length: 5.43"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 150 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/13/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378





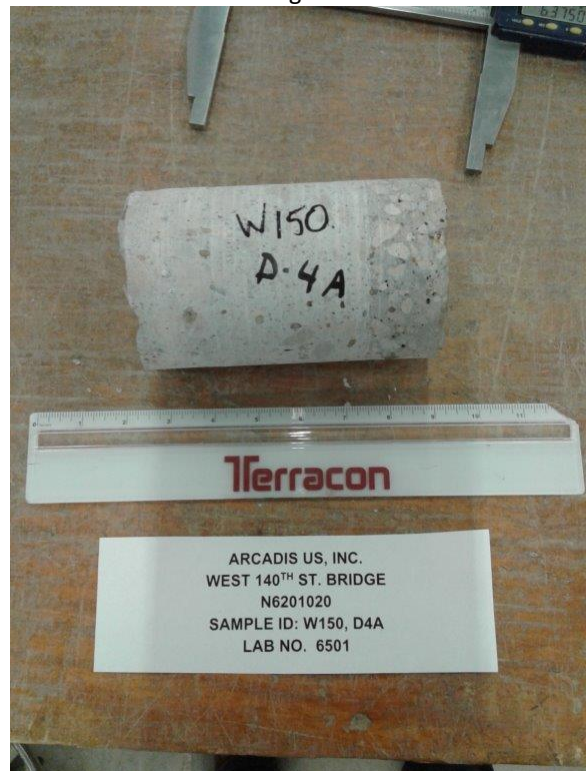
Core length: 6.13"




Core length: 6.00"



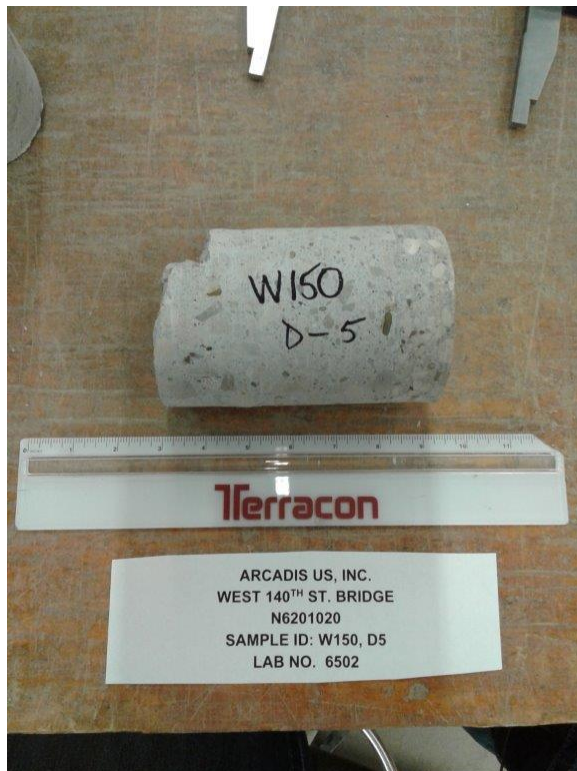
Core length: 5.93"



Core length: 6.21"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 150 <sup>th</sup>	
West 150th Street	Technician: AG	
Cleveland, OH	Date: 10/13/2020	
	Scale: Not to Scale	
		12460 Plaza Dr
		Parma, OH 44130-1057
		(216) 459-8378





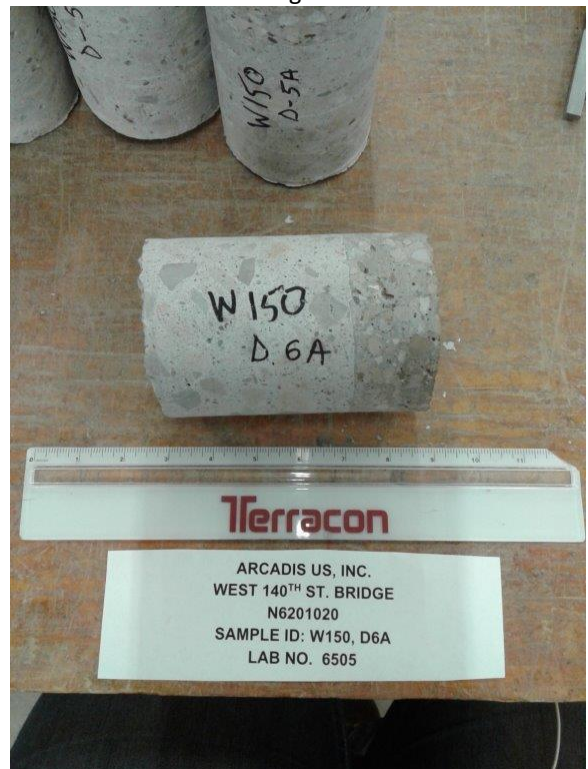
Core length: 4.97"



Core length: 5.44"



Core length: 5.87"



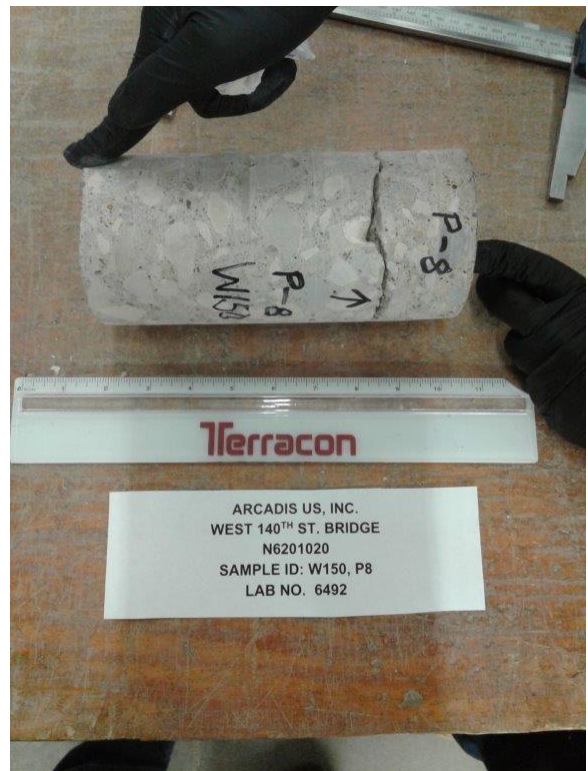
Core length: 5.56"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 150 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/13/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378





Core length: 7.80"



Core length: 8.07"



Core length: 7.50"

West 140th St. Bridge 01.82 and West 150th St. Bridge 01.94 - Inspection & Evaluation	Site: W 150 <sup>th</sup>	<b>Terracon</b>
West 150th Street	Technician: AG	12460 Plaza Dr
Cleveland, OH	Date: 10/13/2020	Parma, OH 44130-1057
	Scale: Not to Scale	(216) 459-8378

## CHLORIDE REPORT

**Report Number:** N120MLAB.0141B  
**Service Date:** 12/11/20  
**Report Date:** 12/11/20  
**Task:** N6201020

# Terracon

611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

### Client

ARCADIS US, Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

### Project

West 150th St. Bridge 01.82  
West 150th Street  
Cleveland, OH

Project No. N120MLAB Task No. N6201020

### Laboratory Test Data

Sample ID	Lab No.	Sample Depth, In.	Percent Chloride by Weight of Concrete	Saturated Surface Dry Density, lb/ft <sup>3</sup>	Chloride, lb/ft <sup>3</sup> by Weight of Concrete
A-1	6487	Top	0.013	137.9	0.018
P-1	6489	Top	0.011	137.2	0.015
P-3	6491	Top	0.005	138.5	0.006
P-8	6492	Top	0.005	135.3	0.006
P-9	6493	Top	0.009	138.2	0.013
D-1	6494	Top	0.018	132.9	0.024
D-2	6496	Top	0.014	133.0	0.018
D-3	6498	Top	0.009	134.5	0.012
D-4	6500	Top	0.014	134.7	0.018
D-5	6502	Top	0.031	132.3	0.041
D-6	6504	Top	0.009	134.7	0.012

**Services:**  
**Terracon Rep:**  
**Reported To:**  
**Contractor:**

### Report Distribution

Reviewed By:



Stewart Abrams  
Staff Geologist

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.





## BOND SHEAR STRENGTH REPORT

### IOWA TEST METHOD 406B

**Client:** Arcadis US Inc  
**Project:** West 150<sup>th</sup> ST. Bridge 01.82  
**Order No.** N6201020  
**Date Typed:** 12/2/2020  
**Date Drilled:** 10/13/2020

**Description of Pavement or Structure:** Bridge deck

<b>Lab No.</b>	6495	6497	6499	6501
<b>Identification</b>	D-1A	D-2A	D-3A	D-4A
<b>Location of Core</b>				
<b>Condition of Core</b>	Good	Good	Good	Good
<b>Length of Core (in.)</b>				
<b>Concrete Mix Used</b>				
<b>Date Concrete Placed</b>				
<b>BOND TENSILE STRENGTH TESTS</b>				
<b>Date Tested</b>	11/14/20	11/14/20	11/14/20	11/14/20
<b>Weight, Lbs.</b>				
<b>Age of Concrete</b>				
<b>Trimmed Length (in.)</b>	5.16	5.49	6.50	6.22
<b>Diameter of Core (in.)</b>	3.70	3.70	3.70	3.70
<b>Area of Core (sq.in.)</b>	10.75	10.75	10.75	10.75
<b>Total Load, (lbs.)</b>	6362	5615	5235	5230
<b>Bond Shear Strength (psi)</b>	590	520	490	490
<b>Failure Plane</b>	Interface	Interface	Failure in Overlay	Interface

**Remarks:**

**Driller:** AG

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## BOND SHEAR STRENGTH REPORT

### IOWA TEST METHOD 406B

**Client:** Arcadis US Inc  
**Project:** West 150<sup>th</sup> ST. Bridge 01.82  
**Order No.** N6201020  
**Date Typed:** 12/2/2020  
**Date Drilled:** 10/13/2020

**Description of Pavement or Structure:** Bridge deck

Lab No.	6503	6506		
Identification	D-5A	D-6A		
Location of Core				
Condition of Core	Good	Good		
Length of Core (in.)				
Concrete Mix Used				
Date Concrete Placed				
<b>BOND TENSILE STRENGTH TESTS</b>				
Date Tested	11/14/20	11/14/20		
Weight, Lbs.				
Age of Concrete				
Trimmed Length (in.)	5.62	5.65		
Diameter of Core (in.)	3.70	3.70		
Area of Core (sq.in.)	10.75	10.75		
Total Load, (lbs.)	9287	4758		
Bond Shear Strength (psi)	865	440		
Failure Plane	Interface	Interface		

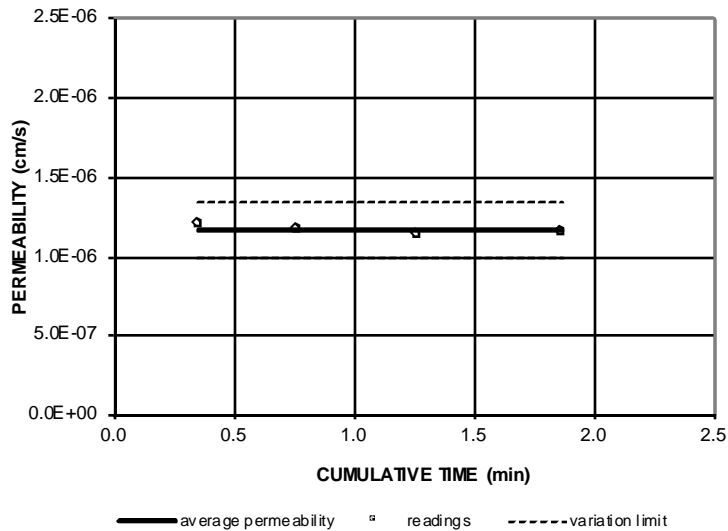
Remarks:

**Driller:** AG

"AS A MUTUAL PROTECTION TO CLIENTS, THE PUBLIC, AND OURSELVES, ALL REPORTS ARE SUBMITTED AS THE CONFIDENTIAL PROPERTY OF CLIENTS, AND AUTHORIZATION FOR PUBLICATIONS OF STATEMENTS, CONCLUSIONS, OR EXTRACTS FROM OR REGARDING OUR REPORTS IS RESERVED PENDING OUR WRITTEN APPROVAL."



## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

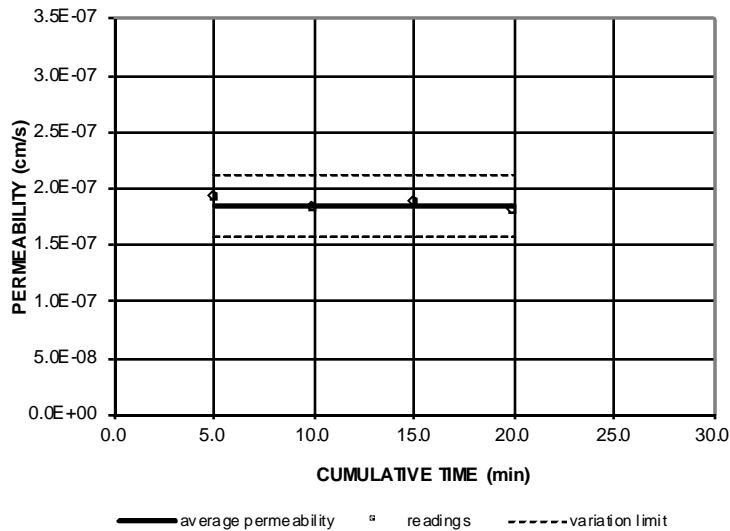
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	0.35	0.35	17.81	1.20E-06	<b>1.2E-06</b>
21.00	0.42	0.77	15.34	1.16E-06	
21.00	0.50	1.27	12.87	1.14E-06	
21.00	0.60	1.87	10.39	1.15E-06	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.25	2.25
Opt. M.C., (%)		Specimen Diameter, (inches)		3.69	3.69
Comp. Method		Specimen Volume, (cu. in.)		24.05	24.05
% Recompact.		Moisture Content, (%)		5.64	10.86
Test Pressures (psi)		Percent Saturation (%)		44.35	85.36
Backpressure	90.00	Wet Mass Density (pcf)		128.78	135.15
Cell pressure	95.00	Dry Mass Density (pcf)		121.90	121.90
Eff. Stress	5.00	Void Ratio		0.33	0.33
Specific Gravity	2.60	Calculated Porosity, %		24.86	24.86

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core (small crack in core)

Project Name	West 150th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	D-1A						
Sample Location							
Date	12/22/2020	Lab No.	6495				

## FLEXIBLE WALL PERMEABILITY TEST




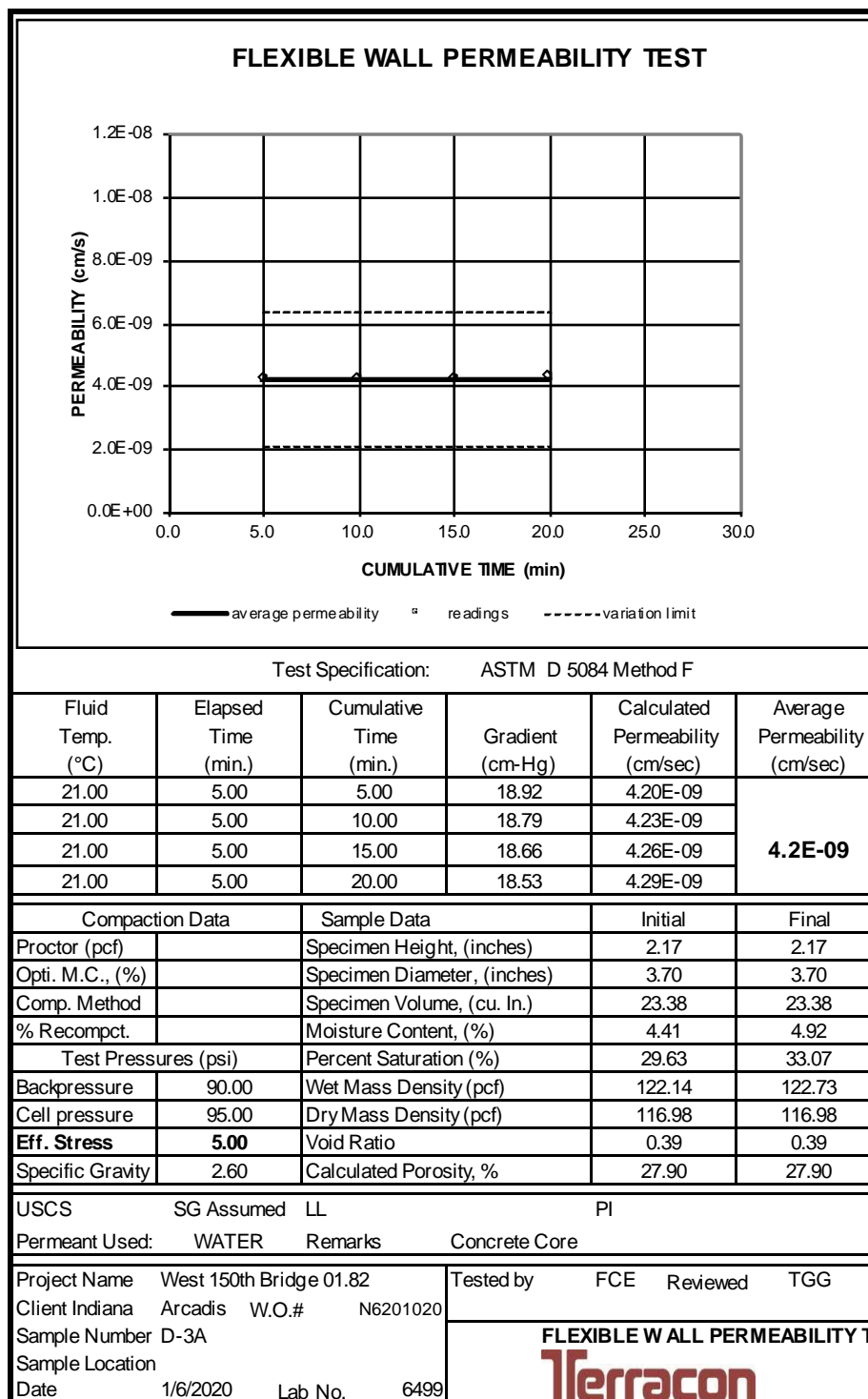
Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	12.40	1.91E-07	<b>1.8E-07</b>
21.00	5.00	10.00	9.68	1.82E-07	
21.00	5.00	15.00	7.51	1.87E-07	
21.00	5.00	20.00	5.87	1.80E-07	

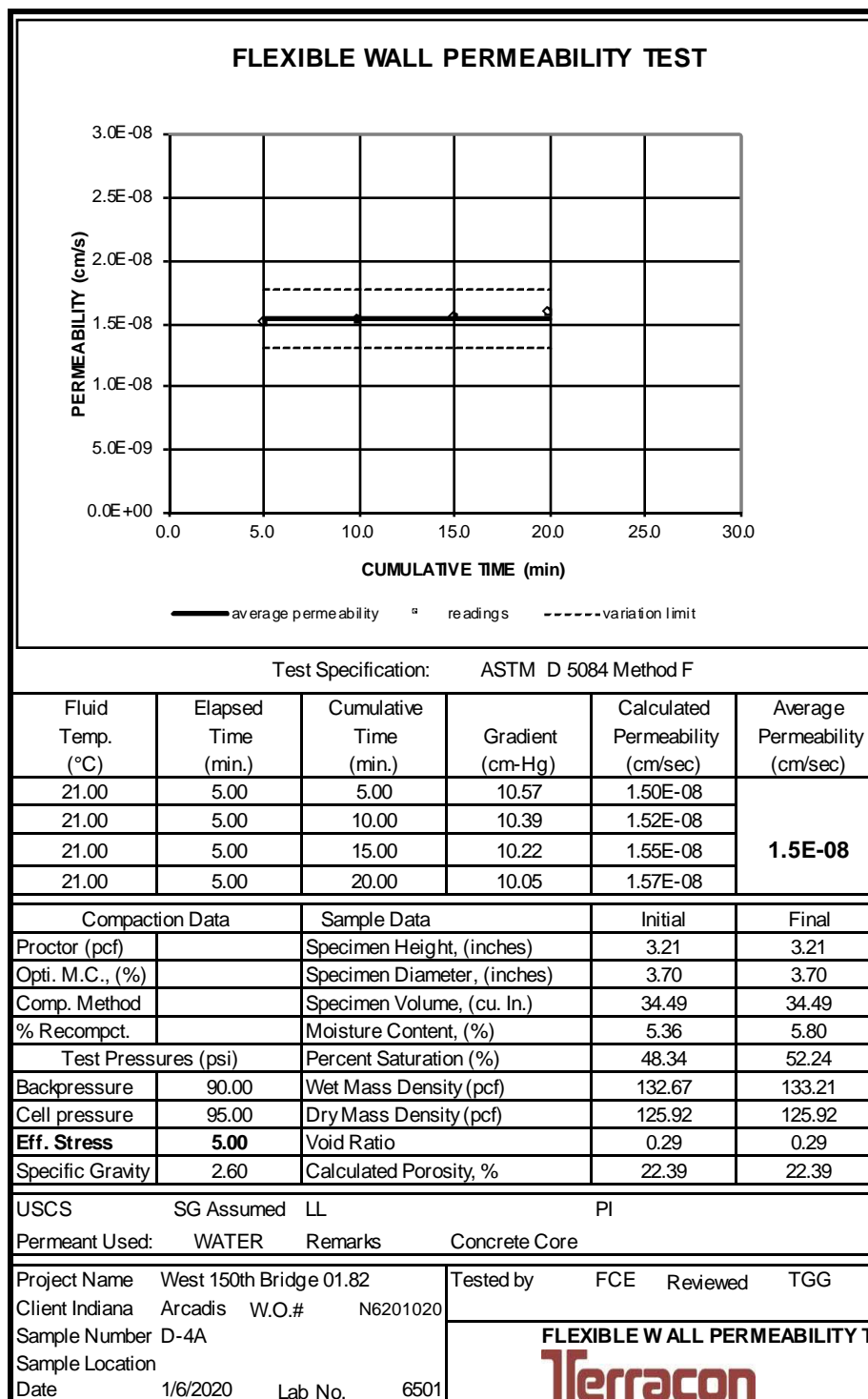
Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.55	2.55
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. In.)		27.46	27.46
% Recompct.		Moisture Content, (%)		4.32	4.71
Test Pressures (psi)		Percent Saturation (%)		39.04	42.58
Backpressure	90.00	Wet Mass Density (pcf)		131.43	131.92
Cell pressure	95.00	Dry Mass Density (pcf)		125.99	125.99
Eff. Stress	5.00	Void Ratio		0.29	0.29
Specific Gravity	2.60	Calculated Porosity, %		22.35	22.35

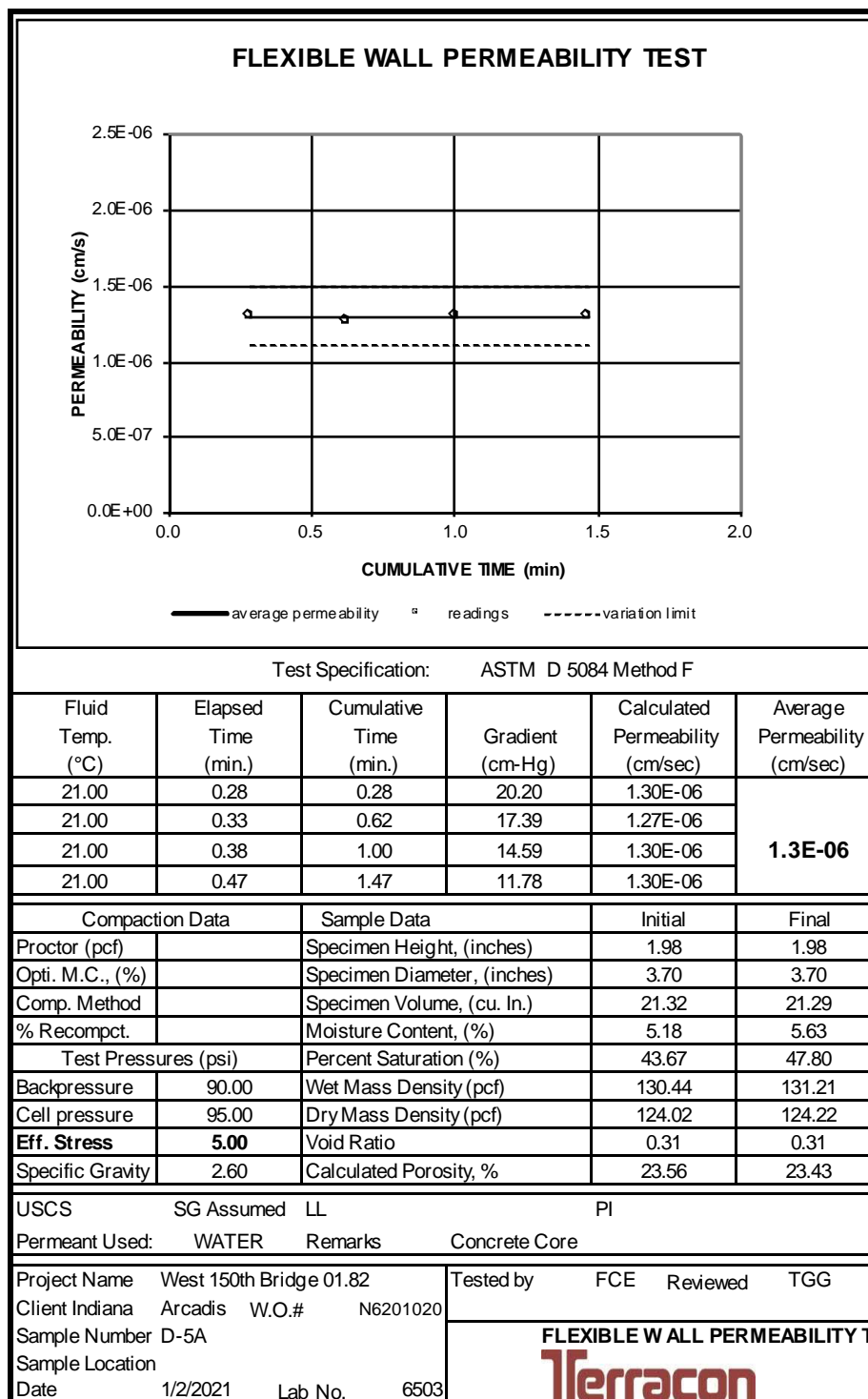
USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 150th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div></div>		
Sample Number	D-2A						
Sample Location							
Date	12/22/2020	Lab No.	6497				

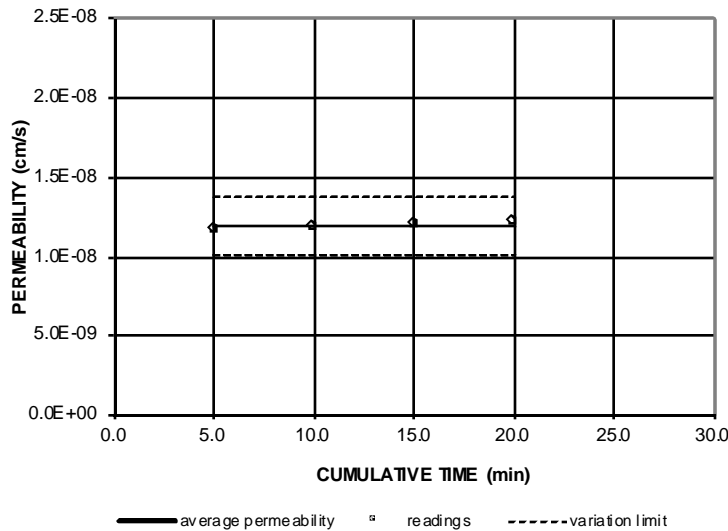








## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

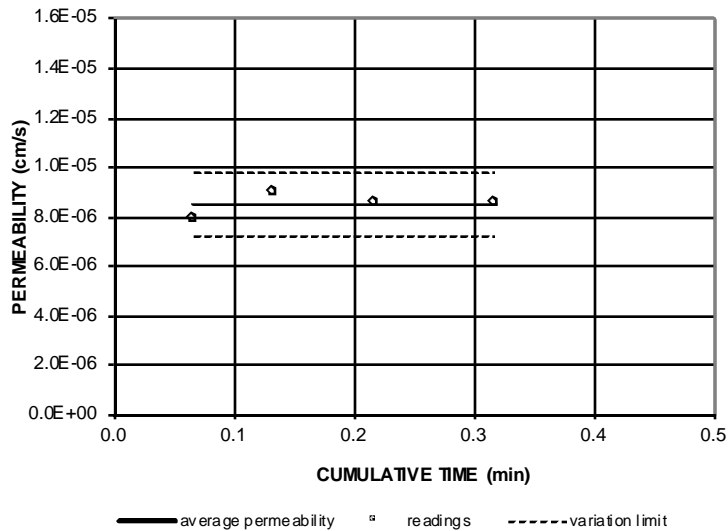
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	13.56	1.16E-08	<b>1.2E-08</b>
21.00	5.00	10.00	13.36	1.18E-08	
21.00	5.00	15.00	13.16	1.20E-08	
21.00	5.00	20.00	12.97	1.22E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.79	2.79
Opti. M.C., (%)		Specimen Diameter, (inches)		3.71	3.71
Comp. Method		Specimen Volume, (cu. in.)		30.04	30.04
% Recompct.		Moisture Content, (%)		5.31	5.62
Test Pressures (psi)		Percent Saturation (%)		44.61	47.28
Backpressure	90.00	Wet Mass Density (pcf)		130.49	130.88
Cell pressure	95.00	Dry Mass Density (pcf)		123.91	123.91
Eff. Stress	5.00	Void Ratio		0.31	0.31
Specific Gravity	2.60	Calculated Porosity, %		23.62	23.62

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 150th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	D-6A						
Sample Location							
Date	1/6/2020	Lab No.	6505				

## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

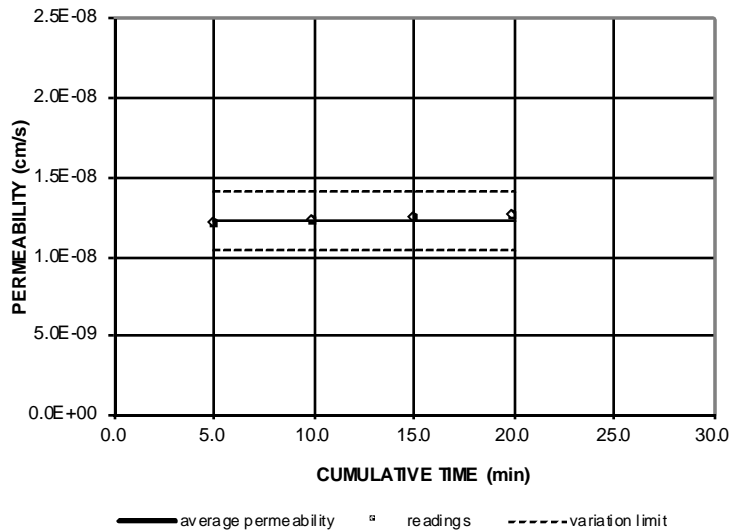
Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	0.07	0.07	14.25	7.86E-06	<b>8.5E-06</b>
21.00	0.07	0.13	12.27	9.03E-06	
21.00	0.08	0.22	10.29	8.50E-06	
21.00	0.10	0.32	8.31	8.60E-06	

Compaction Data		Sample Data	Initial	Final
Proctor (pcf)		Specimen Height, (inches)	2.81	2.81
Opti. M.C., (%)		Specimen Diameter, (inches)	3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)	30.20	30.17
% Recompact.		Moisture Content, (%)	3.98	7.83
Test Pressures (psi)		Percent Saturation (%)	46.44	91.83
Backpressure	90.00	Wet Mass Density (pcf)	137.94	143.20
Cell pressure	95.00	Dry Mass Density (pcf)	132.66	132.80
Eff. Stress	5.00	Void Ratio	0.22	0.22
Specific Gravity	2.60	Calculated Porosity, %	18.23	18.14

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 150th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	A-2						
Sample Location							
Date	12/23/2020	Lab No.	6488				

## FLEXIBLE WALL PERMEABILITY TEST



Test Specification:    ASTM D 5084 Method F

Fluid Temp. (°C)	Elapsed Time (min.)	Cumulative Time (min.)	Gradient (cm-Hg)	Calculated Permeability (cm/sec)	Average Permeability (cm/sec)
21.00	5.00	5.00	13.22	1.20E-08	<b>1.2E-08</b>
21.00	5.00	10.00	13.04	1.22E-08	
21.00	5.00	15.00	12.85	1.23E-08	
21.00	5.00	20.00	12.66	1.25E-08	

Compaction Data		Sample Data		Initial	Final
Proctor (pcf)		Specimen Height, (inches)		2.98	2.98
Opti. M.C., (%)		Specimen Diameter, (inches)		3.70	3.70
Comp. Method		Specimen Volume, (cu. in.)		32.09	32.09
% Recompct.		Moisture Content, (%)		4.63	4.97
Test Pressures (psi)		Percent Saturation (%)		48.76	52.33
Backpressure	90.00	Wet Mass Density (pcf)		136.13	136.57
Cell pressure	95.00	Dry Mass Density (pcf)		130.10	130.10
Eff. Stress	5.00	Void Ratio		0.25	0.25
Specific Gravity	2.60	Calculated Porosity, %		19.81	19.81

USCS	SG Assumed	LL	PI
Permeant Used:	WATER	Remarks	Concrete Core

Project Name	West 150th Bridge 01.82			Tested by	FCE	Reviewed	TGG
Client	Indiana	Arcadis	W.O.#	N6201020	<div>FLEXIBLE WALL PERMEABILITY TEST</div> <div>Terracon</div>		
Sample Number	P-2						
Sample Location							
Date	1/6/2020	Lab No.	6490				



## Concrete Core Test Report

**Report Number:** N120MLAB.0141A  
**Service Date:** 12/09/20  
**Report Date:** 12/10/20  
**Task:** N6201020

**Terracon**  
611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

### Client

ARCADIS US, Inc.  
22 South Main Street  
Suite 200  
Akron, OH 44308

### Project

West 150th St. Bridge 01.94

Cleveland, OH

Project Number: N120MLAB Task Number: N6201020

### Material Information

**Specified Strength:** Unknown

**Specified Length:**

**Mix ID:** Unknown

**Nominal Maximum Size Aggregate:** 1-Inch

### Sample Information

**Placement Date:** Unknown

**Date Tested:** 11/18/20

**Time:** 1300

**Sampled By:**

**Drill Directions:** Vertical

**Date Core Obtained:** 10/13/20

**Time:** 1000

**Date Ends Trimmed:** 11/18/20

**Time:** 0900

**Moisture Conditioning History:** According to ASTM C-42

### Laboratory Test Data

Core ID	Location	Cored Length (in)	Trim Length (in)	Capped Length (in)	Diam. (in)	Area (sq in)	Length / Diam. Ratio	Max Load (lbs)	Corr. Factor	Comp. Strength (psi)	Fracture Type	Density (pcf)	Tested By
1	A-1	8.00	7.40	7.53	3.70	10.75	2.04	83670	1.000	7780	3	137.9	BJM
2	D-1	6.30	5.93	6.10	3.70	10.75	1.65	79450	0.972	7180	3	132.9	BJM
3	D-2	5.54	5.14	5.32	3.70	10.75	1.44	66610	0.953	5900	3	133.0	BJM
4	D-3	6.30	5.86	6.05	3.70	10.75	1.64	80400	0.971	7260	3	134.5	BJM
5	D-4	6.06	5.73	5.88	3.70	10.75	1.59	80040	0.967	7200	4	134.7	BJM
6	D-5	5.90	4.74	4.89	3.70	10.75	1.32	75420	0.938	6580	3	132.3	BJM
7	D-6	6.00	5.73	5.86	3.70	10.75	1.58	76290	0.966	6850	4	134.7	BJM
8	P-1	8.13	4.98	5.19	3.70	10.75	1.40	77440	0.948	6830	4	137.2	BJM
9	P-3	7.82	7.37	7.48	3.70	10.75	2.02	82770	1.000	7700	4	138.5	BJM
10	P-8	8.09	5.35	5.50	3.70	10.75	1.49	58220	0.959	5190	3	135.3	BJM
11	P-9	7.75	7.39	7.49	3.70	10.75	2.02	68680	1.000	6390	4	138.2	BJM

### Comments:

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparer similar or identical materials.

## **Concrete Core Test Report**

**Report Number:** N120MLAB.0141A  
**Service Date:** 12/09/20  
**Report Date:** 12/10/20  
**Task:** N6201020

**Terracon**  
611 Lunken Park Dr  
Cincinnati, OH 45226-1813  
513-321-5816

---

### **Client**

Terracon Consultants, Inc.  
Attn: Accts Payable  
10841 S Ridgeview Rd  
Olathe, KS 66061

### **Project**

MAT Lab Revenue Allocation  
611 Lunken Park Dr  
Cincinnati, OH

Project Number: N120MLAB

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### **Services:**

### **Reported To:**

### **Contractor:**

### **Report Distribution:**

**Reviewed By:**



Timothy G. Goodall  
Department Manager II-Technical

### **Test Methods:**

The tests were performed in general accordance with applicable ASTM, AASHTO, or DOT test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparer similar or identical materials.

January 11, 2021

Arcadis US, Inc.  
1111 Superior Avenue  
Suite 1300  
Cleveland, OH 44114

Attn: Mr. Frank Getz, PE  
Senior Engineer  
330-515-5677  
Frank.Getz@arcadis.com

Re: Geophysical Exploration Services  
W. 140th St. Bridge 01.82 and W. 15th St. Bridge 01.94 - Inspection & Evaluation  
Cleveland, OH  
Terracon Project Number: N6201020

Mr. Getz:

On September 30, October 1, and October 12 – 14, 2020, Terracon Consultants, Inc. (Terracon) performed geophysical exploration services along the two referenced bridges. The primary goal was to perform a Ground Penetrating Radar (GPR) survey of the drive lanes to assess the reinforcing steel for potential deterioration, in general accordance with ASTM D6087.

## 1.0 EXPLORATION METHODS

GPR utilizes radio waves to detect changes in the subsurface of the area being scanned. Changes or reflections in the signal generally indicate material property changes, such as, but not limited to electromagnetic conductivity and dielectric constant, which in some cases can be qualitatively linked to other material properties such as density. These changes can be effective in identifying the presence and location of items such as subsurface voids, buried concrete, tanks, underground utilities, and embedded reinforcing steel in concrete and masonry structures, among other things.

Terracon used a push-cart 1600 MHz antenna made by Geophysical Survey Systems, Inc. (GSSI) to perform an upper profile geophysical survey. GPR collection was performed using the following parameters:

- n Longitudinal gridding (parallel to the direction of traffic) at approximately two-foot intervals across the four lanes of traffic.
- n Data was collected at the rate of 60 scans per foot.



## Geophysical Exploration Report

W. 140<sup>th</sup> St. Bridge 01.82 and W. 15<sup>th</sup> St. Bridge 01.94 ■ Cleveland, Ohio  
January 11, 2021 ■ Terracon Project No. N6201020



Following the field work, the data obtained was post-processed using RADAN software by GSSI. Post-processing consisted of the following:

- n Position correction.
- n Noise filtering.
- n Rebar “layer picking” where the layer of rebar is selected in the GPR file.
- n Data was then exported and plotted using Golden Software Surfer.
- n Plots were aligned to the bridge and overlaid as seen in Exhibits 1 and 2.

Additionally, rebar reflection amplitudes were taken from the line scans. The relative rebar reflection amplitude strengths have been shown to directly correlate to bridge deck deterioration in a number of studies. The rebar reflection amplitudes were plotted using Surfer, attached as Exhibits 1 and 2, and the amplitudes were converted to a normalized decibel scale.

## 2.0 FINDINGS AND CONCLUSIONS

The radar data was plotted by normalized decibels. The amplitude of the reflected signal from the rebar layer provides qualitative information on the approximate amount of deterioration within the pavement. Based on our findings as shown on Exhibits 1 and 2, the yellowish, orange and red areas show lower relative rebar reflective amplitudes and are indicative of likely areas of varying bridge deck deterioration.

## 3.0 LIMITATIONS AND RECOMMENDATIONS

It should be noted that, as with any geophysical testing method, the processes relies on instrument signals to indicate physical conditions in the field. Signal information can be affected by on-site conditions beyond the control of the operator, such as, but not limited to, cultural features, concrete types, concrete moisture, and/or reinforcing steel spacing. Interpretation of those signals is based on a combination of known factors combined with the experience of the operator and geophysical scientist evaluating the results. Utilizing conventional observation, sampling, and testing of select areas, such as visual condition survey, sounding, and coring techniques, are recommended to confirm the results from the geophysical surveys. Terracon recommends that additional GPR surveys be performed every 2 to 4 years for moderately aged bridge decks showing signs on minor deterioration to chart the advancement of further deterioration with time and make timely decisions regarding future repairs.

As with all geophysical methods, the geophysical results provide a level of confidence, but should not be considered absolute. We cannot be responsible for the misinterpretation of unverified geophysical results by others.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geophysical/engineering practices. No warranties, express or implied, are intended or made.

## Geophysical Exploration Report

W. 140<sup>th</sup> St. Bridge 01.82 and W. 15<sup>th</sup> St. Bridge 01.94 ■ Cleveland, Ohio  
January 11, 2021 ■ Terracon Project No. N6201020



The analysis and recommendations presented in this report are based upon the data obtained from the geophysical surveys and from other information discussed in this report. This report does not reflect variations that may occur in areas inaccessible to the geophysical equipment, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction.

## 4.0 CLOSING

We appreciate the opportunity to be of service to you on this project. Please do not hesitate to contact the undersigned if you have any questions regarding this information or if we can be of further service to you.

Sincerely,

**Terracon Consultants, Inc.**

A handwritten signature in black ink, appearing to read "Kyle J. Shalek".

Kyle J. Shalek, Ph.D.  
Geophysics Manager  
Senior Staff Geologist

David G. Potoma, P.E.  
Manager  
Materials Department

Attachment: Exhibits 1-2



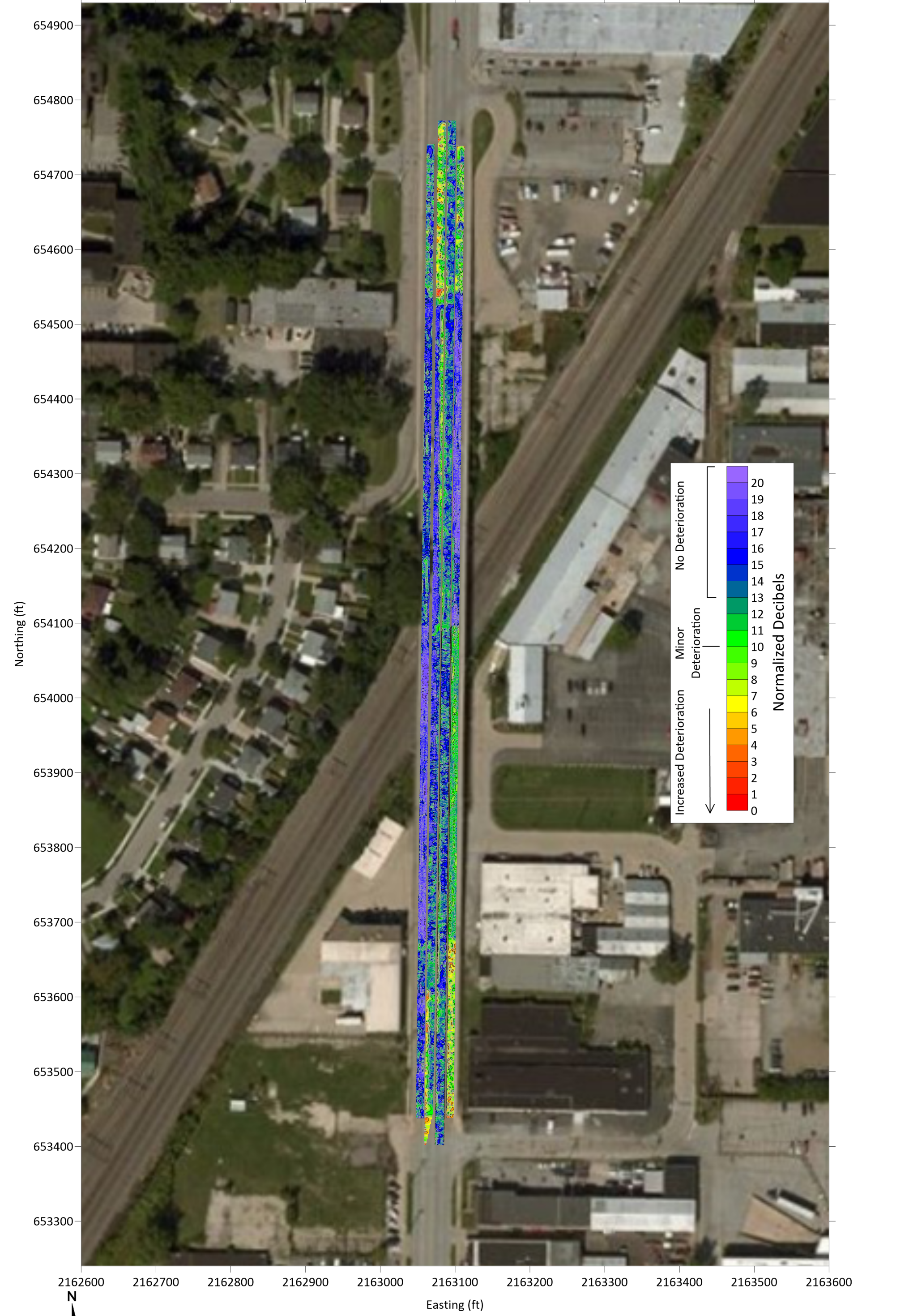


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	AG	Project No.	N6201020
Drawn by:	KJS	Scale:	As Shown
Checked by:	AG	File Name:	140th
Approved by:	DGP	Date:	12/11/2020



West 140th GPR Results
West 140th St. Bridge 01.82 & West 150th St. Bridge 01.94 Inspection and Evaluation Cleveland, Ohio

EXHIBIT
1





DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	AG
Drawn by:	KJS
Checked by:	AG
Approved by:	DGP

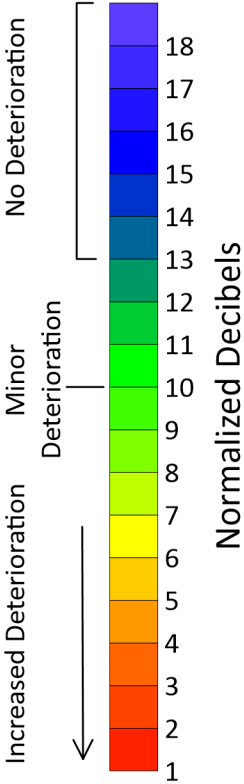
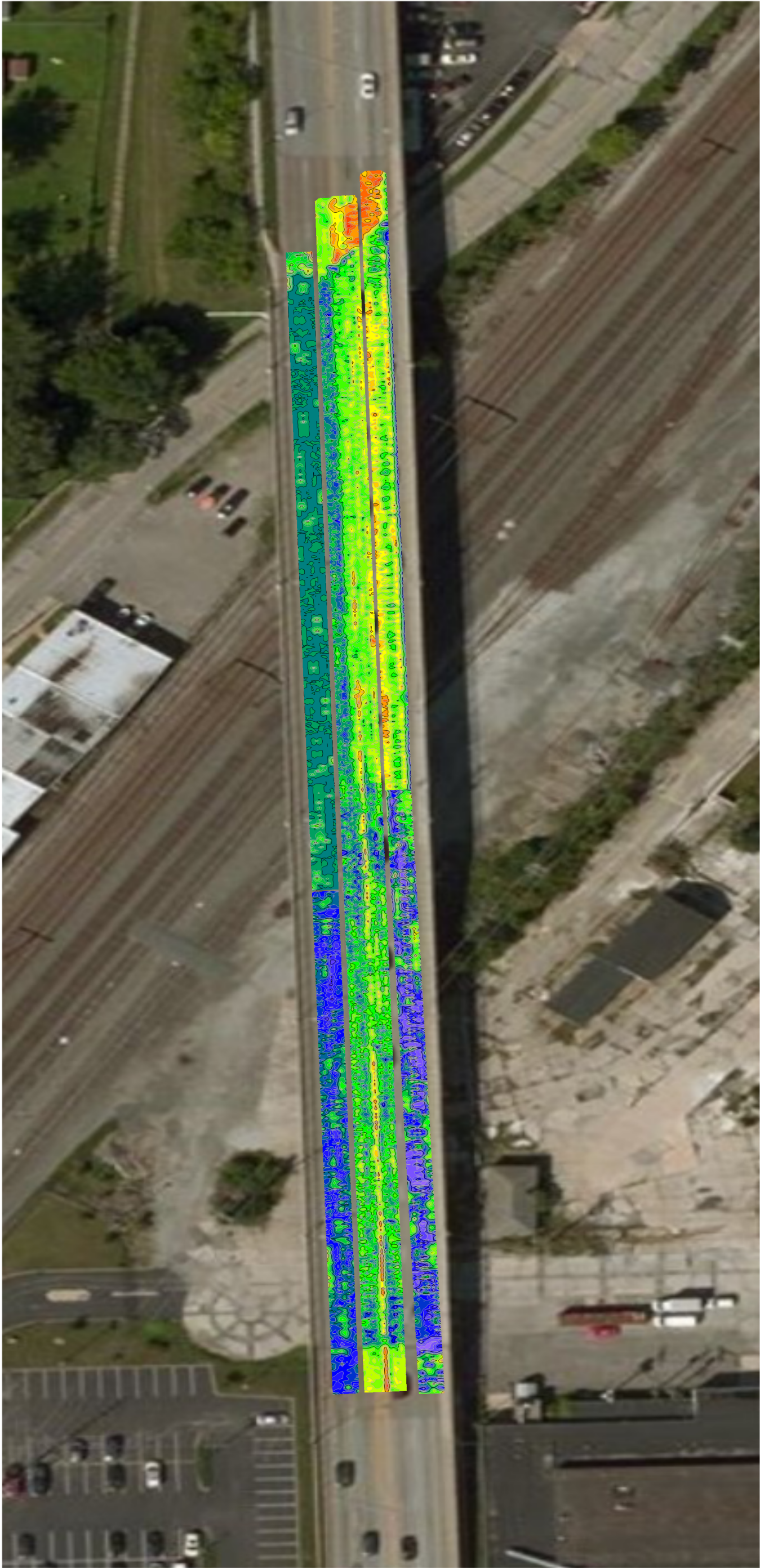
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File Name:	140th
Date:	12/11/2020



611 Lunken Park Drive  
Cincinnati, Ohio 45226

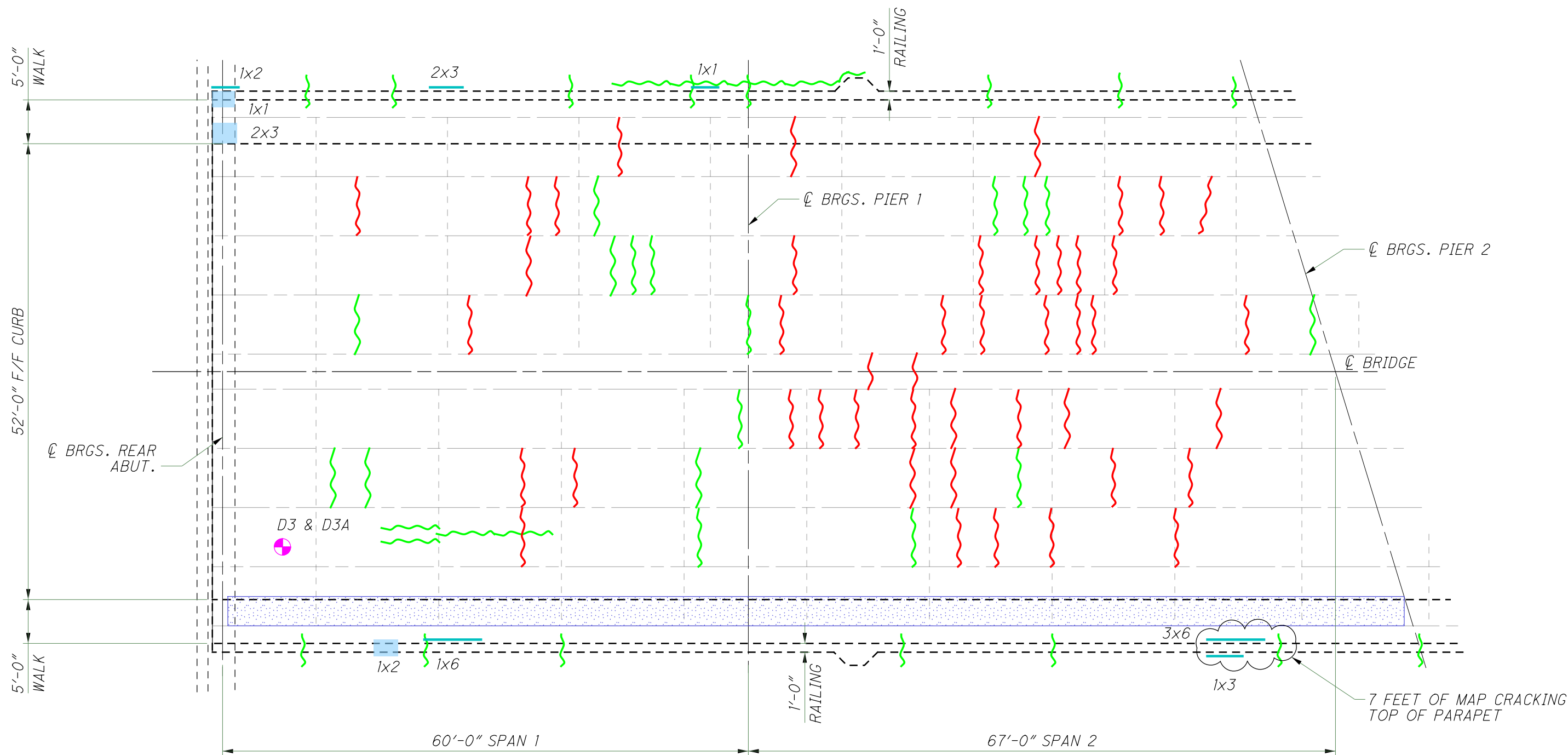
W. 150th St. GPR Results
West 140th St. Bridge 01.82 & West 150th St. Bridge 01.94 Inspection and Evaluation Cleveland, Ohio

EXHIBIT
2



# APPENDIX D



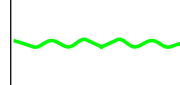

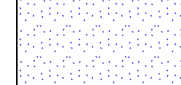

## Deck Survey Figures



NOTE: MAP CRACKING OCCURS AT MULTIPLE LOCATIONS ALONG THE EAST SIDE FASCIA.



# LEGEND

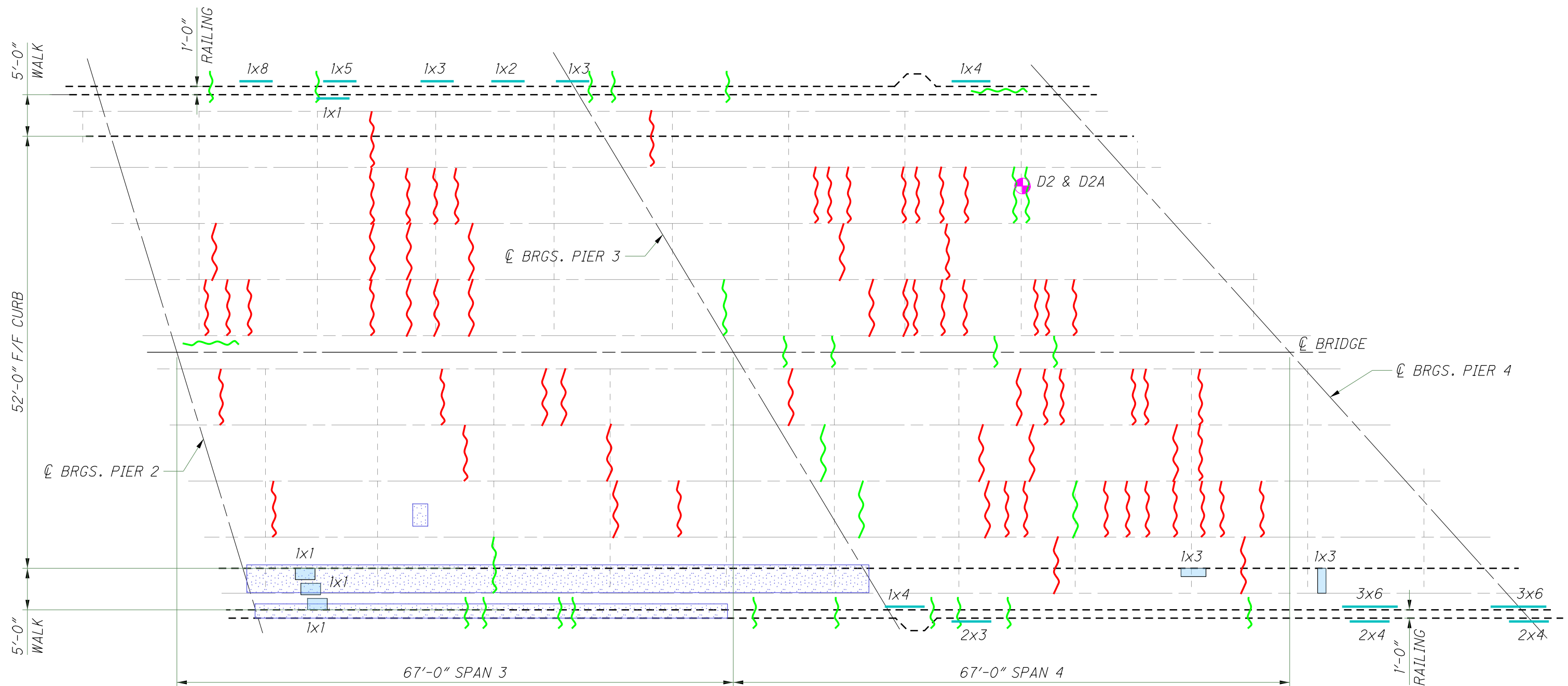
					
SPALLING/ DELAMINATION	SPALLING ALONG CONCRETE FASCIA	CRACKING	CRACKING WITH EFFLORESCENCE	SCALING WITH MINOR CRACKING	DECK CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



## INSPECTION FINDINGS – DECK SPANS 1 AND 2





### LEGEND

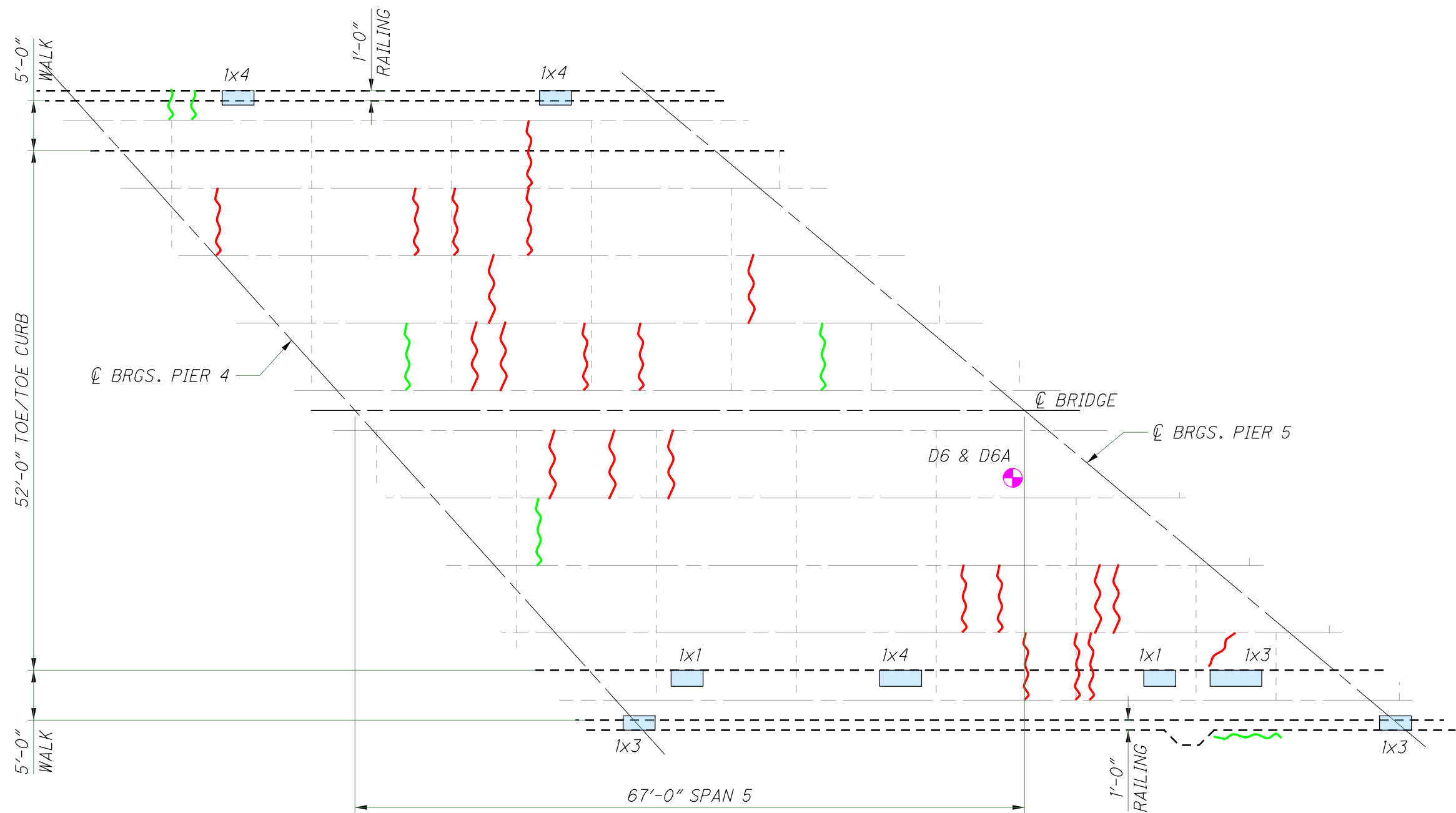
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W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

**ARCADIS** Design & Consultancy  
for natural and  
built assets

## INSPECTION FINDINGS – DECK SPANS 3 AND 4

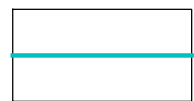




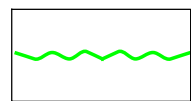
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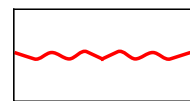
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DELAMINATION



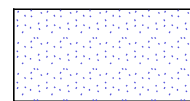
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CONCRETE FASCIA



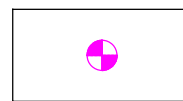
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CRACKING WITH  
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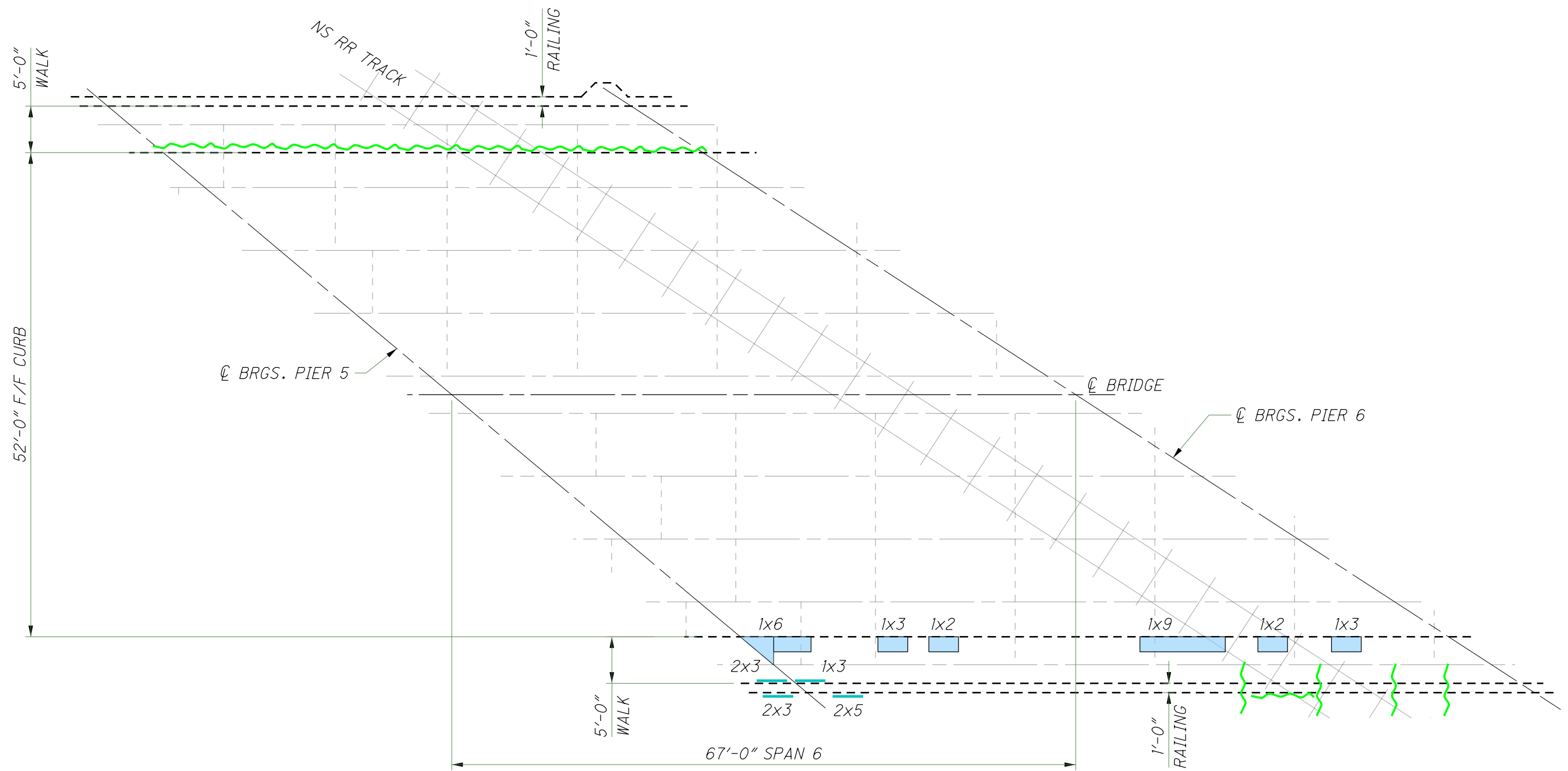
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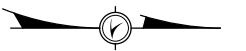
DECK CORE  
LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

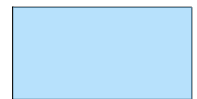
## INSPECTION FINDINGS – DECK SPAN 5



NOTE: MAP CRACKING OCCURS AT MULTIPLE LOCATIONS ALONG THE EAST SIDE FASCIA.



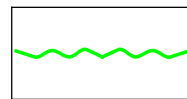
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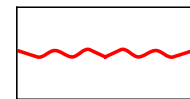
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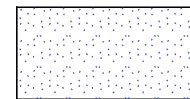
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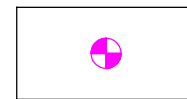
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CRACKING WITH  
EFFLORESCENCE



SCALING WITH  
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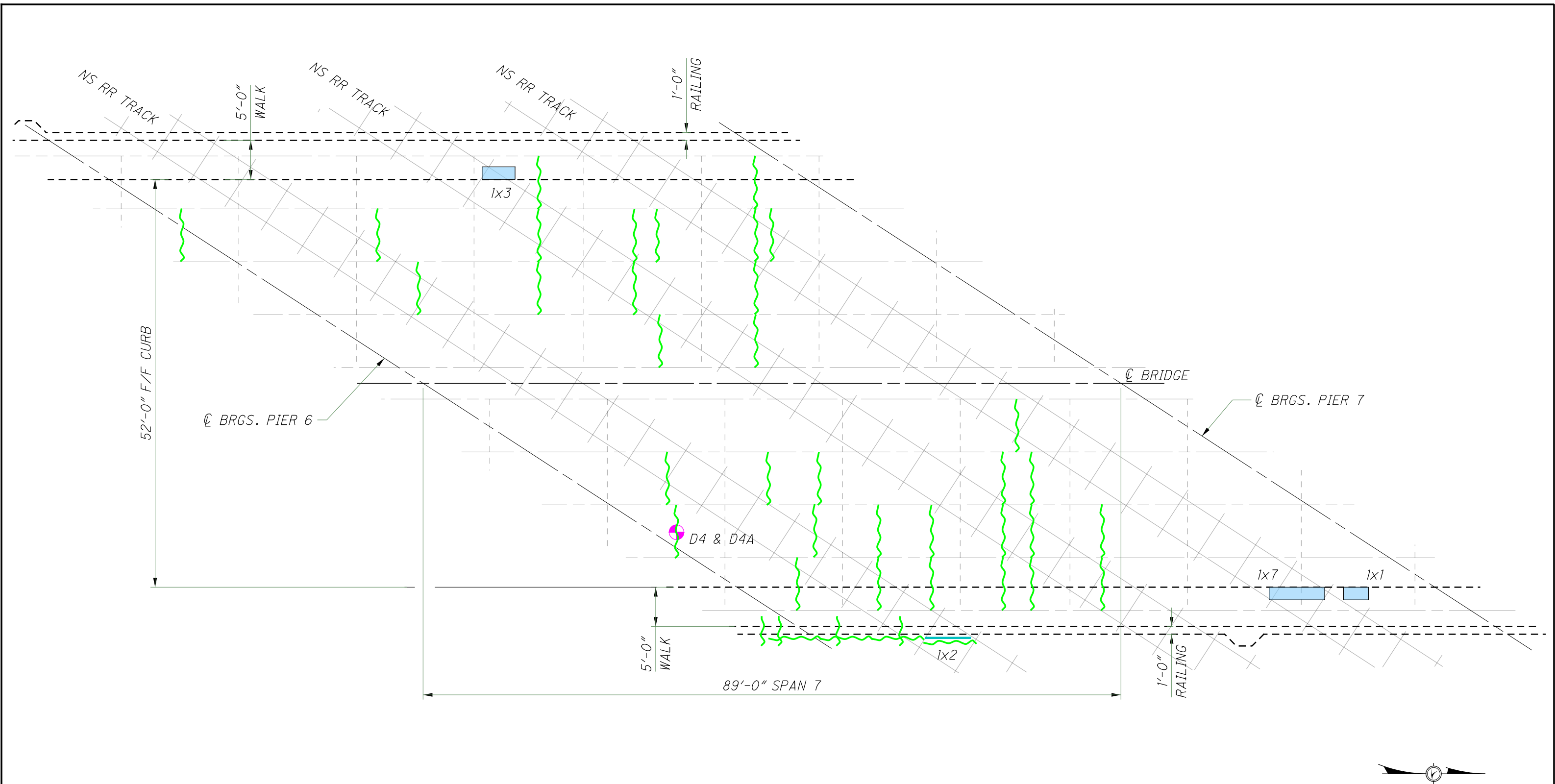


DECK CORE  
LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



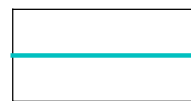
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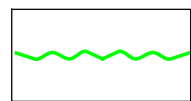
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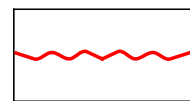
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DELAMINATION



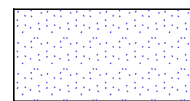
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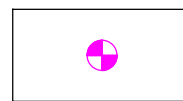
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CRACKING WITH  
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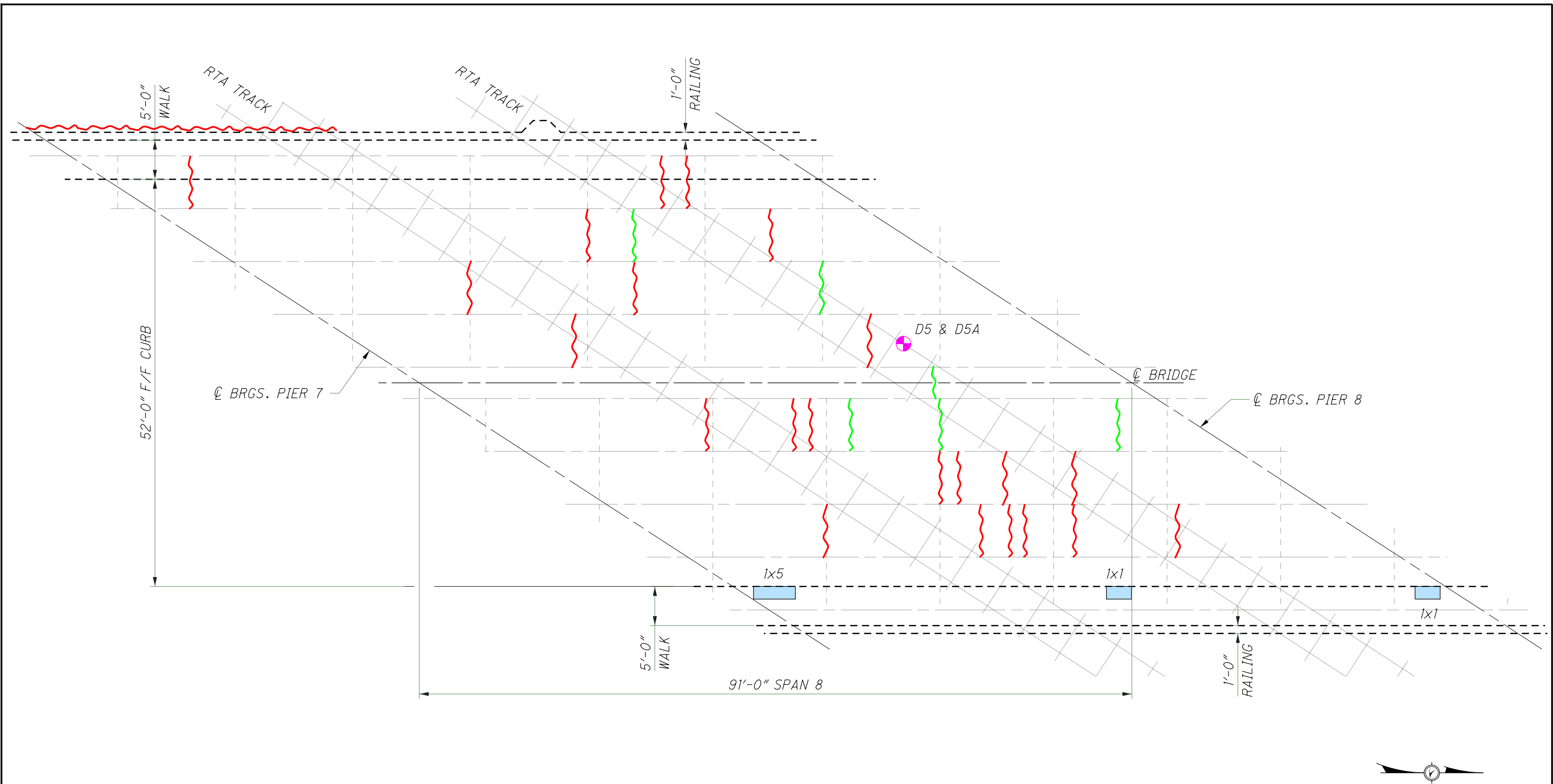
SCALING WITH  
MINOR CRACKING



DECK CORE  
LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

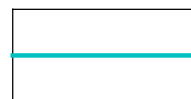
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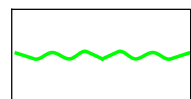
LEGEND



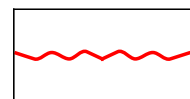
SPALLING/  
DELAMINATION



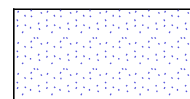
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CONCRETE FASCIA



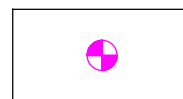
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CRACKING WITH  
EFFLORESCENCE



SCALING WITH  
MINOR CRACKING

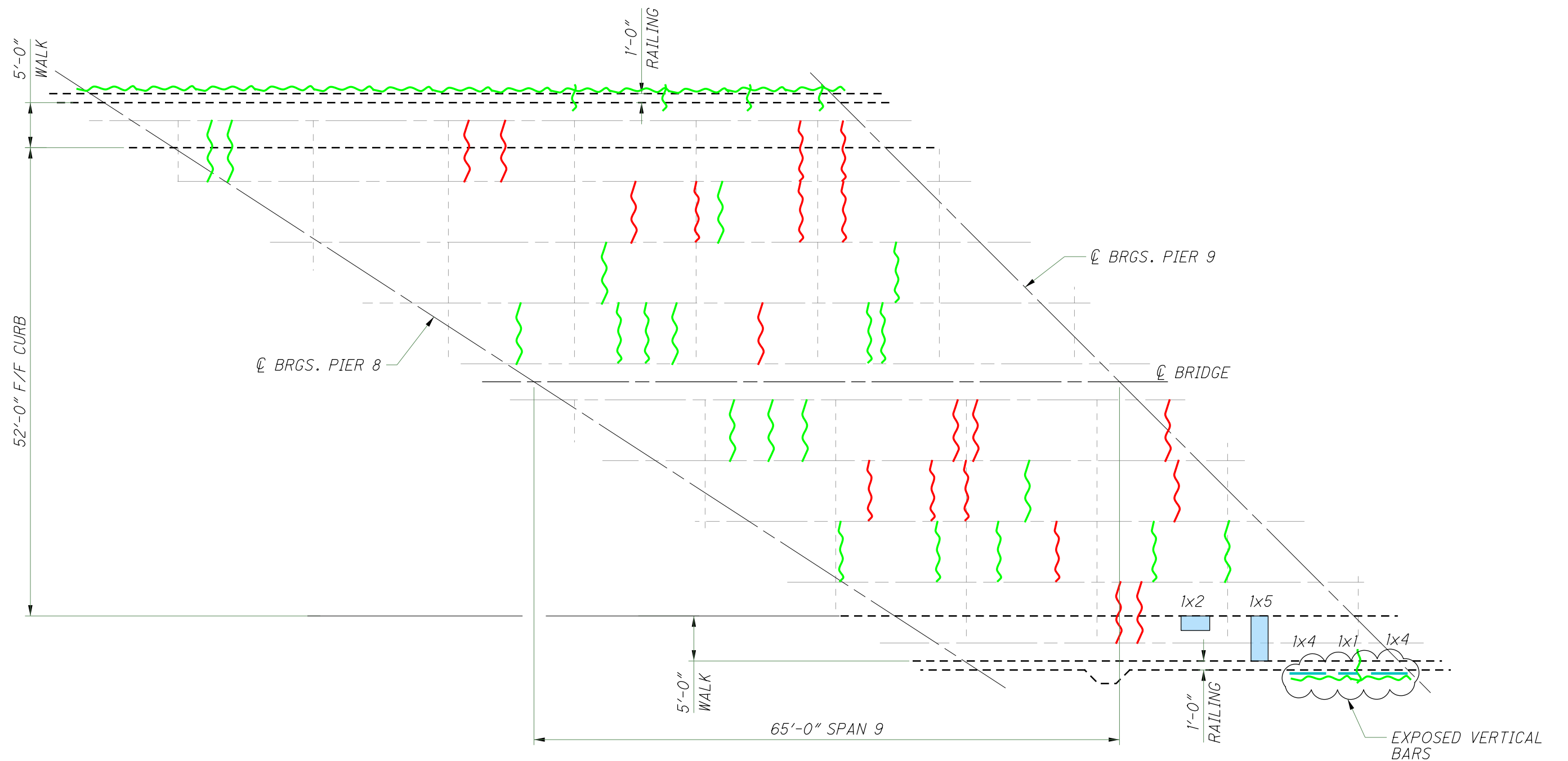


DECK CORE  
LOCATION

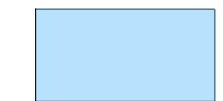
W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



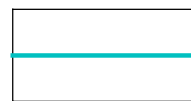
INSPECTION FINDINGS – DECK SPAN 8



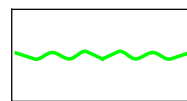
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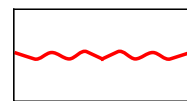
SPALLING/  
DELAMINATION



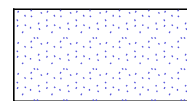
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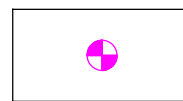
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CRACKING WITH  
EFFLORESCENCE



SCALING WITH  
MINOR CRACKING

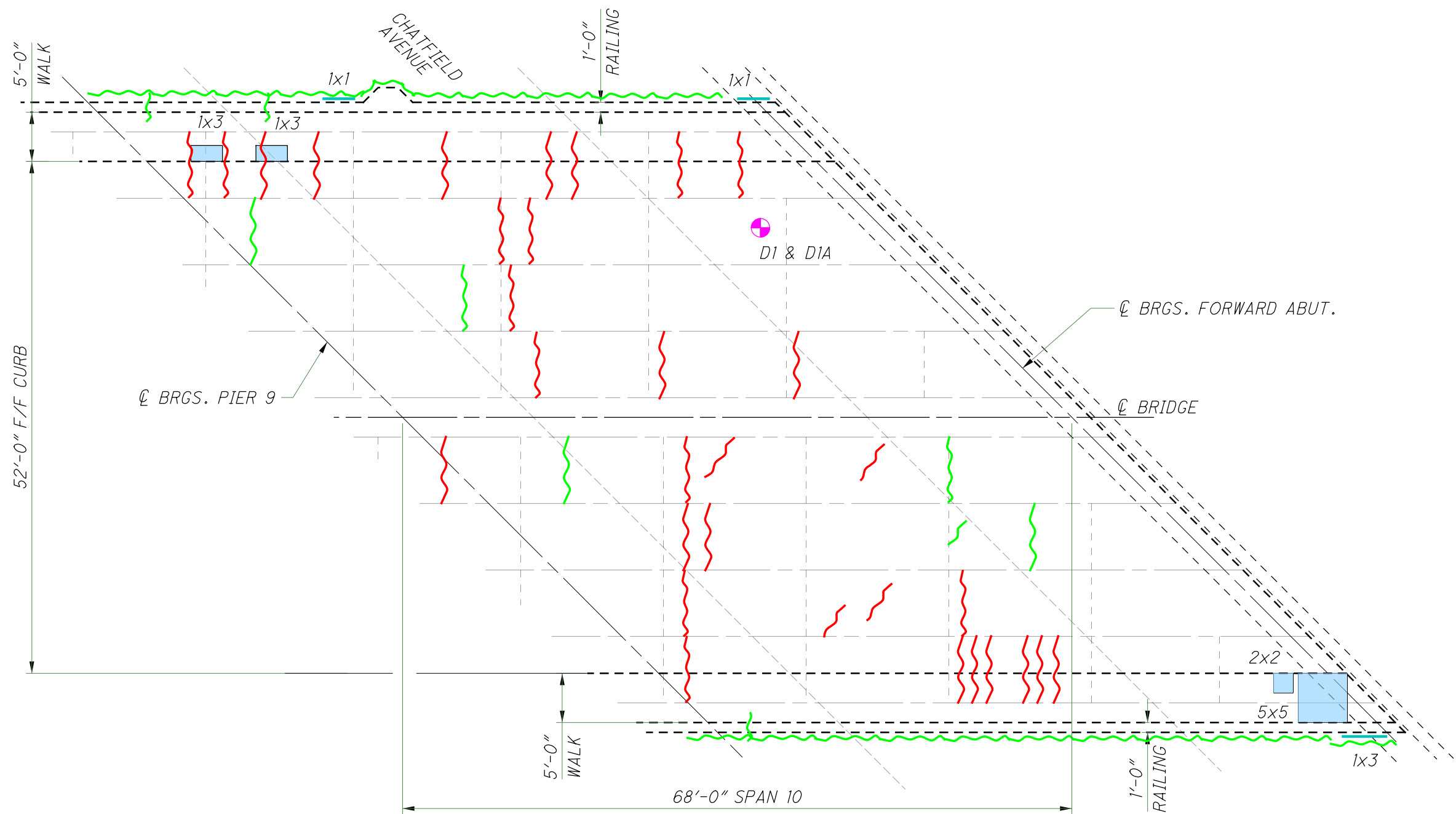


DECK CORE  
LOCATION

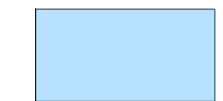
W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

## INSPECTION FINDINGS – DECK SPAN 9

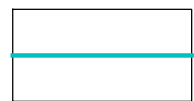




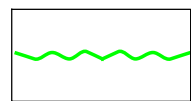
### LEGEND



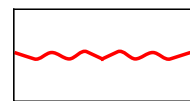
SPALLING/  
DELAMINATION



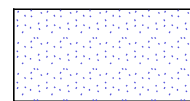
SPALLING ALONG  
CONCRETE FASCIA



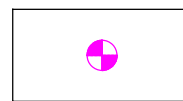
CRACKING



CRACKING WITH  
EFFLORESCENCE



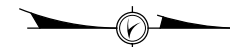
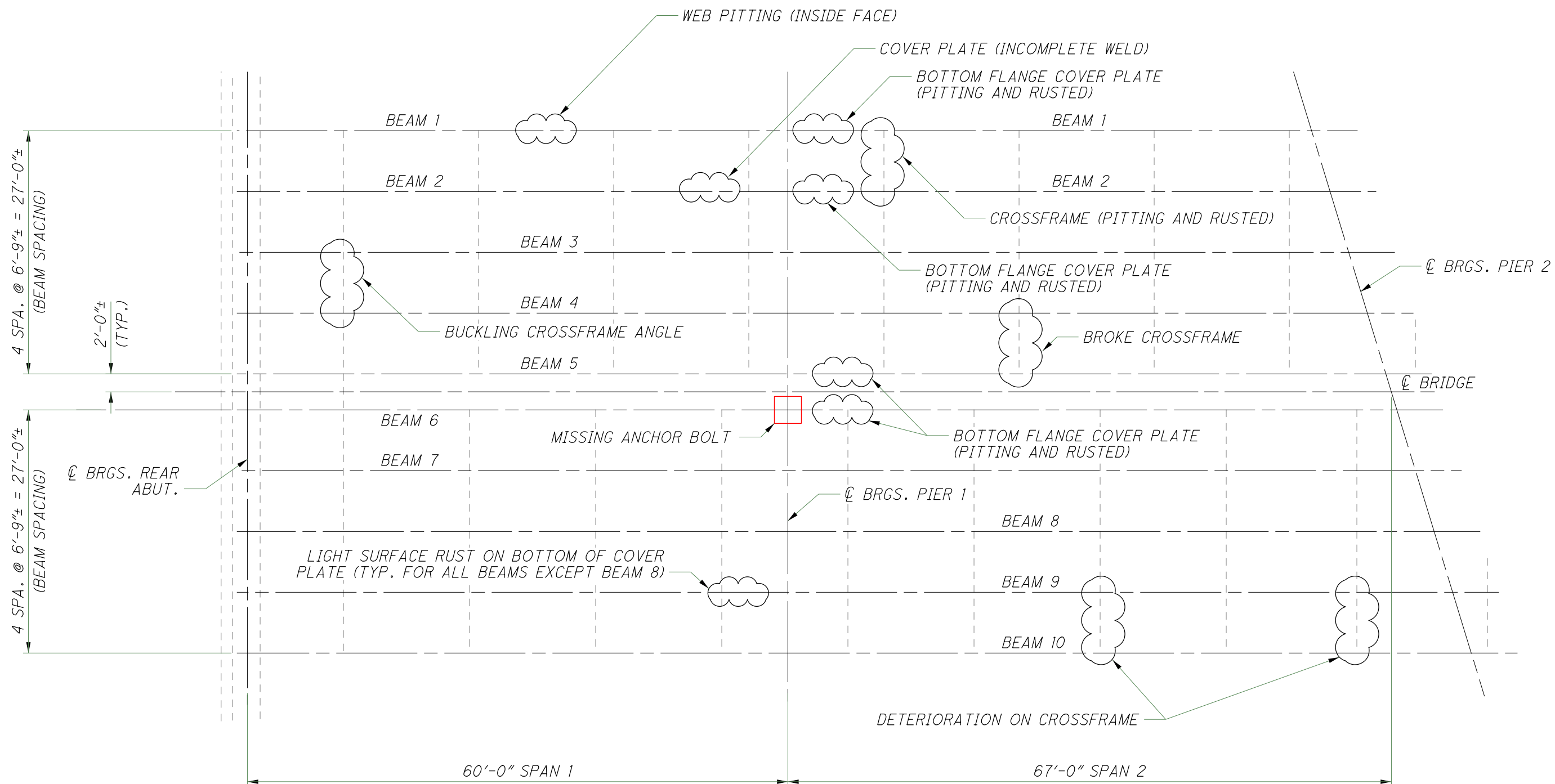
SCALING WITH  
MINOR CRACKING



DECK CORE  
LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

## INSPECTION FINDINGS – DECK SPAN 10



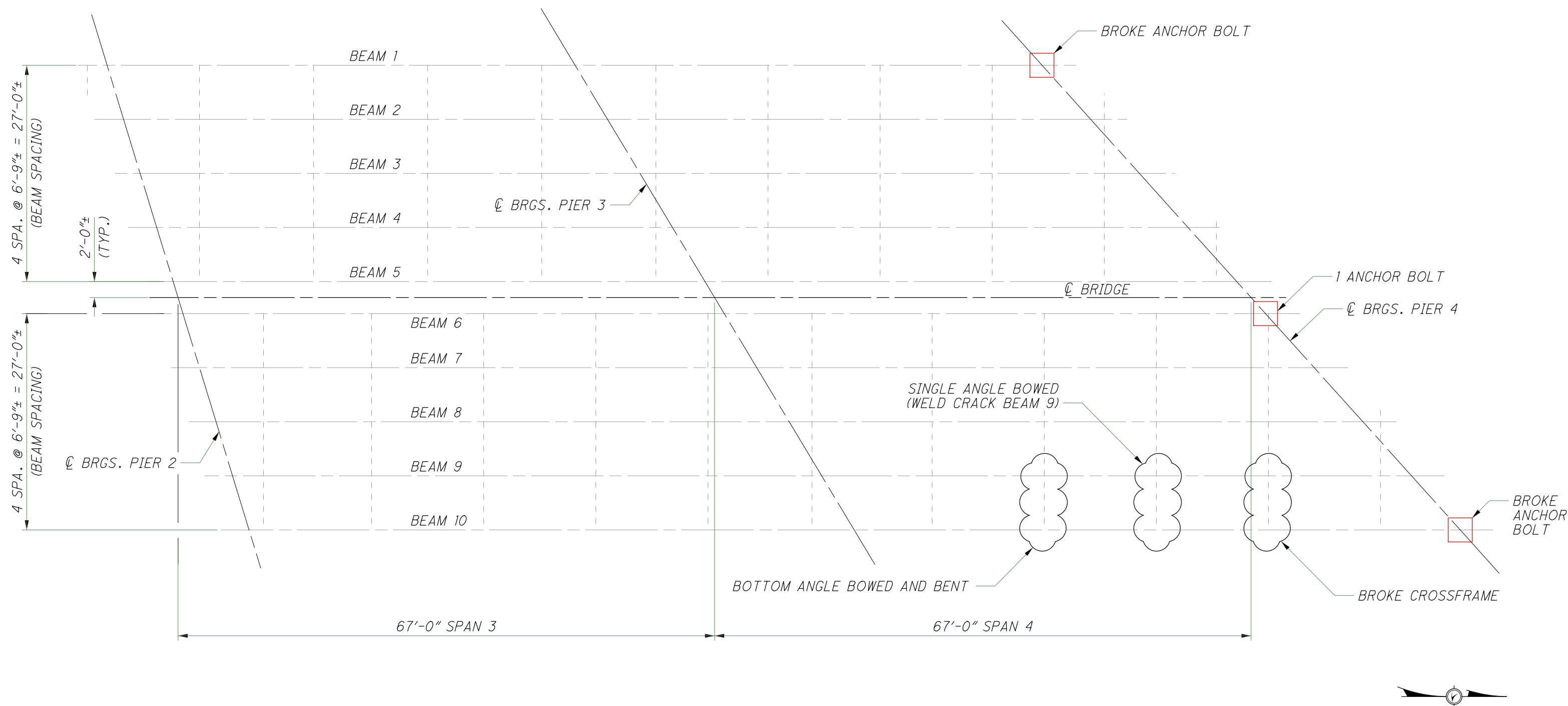
## NOTES

1. ANCHOR BOLTS ARE BENT AT MOST BEARINGS
2. PAINT IS IN GOOD CONDITION. MINOR PINHOLE RUSTING AT ISOLATED LOCATIONS.

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



INSPECTION FINDINGS – STRUCTURAL STEEL, SPANS 1 AND 2



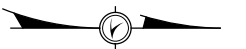
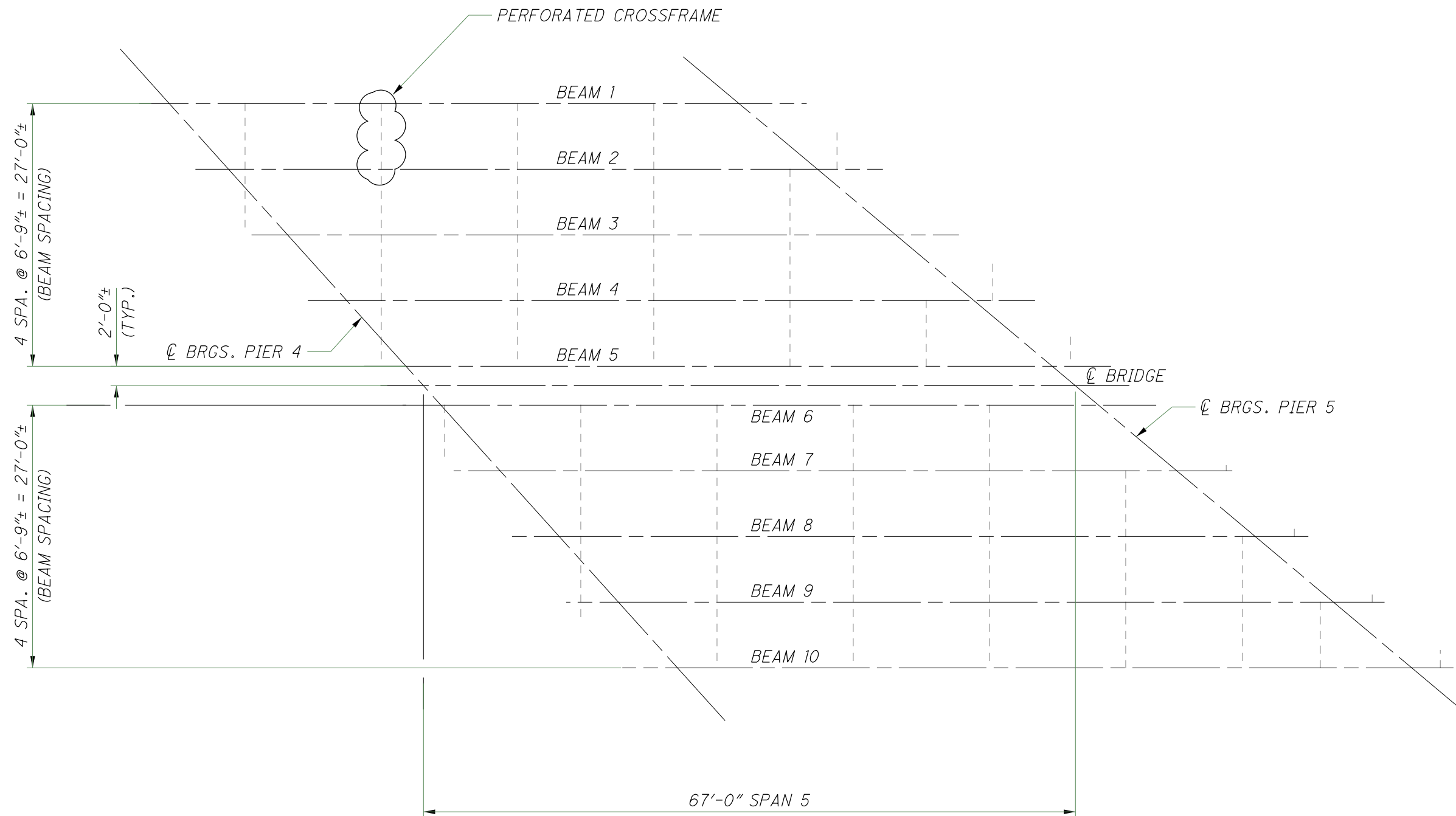
# NOTES

- ANCHOR BOLTS ARE BENT AT MOST BEARINGS
- PAINT IS IN GOOD CONDITION. MINOR PINHOLE RUSTING AT ISOLATED LOCATIONS.

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



INSPECTION FINDINGS – STRUCTURAL STEEL, SPANS 3 AND 4

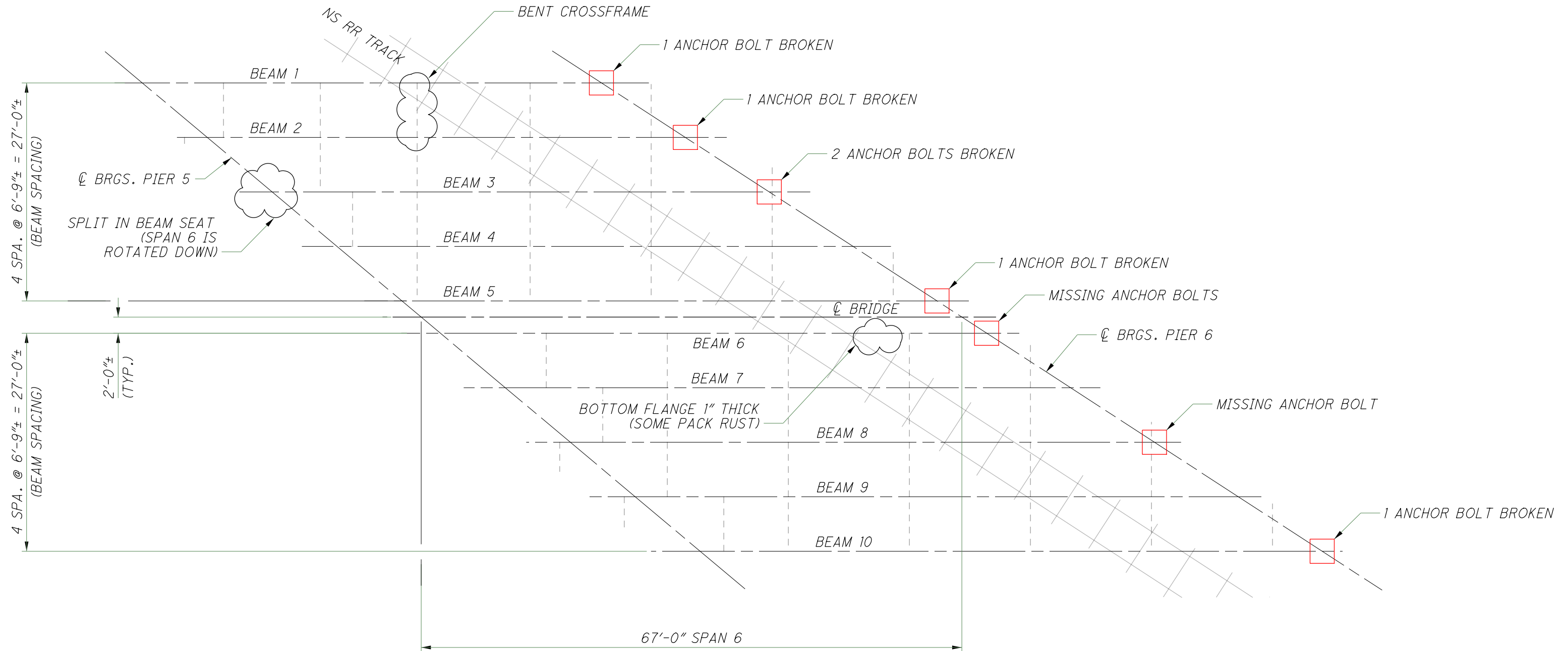


# NOTES

1. ANCHOR BOLTS ARE BENT AT MOST BEARINGS
2. PAINT IS IN GOOD CONDITION. MINOR PINHOLE RUSTING AT ISOLATED LOCATIONS.

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 5



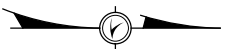
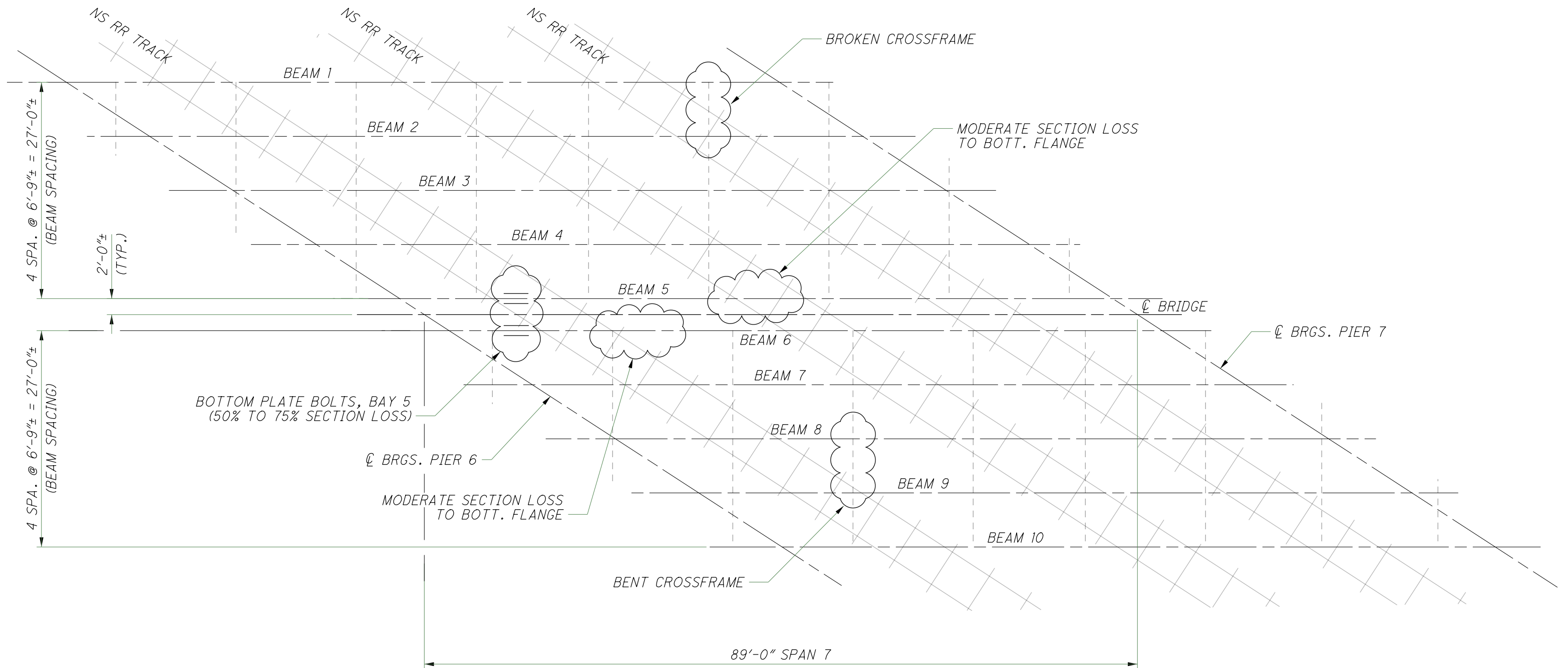
# NOTE

1. ANCHOR BOLTS ARE BENT AT MOST BEARINGS

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 6



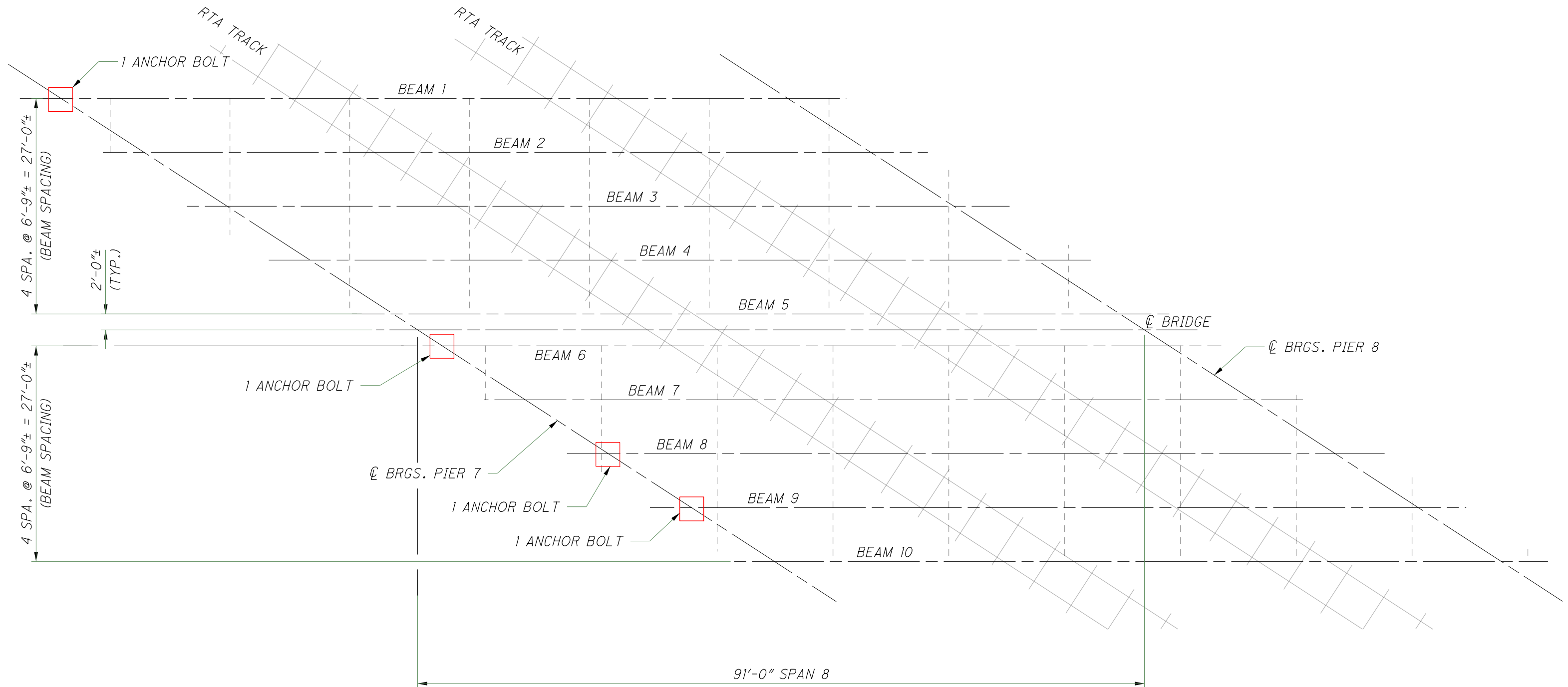


# NOTE

1. ANCHOR BOLTS ARE BENT AT MOST BEARINGS

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 7



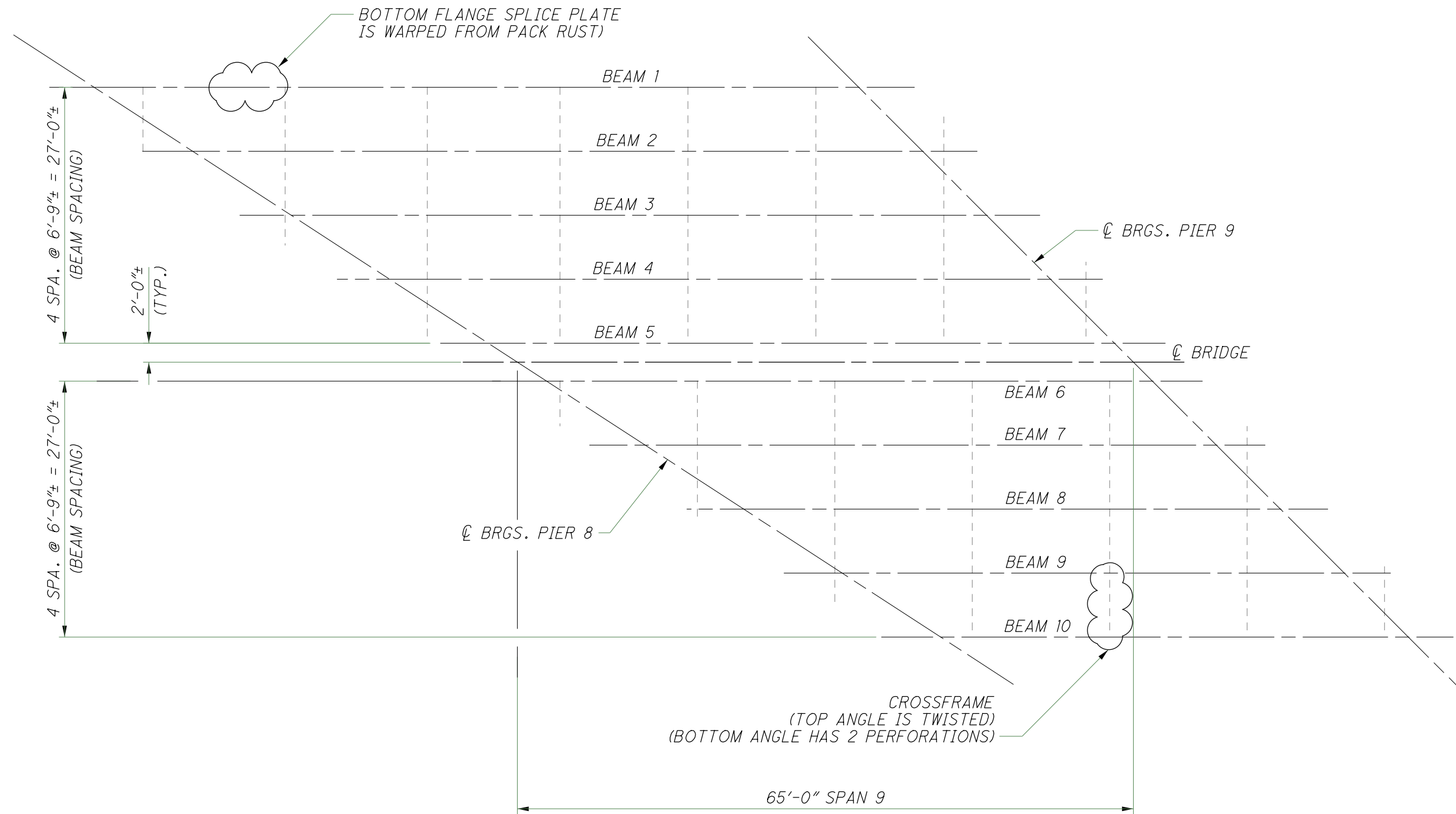
# NOTE

- ANCHOR BOLTS ARE BENT AT MOST BEARINGS

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



## INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 8

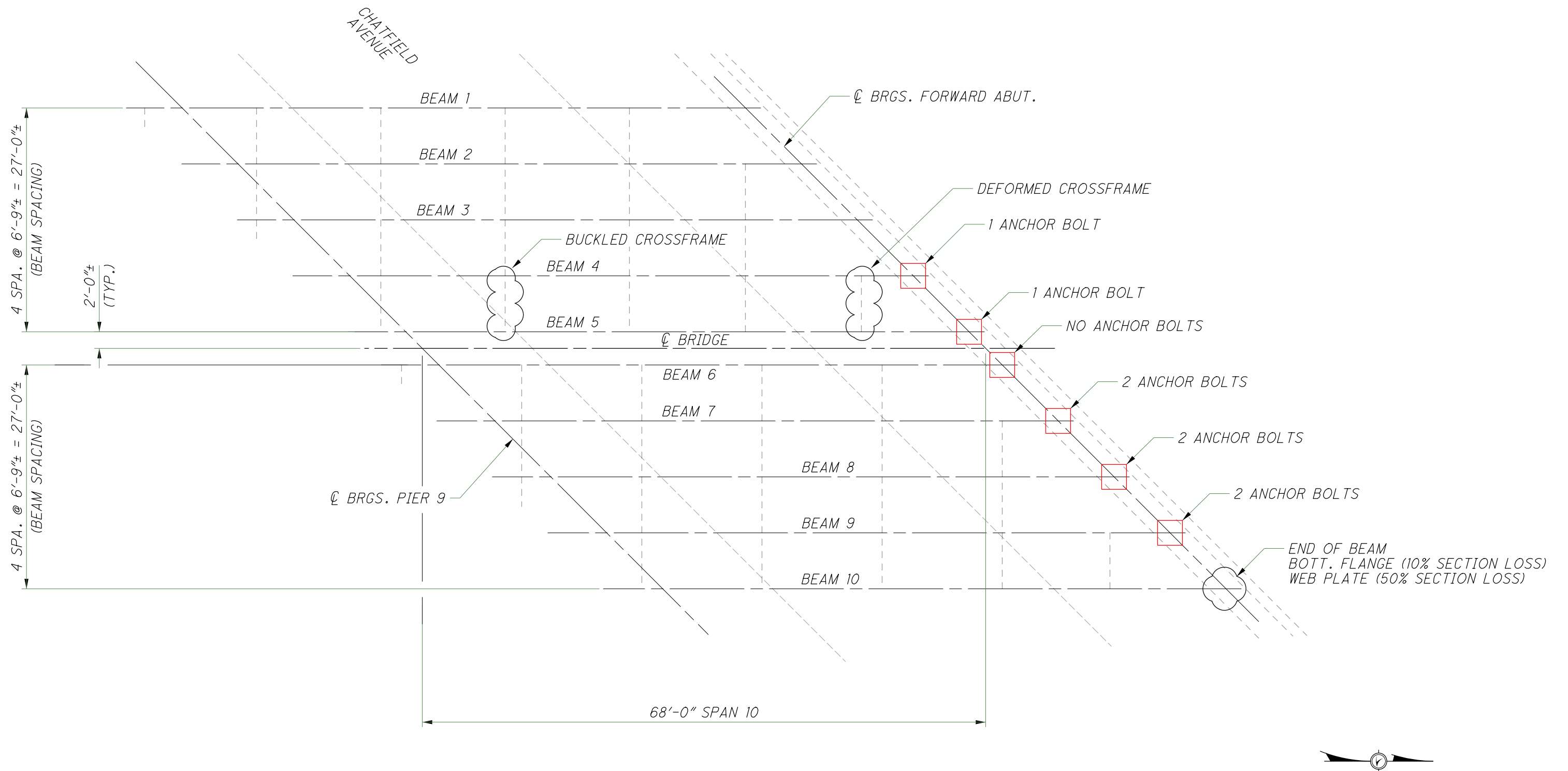


# NOTES

- ANCHOR BOLTS ARE BENT AT MOST BEARINGS
- PAINT IS IN GOOD CONDITION. MINOR PINHOLE RUSTING AT ISOLATED LOCATIONS.

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 9

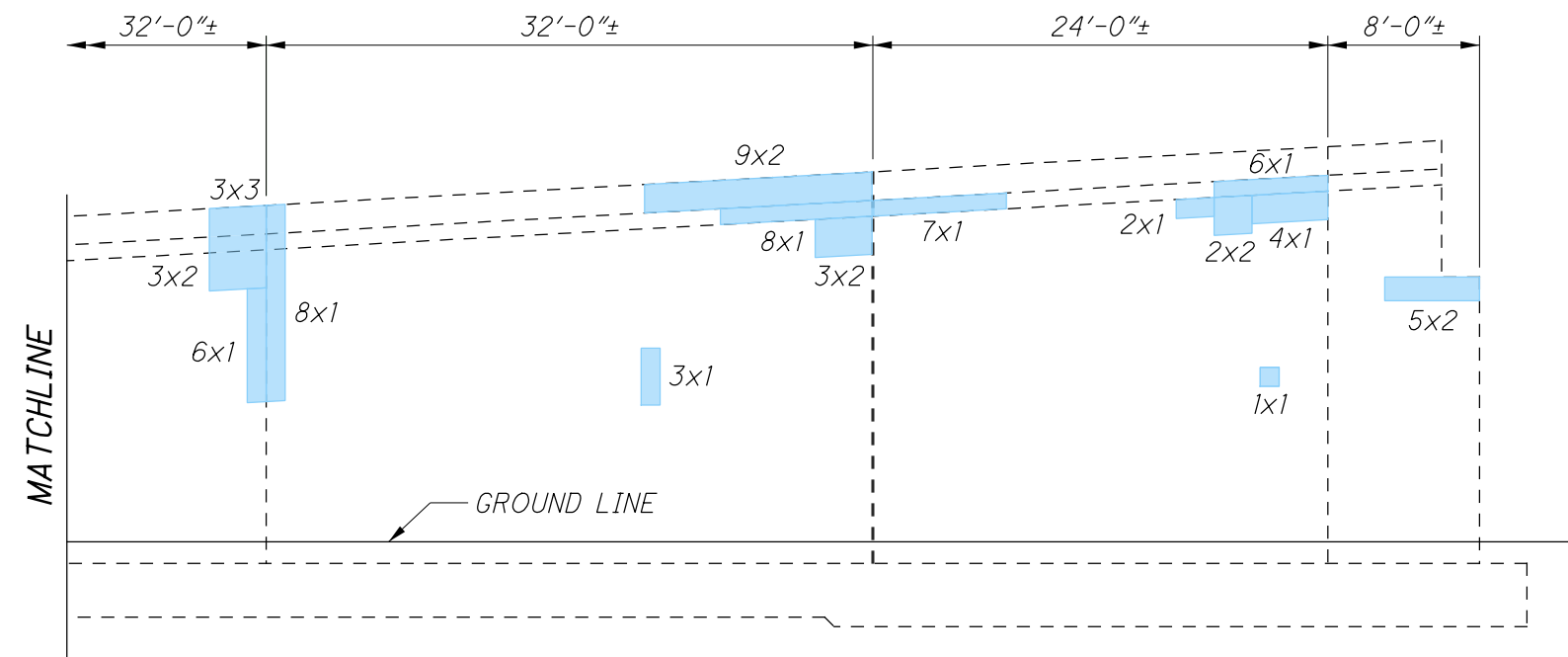


# NOTES

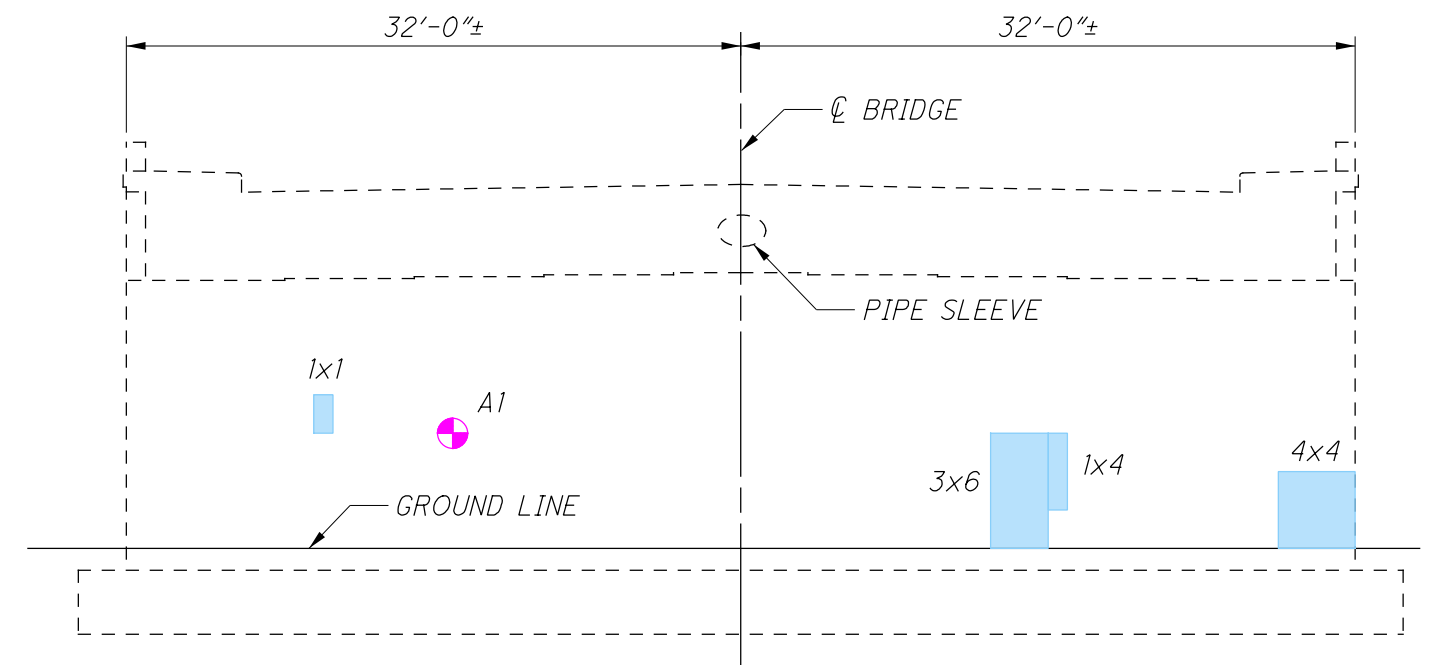
- ANCHOR BOLTS ARE BENT AT MOST BEARINGS
- PAINT IS IN GOOD CONDITION. MINOR PINHOLE RUSTING AT ISOLATED LOCATIONS.

W. 150th ST. BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

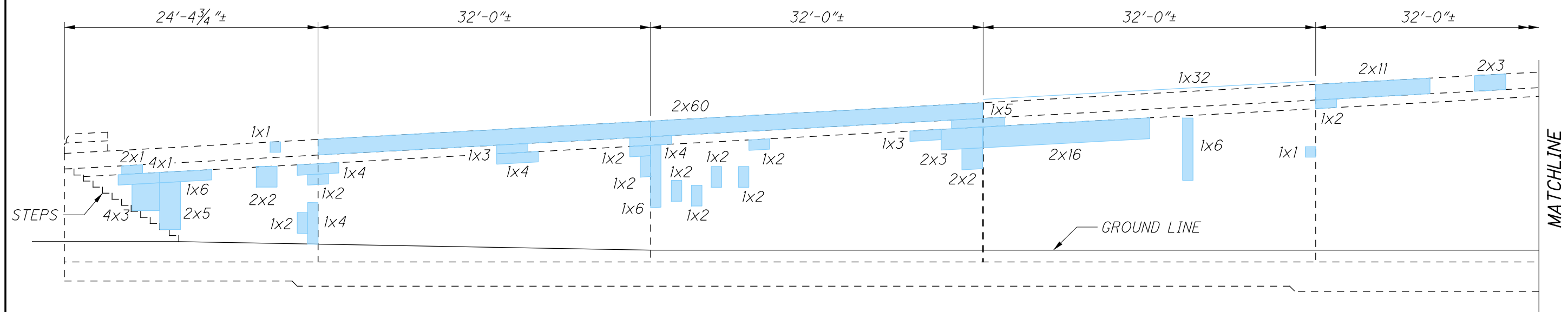
INSPECTION FINDINGS – STRUCTURAL STEEL, SPAN 10



REAR - RIGHT RETAINING WALL ELEVATION



REAR ABUTMENT ELEVATION

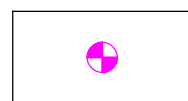


REAR - RIGHT RETAINING WALL ELEVATION

LEGEND



SPALLING/  
DELAMINATION

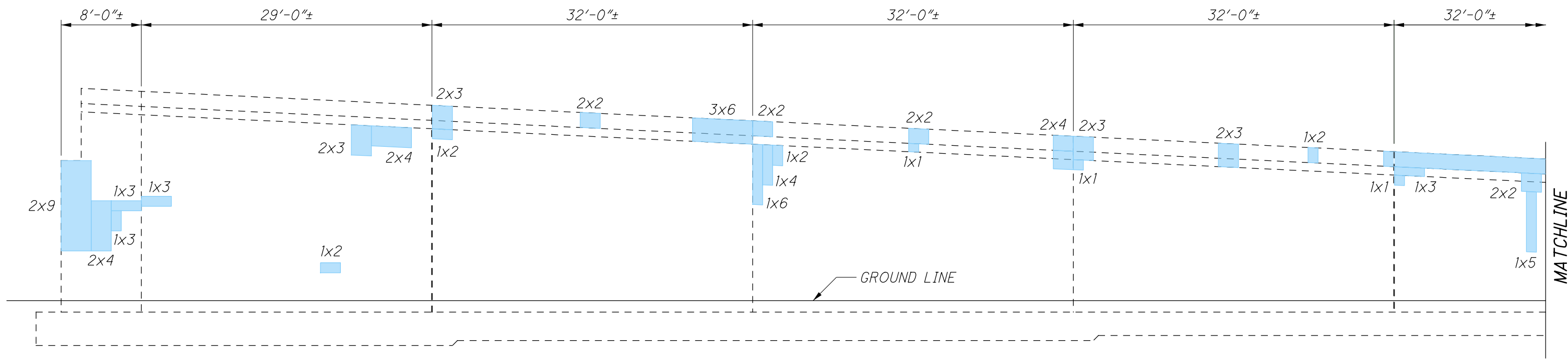


SUBSTRUCTURE  
CORE LOCATION

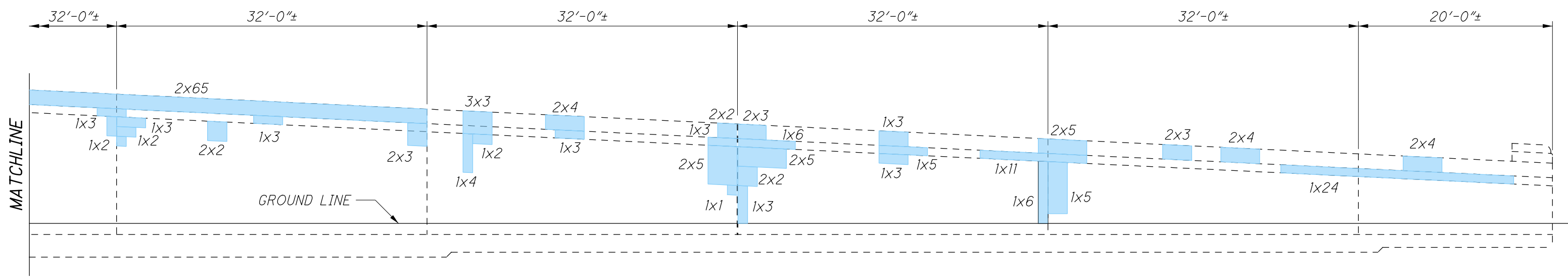
W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION AND  
EVALUATION REPORT

INSPECTION FINDINGS – REAR ABUTMENT/RETAINING WALLS





REAR - LEFT RETAINING WALL ELEVATION



REAR - LEFT RETAINING WALL ELEVATION

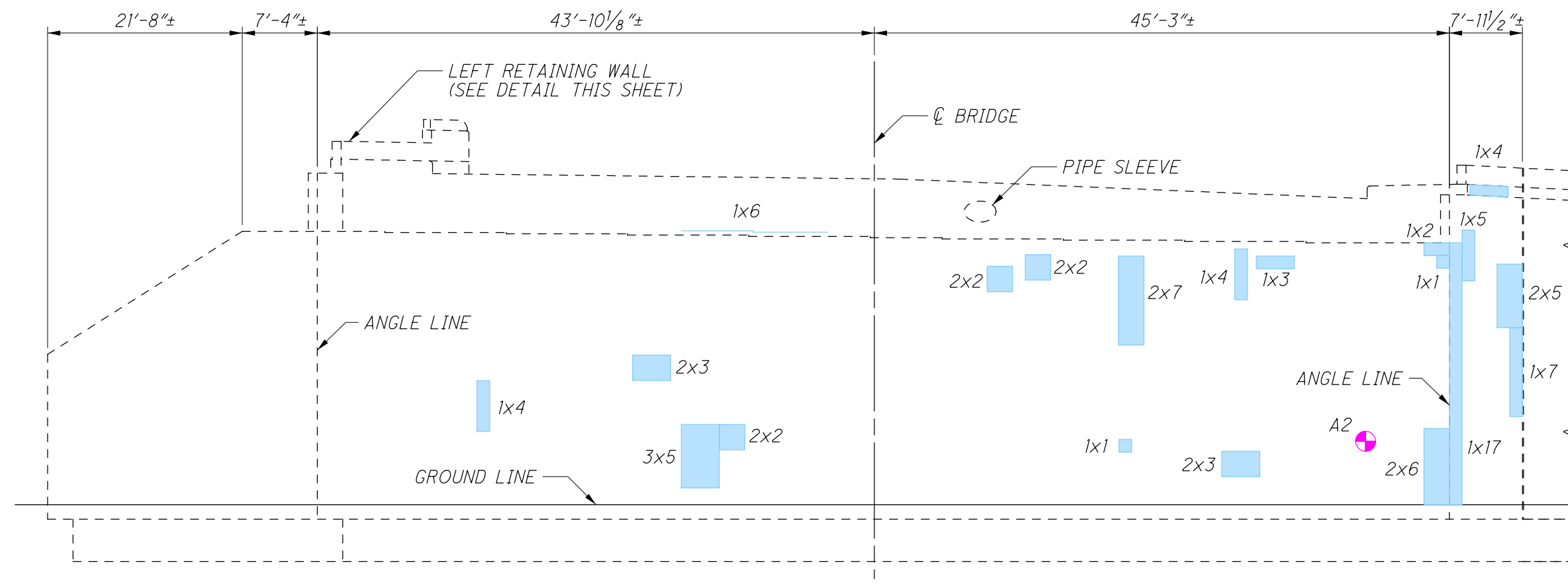
LEGEND



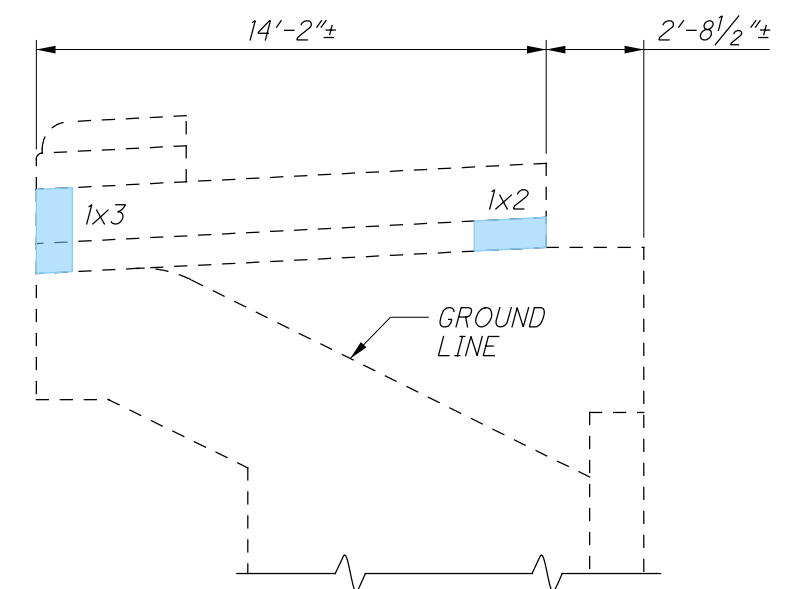
SPALLING/  
DELAMINATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION AND  
EVALUATION REPORT

INSPECTION FINDINGS – REAR ABUTMENT/RETAINING WALLS



FORWARD ABUTMENT ELEVATION

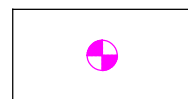


FORWARD - LEFT RETAINING WALL AND PARAPET

LEGEND



SPALLING/  
DELAMINATION

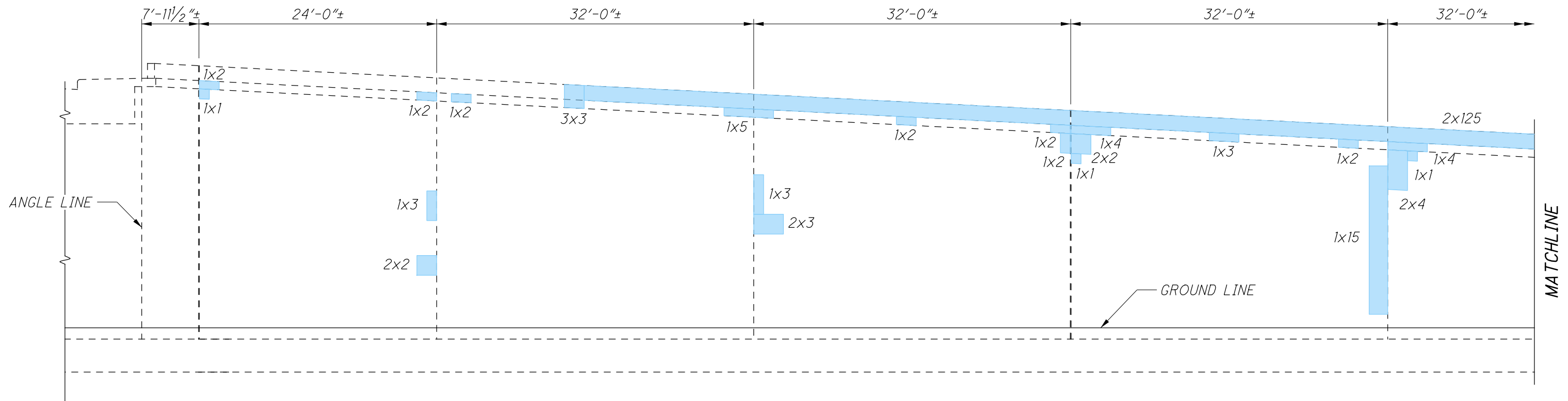


SUBSTRUCTURE  
CORE LOCATION

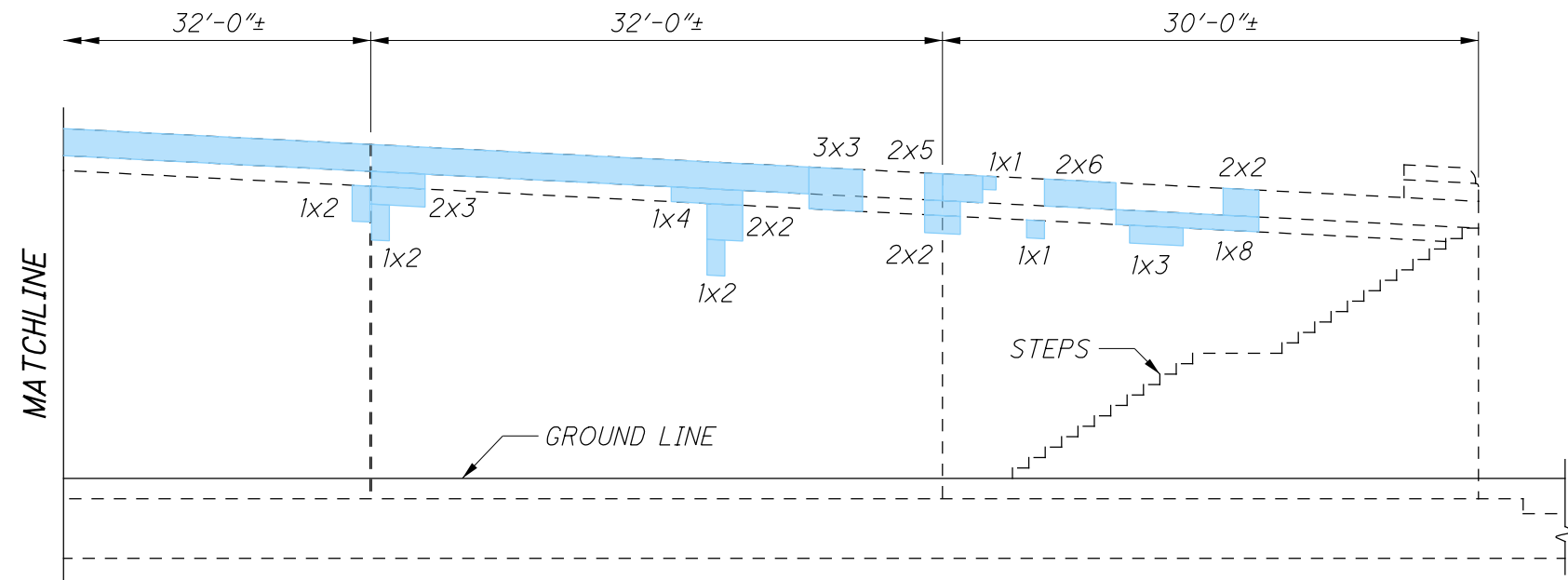
W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION AND  
EVALUATION REPORT



INSPECTION FINDINGS – FORWARD ABUTMENT/RETAINING WALLS



FORWARD - RIGHT RETAINING WALL ELEVATION



FORWARD - RIGHT RETAINING WALL ELEVATION

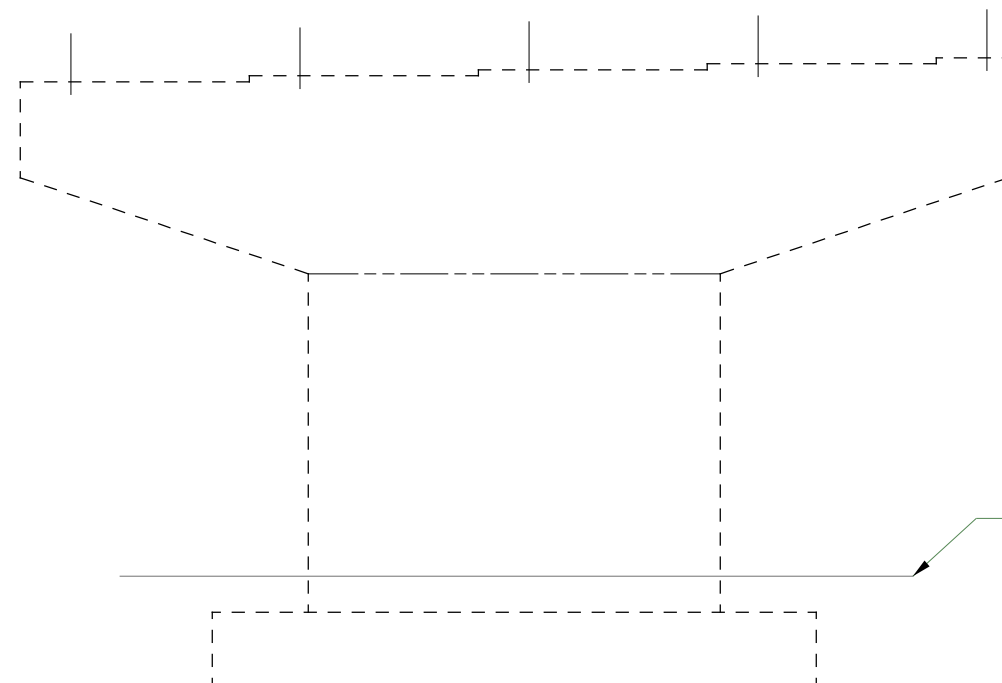
LEGEND



SPALLING/  
DELAMINATION

W. 150TH STREET BRIDGE 01.94 - BRIDGE INSPECTION AND  
EVALUATION REPORT

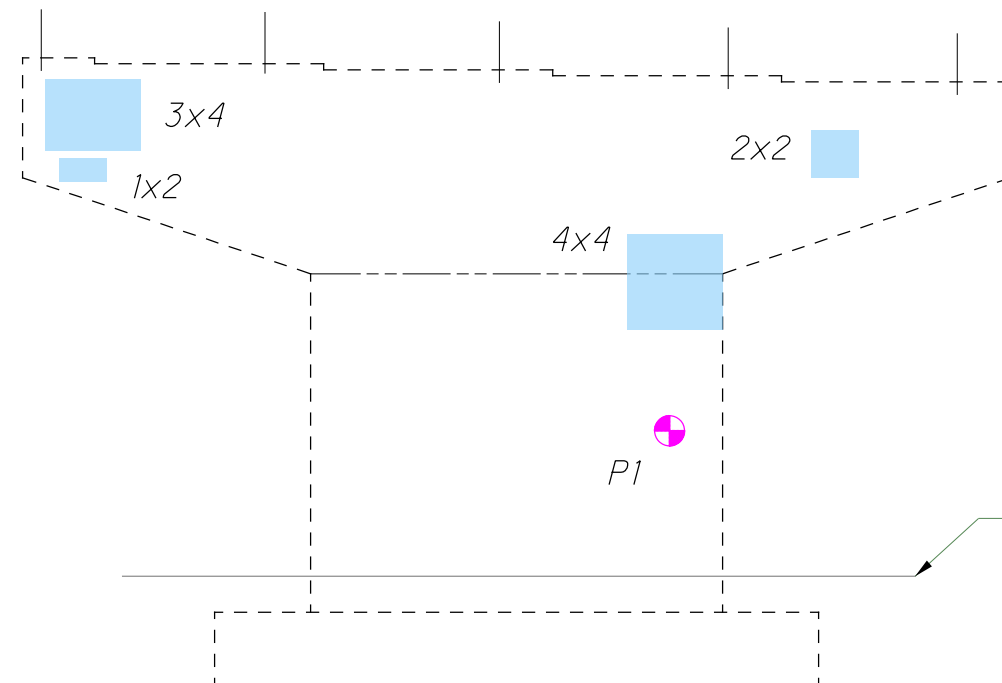
INSPECTION FINDINGS - FORWARD ABUTMENT/RETAINING WALLS



P1R

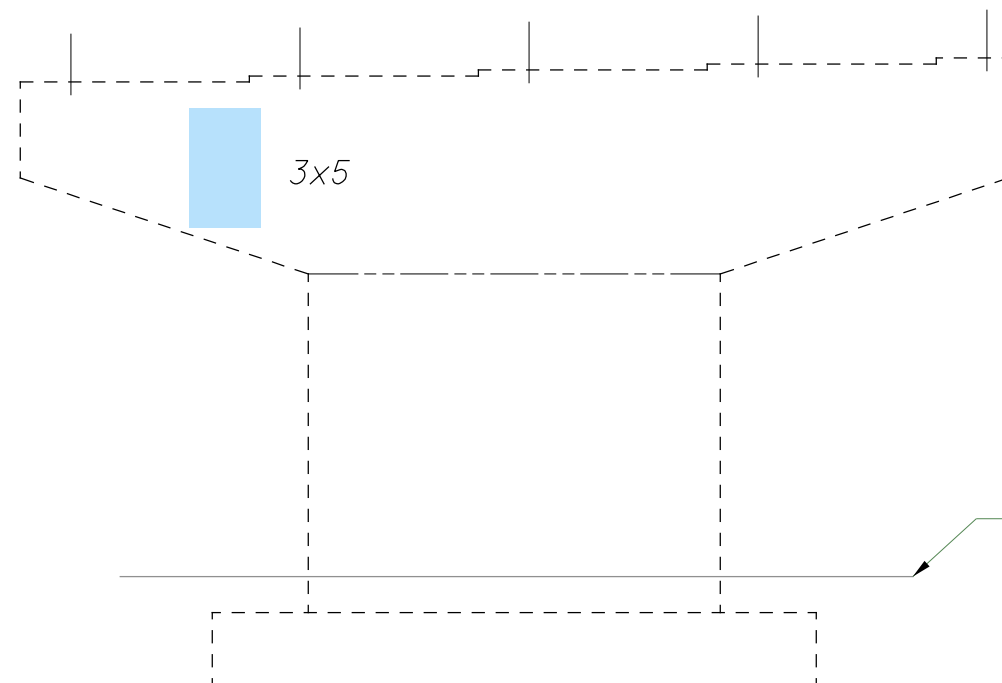
GROUNDLINE

NORTH FACE ELEVATION



P1L

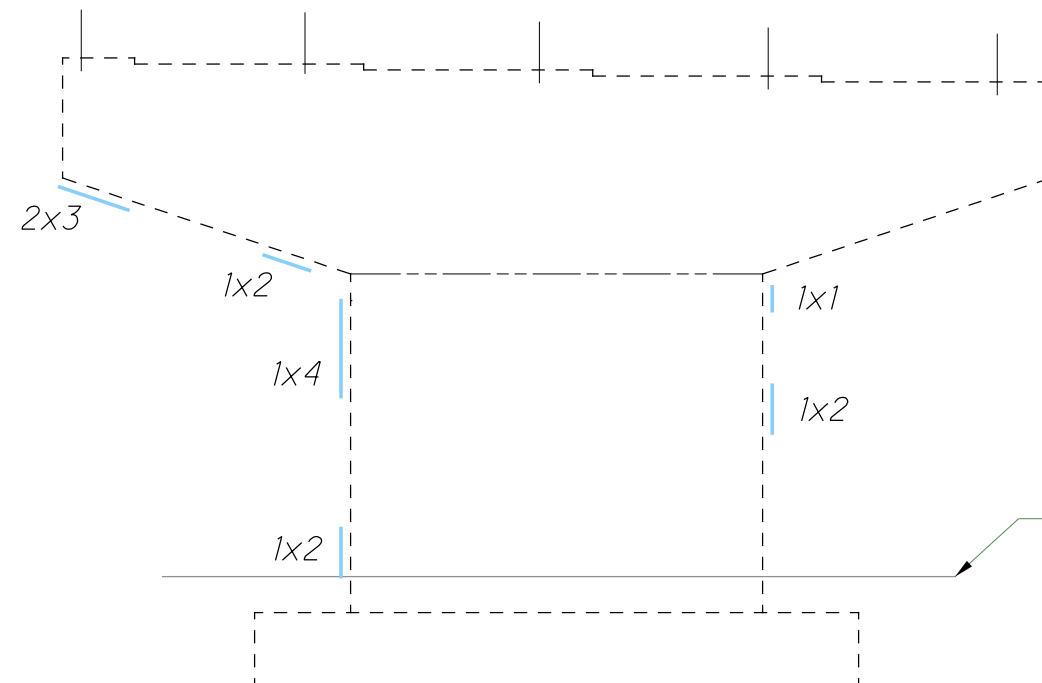
GROUNDLINE



P1L

GROUNDLINE

SOUTH FACE ELEVATION



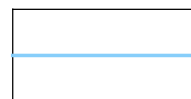
P1R

GROUNDLINE

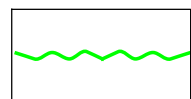
LEGEND



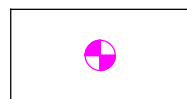
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING

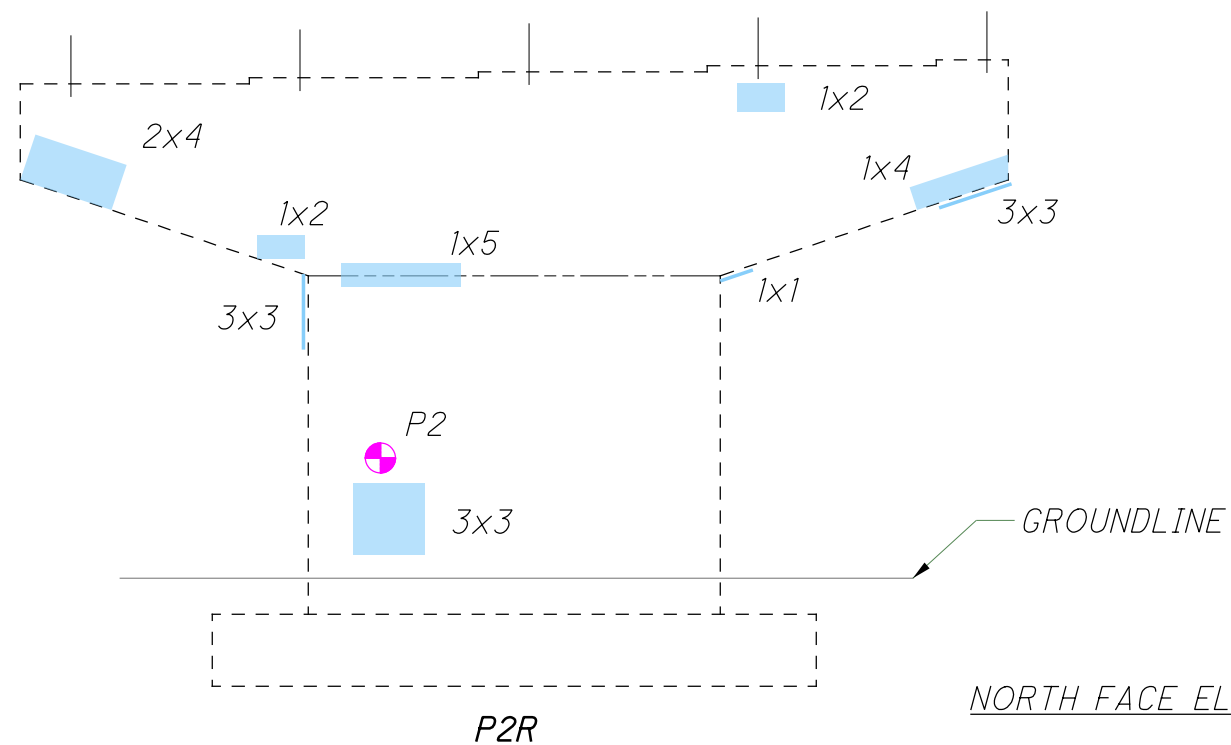


SUBSTRUCTURE  
CORE LOCATION

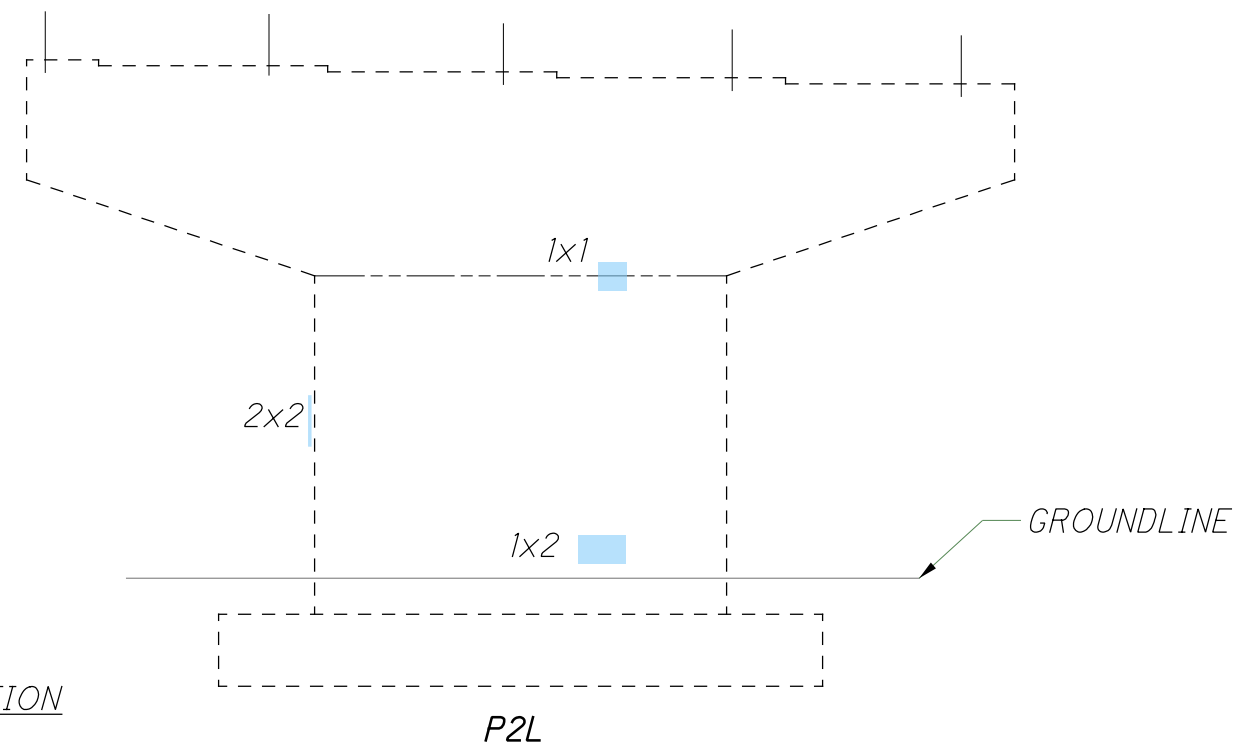
W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



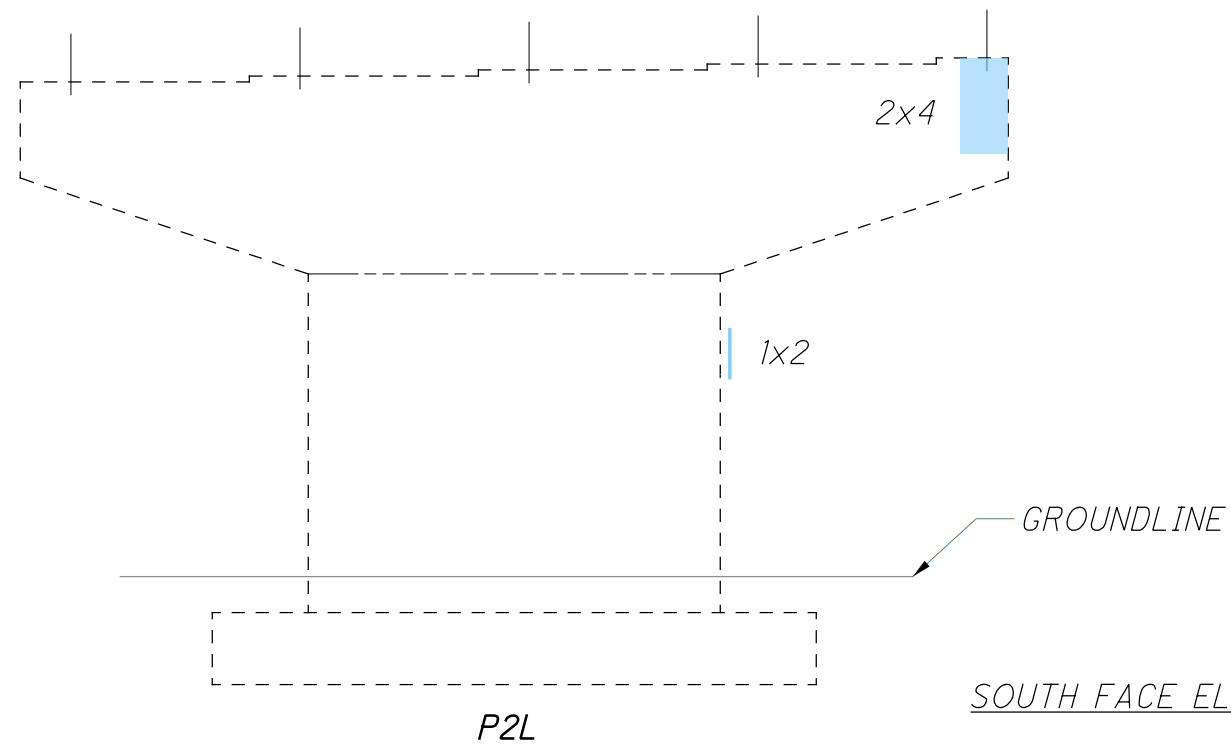
INSPECTION FINDINGS – PIER 1



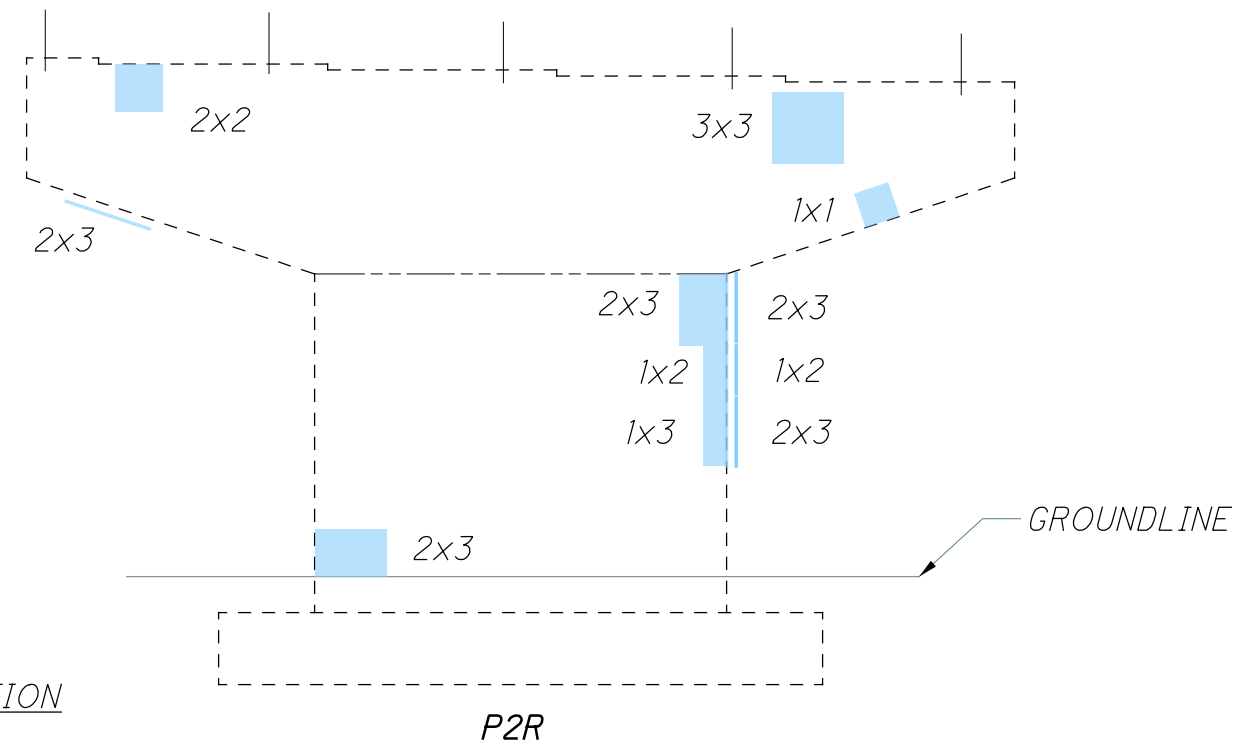
NORTH FACE ELEVATION



P2L



SOUTH FACE ELEVATION

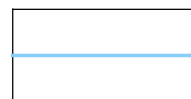


P2R

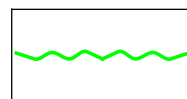
LEGEND



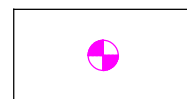
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING



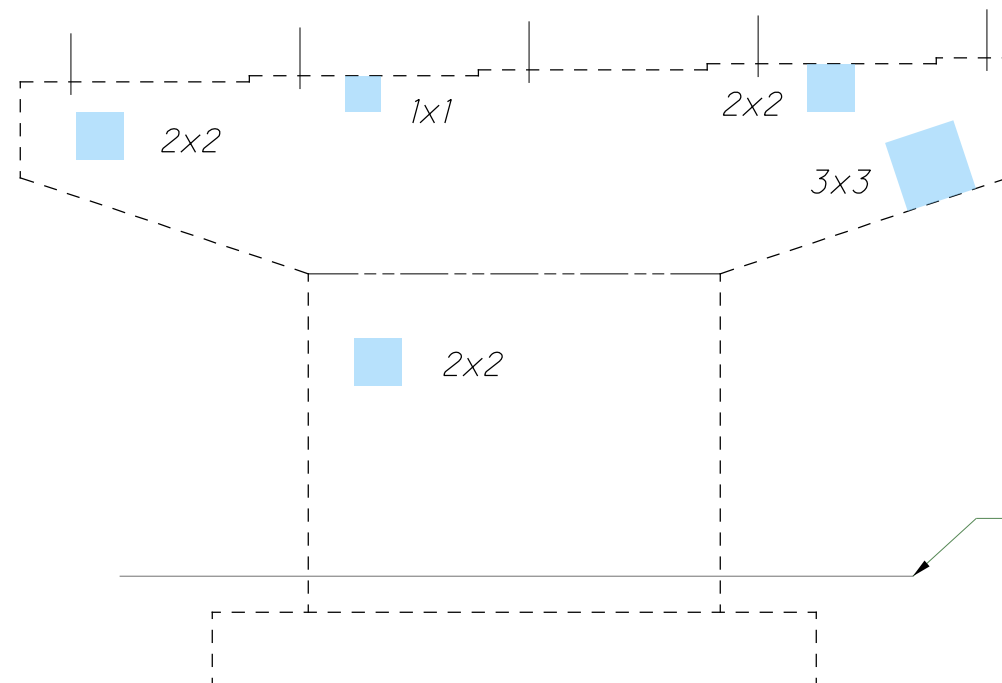
SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

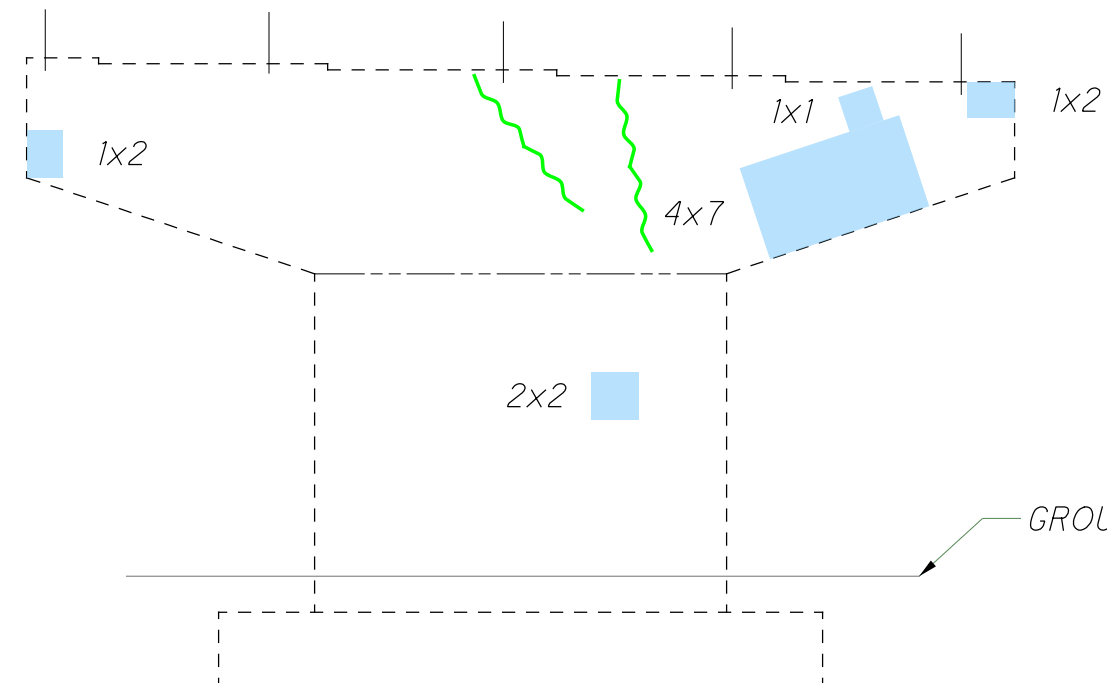


INSPECTION FINDINGS – PIER 2

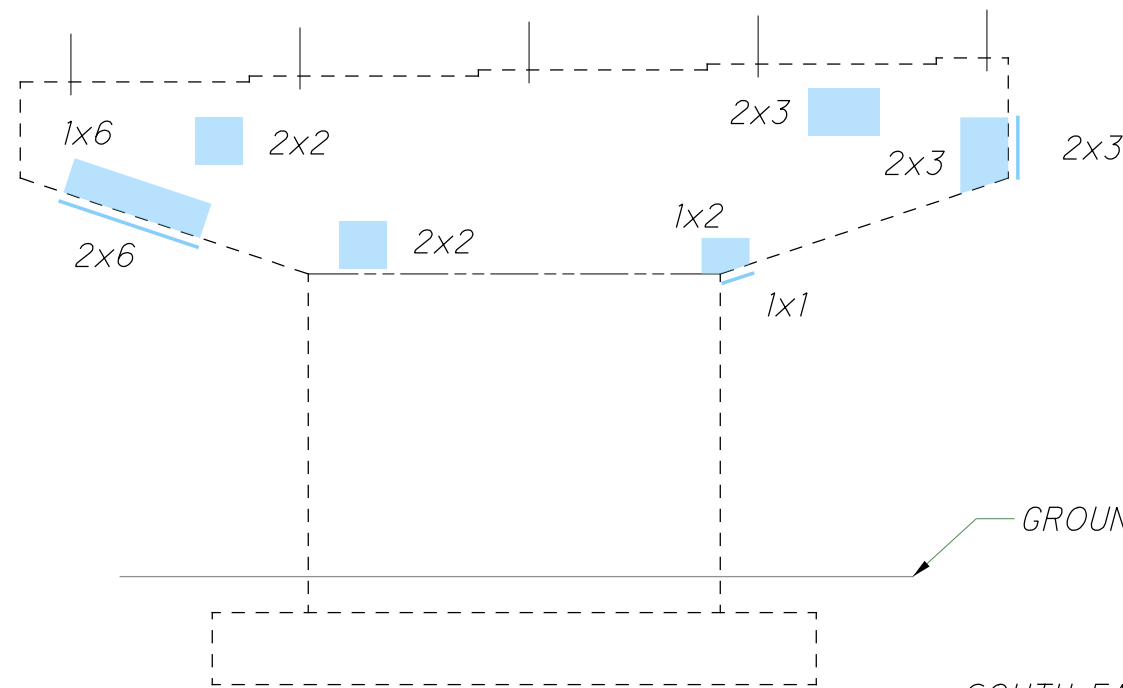




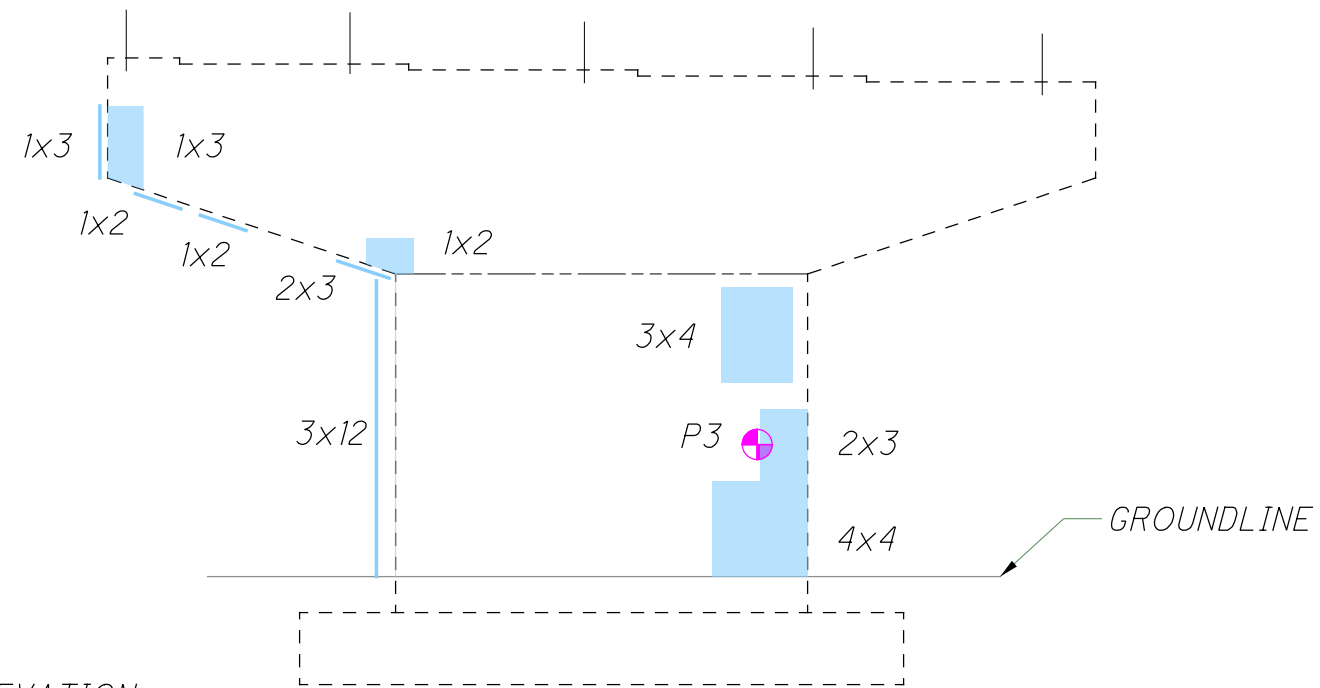
NORTH FACE ELEVATION



P3L



SOUTH FACE ELEVATION

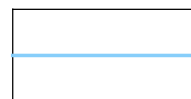


P3R

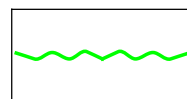
LEGEND



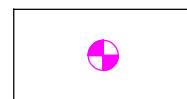
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING

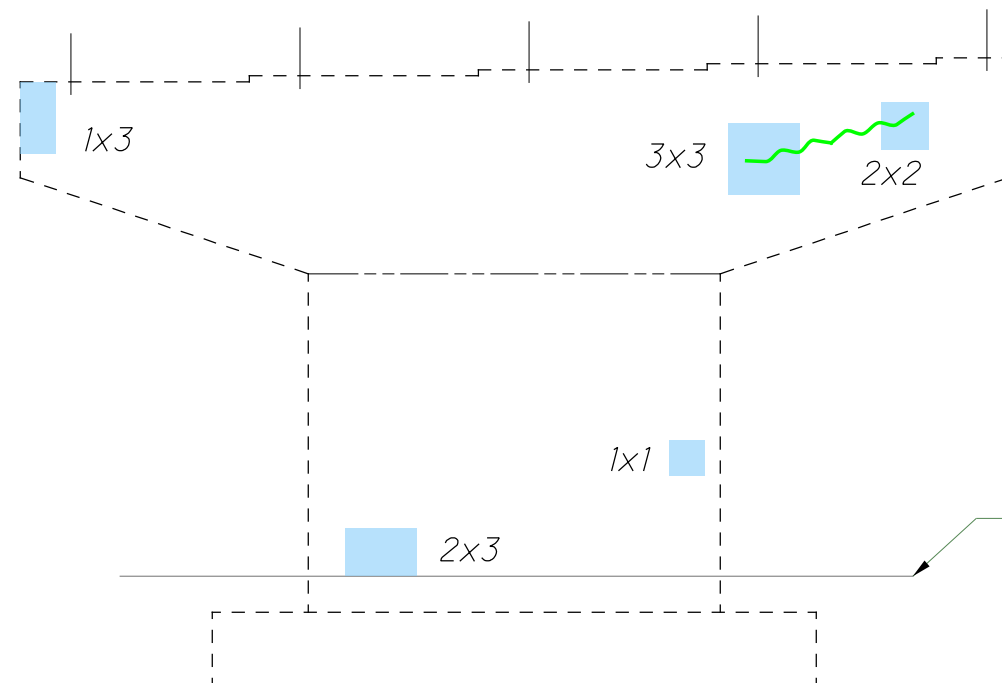


SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



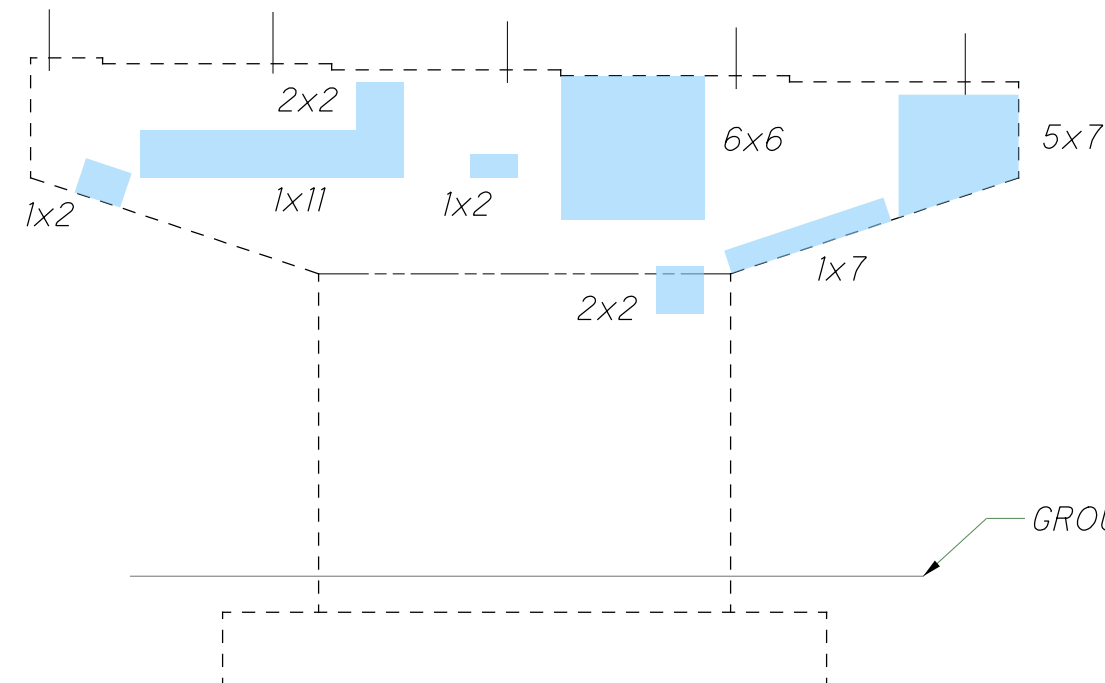
INSPECTION FINDINGS – PIER 3



GROUNDLINE

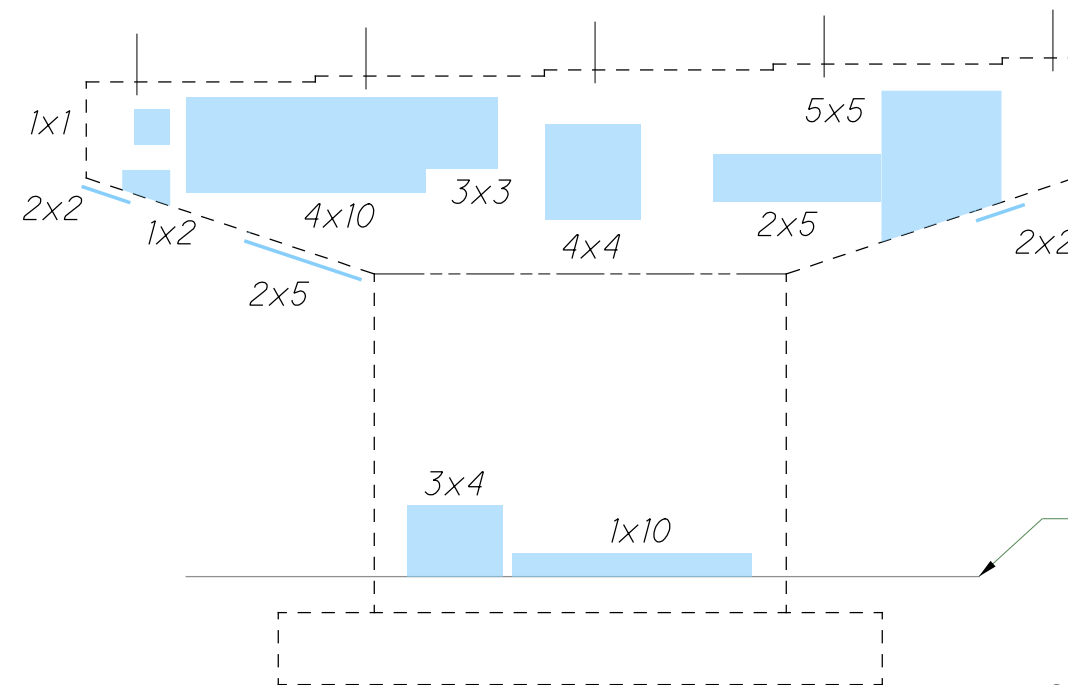
P4R

NORTH FACE ELEVATION



GROUNDLINE

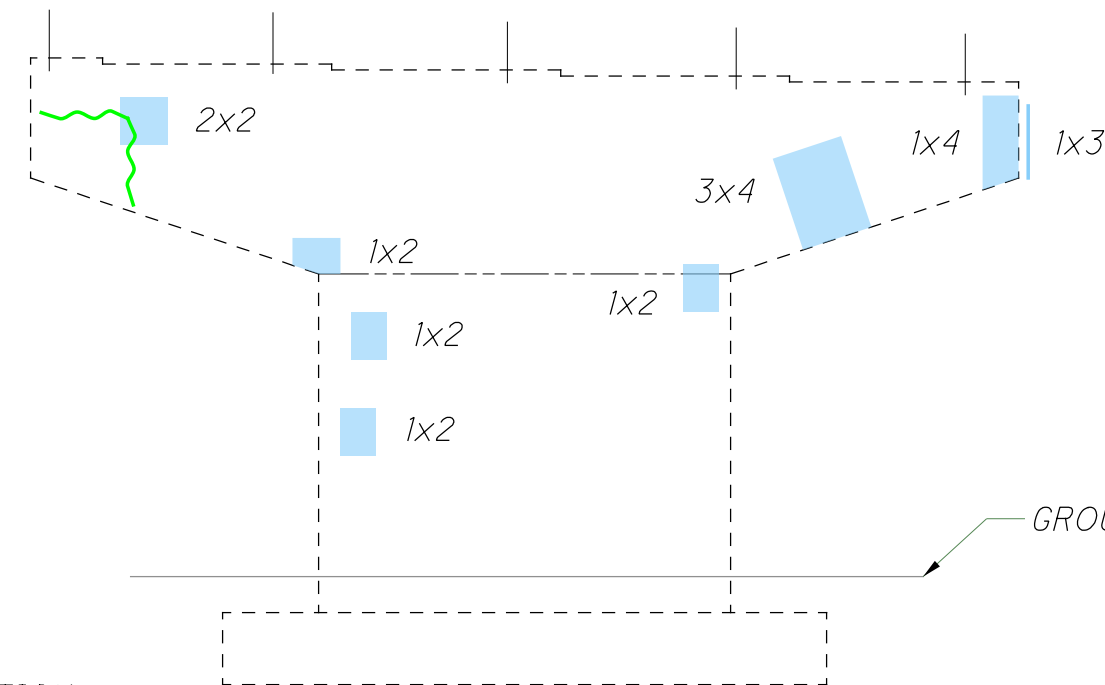
P4L



GROUNDLINE

P4L

SOUTH FACE ELEVATION



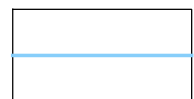
GROUNDLINE

P4R

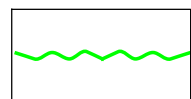
LEGEND



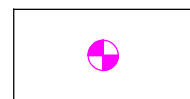
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING

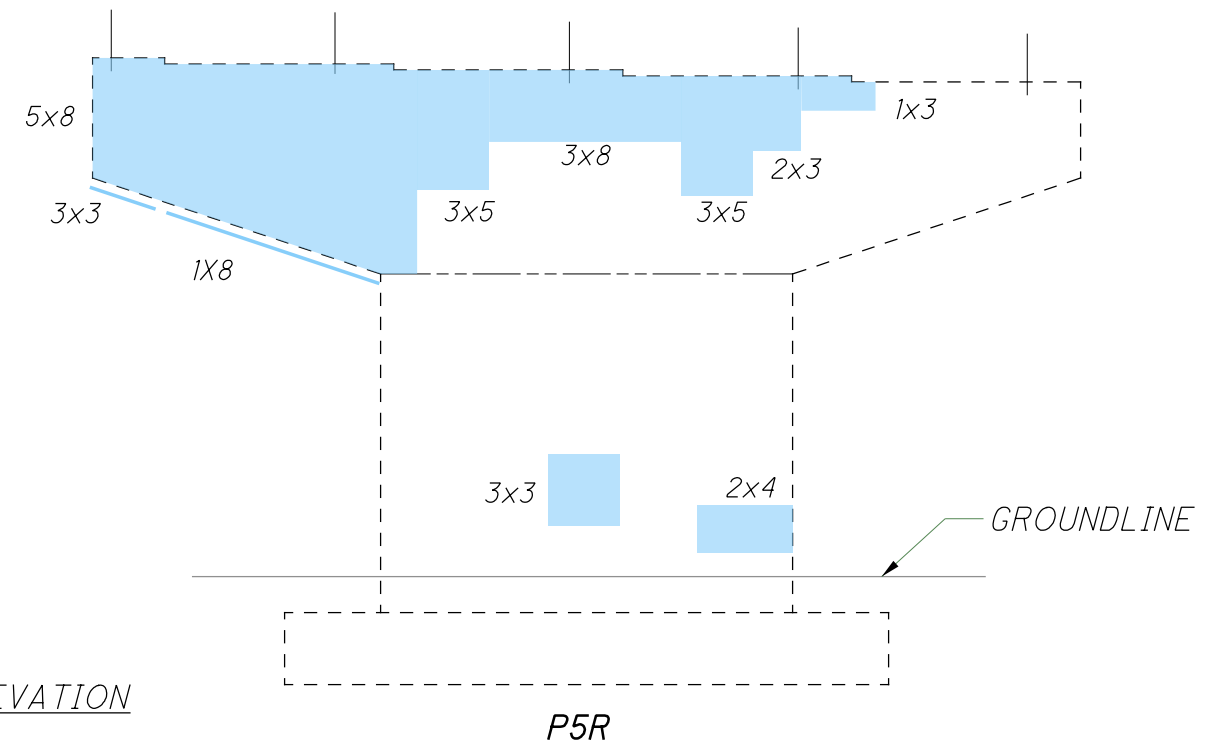
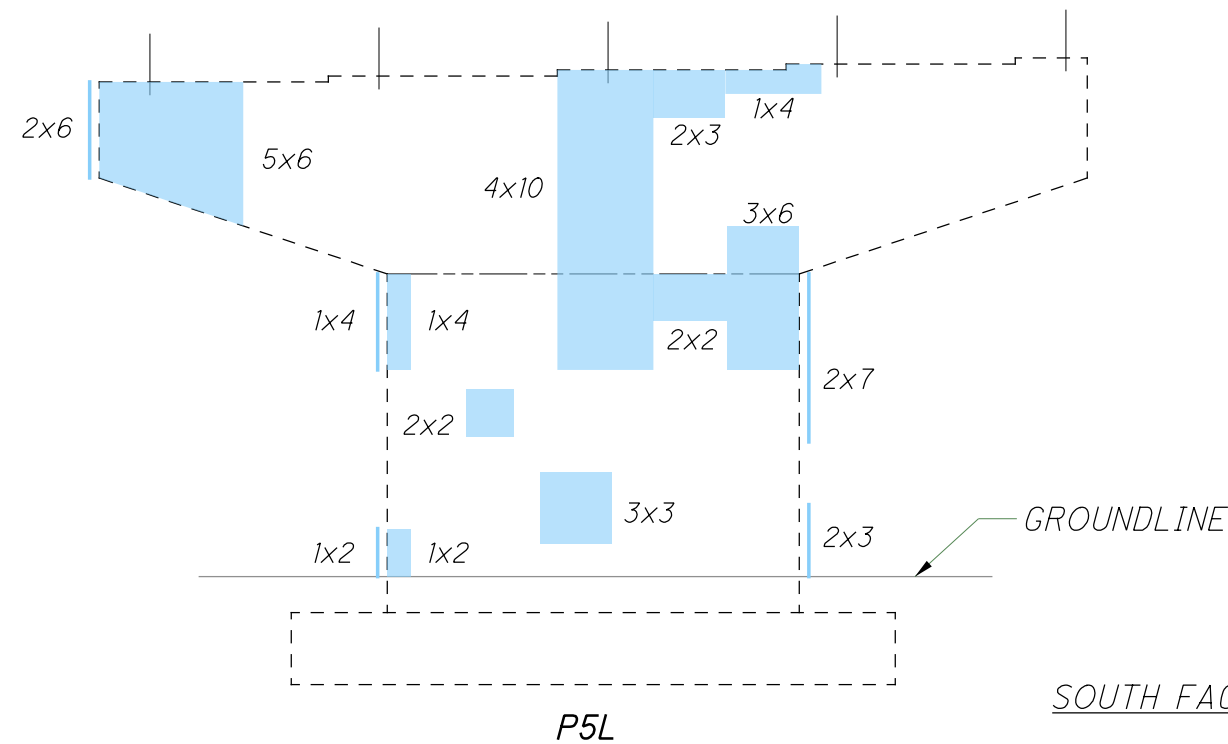
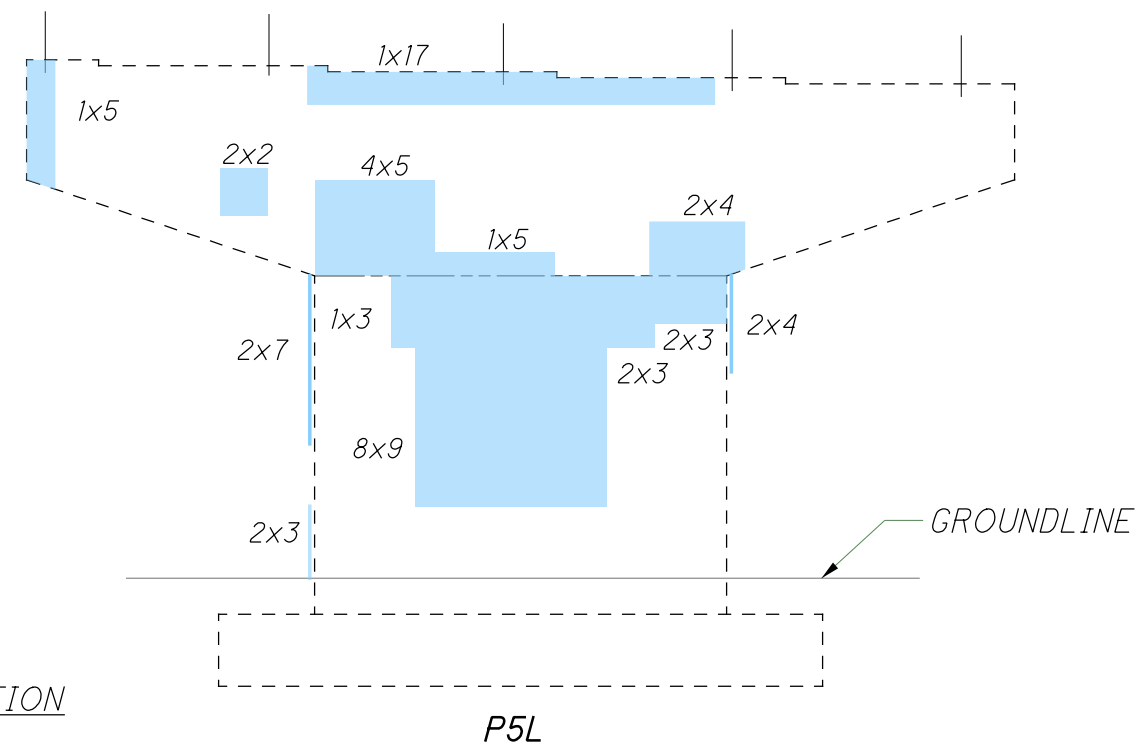
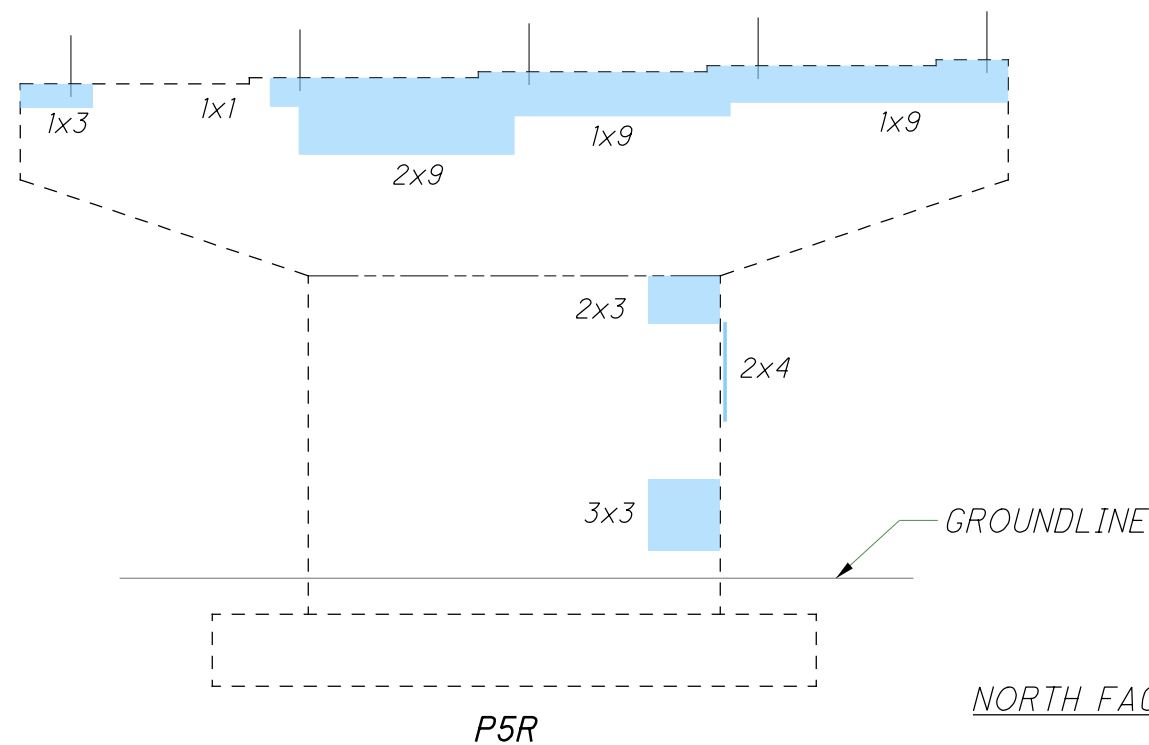


SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



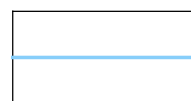
INSPECTION FINDINGS – PIER 4



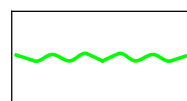
# LEGEND



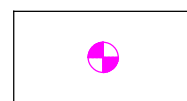
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING

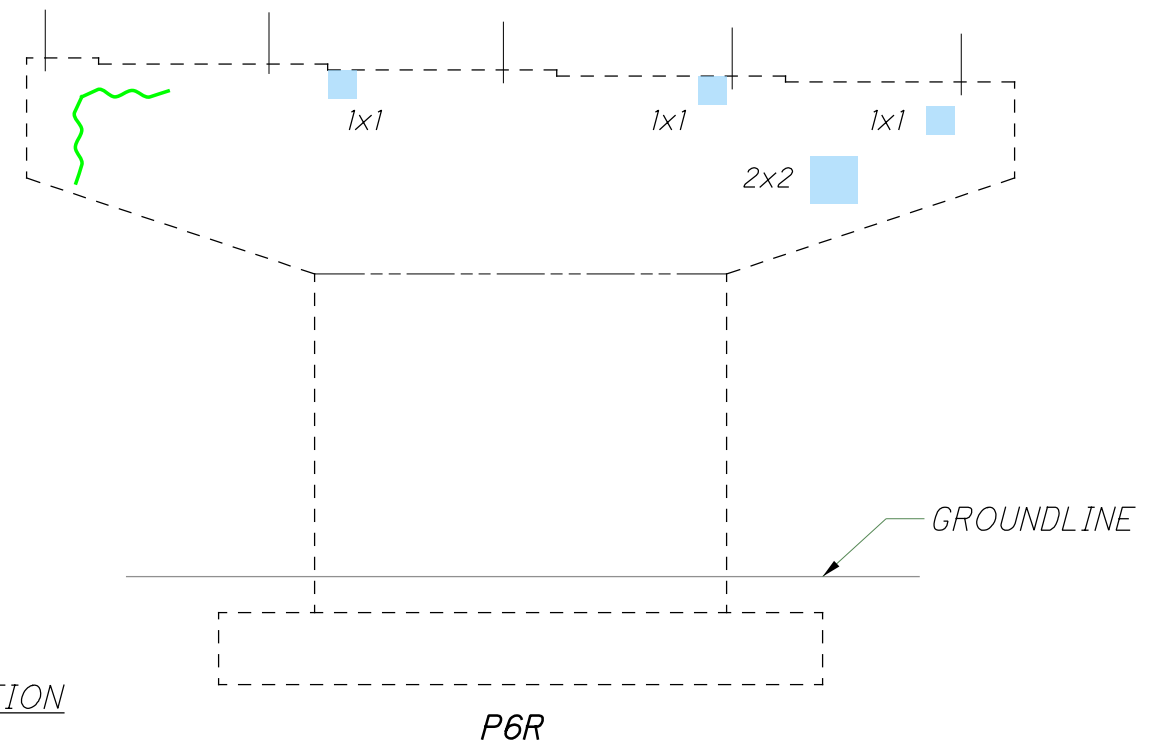
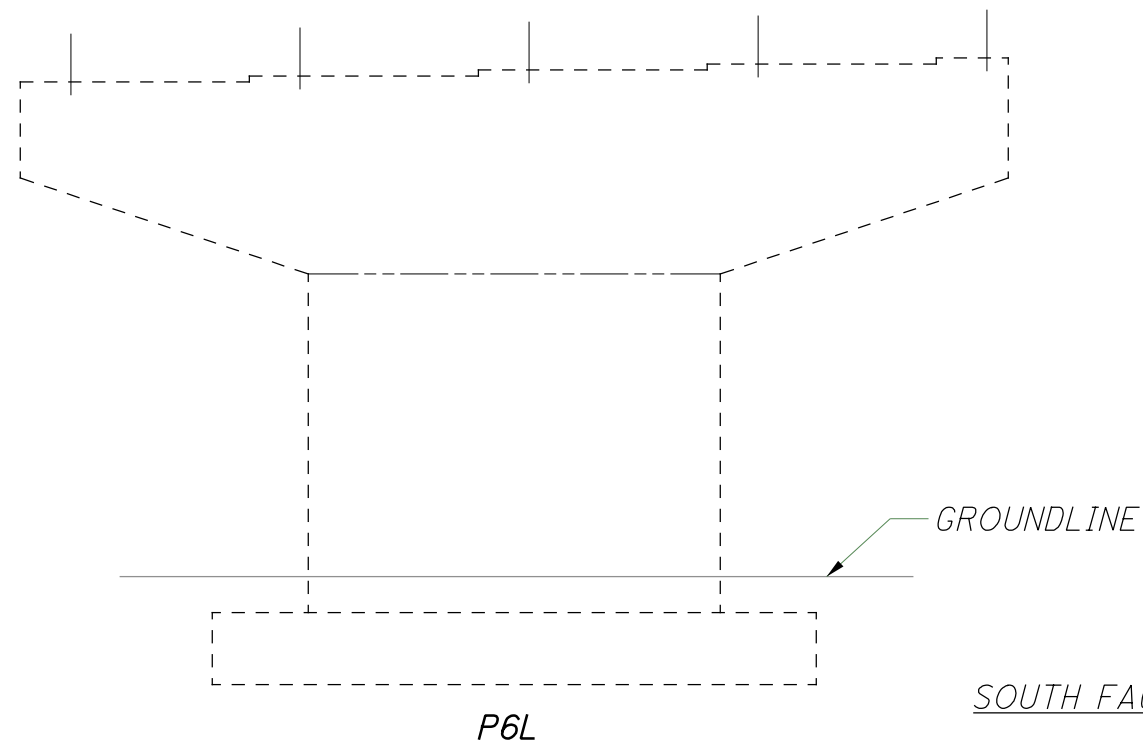
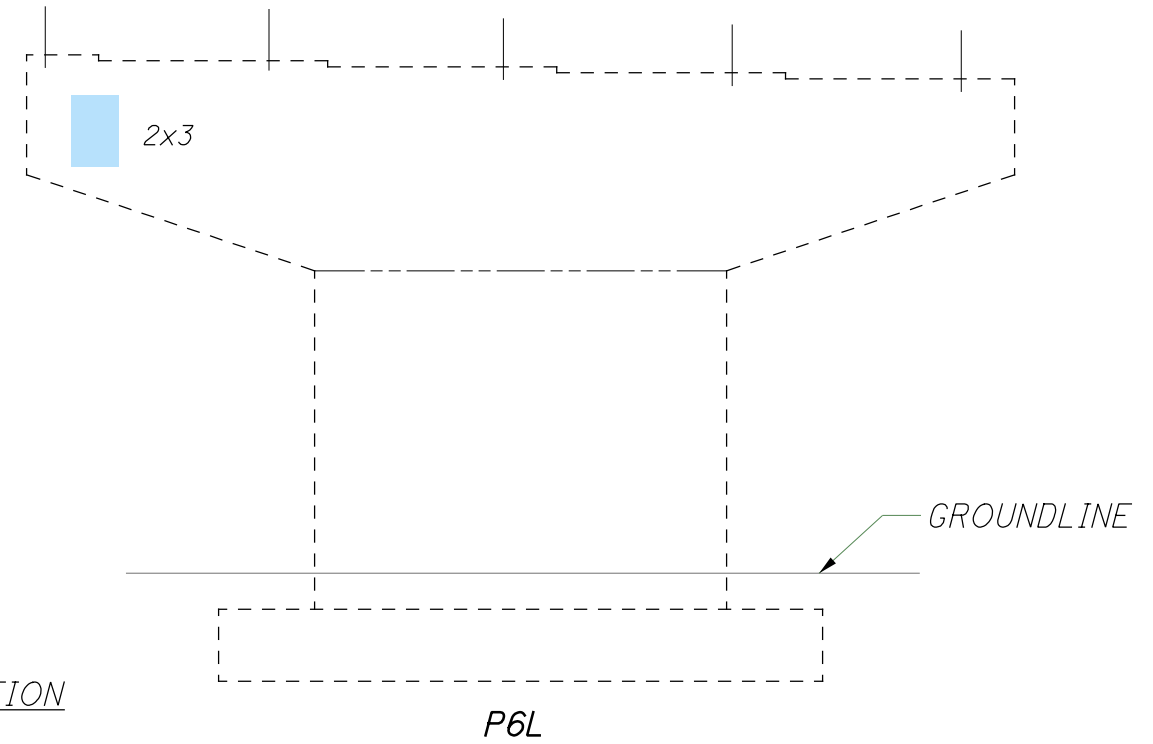
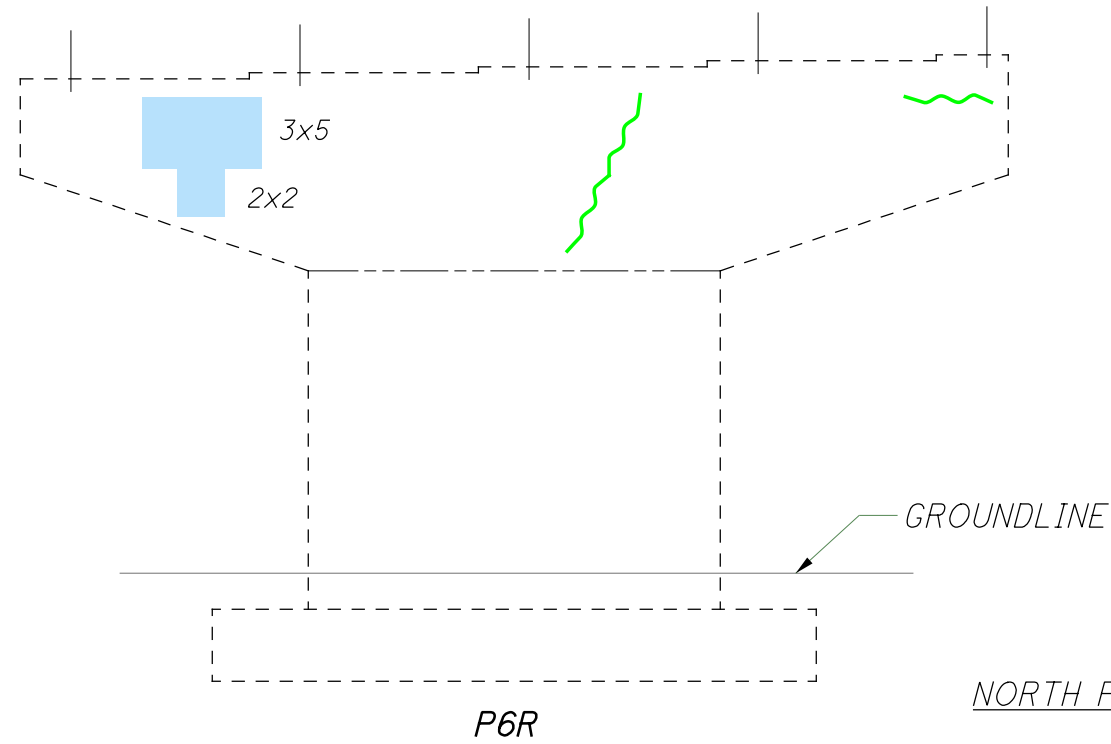


SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



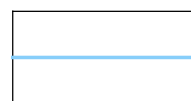
## INSPECTION FINDINGS – PIER 5



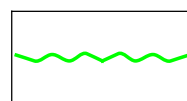
# LEGEND



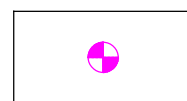
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING

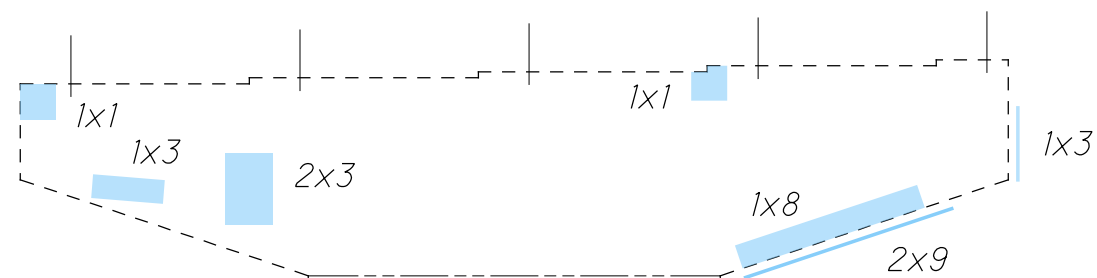


SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



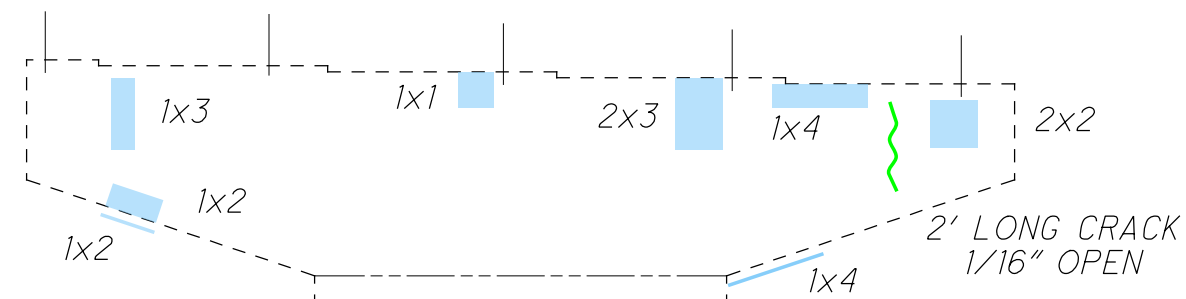
INSPECTION FINDINGS – PIER 6



GROUNDLINE

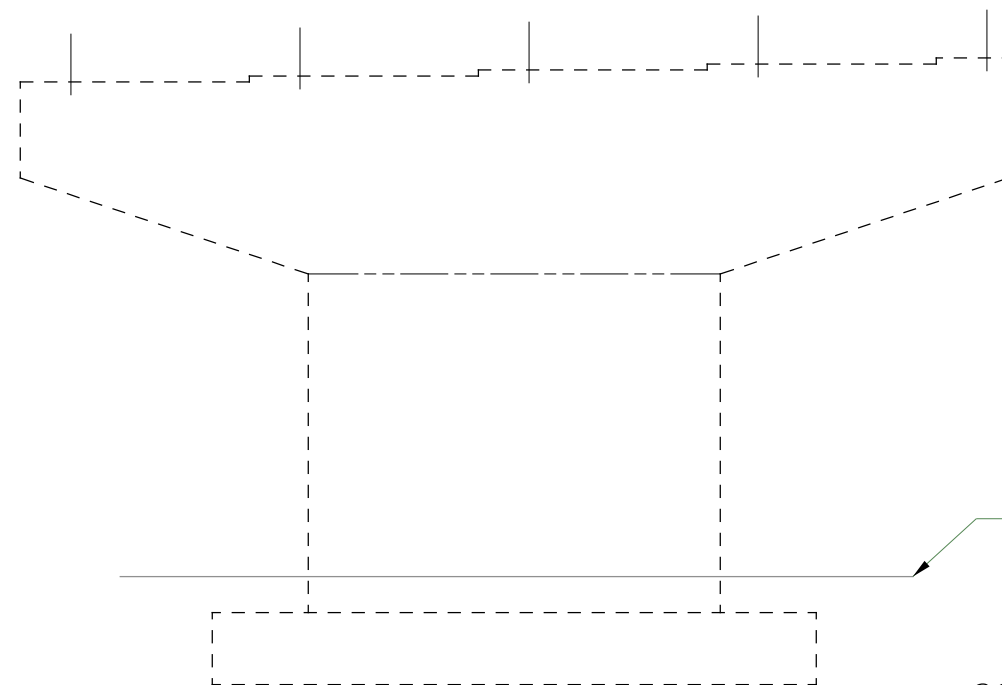
P7R

NORTH FACE ELEVATION



GROUNDLINE

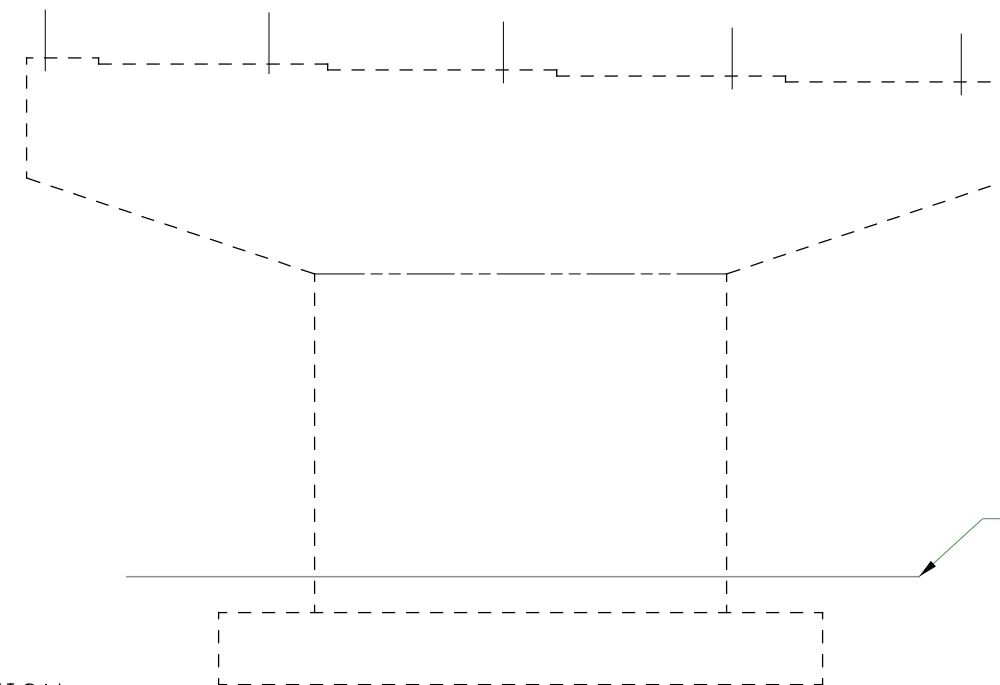
P7L



GROUNDLINE

P7L

SOUTH FACE ELEVATION



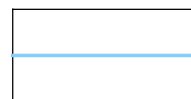
GROUNDLINE

P7R

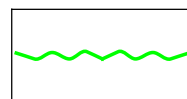
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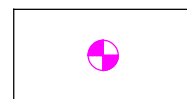
SPALLING/  
DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING



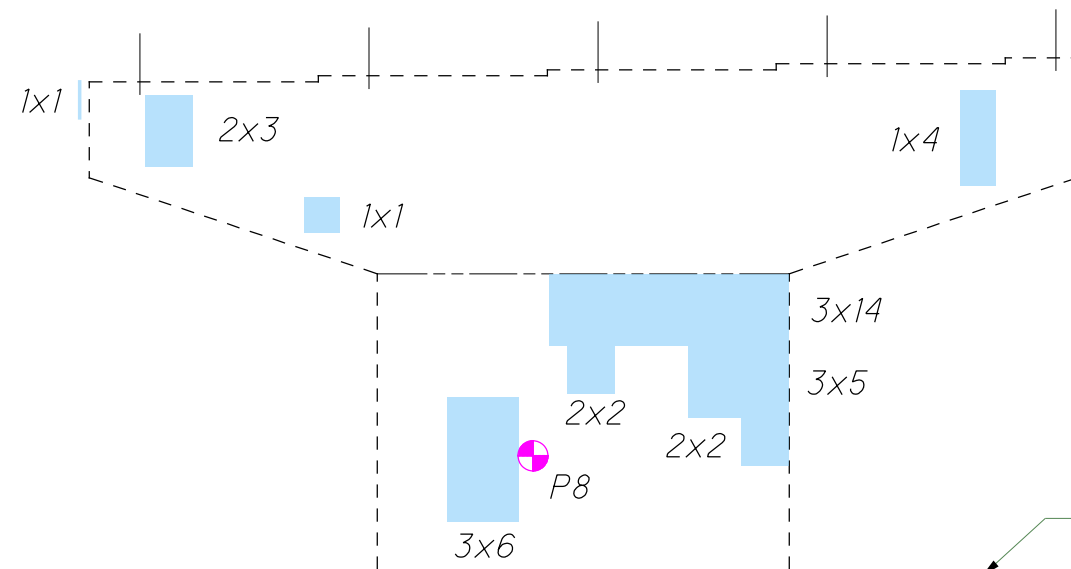
SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT

**ARCADIS** Design & Consultancy  
for natural and  
built assets

INSPECTION FINDINGS – PIER 7

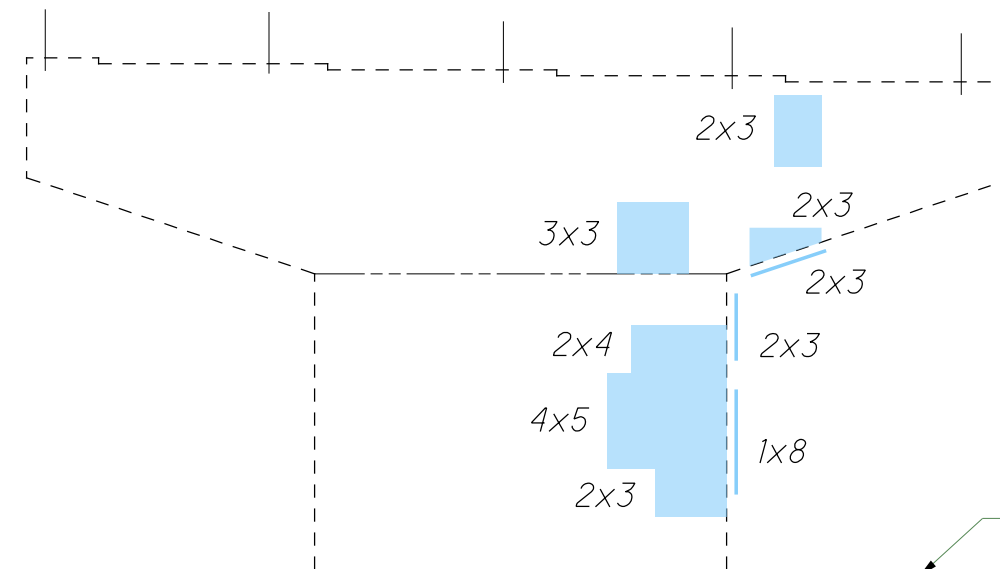




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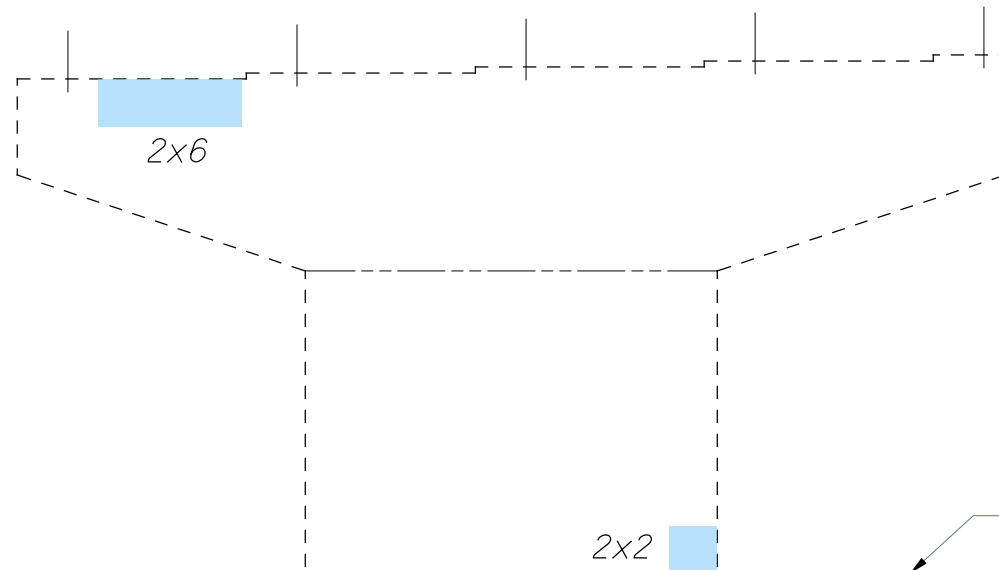
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SOUTH FACE ELEVATION



GROUNDLINE

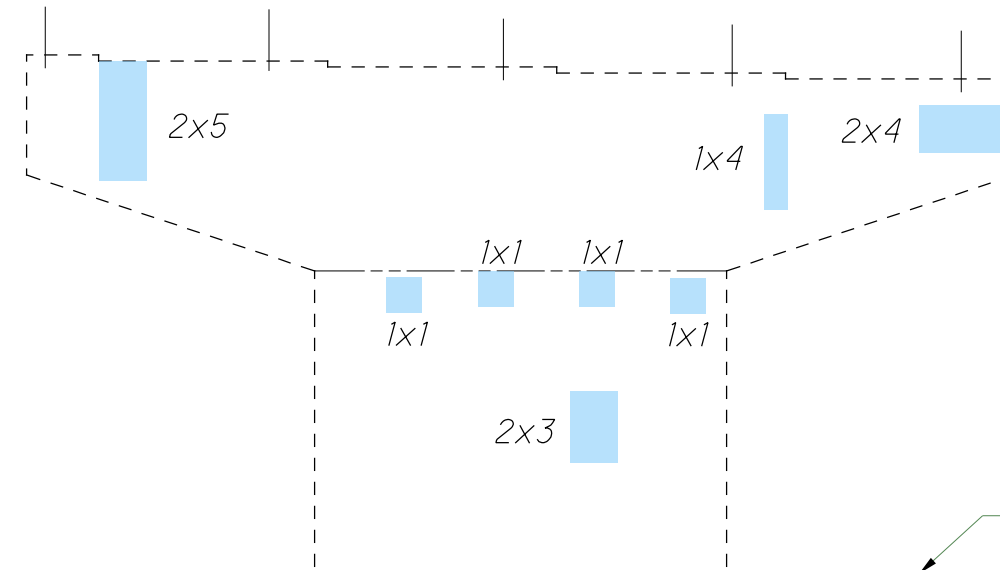
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GROUNDLINE

P8L

NORTH FACE ELEVATION



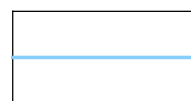
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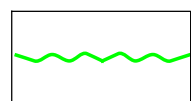
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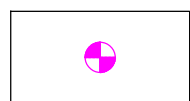
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SPALLING ALONG  
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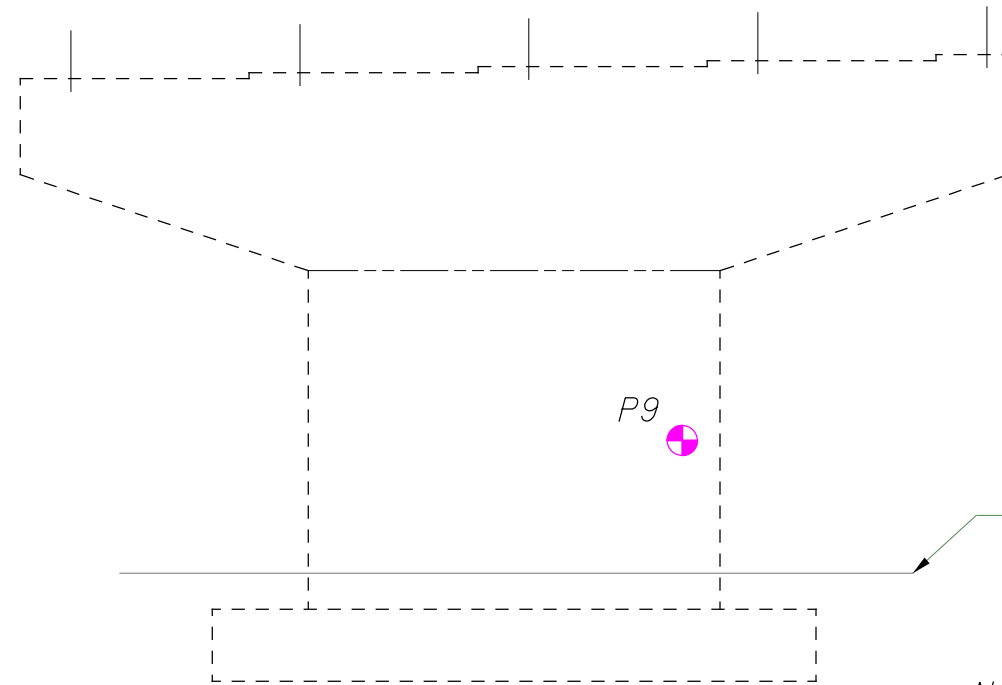


SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



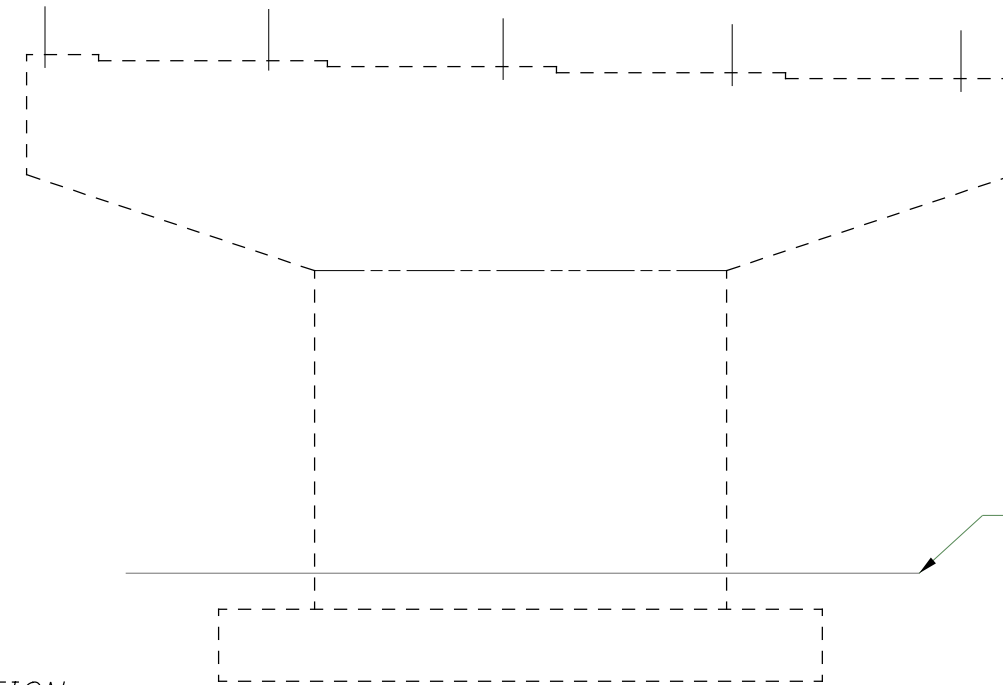
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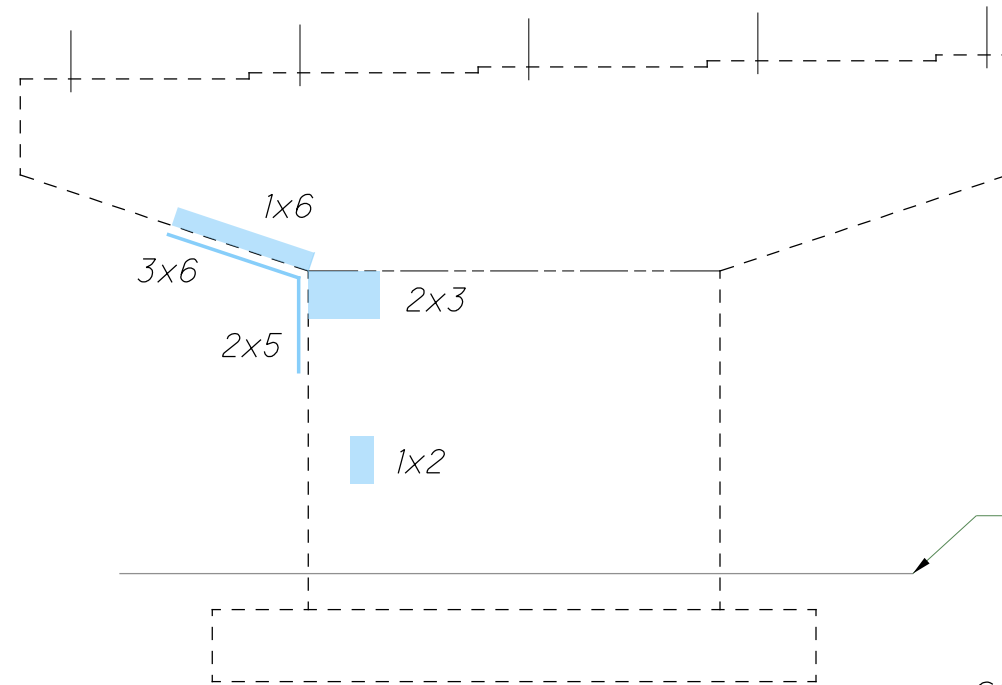
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NORTH FACE ELEVATION



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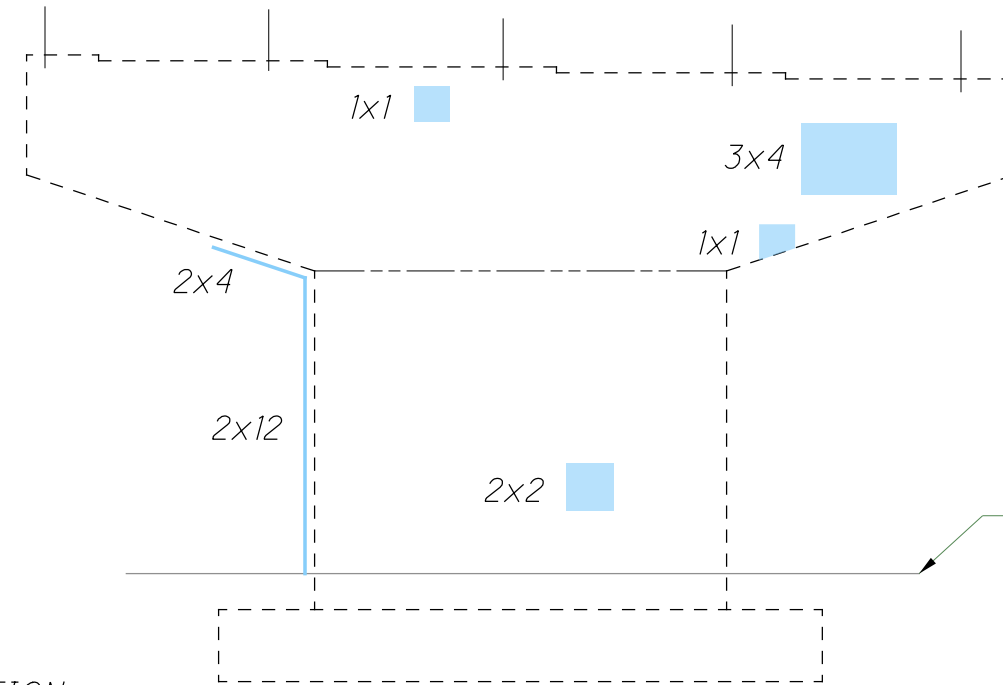
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GROUNDLINE

P9L

SOUTH FACE ELEVATION



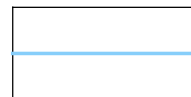
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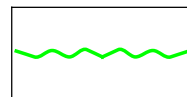
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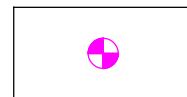
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DELAMINATION



SPALLING ALONG  
CONCRETE FASCIA



CRACKING



SUBSTRUCTURE  
CORE LOCATION

W. 150TH STREET BRIDGE 01.94 – BRIDGE INSPECTION  
AND EVALUATION REPORT



INSPECTION FINDINGS – PIER 9

# APPENDIX E

## Pre-Demolition Hazardous Building Materials Survey

# HAZARDOUS BUILDING MATERIALS SURVEY

Cuyahoga County  
West 150th Street Bridge 01.94  
Cleveland, Ohio 44111

December 11, 2020

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a complex, angular form that extends from the bottom edge towards the top right corner.

## HAZARDOUS BUILDING MATERIALS SURVEY

Report Prepared By:



---

Kristen Leone Malysz  
Project Task Manager 1  
Asbestos Hazard Evaluation Specialist (ES35684)

Report Reviewed By:



---

Gregory Donovan  
Certified Project Manager

## HAZARDOUS BUILDING MATERIALS SURVEY

Cuyahoga County  
West 150th Street Bridge 01.94  
Cleveland, Ohio 44111

Prepared for:

Demetrios J. Hazimihalis, P.E., MSCE  
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Inspection & Maintenance Project  
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Prepared by:

Arcadis U.S., Inc.  
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Tel 216.781.6177

Our Ref.:

30056244 - TOHCUY002

Date:

December 11, 2020

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## APPENDICES

Appendix A	Limitations and Service Constraints
Appendix B	Accreditation
Appendix C	Laboratory Report – Asbestos
Appendix D	Laboratory Report – Lead
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## 1 INTRODUCTION

Arcadis U.S., Inc. (Arcadis) conducted a Hazardous Building Materials Survey (survey) at the West 150th Street Bridge 01.94 located in Cleveland, Ohio (site).

The objective of the survey was to ascertain the general presence, quantity, and location of asbestos-containing materials (ACMs) and lead paint at the site. The results of the survey will assist in the preparation of an abatement scope of work and subsequent abatement of identified ACMs and lead paint that may be required prior to renovation or demolition activities. Arcadis' survey and report are subject to the Limitations and Service Constraints provided in Appendix A.

The survey was conducted on October 2, 2020, by Ms. Kristen Malysz of Arcadis. Ms. Malysz is certified by the Ohio Environmental Protection Agency (OEPA) as Asbestos Hazard Evaluation Specialists (AHES). A copy of her certification is provided in Appendix B.

## 2 SURVEY METHODOLOGY

### 2.1 Asbestos Survey Approach

Arcadis conducted the asbestos survey of the site for compliance with the National Emissions Standards for Hazardous Air Pollutants (NESHAPs).

This was accomplished by initially conducting a visual inspection of the structure and collecting samples of suspect ACM based on these observations. Arcadis conducted the asbestos survey in general accordance with ASTM International (ASTM) E2356 Standard Practice for Comprehensive Building Asbestos Surveys. ASTM E2356 meets the applicable requirements of current United States Environmental Protection Agency (USEPA) NESHAP Standard 40 Code of Federal Regulations (CFR) 61, Subpart M (Asbestos), USEPA Asbestos Hazard Emergency Response Act (AHERA) 40 CFR 763, Subpart E, and Occupational Safety and Health Administration (OSHA) asbestos survey and/or sampling regulations.

The survey included an inspection of the West 150th Street Bridge 01.94 providing a general sense of the overall location, type, quantity, and condition of potential ACMs present. It was thorough in that most accessible functional spaces were inspected, and bulk samples taken of suspect materials observed. The presence of asbestos in suspect materials was assumed or presumed in some cases without bulk samples being collected or analyzed. This was necessary for locations where materials were inaccessible or areas that were unsafe to access (e.g., energized equipment, confined spaces, inside mechanical equipment). For those areas that were not safely accessible, suspect materials observed or presumed to be present were documented and assumed as ACMs.

The survey included destructive, intrusive, and/or exploratory testing. The sampling areas requiring destructive sampling were left in an orderly manner. Arcadis endeavored to observe normally inaccessible areas, such as, but not limited to, under parapet walls and pot bearings for suspect ACMs.

The asbestos survey included a visual and physical assessment of each accessible space to locate suspect ACMs. Suspect materials were divided into "Homogeneous Areas" (HAs) (i.e., building materials

## HAZARDOUS BUILDING MATERIALS SURVEY

that were determined by the inspector to be homogeneous based on their color, texture, and assumed date of installation). A representative number of samples were collected from each HA.

Bulk material samples were collected in 4-mil plastic bags, and tightly sealed for transport to EMSL Analytical, Inc. (EMSL) located in Indianapolis, Indiana. Each sample collected by Arcadis was assigned its own unique coded number. Samples were sent to EMSL for laboratory analysis under a chain-of-custody protocol.

### 2.2 Lead Paint Survey Approach

Arcadis conducted a lead paint survey of representative surfaces for compliance with USEPA Resource Conservation and Recovery Act (RCRA) (Standard 40 CFR 240-280) and OSHA Lead in Construction (Standard 29 CFR 1926.62).

Suspect lead paint was identified based upon a visual inspection of painted building components. Samples of suspect lead paint were collected and assigned their own unique identification number, placed in 4-mil sealable plastic bags, and tightly sealed for subsequent shipment under a chain of custody protocol to EMSL in Indianapolis, Indiana.

## 3 ANALYTICAL METHODS

### 3.1 Asbestos

Bulk samples were analyzed for asbestos (reported in percent of type of asbestos) using Polarized Light Microscopy with Dispersion Staining (PLM/DS) in accordance with the USEPA Method 600/R-93/116. Percentage estimates of each material's composition are based on the analyst's best visual judgment following PLM/DS analysis, and examination with a stereoscope.

EMSL is a member of the American Industrial Hygiene Association (AIHA), National Voluntary Laboratory Accreditation Program (NVLAP). EMSL's laboratory analytical reports results and NVLAP accreditations are provided as Appendix C.

### 3.2 Lead Paint

Paint chip samples were analyzed for total lead content (reported in total percent by weight) by flame atomic adsorption spectrometry (AAS) in accordance with USEPA Method 7420, SW 846-3050B/7000B. Strict quality control/quality assurance (QA/QC) provisions were adhered to for analysis of all lead samples. EMSL conformed to its own in-house QA/QC procedures established by their accreditation manual. EMSL in Indianapolis, Indiana, is approved by the Ohio Department of Health (ODH) Lead Poisoning Prevention Program as an Environmental Lead Laboratory under Chapter 3701-82 of the Ohio Administrative Code (O.A.C.), which is provided in Appendix D along with the laboratory analysis results for lead.

## 4 FINDINGS

### 4.1 Asbestos

Arcadis identified twenty-two (22) HAs, from which, forty-nine (49) suspect ACM bulk samples were collected and submitted for laboratory analysis. A listing of the identified HAs, including each HA material description, location, condition, asbestos content, and estimated quantity, are presented in Table 1. Approximate sampling locations are shown on the Figures. Representative photographs are provided in Appendix F.

The following HA was assumed to contain asbestos at concentrations above 1% (ACM is defined as a material containing more than 1% of asbestos by weight):

- HA 150-21 – Electrical Wire Insulation was assumed to be present and be ACM.

The remaining bulk samples collected by Arcadis as part of the survey were reported by the laboratory as “None Detected” for asbestos.

### 4.2 Lead Paint

Five (5) paint chip samples were collected and submitted for laboratory analysis. Lead in paint was detected in three (3) samples analyzed at concentrations ranging from 0.038% by weight to 0.092% by weight. Details regarding material description, location, substrate, and reporting limit of each paint chip sampled are presented in Table 2. Approximate sampling locations are shown on the Figures. Representative photographs are provided in Appendix F.

The following paint chip samples were confirmed to contain detectable levels of lead:

- 150-PC-03: Gray Paint on Metal Beams
- 150-PC-04: Gray Paint on Concrete Parapet Wall
- 150-PC-05: Brown Paint on Lamp posts

The remaining paint chip samples collected by Arcadis as part of the survey were reported by the laboratory as “None Detected” or below the laboratory’s limit of detection for lead.

## 5 RECOMMENDATIONS

### 5.1 Asbestos

As presented in Table 1 and the laboratory data provided in Appendix C, results of the asbestos survey identified assumed ACMs at the site.

ACMs identified at the site that may be disturbed during renovation or demolition activities, must be removed by a licensed asbestos abatement contractor utilizing industry standard work procedures in accordance with all federal, state, and local regulations governing asbestos.



## HAZARDOUS BUILDING MATERIALS SURVEY

Suspect ACMs that could not be sampled during the survey have been assumed to contain asbestos at concentrations above 1%. These materials must be managed as ACM until laboratory analysis can prove otherwise.

If other suspect materials, not referenced in this survey report, are identified during demolition activities, Arcadis recommends that these materials be considered ACM until they are inspected by an appropriately licensed asbestos inspector and proven otherwise.

Asbestos waste must be disposed at an asbestos waste receiving facility that is duly permitted by the state and/or local municipality in which it resides.

### 5.2 Lead Paint

As presented in Table 2, and the laboratory data provided in Appendix D, detectable levels of lead in paint were identified at the site.

Arcadis recommends that the general contractor and any sub-trades be advised of the presence of lead-based paint/lead-containing paint and their requirements for compliance with the OSHA Lead in Construction standard (Title 29 CFR, Part 1962.62). Compliance with OSHA is required for any detectable levels of lead in painted surfaces.

Any work that could disturb known or suspect lead-based paint should be conducted in a way to minimize and control dust, and that the contractor performs a thorough cleanup.

If other suspect lead-based paints/lead-containing paints, not referenced in this survey report, are identified during renovation activities, Arcadis recommends that these materials be managed as lead-containing until they are inspected and proven otherwise.

Waste characterization sampling and analysis is recommended for the representative waste stream generated by renovation activities. Waste stream analyses should include toxicity characteristic leaching procedure analysis, as required.

## 6 ADDITIONAL SURVEY LIMITATIONS

Arcadis' survey is subject to the following limitations in addition to those presented in Appendix A:

- Utilities/services, including electric and water, were active in areas surveyed. Materials associated with electrical components and energized equipment were not safely accessible and were not sampled.
- The investigation did not include access or inspection of confined spaces, underground piping, conduits, building footings, and extent of subsurface soil asbestos contamination, if any.

# TABLES



**Table 1**  
**Homogeneous Areas Summary**

**Cuyahoga County**  
**W. 150th Street Bridge 01.94**  
**Cleveland, Ohio 44111**

HA No.	Material Description	Material Location	Sample Number	Condition	Friability	Asbestos Content	Estimated Quantity	Unit	Notes
150-01	Pad under Pot Bearing (White Fibers with Yellow Binder, Inseparable)	Under Port Bearings on Piers and Abutments	150-01A 150-01B 150-01C	Good	Non-Friable	NAD	165	SF	
150-02	Coating on Metal Bridge Support Components, White	Throughout on Metal Bridge Support Components	150-02A 150-02B 150-02C	Damaged	Non-Friable	NAD	46,000	SF	
150-03	Pipe Outer Coating, Off White	City Waterline	150-03A 150-03B 150-03C	Significantly Damaged	Non-Friable	NAD	4,460	SF	710 LF
150-04	Yellow Fiberglass Pipe Insulation associated with City Waterline	City Waterline	Not Sampled	Damaged	Friable	NSM	710	LF	Non-Suspect
150-05	Asphaltic Wire Wrapped Pipe Covering (Black over Gray, Inseparable)	City Waterline	150-05A 150-05B 150-05C	Damaged	Friable	NAD	710	LF	
150-06	Asphaltic Hard Expansion Joint Material, Black	Expansion Joints Base of Pier 1	150-06A 150-06B	Good	Friable	NAD	30	SF	60 LF
150-07	Gray Cementitious Patching Material associated with Piers and Walls	Sporadically on Piers and Extensively on Walls	150-07A 150-07B 150-07C	Good	Non-Friable	NAD	5,000	SF	
150-08	Gray Coating associated with Abutments and Piers	Walls and Piers	150-08A 150-08B 150-08C	Good	Non-Friable	NAD	27,500	SF	
150-09	New Side Walk Expansion Joint Material, Brown	New Sidewalk Areas	150-09A 150-09B	Good	Non-Friable	NAD	50	SF	100 LF
150-10	Parapet Expansion Joint Material (Asphaltic Shingle Type), Dark Gray	Parapet Wall Joints	150-10A 150-10B 150-10C	Good	Non-Friable	NAD	60	SF	
150-11	Gray Caulk at Security Fence Supports and Bottom Plates	Security Fence Supports and Plates	150-11A 150-11B 150-11C	Damaged	Non-Friable	NAD	30	SF	
150-12	Brown Paper associated with Lamppost Shims and Security Fence Supports	Security Fence Shims	150-12A 150-12B 150-12C	Good	Non-Friable	NAD	10	SF	

**Table 1**  
**Homogeneous Areas Summary**

**Cuyahoga County**  
**W. 150th Street Bridge 01.94**  
**Cleveland, Ohio 44111**

HA No.	Material Description	Material Location	Sample Number	Condition	Friability	Asbestos Content	Estimated Quantity	Unit	Notes
150-13	Black Caulk (Tar) associated with Sidewalk and Deck	Sidewalk and Bridge Deck	150-13A 150-13B 150-13C	Good	Non-Friable	NAD	44	SF	
150-14	White Caulk and Mastic associated with Guard Rail Bolts	Guard Rail Bolts	150-14A 150-14B 150-14C	Good	Non-Friable	NAD	50	SF	
150-15	Parapet Wall Coating (Gray over Yellow, Inspirable)	Parapet Walls	150-15A 150-15B 150-15C	Good	Non-Friable	NAD	9,940	SF	<10% Delamination, which is friable
150-16	Expansion Joint Materials associated with Walls (Inspirable Layers)	Wall Expansion Joints	150-16A 150-16B 150-16C	Good	Damaged	NAD	25	SF	135 LF
150-17	Concrete	Walls, Piers and Parapet	150-17A 150-17B 150-17C	Good	Friable	NAD	7,000	CY	
150-18	Cementitious Patching Material on Parapet	Parapet	150-18A 150-18B 150-18C	Damaged	Non-Friable	NAD	800	SF	
150-19	Yellow Foam Insulation	Sporadic, most at Conduit Penetrations	Not Sampled	Good	Friable	NSM	Not Quantified		Non-Suspect
150-20	Gray PVC Piping	Conduits	Not Sampled	Good	Non-Friable	NSM	3,000	LF	Non-Suspect
150-21	Electrical Wire Insulation (if present)	Conduits	Assumed	Unknown	Unknown	Assumed	5,680	LF	Material is assumed asbestos-containing until laboratory analysis can confirm or deny the presence of asbestos. Not investigated due to live electrical components.
150-22	Black Rubber Expansion Joint Material	Deck Expansion Joints	Not Sampled	Good	Non-Friable	NSM	Not Quantified		Non-Suspect
Notes:									

**Table 1**  
**Homogeneous Areas Summary**

**Cuyahoga County**  
**W. 150th Street Bridge 01.94**  
**Cleveland, Ohio 44111**

HA No.	Material Description	Material Location	Sample Number	Condition	Friability	Asbestos Content	Estimated Quantity	Unit	Notes
Assumed ACM = Material determined by the inspector to be suspect ACM is considered asbestos-containing until laboratory analysis can prove otherwise.									
EA = Each									
CY = Cubic Yards									
LF = Linear Foot									
NAD = No Asbestos Detected									
NSM = Non Suspect Material									
SF = Square Foot									



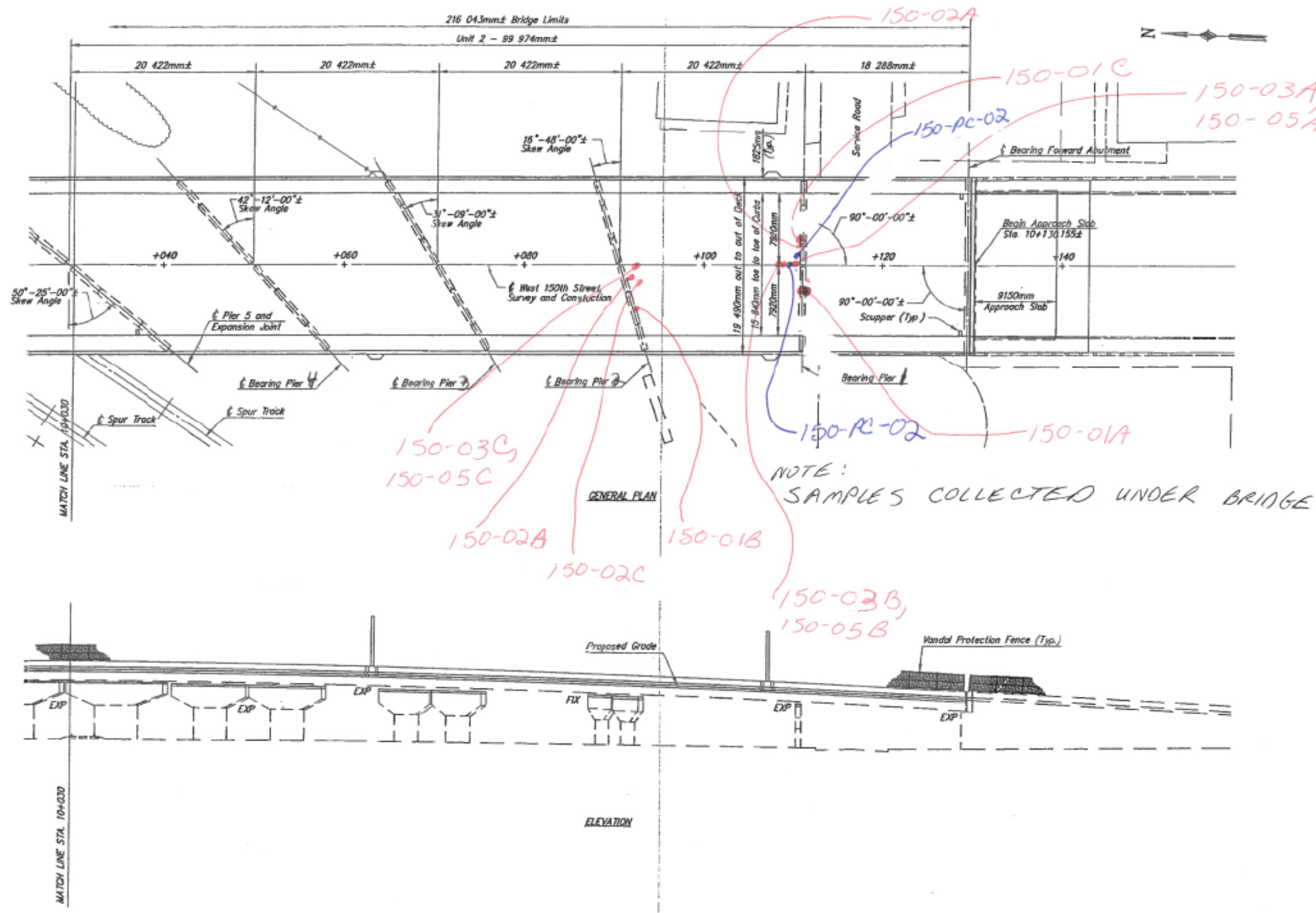
**Table 2  
Lead Paint Summary**

**Cuyahoga County  
W. 150th Street Bridge 01.94  
Cleveland, Ohio 44111**

Sample ID	Description	Substrate	Sample Location	Material Location	Condition	Result (% wt.)	Classification	Notes
150-PC-01	Gray Paint	Concrete	South Breast Wall	Piers and Walls	Non-Intact	<0.0080	ND	
150-PC-02	White Paint	Asphaltic Pipe Wrap	Pipe at Pier 1	City Waterline	Non-Intact	<0.0080	ND	
150-PC-03	Gray Paint	Metal	Beam at Pier 1	Beams	Intact	0.038	LCP	
150-PC-04	Gray Paint	Concrete	Central Area East Side Parapet Wall	Parapet Wall	Non-Intact	0.066	LCP	
150-PC-05	Brown Paint	Metal	Central Lamppost on East Side	Lampposts	Intact	0.092	LCP	
<u>Notes:</u>								
LBP = Lead-Based Paint (Greater than or equal to 0.5% lead by weight)								
LCP = Lead-Containing Paint (Any detectable % lead by weight)								
ND = None Detected								

# FIGURES



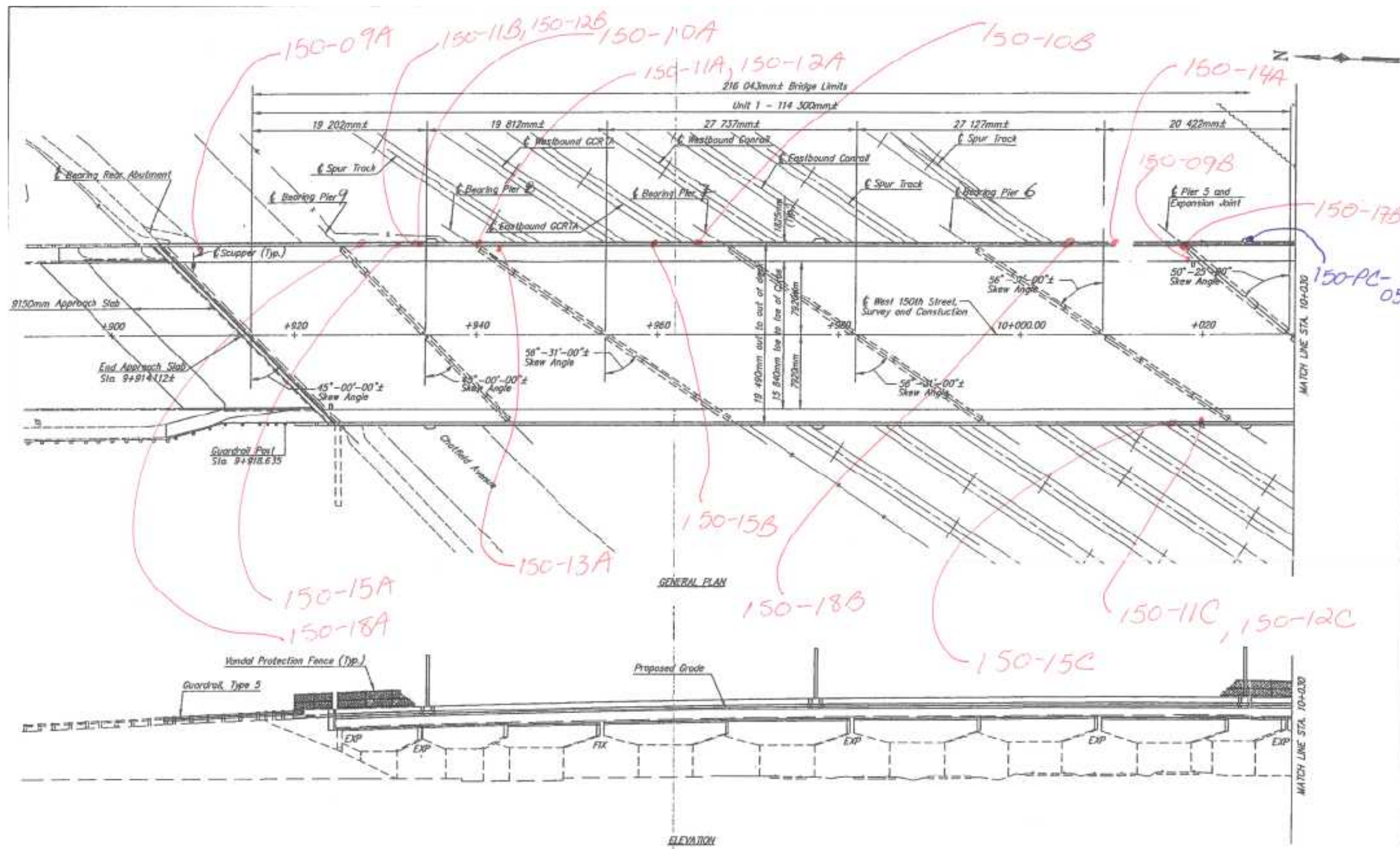


LEGEND:  
● BULK ASBESTOS SAMPLE LOCATION  
■ PAINT CHIP SAMPLE LOCATION

NOT TO SCALE

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WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
SOUTH WING BELOW BRIDGE DECK

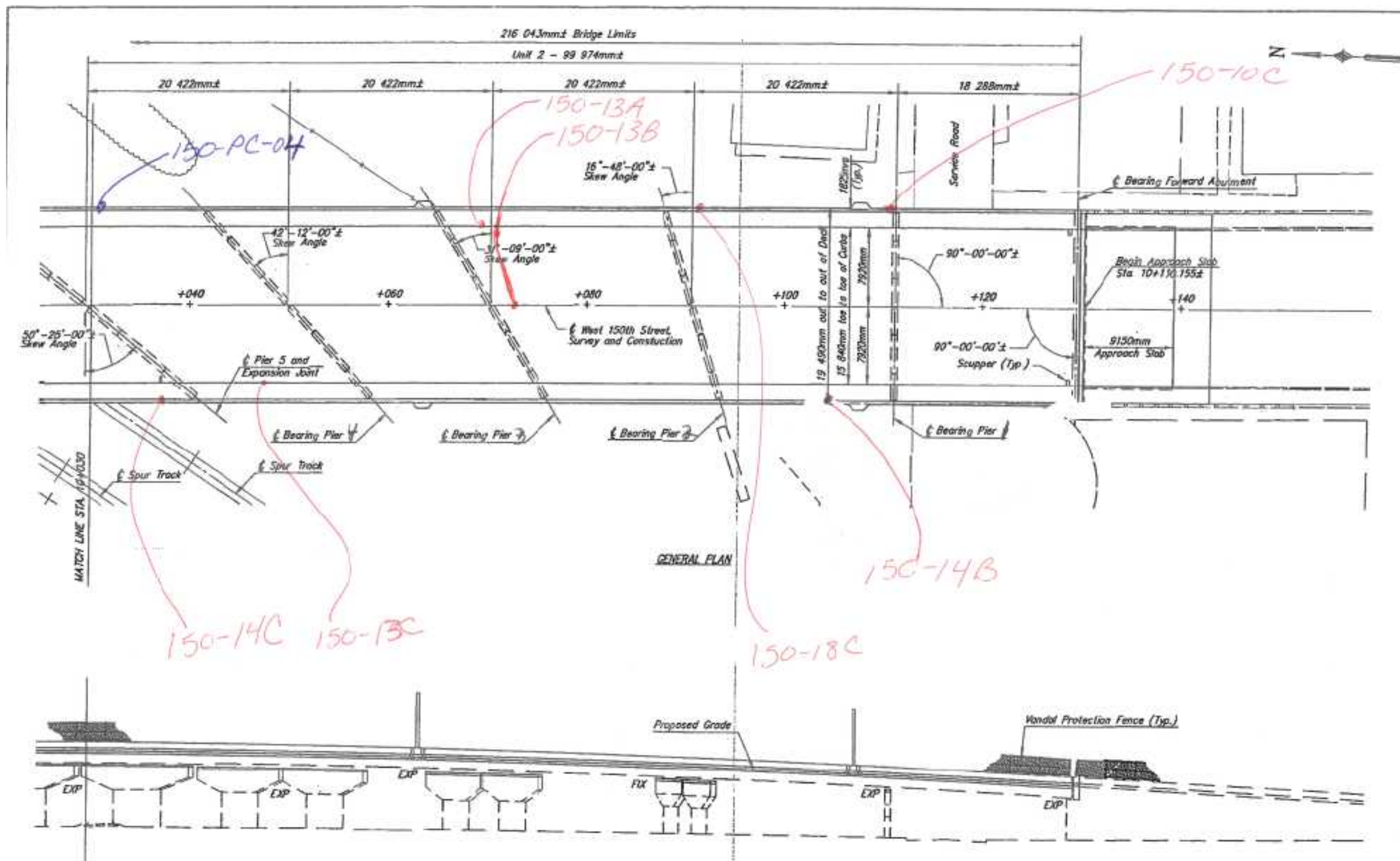


NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
NORTH END





**LEGEND:**

- BULK ASBESTOS SAMPLE LOCATION
- PAINT CHIP SAMPLE LOCATION



NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

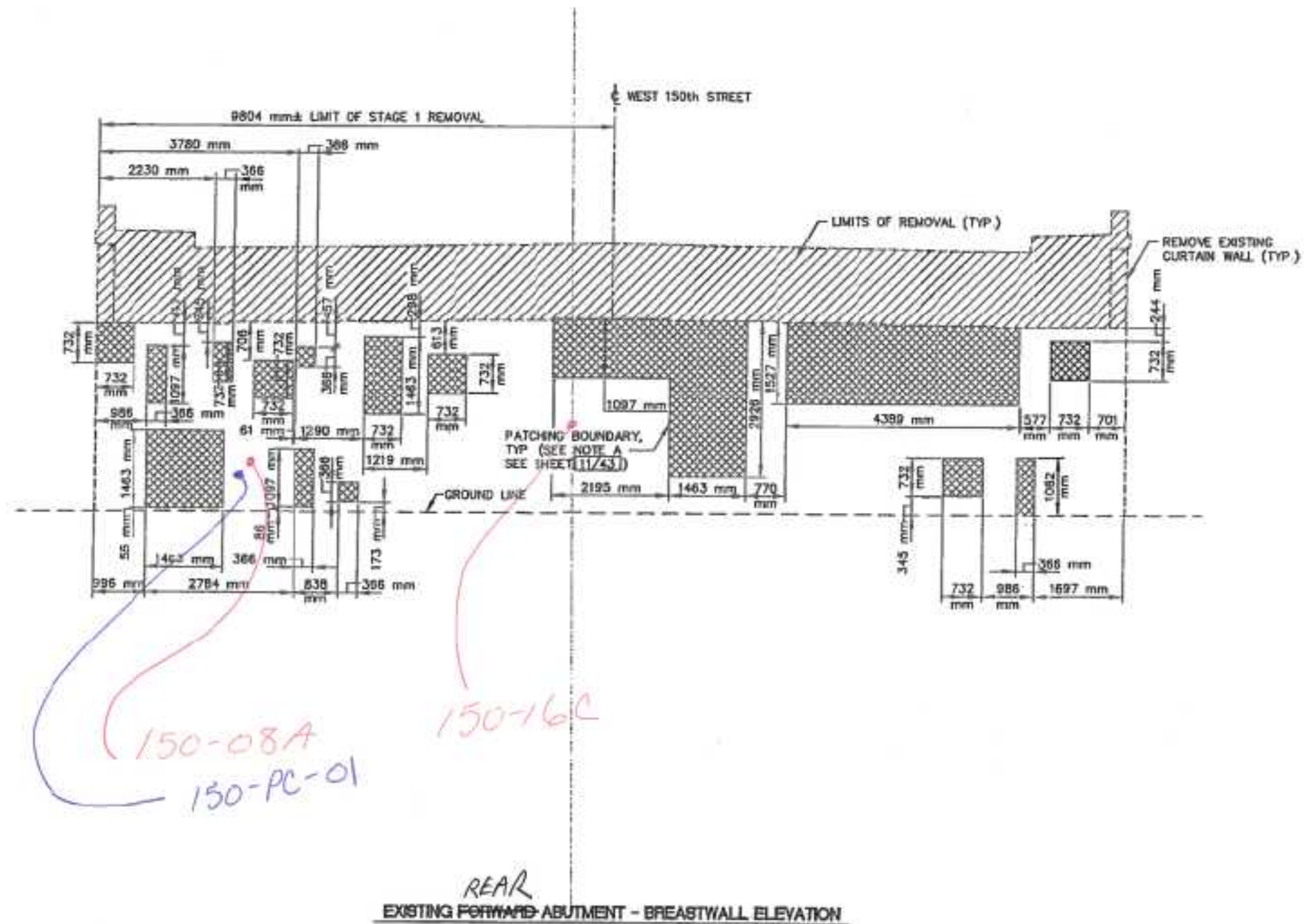
SAMPLE LOCATIONS  
SOUTH END





 BULK ASBESTOS SAMPLE LOCATION  
 PAINT CHIP SAMPLE LOCATION

SAMPLE LOCATIONS  
SOUTH RIGHT RETAINING WALL



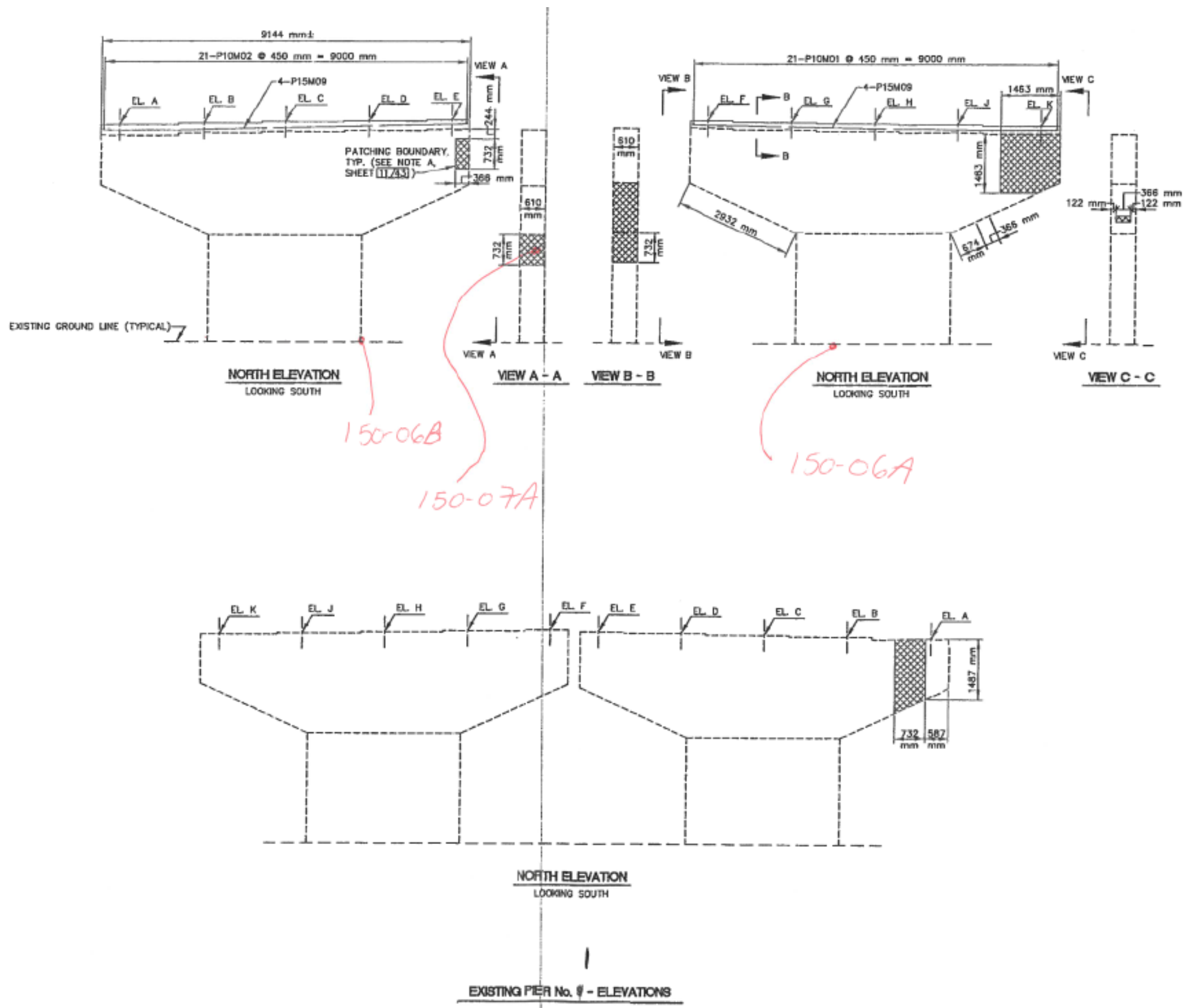
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- PAINT CHIP SAMPLE LOCATION

NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
SOUTH ABUTMENT BREASTWALL



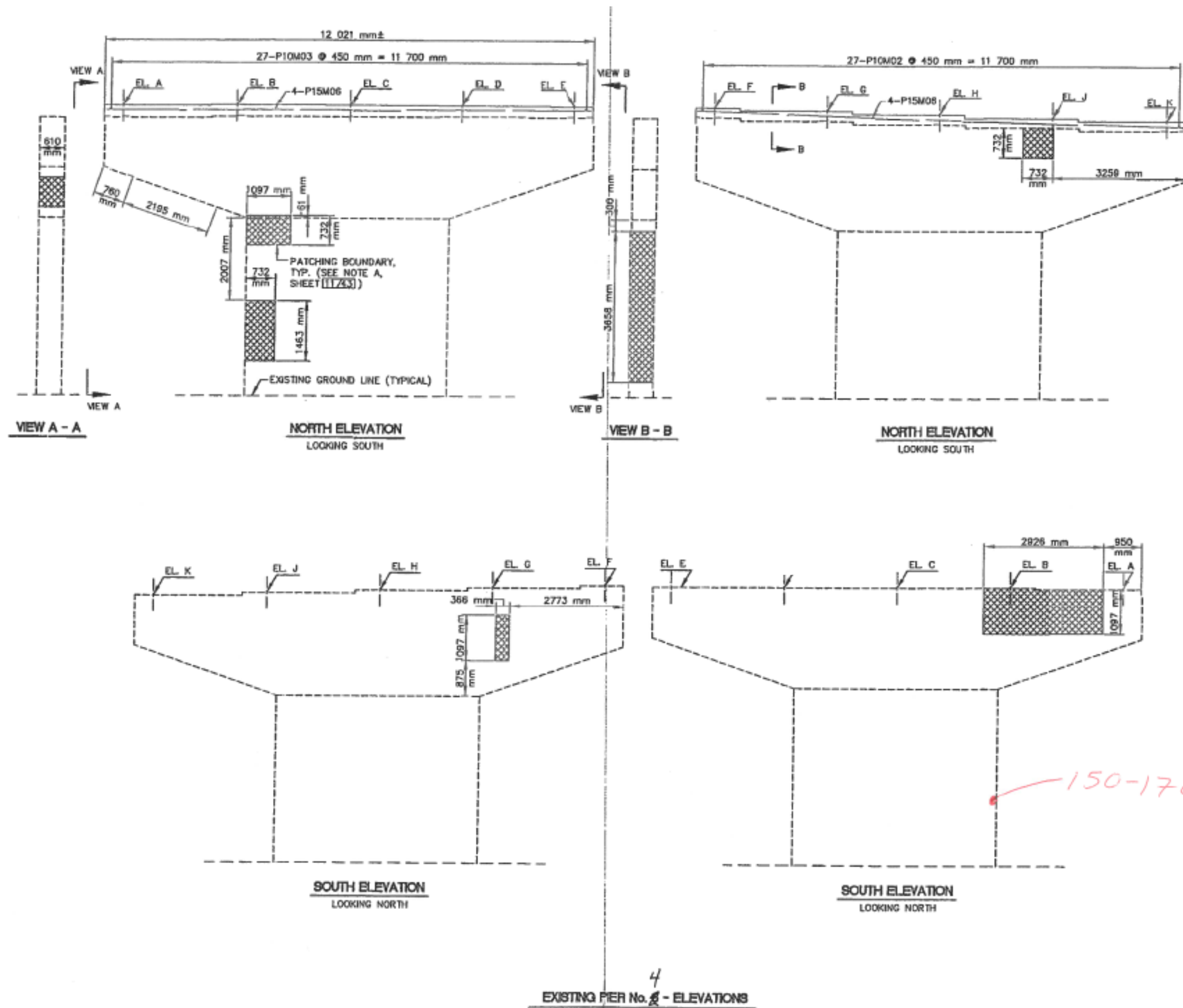
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- PAINT CHIP SAMPLE LOCATION

NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
PIER 1

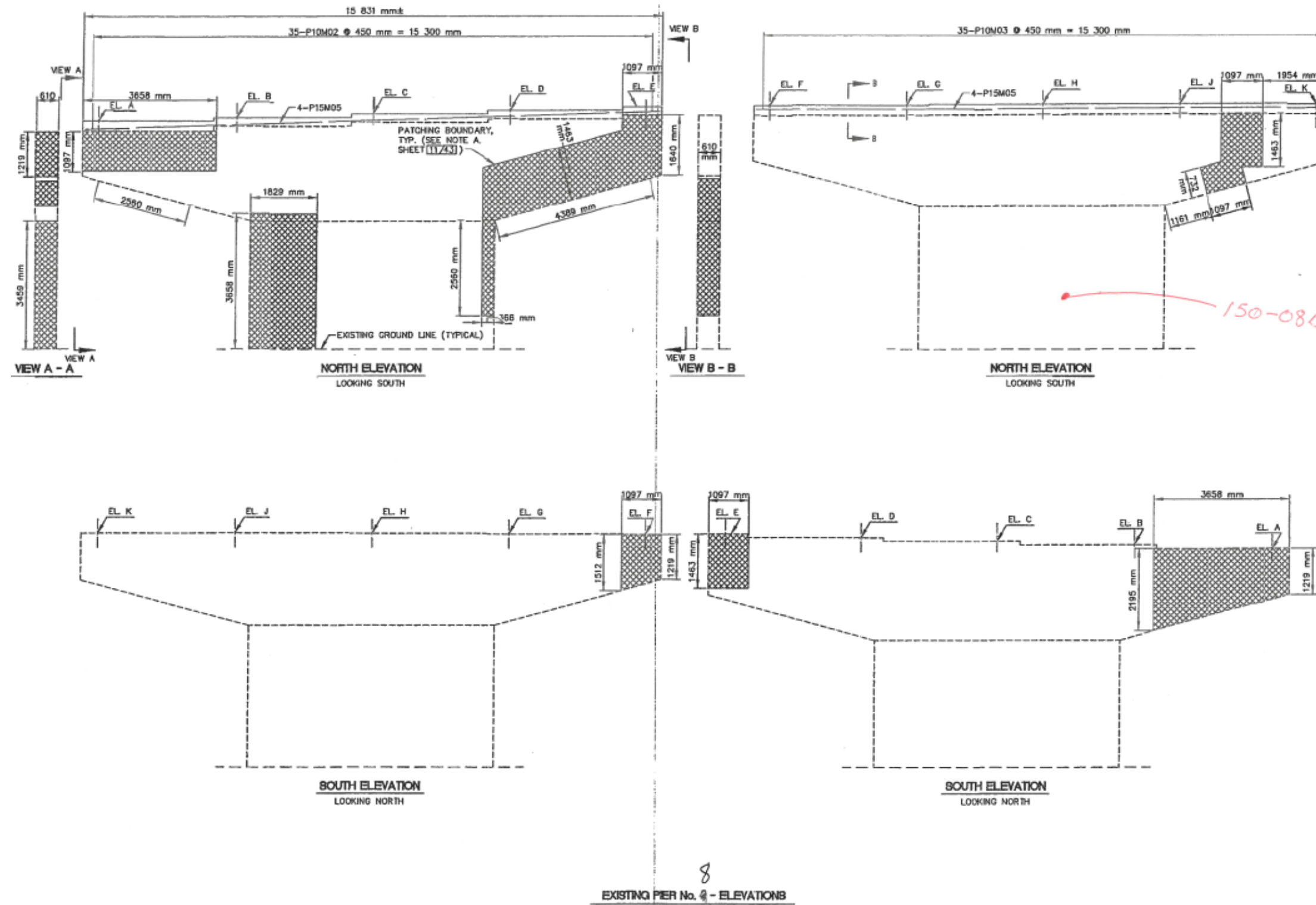


- LEGEND:**
- BULK ASBESTOS SAMPLE LOCATION
  - PAINT CHIP SAMPLE LOCATION

NOT TO SCALE

CUYAHOGA COUNTY WEST 150TH STREET BRIDGE 01.94 CLEVELAND, OHIO	
SAMPLE LOCATIONS PIER 4	
	FIGURE <b>7</b>





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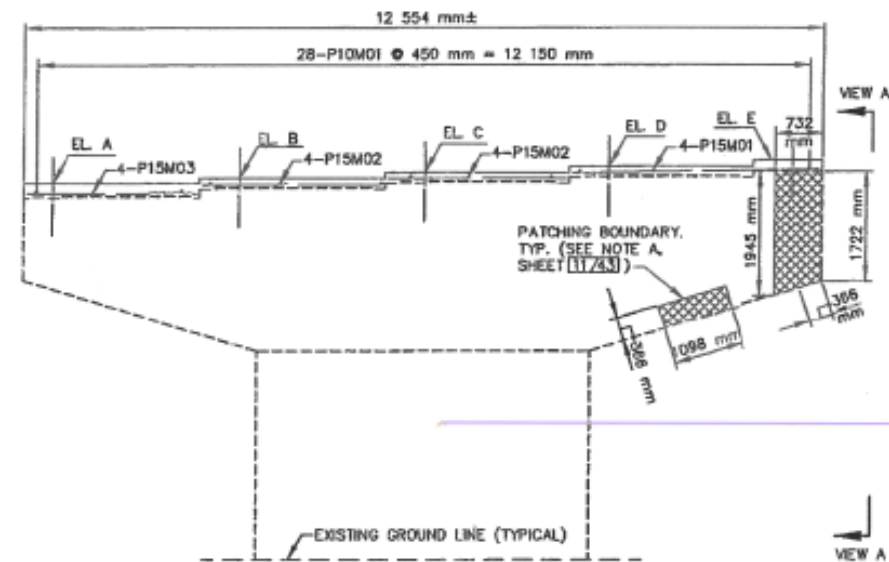
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- PAINT CHIP SAMPLE LOCATION

NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
PIER 8

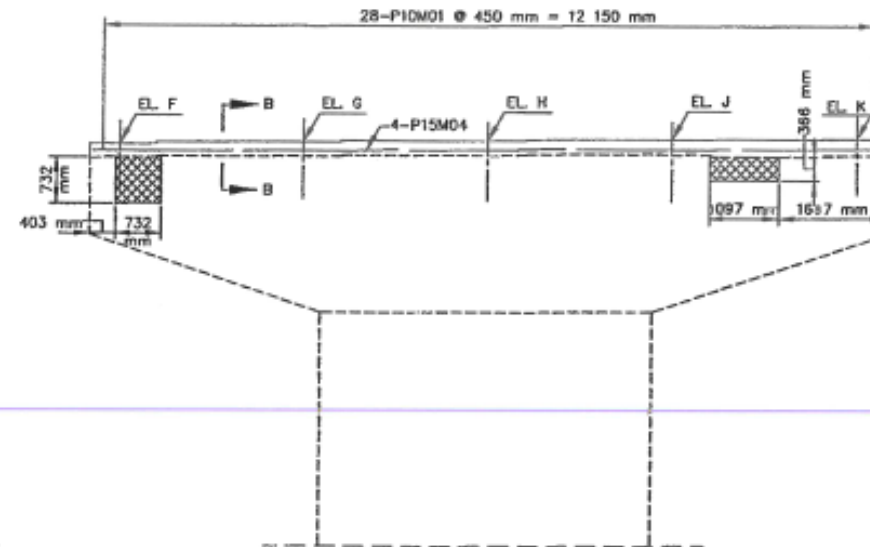




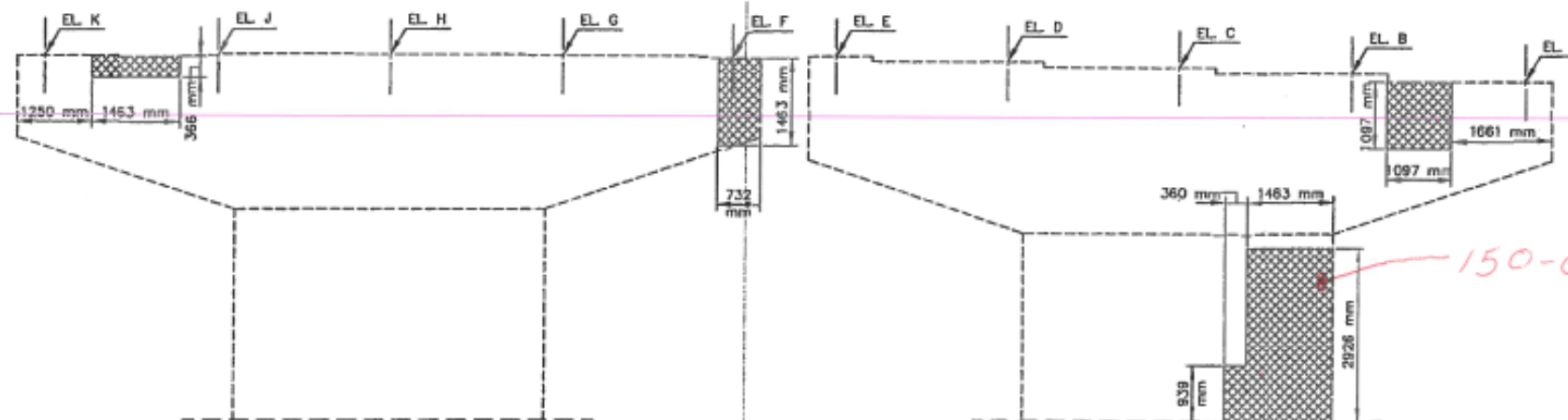
**NORTH ELEVATION**  
LOOKING SOUTH



**VIEW A - A**



**NORTH ELEVATION**  
LOOKING SOUTH



**SOUTH ELEVATION**  
LOOKING NORTH

**SOUTH ELEVATION**  
LOOKING NORTH

**EXISTING PIER No. 9 - ELEVATIONS**

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- PAINT CHIP SAMPLE LOCATION

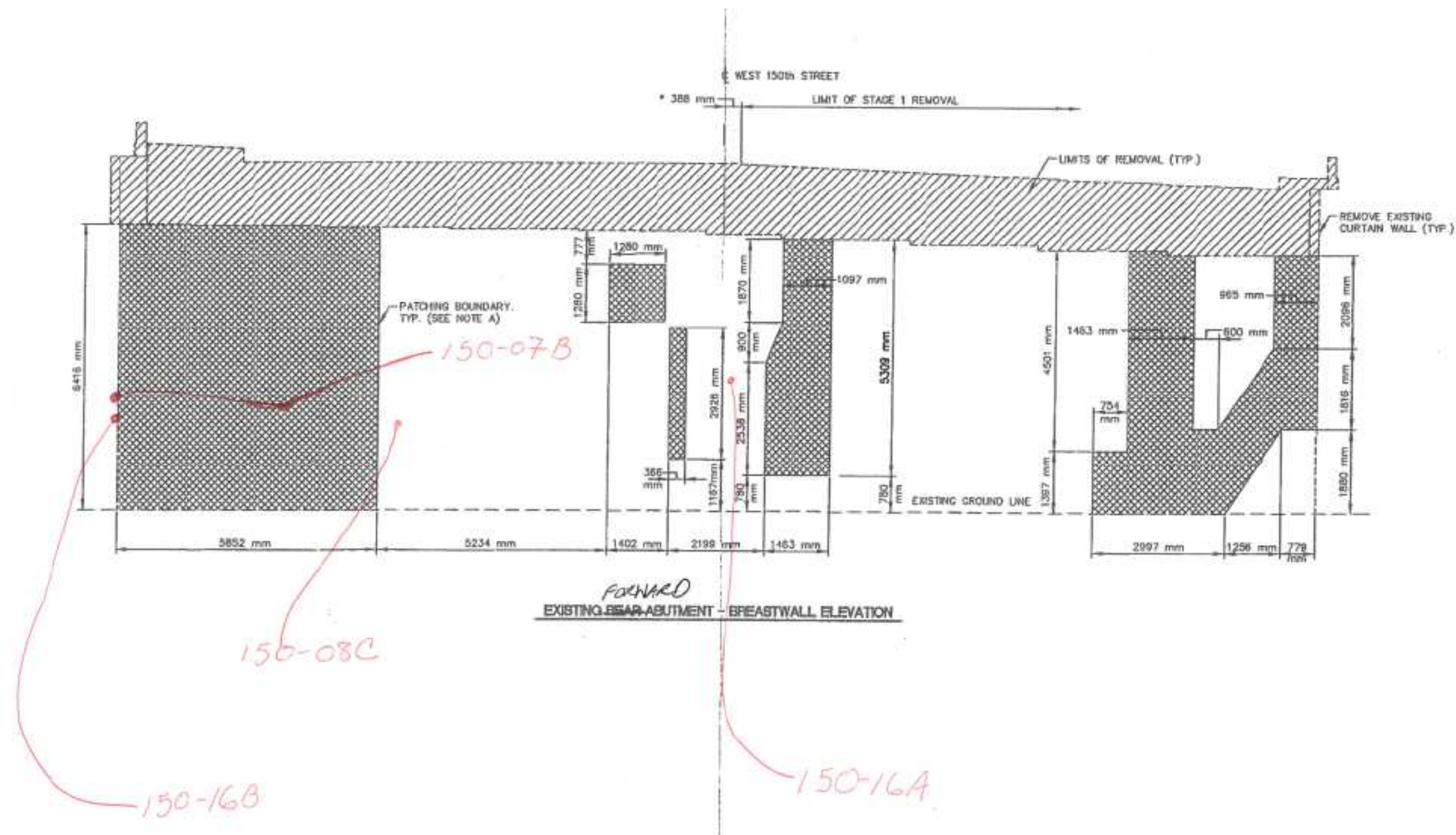
NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
PIER 9

LEGEND:

- BULK ASBESTOS SAMPLE LOCATION
- PAINT CHIP SAMPLE LOCATION



NOT TO SCALE

CUYAHOGA COUNTY  
WEST 150TH STREET BRIDGE 01.94  
CLEVELAND, OHIO

SAMPLE LOCATIONS  
NORTH ABUTMENT BREASTWALL

# APPENDIX A

## Limitations and Service Constraints



## **LIMITATIONS AND SERVICE CONSTRAINTS**

The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by ARCADIS and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that ARCADIS relied upon any information prepared by other parties not under contract to ARCADIS, ARCADIS makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when ARCADIS's investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in other parts of the project site may vary from those at the locations where data were collected. ARCADIS's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

ARCADIS, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

# APPENDIX B

## Accreditation





State of Ohio  
Environmental Protection Agency  
Asbestos Program

**Asbestos Hazard Abatement Specialist**

**Kristen L  
Malysz**

2366 Oltesvig Lane  
Highland MI 48357

Certification Number **AS31676** Expiration Date **8/29/21**

DOB: 12/26/66  
Card not Valid  
if Altered



State of Ohio  
Environmental Protection Agency  
Asbestos Program

**Asbestos Hazard Evaluation Specialist**

**Kristen L  
Malysz**

2366 Oltesvig Lane  
Highland MI 48357

Certification Number **ES35684** Expiration Date **8/29/21**

DOB: 12/26/66  
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if Altered



State of Ohio  
Environmental Protection Agency  
Asbestos Program

**Asbestos Hazard Abatement Project Designer**

**Kristen L  
Malysz**

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Highland MI 48357

Certification Number **PD60817** Expiration Date **8/29/21**

DOB: 12/26/66  
Card not Valid  
if Altered



# APPENDIX C

Laboratory Report – Asbestos





# EMSL Analytical, Inc.

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EMSL Order: 162020635

Customer ID: ACAD78BE

Customer PO: 30056244

Project ID:

**Attention:** Kristen Malysz  
ARCADIS U.S., Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

**Project:** 30056244 - TOHCUY002 - W. 150TH BRIDGE

**Phone:** (248) 994-2241

**Fax:**

**Received Date:** 10/08/2020 9:45 AM

**Analysis Date:** 10/14/2020 - 10/15/2020

**Collected Date:** 10/02/2020

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-01A 162020635-0001	PIER 1 / WEST UNDER EAST POT BEARING	White/Yellow Non-Fibrous Homogeneous	80% Cellulose	20.0% Non-fibrous (Other)	None Detected
Inseparable.					
150-01B 162020635-0002	PIER 2 / WEST PIER UNDER CENTER POT BEARING	White/Yellow Non-Fibrous Homogeneous	80% Cellulose	20.0% Non-fibrous (Other)	None Detected
Inseparable.					
150-01C 162020635-0003	PIER 1 / EAST UNDER WEST POT BEARING	White/Yellow Non-Fibrous Homogeneous	55% Cellulose	45.0% Non-fibrous (Other)	None Detected
150-02A 162020635-0004	BEAM AT PIER 1	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
150-02B 162020635-0005	TRUSS AT PIER 2	Gray Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	None Detected
150-02C 162020635-0006	BEAM AT PIER 2	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90.0% Non-fibrous (Other)	None Detected
150-03A 162020635-0007	CITY WATER PIPE BETWEEN PIERS 1 & 2	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90.0% Non-fibrous (Other)	None Detected
150-03B 162020635-0008	CITY WATER PIPE BETWEEN PIERS 1 & 2	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85.0% Non-fibrous (Other)	None Detected
150-03C 162020635-0009	CITY WATER PIPE BETWEEN PIERS 1 & 2	White/Black Non-Fibrous Homogeneous	4% Cellulose	96.0% Non-fibrous (Other)	None Detected

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Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Report amended: 10/15/2020 09:03:14 Replaces amended report from: 10/15/2020 09:01:18 Reason Code: DataEntry-Other (see report comment)



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**Collected Date:** 10/02/2020

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-05A 162020635-0010	CITY WATER PIPE BETWEEN PIERS 1 & 2	Gray/Black Non-Fibrous Homogeneous	65% Cellulose	35.0% Non-fibrous (Other)	None Detected
150-05B 162020635-0011	CITY WATER PIPE BETWEEN PIERS 1 & 2	Black Fibrous Homogeneous	40% Cellulose	60.0% Non-fibrous (Other)	None Detected
150-05C 162020635-0012	CITY WATER PIPE BETWEEN PIERS 1 & 2	Black Non-Fibrous Homogeneous	25% Cellulose	75.0% Non-fibrous (Other)	None Detected
150-06A 162020635-0013	BASE OF PIER 1 / WEST	Black Non-Fibrous Homogeneous	6% Cellulose	94.0% Non-fibrous (Other)	None Detected
150-06B 162020635-0014	BASE OF PIER 1 / EAST	Black Non-Fibrous Homogeneous	15% Cellulose	85.0% Non-fibrous (Other)	None Detected
150-07A 162020635-0015	PIER 1 / EAST, EAST SIDE	Gray Non-Fibrous Homogeneous		25% Quartz 25% Ca Carbonate 50.0% Non-fibrous (Other)	None Detected
150-07B 162020635-0016	FORWARD BREAST WALL	Gray Non-Fibrous Homogeneous		30% Quartz 20% Ca Carbonate 50.0% Non-fibrous (Other)	None Detected
150-07C 162020635-0017	PIER 9 WEST / WEST SIDE	Gray Non-Fibrous Homogeneous		45% Quartz 25% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
150-08A 162020635-0018	SOUTH (REAR) BREAST-WALL	Gray Non-Fibrous Homogeneous	3% Cellulose	15% Ca Carbonate 82.0% Non-fibrous (Other)	None Detected

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## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-08B 162020635-0019	PIER 8 EAST NORTH FACE	Gray Non-Fibrous Homogeneous	3% Cellulose	20% Ca Carbonate 77.0% Non-fibrous (Other)	None Detected
150-08C 162020635-0020	NORTH (FORWARD) EAST WALL	Gray Non-Fibrous Homogeneous		25% Ca Carbonate 75.0% Non-fibrous (Other)	None Detected
150-09A 162020635-0021	BETWEEN SIDEWALK PARAPET WALL / NORTH END	Brown Non-Fibrous Homogeneous	80% Cellulose	20.0% Non-fibrous (Other)	None Detected
150-09B 162020635-0022	NORTH OF NORTHERN MOST DECK EXPANSION JOINT	Brown Non-Fibrous Homogeneous	85% Cellulose	15.0% Non-fibrous (Other)	None Detected
150-10A 162020635-0023	NORTH OF NORTHEAST LAMPPOST	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85.0% Non-fibrous (Other)	None Detected
150-10B 162020635-0024	BETWEEN THE TWO NORTHERN MOST LAMPPOST ON EAST SIDE @ PARAPET JOINT	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85.0% Non-fibrous (Other)	None Detected
150-10C 162020635-0025	SOUTH OF SOUTHERN MOST LAMPPOST ON EAST SIDE	Gray Non-Fibrous Homogeneous		25% Ca Carbonate 75.0% Non-fibrous (Other)	None Detected
150-11A 162020635-0026	SOUTH OF NORTH LAMPPOST / EAST SIDE SUPPORT PLATE	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
150-11B 162020635-0027	NORTH OF LAMPPOST @ NORTHERN MOST EXPANSION JOINT	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected

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## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-11C 162020635-0028	COLLAR OF SUPPORT / NORTH OF LAMPPOST #3 / WEST SIDE	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
150-12A 162020635-0029	SOUTH OF NORTHEAST LAMPPOST	Gray/Tan Non-Fibrous Homogeneous	8% Cellulose	10% Ca Carbonate 82.0% Non-fibrous (Other)	None Detected
150-12B 162020635-0030	LAMPPOST @ NORTHERN MOST DECK EXPANSION JOINT	Gray/Tan Fibrous Homogeneous	25% Cellulose	75.0% Non-fibrous (Other)	None Detected
150-12C 162020635-0031	SECURITY FENCE SUPPORT NORTH OF LAMPPOST #3 / WEST SIDE	Brown/Gray Fibrous Homogeneous	45% Cellulose	55.0% Non-fibrous (Other)	None Detected
150-13A 162020635-0032	SOUTH OF NE LAMPPOST ON SIDEWALK	Black Non-Fibrous Homogeneous		25% Ca Carbonate 75.0% Non-fibrous (Other)	None Detected
150-13B 162020635-0033	SOUTH OF NE LAMPPOST ON DECK	Black Non-Fibrous Homogeneous		25% Ca Carbonate 75.0% Non-fibrous (Other)	None Detected
150-13C 162020635-0034	SOUTH OF NORTHERN MOST EXPANSION JOINT/ WEST SIDE	Black Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
150-14A 162020635-0035	NORTH OF NORTHERN MOST EXPANSION JOINT / WEST SIDE	Gray/Tan Non-Fibrous Homogeneous		15% Ca Carbonate 85.0% Non-fibrous (Other)	None Detected
150-14B 162020635-0036	NORTH OF SOUTHWEST LAMPPOST	Gray Non-Fibrous Homogeneous		15% Ca Carbonate 85.0% Non-fibrous (Other)	None Detected

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-14C 162020635-0037	NORTH OF NORTHERN MOST EXPANSION JOINT / WEST SIDE	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
150-15A 162020635-0038	NORTH OF NORTHERN MOST LAMPPOST / EAST SIDE OF BRIDGE	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90.0% Non-fibrous (Other)	None Detected
150-15B 162020635-0039	BETWEEN THE TWO NORTHERN LAMPPOSTS / EAST SIDE OF BRIDGE	Gray Non-Fibrous Homogeneous		10% Ca Carbonate 90.0% Non-fibrous (Other)	None Detected
150-15C 162020635-0040	NORTH OF CENTRAL LAMPPOST / WEST SIDE	Gray Non-Fibrous Homogeneous		20% Ca Carbonate 80.0% Non-fibrous (Other)	None Detected
150-16A 162020635-0041	CENTER EXPANSION JOINT / NORTH FORWARD BREAST WALL	Brown/Gray Non-Fibrous Homogeneous	5% Cellulose	35% Quartz 25% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
150-16B 162020635-0042	NORTHWEST RETAINING WALL	Various Non-Fibrous Homogeneous	10% Cellulose	90.0% Non-fibrous (Other)	None Detected
150-16C 162020635-0043	SOUTH (REAR) BREAST WALL	Black Fibrous Homogeneous	55% Cellulose	45.0% Non-fibrous (Other)	None Detected
150-17A 162020635-0044	RIGHT REAR RETAINING WALL	Gray Non-Fibrous Homogeneous		45% Quartz 25% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					
150-17B 162020635-0045	EAST SIDE PARAPET WALL	Gray Non-Fibrous Homogeneous		45% Quartz 20% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
Inseparable paint / coating layer included in analysis					

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Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
150-17C 162020635-0046	PIER 4	Gray Non-Fibrous Homogeneous		45% Quartz 25% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected
150-18A 162020635-0047	ON PARAPET, EAST SIDE OF BRIDGE	Gray Non-Fibrous Homogeneous	4% Cellulose	35% Quartz 20% Ca Carbonate 41.0% Non-fibrous (Other)	None Detected
150-18B 162020635-0048	ON PARAPET, CENTRAL AREA	Gray Non-Fibrous Homogeneous		40% Quartz 25% Ca Carbonate 35.0% Non-fibrous (Other)	None Detected
150-18C 162020635-0049	ON EAST PARAPET, SOUTH END	Gray Non-Fibrous Homogeneous		45% Quartz 25% Ca Carbonate 30.0% Non-fibrous (Other)	None Detected

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<http://www.EMSL.com> / [indianapolislaboratory@emsl.com](mailto:indianapolislaboratory@emsl.com)

EMSL Order: 162020635

Customer ID: ACAD78BE

Customer PO: 30056244

Project ID:

**Attention:** Kristen Malysz  
ARCADIS U.S., Inc.  
222 South Main Street  
Suite 200  
Akron, OH 44308

**Project:** 30056244 - TOHCUY002 - W. 150TH BRIDGE

**Phone:** (248) 994-2241

**Fax:**

**Received Date:** 10/08/2020 9:45 AM

**Analysis Date:** 10/14/2020 - 10/15/2020

**Collected Date:** 10/02/2020

The samples in this report were submitted to EMSL for analysis by Asbestos Analysis of Bulk materials via EPA/600 (0513) Method using Polarized Light Microscopy. The reference number for these samples is the EMSL Order ID above. Please use this reference number when calling about these samples.

## Report Comments:

Sample Receipt Date: 10/08/2020

Sample Receipt Time: 9:45 AM

Analysis Completed Date: 10/15/2020

Analysis Completed Time: 3:00 AM

## Analyst(s):

Ghaly Hemaya PLM (29)

Maye Yassin PLM (14)

Migena Shehu PLM (6)

## Samples Reviewed and approved by:

Richard Harding, Laboratory Manager  
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. New York, NY AIHA-LAP, LLC--IHLAP Accredited #102581, NVLAP Lab Code 101048-9, NYS ELAP 11506, NJ NY022, CT PH-0170, MA AA000170

Report amended: 10/15/2020 09:03:14 Replaces amended report from: 10/15/2020 09:01:18 Reason Code: DataEntry-Other (see report comment)



EMSL ANALYTICAL, INC.  
LABORATORY / PRODUCTS / TRAINING

## Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (lab use only):

162020635

EMSL Analytical, Inc.  
200 Route 130 North

Cinnaminson, NJ 08077  
Phone 1-800-220-3675  
Fax (856) 786-5974

Company Name: ARCADIS U.S., Inc.		EMSL Customer ID:	
Street: 222 South Main Street Suite 200		City: Akron	State or Province: OH
Zip/Postal Code: 44308	Country: US	Telephone #: 248-5347002	Fax #:
Report To (Name): Kristen Malysz		Please Provide Results via: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
email Address: kristen.malysz@arcadis.com		Purchase Order Number: project #	
Client Project ID: 30056244 - TOHCUY002 - W. 1 <sup>st</sup> Bridge		EMSL Project ID (internal use only):	
State or Province Collected: OH		CT only <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different - If bill to is different note instructions in comment. Third party billing requires written authorization from third party			
Turnaround Time (TAT) Options Please Check			
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 32 Hour* <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week
* 32 Hour TAT available for select tests only; samples must be submitted by 11:30am. Please call ahead for large projects and/or turnaround times 6 hours or less.			
PLM - Bulk (reporting limit)		TEM - Bulk	
<input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NIOSH 9002 (<1%) <input type="checkbox"/> NY ELAP Method 198.1- friable - NY <input type="checkbox"/> NY ELAP Method 198.6 NOB- non-friable - NY <input type="checkbox"/> NY ELAP Method 198.8- Vermiculite Surfacing Material <input type="checkbox"/> OSHA ID-191 Modified <input type="checkbox"/> EMSL Standard Addition Method		<input type="checkbox"/> TEM EPA NOB - EPA 600/R-93/116 Section 2.5.5.1 <input type="checkbox"/> NY ELAP Method 198.4 non-friable - NY <input type="checkbox"/> Chatfield Protocol (semi-quantitative) <input type="checkbox"/> TEM % by Mass - EPA 600/R-93/116 Section 2.5.5.2 <input type="checkbox"/> TEM Qualitative via Filtration Prep Technique <input type="checkbox"/> TEM Qualitative via Drop Mount Prep Technique Other tests (please specify) <input type="checkbox"/>	
<input checked="" type="checkbox"/> Positive Stop - Clearly Identify Homogenous Areas (HA)		Date Sampled: 10/2/20	
Sampler's Name: KRISTEN MALYSZ		Sampler's Signature: <i>[Signature]</i>	
Sample #	HA #	Sample Location	Material Description
150-01A	150-01	SEE ATTACHED 2 LAYERS	SEE ATTACHED
B			
C			
150-02A	150-02		
B			
C			
Client Sample # (s): 150-01A - 150-18C		Total # of Samples: 49	
Relinquished by (Client): <i>[Signature]</i>		Date: 10/6/20	Time:
Received by (Lab): <i>[Signature]</i>		Date: 10-8-2020	Time: 945am
Comments/Special Instructions: Bill To: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #			

Page 1 of 4

+ 1st PAGE ATTACHMENT

Controlled Document - COC-01 Asbestos Bulk - R4 - 09/10/2018

EMSL Analytical, Inc.'s (DBA: LA Testing) Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical Inc. constitutes acceptance and acknowledgment of all terms and conditions.





EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (lab use only):

162020635

EMSL Analytical, Inc.  
200 Route 130 North

Cinnaminson, NJ 08077  
Phone 1-800-220-3675  
Fax (856) 786-5974

Additional pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
150-03A	150-03	SEE ATTACHED	SEE ATTACHED
↓ B	↓		
✓ C	✓		
150-05A	150-05	2 LAYERS	
↓ B	↓	↓ ↓	
✓ C	✓	✓ ✓	
150-06A	150-06		
↓ B	↓		
✓ C	✓		
150-07A	150-07		
↓ B	↓		
✓ C	✓		
150-08A	150-08		
↓ B	↓		
✓ C	✓		
150-09A	150-09		
↓ B	↓		
150-10A	150-10		
↓ B	↓		
✓ C	✓		
150-11A	150-11		
		↓	↓
		↓	↓
		↓	↓
		↓	↓

\*Comments/Special Instructions:  
 Bill To: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US  
 Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #

Page 2 of 4 pages

+ NO PAGE ATTACHMENT

Controlled Document - COC-01 Asbestos Bulk - R4 - 09/10/2019

EMSL Analytical, Inc.'s (DBA: LA Testing) Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical Inc. constitutes acceptance and acknowledgment of all terms and conditions.



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Bulk Building Material Chain of Custody

EMSL Order Number (lab use only):

EMSL Analytical, Inc.  
200 Route 130 North

Cinnaminson, NJ 08077  
Phone 1-800-220-3675  
Fax (856) 786-5974

Additional pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	HA #	Sample Location	Material Description
150-11B	150-11	SEE ATTACHED	SEE ATTACHED
↓ C	↓		
150-12A	150-12		
↓ B	↓		
↓ C	↓		
150-13A	150-13		
↓ B	↓		
↓ C	↓		
150-14A	150-14		
↓ B	↓		
↓ C	↓		
150-15A	150-15	2 LAYERS IF SUPERFINE	
↓ B	↓	↓	
↓ C	↓	↓	
150-16A	150-16	3 LAYERS	
↓ B	↓	↓	
↓ C	↓	↓	
150-17A	150-17		
↓ B	↓		
↓ C	↓		
150-18A	150-18		
		✓	✓

\*Comments/Special Instructions:  
Bill To: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US  
Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #

Page 3 of 4 pages

+ 10 PAGE ATTACHMENT

Controlled Document - COC-01 Asbestos Bulk - R4 - 09/10/2019

EMSL Analytical, Inc.'s (DBA: LA Testing) Laboratory Terms and Conditions are incorporated into this chain of custody by reference in their entirety. Submission of samples to EMSL Analytical Inc. constitutes acceptance and acknowledgment of all terms and conditions.

**EMSL ANALYTICAL, INC.**  
LABORATORY • PRODUCTS • TRAINING

**EMSL Order Number** (lab use only):

Cinnaminson, NJ 08077  
Phone 1-800-220-3675  
Fax (856) 786-5974

Sample #	HA #	Sample Location	Material Description
150-18B	150-18	SEE ATTACHED	SEE ATTACHED
-18C	↓	↓ ↓	↓ ↓

BillTo: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US  
Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #

+ 10 PAGE ATTACHMENT

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ASBESTOS PROPERTY INSPECTION

Page 1 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 38056244 - TOHCUY002		Dates of Inspection: 10/2/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-01	Material Type: mm	✓ A PIER WEST UNDER EAST ✓ B PIER WEST PIER CENTER ✓ C PIER EAST UNDER WEST POT BEARING		Located on which floors:  Located in which rooms: UNDER POT BEARINGS ON PIERS & ABUTMENTS		Good	Contact: None L M H  Vibration: None L M H
Material Description: PAD UNDER POT BEARING (WHITE FIBERS WITH YELLOW BINDER)		SEPERATE IF POSSIBLE		Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:		Physically Damaged	Air Erosion: None L M H
Primary Color: WHITE & YELLOW				Total quantity of HA: 10 PADS * 11 ABUTMENTS * 1.541' = 165 SF		Water Damage	Water: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Air Erosion	None L M H
NESHAP: Friable Cat 1 Cat 2 SACM NSM		✓ A CITY WATER PIPE BETWEEN PIERS 8 AND 9					
HA # 150-03	Material Type: mm	✓ B SAME ✓ C SAME		Located on which floors:  Located in which rooms: LENGTH OF BRIDGE ON CITY WATERLINE		Good	Contact: None L M H
Material Description: PIPE OUTER COATING				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:		Significantly Damaged	Vibration: None L M H
Primary Color: OFF WHITE (PAINT TYPE)				Total quantity of HA: 710' * 1' = 4460 SF		Physical Damage	Air Erosion: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities: 50%		Water Damage	Water: None L M H
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	None L M H

ADDITIONAL NOTES:

Samples collected by: 10/2/20 Samples Relinquished by: 10/6/20 Samples Relinquished to: \_\_\_\_\_  
 Date: \_\_\_\_\_ Date: \_\_\_\_\_ Date: \_\_\_\_\_

162020635

ARCADIS

## ASBESTOS PROPERTY INSPECTION

Page 2 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/7/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-02	Material Type: MM	A BEAM AT PIER		Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
		B TRUSS AT PIER		Located in which rooms: T/O		Damaged	
		C BEAM AT PIER				Significantly Damaged	
Material Description: COATING ON METAL BRIDGE SUPPORT COMPONENTS				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color: WHITE				Total quantity of HA: FIBERGLASS TOWNSHIPS 46,000 SF		Physical Damage	
Texture: Flashed Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities: c10%		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	
HA # 150-04	Material Type: NSM			Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
		NSM		Located in which rooms: T/O		Damaged	
						Significantly Damaged	
Material Description: YELLOW FIBERGLASS PIPE INSULATION ASSOCIATED WITH CITY WATER LINE				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color:				Total quantity of HA: 710 LF		Physical Damage	
Texture: Flashed Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	

ADDITIONAL NOTES:

Samples collected by: 10/2/20      Samples Relinquished by: 10/2/20      Samples Relinquished to: \_\_\_\_\_  
 Date: \_\_\_\_\_      Date: \_\_\_\_\_      Date: \_\_\_\_\_



162020635

Page 3 of 11

Material Type and Description		Sample Number and Sample Location	HA Quantities & HA Locations	Current Condition	Potential Future Damage
HA # 150-05	Material Type: TSI	✓✓ A CITY WATER PIPE BETWEEN PIERS	Located on which floor: 1st	Good	
		✓✓ B	Located in which rooms: LENGTH OF BRIDGE	Damaged	Contact: None L M H
		✓✓ C	OTV CITY WATER LINE	Significantly Damaged	Vibration: None L M H
Material Description: ASPHALTIC WIRE WRAPPED PIPE COVERING		* 2 LAYERS BLACK AND GRAY *	Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:	Physical Damage	Air Erosion: None L M H
Primary Color: BLACK OVER GRAY - INNER			Total quantity of HA: 710LF	Water Damage	Water: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A			Damaged areas and descriptions and quantities: 15%	Air Erosion	None L M H
NESHAP: Friable Cat 1 Cat 2 SACM NSM					
HA # 150-06	Material Type: MM	✓✓ A BASE OF PIER WEST	Located on which floor:	Good	
		✓✓ B SOUTH EAST WING WALL (REAR)	Located in which rooms: EXPANSION JOINTS WALLS AND BASE OF PIER 1	Damaged	Contact: None L M H
		✓✓ C BASE OF PIER 1 EAST		Significantly Damaged	Vibration: None L M H
Material Description: ASPHALTIC HARD EXPANSION JOINT MATERIAL			Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:	Physical Damage	Air Erosion: None L M H
Primary Color: BLACK			Total quantity of HA:	Water Damage	Water: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A			Damaged areas and descriptions and quantities:	Air Erosion	None L M H
NESHAP: Friable Cat 1 Cat 2 SACM NSM					

## ADDITIONAL NOTES:

Samples collected by:

Date:

Samples Relinquished by:

Date:

Samples Relinquished to:

Date:

162020635

ARCADIS

## ASBESTOS PROPERTY INSPECTION

Page 4 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/1/2020		
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)				
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage	
HA # 150-07	Material Type: MM	✓ A PIER 1 EAST, EAST SIDE		Located on which floors:		Good	Contact: None L M H	
		✓ B FORWARD BREAST WALL		Located in which rooms:				Damaged
		✓ C PIER 9 WEST, WEST SIDE		SPORADIC ON PIERS & BREAST WALLS EXTENSIVE ON				Significantly Damaged
Material Description: CEMENTITIOUS PATCH MATERIAL				Location of HA within area: Ceiling Floor Wall Roof				
				Multiple Shaftways Other:				
				Total quantity of HA: 5,000 SF		Physical Damage	Air Erosion: None L M H	
				Damaged areas and descriptions and quantities:		Water Damage		
Primary Color: GRAY				40%		Air Erosion	Water: None L M H	
Texture: Fissured Grooved Rough Smooth Not Visible N/A								
NESHAP: Friable Cat 1 Cat 2 SACM NSM								
HA # 150-08	Material Type: MM	✓ A SOUTH (REAR) BREAST WALL		Located on which floors:		Good	Contact: None L M H	
		✓ B PIER 8 EAST NORTH FACE		Located in which rooms:				Damaged
		✓ C NORTH (FORWARD) BREAST WALL		T/O ON BREAST WALLS & PIERS				Significantly Damaged
Material Description: COATING ASSOCIATED WITH ABUTMENTS AND PIERS				Location of HA within area: Ceiling Floor Wall Roof				
				Multiple Shaftways Other:				
				Total quantity of HA: 27,500 SF		Physical Damage	Air Erosion: None L M H	
				Damaged areas and descriptions and quantities:		Water Damage		
Primary Color: GRAY				40%		Air Erosion	Water: None L M H	
Texture: Fissured Grooved Rough Smooth Not Visible N/A								
NESHAP: Friable Cat 1 Cat 2 SACM NSM								

ADDITIONAL NOTES:

Samples collected by:  
Date: 10/2/20Samples Relinquished by:  
Date: 10/6/20Samples Relinquished to:  
Date:

162020635



## ASBESTOS PROPERTY INSPECTION

Page 5 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/1/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 15009	Material Type: MM	✓ A BETWEEN SIDEWALK & PARAPET WALL NORTH END NORTH OF NORTHERN MOST ✓ B DECK EXPANSION JOINT		Located on which floors:  Located in which rooms: NEW SIDEWALK AREAS NORTH END AND CENTRAL AREAS OF EAST SIDE		Good  Damaged  Significantly Damaged	Contact: None L M H  Vibration: None L M H
Material Description: NEW SIDE WALK EXPANSION JOINT				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other			
Primary Color: BROWN				Total quantity of HA: ~50LF * 6" = 25 SF		Physical Damage	Air Erosion: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	Water: None L M H
NESHAP: Frangible Cat 1 Cat 2 SACM NSM						Air Erosion	None L M H
HA # 150-10	Material Type: MM	✓ A NORTH OF NORTHEAST LAMP POST ✓ B BETWEEN THE TWO NORTHEAST MOST LAMP POST ON EAST SIDE @ PARAPET JOINT		Located on which floors:  Located in which rooms: PARAPET JOINTS		Good  Damaged  Significantly Damaged	Contact: None L M H  Vibration: None L M H
Material Description: PARAPET EXPANSION JOINT MATERIAL (ASPHALTIC SHINGLE TYPE)		✓ C SOUTH OF SOUTHERN MOST LAMP POST ON EAST SIDE		Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other			
Primary Color: GRAY				Total quantity of HA: 31' * 10' * 2 = 60 SF		Physical Damage	Air Erosion: None L M H
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities: ~10%		Water Damage	Water: None L M H
NESHAP: Frangible Cat 1 Cat 2 SACM NSM						Air Erosion	None L M H

## ADDITIONAL NOTES:

Samples collected by:

Date:

10/2/20

Samples Relinquished by:

Date:

10/6/20

Samples Relinquished to:

Date:

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/1/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-11	Material Type: MM	SOUTH OF NORTH LAMP POST A EAST SIDE SUPPORT PLATE NORTH OF LAMP POST @ B NORTHERN MOST EXPANSION JOINT COLLAR OF SUPPORT NORTH OF C LAMP POST #3 WEST SIDE		Located on which floor: Located in which rooms: Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other: Total quantity of HA: $\sim 710' \times 2' \times \frac{1}{4}" = 305F$ Damaged areas and descriptions and quantities: 410%		Good Damaged Significantly Damaged Physical Damage Water Damage Air Erosion	Contact: None L M H Vibration: None L M H Air Erosion: None L M H Water: None L M H
Material Description: GRAY CAULK AT SECURITY FENCE SUPPORTS AND BOTTOM PLATE Primary Color: Texture: Fissured Grooved Rough Smooth Not Visible N/A NESHAP: Friable Cat 1 Cat 2 SACM NSM							
HA # 150-12	Material Type: MM	EAST SOUTH OF NORTH LAMP POST A LAMP POST @ NORTHERN B MOST DECK EXPANSION JOINT C SECURITY FENCE SUPPORT NORTH OF LAMP POST #3 WEST SIDE		Located on which floor: Located in which rooms: Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other: Total quantity of HA: 105F Damaged areas and descriptions and quantities:		Good Damaged Significantly Damaged Physical Damage Water Damage Air Erosion	Contact: None L M H Vibration: None L M H Air Erosion: None L M H Water: None L M H
Material Description: PAPER @ LAMP POST SHIMS AND SECURITY FENCE SUPPORTS Primary Color: LIGHT BROWN Texture: Fissured Grooved Rough Smooth Not Visible N/A NESHAP: Friable Cat 1 Cat 2 SACM NSM							

ADDITIONAL NOTES:

Samples collected by:

Samples Relinquished by:

Samples Relinquished to:

Date:

Date:

Date:

10/2/20

10/6/20

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/10/20	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 13	Material Type: MM	✓ A SOUTH OF LAMP POST ON NE SIDEWALK		Located on which floors:		Good	Contact: None L M H  Vibration: None L M H
		✓ B SOUTH OF NE LAMP POST ON DECK		Located in which rooms:		Damaged	
		✓ C SOUTH OF NORTHERN MOST DECK EXPANSION JOINT WEST SIDE				Significantly Damaged	
Material Description: CAULK (TAR) ASSOCIATED WITH SIDEWALK AND DECK				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			Air Erosion: None L M H  Water: None L M H
Primary Color: BLACK				Total quantity of HA: ~7104 SF ~4000 SF 15" 4455 SF		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	
HA # 14	Material Type: MM	✓ A NORTH OF NORTHERN MOST DECK EXPANSION JOINT		Located on which floors:		Good	Contact: None L M H  Vibration: None L M H
		✓ B NORTH OF SOUTH WEST LAMP POST		Located in which rooms: RAIL BOLTS		Damaged	
		✓ C NORTH OF NORTHERN MOST EXPANSION JOINT WEST SIDE				Significantly Damaged	
Material Description: CAULK/MASTIC @ RAIL BOLTS				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			Air Erosion: None L M H  Water: None L M H
Primary Color: WHITE				Total quantity of HA: 50 SF		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	

ADDITIONAL NOTES:

Samples collected by:

Date:

10/2/20

Samples Relinquished by:

Date:

10/6/20

Samples Relinquished to:

Date:



162020635

ARCADIS

## ASBESTOS PROPERTY INSPECTION

Page 8 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/7/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malyaz (ES35684)			
Material Type and Description	Sample Number and Sample Location	HA Quantities & HA Locations	Current Condition	Potential Future Damage			
HA # 150-15 Material Type: MM	✓ A NORTH OF NORTHERN MOST LAMP POST EAST SIDE OF BRIDGE ✓ B BETWEEN THE TWO NORTHERN LAMP POSTS EAST SIDE OF BRIDGE ✓ C NORTH OF CENTRAL LAMP POST WEST SIDE OF BRIDGE	Located on which floors: PARAPET Located in which rooms:	Good Damaged Significantly Damaged	Contact: None L M H Vibration: None L M H			
Material Description: PARAPET WALL COATING		Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:	Physical Damage	Air Erosion: None L M H			
Primary Color: GRAY OVER YELLOW Texture: Fissured Grooved Rough Smooth Not Visible N/A NESHAP: Friable Cat 1 Cat 2 SACM NSM	DAMAGED / DELAMINATED AREAS ARE FRAGILE	Total quantity of HA: 9940 SF Damaged areas and descriptions and quantities: ~10% DELAMINATION	Water Damage Air Erosion	Water: None L M H			
HA # 150-16 Material Type: MM	✓ A CENTER EXPANSION JOINT NORTH FORWARD BREAST WALL EXPANSION JOINT ✓ B NORTH WEST RETAINING WALL ✓ C SOUTH (REAR) BREAST WALL	Located on which floors: WALL EXPANSION JOINTS Located in which rooms:	Good Damaged Significantly Damaged	Contact: None L M H Vibration: None L M H			
Material Description: "EXPANSION JOINT MATERIALS ASSOCIATED WITH WALLS"	LAYER 1 CEMENTIOUS COATING (GRAY) LAYER 2 BLACK TAR PAPER LAYER 3 BROWN PRESSED CELLULOSE	Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other: Total quantity of HA: 421 + 152.5 = 573.5 SF Damaged areas and descriptions and quantities: ~25% ~30%	Physical Damage Water Damage Air Erosion	Air Erosion: None L M H Water: None L M H			

ADDITIONAL NOTES:

Samples collected by:

Date:

10/2/20

Samples Relinquished by:

Date:

11/6/20

Samples Relinquished to:

Date:

162020635



## ASBESTOS PROPERTY INSPECTION

Page 9 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/7/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35884)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-17	Material Type: <del>CONCRETE</del> MM	✓ A	RIGHT REAR RETAINING WALL	Located on which floors:		Good  Damaged  Significantly Damaged	Contact: None L M H  Vibration: None L M H
		✓ B	EAST SIDE PARAPET WALL	Located in which rooms: WALLS, PIERS & PARAPETS			
		✓ C	PIER 4				
Material Description:  CONCRETE				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:		Physical Damage  Water Damage  Air Erosion	Air Erosion: None L M H  Water: None L M H
				Total quantity of HA: 7000 CY			
				Damaged areas and descriptions and quantities: 40%			
Primary Color:							
Texture: Fissured Grooved Rough Smooth Not Visible N/A							
NESHAP: Friable Cat 1 <input checked="" type="radio"/> Cat 2 <input type="radio"/> SACM <input type="radio"/> NSM							
HA # 150-18	Material Type: MM	✓ A	ON PARAPET, EAST SIDE OF BRIDGE NORTHEN	Located on which floors:		Good  Damaged  Significantly Damaged	Contact: None L M H  Vibration: None L M H
		✓ B	ON PARAPET, CENTRAL AREA EAST	Located in which rooms:			
		✓ C	ON EAST PARAPET, SOUTH END				
Material Description: CEMENTITIOUS PATCHING MATERIAL ON PARAPETE				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:		Physical Damage  Water Damage  Air Erosion	Air Erosion: None L M H  Water: None L M H
				Total quantity of HA: 800 SF			
				Damaged areas and descriptions and quantities: ~10% DELAM			
Primary Color: GRAY							
Texture: Fissured Grooved Rough Smooth Not Visible N/A							
NESHAP: Friable <input type="radio"/> Cat 1 <input checked="" type="radio"/> Cat 2 <input type="radio"/> SACM <input type="radio"/> NSM							

ADDITIONAL NOTES:

Samples collected by:

Samples Relinquished by:

Samples Relinquished to:

Date:

Date:

Date:

10/2/20

10/6/20

162020635



## ASBESTOS PROPERTY INSPECTION

Page 10 of 11

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/1/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-19	Material Type: NSM			Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
				Located in which rooms: SPORADIC MOSTLY @ CONDUIT PENETRATIONS		Damaged	
						Significantly Damaged	
Material Description: FOAM INSULATION				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color: YELLOW				Total quantity of HA: NE		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	
HA # 150-20	Material Type: NSM			Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
				Located in which rooms: <del>SPORADIC</del> CONDUITS		Damaged	
						Significantly Damaged	
Material Description: PVC PIPING				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color: GRAY				Total quantity of HA: ~3000LF		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	

## ADDITIONAL NOTES:

Samples collected by: [Signature] Date: 10/2/20 Samples Relinquished by: [Signature] Date: 10/6/20 Samples Relinquished to: \_\_\_\_\_ Date: \_\_\_\_\_

162020635

Property Address: W.140th & W.150th Bridge Inspections		Building Name: W.140th & W.150th Bridge Inspections		Project Number: 30056244 - TOHCUY002		Dates of Inspection: 10/17/2020	
Floor(s) Surveyed:		Areas Surveyed: Bridge Piers and Deck		Inspector(s): Kristen Malysz (ES35684)			
Material Type and Description		Sample Number and Sample Location		HA Quantities & HA Locations		Current Condition	Potential Future Damage
HA # 150-21	Material Type: NSM			Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
		NSM		Located in which rooms: DECK		Damaged	
						Significantly Damaged	
Material Description: BLACK RUBBER EXPANSION JOINTS				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color: BLACK				Total quantity of HA:		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	
HA #	Material Type:			Located on which floors:		Good	Contact: None L M H  Vibration: None L M H  Air Erosion: None L M H  Water: None L M H
				Located in which rooms:		Damaged	
						Significantly Damaged	
Material Description:				Location of HA within area: Ceiling Floor Wall Roof Multiple Shaftways Other:			
Primary Color:				Total quantity of HA:		Physical Damage	
Texture: Fissured Grooved Rough Smooth Not Visible N/A				Damaged areas and descriptions and quantities:		Water Damage	
NESHAP: Friable Cat 1 Cat 2 SACM NSM						Air Erosion	

ADDITIONAL NOTES:

Samples collected by:

Samples Relinquished by:

Samples Relinquished to:

Date:

Date:

Date:

10/2/20

10/6/20

United States Department of Commerce  
National Institute of Standards and Technology



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## Certificate of Accreditation to ISO/IEC 17025:2017

---

NVLAP LAB CODE: 101048-9

**EMSL Analytical, Inc.**  
New York, NY

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

### **Asbestos Fiber Analysis**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

---

2020-07-01 through 2021-06-30  
Effective Dates



---

For the National Voluntary Laboratory Accreditation Program



**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

**EMSL Analytical, Inc.**  
307 W. 38th Street  
New York, NY 10018  
Mr. Jim Hall  
Phone: 212-290-0051 Fax: 212-290-0058  
Email: [jhall@emsl.com](mailto:jhall@emsl.com)  
<http://www.emsl.com>

**ASBESTOS FIBER ANALYSIS**

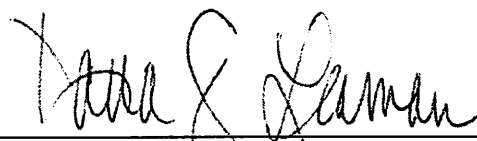
**NVLAP LAB CODE 101048-9**

**Bulk Asbestos Analysis**

<u>Code</u>	<u>Description</u>
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

**Airborne Asbestos Analysis**

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

  
\_\_\_\_\_  
For the National Voluntary Laboratory Accreditation Program

United States Department of Commerce  
National Institute of Standards and Technology



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## Certificate of Accreditation to ISO/IEC 17025:2017

---

NVLAP LAB CODE: 200188-0

**EMSL Analytical, Inc.**  
Indianapolis, IN

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

### **Asbestos Fiber Analysis**

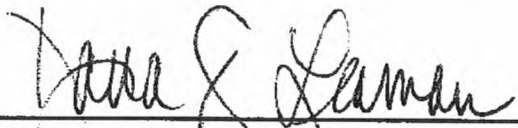
*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

---

2020-04-01 through 2021-03-31

*Effective Dates*



  
For the National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.  
6340 Castleplace Dr.  
Indianapolis, IN 46250  
Mr. Richard Harding  
Phone: 317-803-2997 Fax: 317-803-3047  
Email: rharding@emsl.com  
<http://www.emsl.com>

ASBESTOS FIBER ANALYSIS

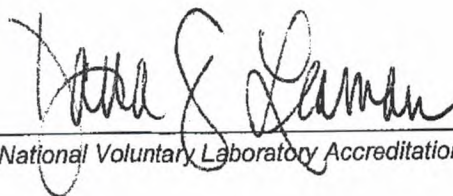
NVLAP LAB CODE 200188-0

Bulk Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

<u>Code</u>	<u>Description</u>
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

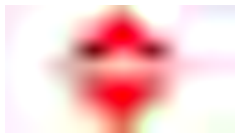


For the National Voluntary Laboratory Accreditation Program

# APPENDIX D

Laboratory Report – Lead



**EMSL Analytical, Inc.**

6340 CastlePlace Dr., Indianapolis, IN 46250

Phone/Fax: (317) 803-2997 / (317) 803-3047

<http://www.EMSL.com>[indianapolislab@emsl.com](mailto:indianapolislab@emsl.com)

EMSL Order: 162020596

CustomerID: ACAD78BE

CustomerPO: 30056244

ProjectID:

Attn: **Kristen Malysz**  
**ARCADIS U.S., Inc.**  
**222 South Main Street**  
**Suite 200**  
**Akron, OH 44308**

Phone: (330) 434-1995  
Fax:  
Received: 10/08/20 9:45 AM  
Collected: 10/5/2020

Project: **30056244 / TOHCUY002 - W. 150TH****Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)\***

<i>Client SampleDescription</i>	<i>Collected</i>	<i>Analyzed</i>	<i>Weight</i>	<i>RDL</i>	<i>Lead Concentration</i>
150-PC-01 162020596-0001	10/5/2020	10/13/2020 Site: SOUTH (REAR) BREAST WALL Desc: GRAY / CONCRETE / WALL	0.2561 g	0.0080 % wt	<0.0080 % wt
150-PC-02 162020596-0002	10/5/2020	10/13/2020 Site: PIPE @ PIER 1 Desc: WHITE / ASPHALTIC PIPE WRAP	0.2543 g	0.0080 % wt	<0.0080 % wt
150-PC-03 162020596-0003	10/5/2020	10/13/2020 Site: BEAM @ PIER 1 Desc: GRAY / METAL / BEAM	0.2546 g	0.0080 % wt	0.038 % wt
150-PC-04 162020596-0004	10/5/2020	10/13/2020 Site: GENERAL AREA EAST SIDE PARAPET Desc: GRAY / CONCRETE / PARAPET	0.2538 g	0.0080 % wt	0.066 % wt
150-PC-05 162020596-0005	10/1/2020	10/13/2020 Site: CENTRAL LAMPOST ON EAST SIDE Desc: BROWN / METAL / LAMPOST	0.2554 g	0.0080 % wt	0.092 % wt

Allison Ford, Chemistry Lab Manager  
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted.

Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Indianapolis, IN AIHA-LAP, LLC--ELLAP 157245, OH E10040

Initial report from 10/15/2020 07:51:59





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING  
LABORATORY • PRODUCTS • TRAINING

## Lead (Pb) Chain of Custody

EMSL Order ID (Lab Use Only):

162020596

Indianapolis, IN 46250  
PHONE: (317) 803-2997  
FAX: (317) 803-3047

Company: ARCADIS U.S., Inc.		EMSL-Bill to: <input type="checkbox"/> Same <input checked="" type="checkbox"/> Different If Bill to is Different note instructions in Comments**		
Street: 222 South Main Street Suite 200		Third Party Billing requires written authorization from third party		
City: Akron	State/Province: OH	Zip/Postal Code: 44308	Country: US	
Report To (Name): Kristen Malysz		Telephone #: 248-5347002		
Email Address: kristen.malysz@arcadis.com		Fax #:	Purchase Order: project #	
Project Name/Number: 30056244 - TOHCUY002 - W.150th		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email		
U.S. State Samples Taken: OH		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt		
Turnaround Time (TAT) Options* - Please Check				
<input type="checkbox"/> 3 Hour	<input type="checkbox"/> 6 Hour	<input type="checkbox"/> 24 Hour	<input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week	
*Analysis completed in accordance with EMSL's Terms and Conditions located in the Price Guide				
Matrix	Method	Instrument	Reporting Limit	Check
Chips <input checked="" type="checkbox"/> % by wt. <input type="checkbox"/> mg/cm <sup>2</sup> <input type="checkbox"/> ppm (mg/kg)	SW846-7000B	Flame Atomic Absorption	0.01%	<input checked="" type="checkbox"/>
Air	NIOSH 7082	Flame Atomic Absorption	4 µg/filter	<input type="checkbox"/>
	NIOSH 7105	Graphite Furnace AA	0.03 µg/filter	<input type="checkbox"/>
	NIOSH 7300M/NIOSH 7303	ICP-OES	0.5 µg/filter	<input type="checkbox"/>
Wipe* <input type="checkbox"/> ASTM <input type="checkbox"/> non ASTM <input type="checkbox"/>	SW846-7000B	Flame Atomic Absorption	10 µg/wipe	<input type="checkbox"/>
*If no box checked, non-ASTM Wipe assumed	SW846-6010B or C	ICP-OES	1.0 µg/wipe	<input type="checkbox"/>
TCLP	SW846-1311/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1311/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
SPLP	SW846-1312/7000B/SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	SW846-1312/SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
TTLIC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
STLC	22 CCR App. II, 7000B/7420	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	22 CCR App. II, SW846-6010B or C	ICP-OES	0.1 mg/L (ppm)	<input type="checkbox"/>
Soil	SW846-7000B	Flame Atomic Absorption	40 mg/kg (ppm)	<input type="checkbox"/>
	SW846-6010B or C	ICP-OES	2 mg/kg (ppm)	<input type="checkbox"/>
Wastewater Unpreserved <input type="checkbox"/> Preserved with HNO <sub>3</sub> pH < 2 <input type="checkbox"/>	SM3111B/SW846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.7	ICP-OES	0.020 mg/L (ppm)	<input type="checkbox"/>
Drinking Water Unpreserved <input type="checkbox"/> Preserved with HNO <sub>3</sub> pH < 2 <input type="checkbox"/>	EPA 200.8	ICP-MS	0.001 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.9	Graphite Furnace AA	0.003 mg/L (ppm)	<input type="checkbox"/>
	EPA 200.5	ICP-OES	0.003 mg/L (ppm)	<input type="checkbox"/>
TSP/SPM Filter	40 CFR Part 50	ICP-OES	12 µg/filter	<input type="checkbox"/>
	40 CFR Part 50	Graphite Furnace AA	3.6 µg/filter	<input type="checkbox"/>
Other:				<input type="checkbox"/>
Name of Sampler:		Signature of Sampler:		
Sample #	Location	Volume/Area	Date/Time Sampled	
150-PC-01	SEE ATTACHED	~ 4 in <sup>2</sup>	10/2/20	
150-PC-02	↓	~ 4 in <sup>2</sup>	✓	
Client Sample #s	150-PC-01 to 150-PC-05	Total # of Samples:	5	
Relinquished (Client):	<i>[Signature]</i>	Date:	10/6/20 Time:	
Received (Lab):	<i>[Signature]</i>	Date:	10-8-2020 Time:	
Comments:				
BillTo: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #				



Ordering & Consulting  
for natural and  
built assets

Project / Client:

CUYAHOGA COUNTY

Site Address:

BRIDGE #152 WEST 150TH STREET

Project Number:

30056244

Sample Date:

10/2/20  
(LA 9325)

Inspector:

KRISTEN MALYSZ

Sample ID Number	Color	Substrate Material (e.g., metal, concrete)	Surface Type (e.g., wall, door, pipe)	Condition (e.g., intact, flaking)	Specific Sample Location	General Location (e.g., what rooms)	Additional Notes (e.g., Multiple Layers)
✓ 150-PC-01	GRAY	CONCRETE	WALL	MOSTLY INTACT	SOUTH (REAR) BRACEWALL	WALLS AND PIERS	
✓ 150-PC-02	WHITE	ASPHALTIC PIPE WRAP	PIPE	POOR (NON-INTACT)	PIPE @ PIER 1	WATER LINE	WHITE OVER BLACK
✓ 150-PC-03	GRAY	METAL	BEAM	INTACT	BEAM @ PIER 1	METAL STRUCTURAL COMPONENTS	GRAY OVER WHITE
✓ 150-PC-04	GRAY	CONCRETE	PARAPET	SPORADIC DELAMINATION	CENTRAL AREA EAST SIDE PARAPET	PARAPETS	
✓ 150-PC-05	BROWN	METAL	LAMPOST	INTACT	CENTRAL LAMPOST ONE EAST SIDE	LAMPOSTS	



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# LEAD (Pb) CHAIN OF CUSTODY

EMSL ORDER ID (Lab Use Only):

162020596

EMSL Analytical, Inc.

6340 Castleplace Dr.

Indianapolis, IN 46250

PHONE: (317) 803-2997

FAX: (317) 803-3047

Additional Pages of the Chain of Custody are only necessary if needed for additional sample information

Sample #	Location	Volume/Area	Date/Time Sampled				
150-PC-03	SEE ATTACHED	~ 4 in <sup>2</sup>	10/2/20				
150-PC-04	↓	↓	↓				
150-PC-05	↓	↓	↓				

**Comments/Special Instructions:**

BJITo: ARCADIS U.S., Inc., 630 Plaza Drive, Suite 600, Highlands Ranch, CO, 80129, US  
 Attention: Kristen Malysz Phone: 2489942240 Email: kristen.malysz@arcadis.com Purchase Order: project #

Page 2 of 2 pages + 1 PAGE ATTACHMENT



Department  
of Health

Mike DeWine, Governor  
Jon Husted, Lt. Governor

Amy Acton, MD, MPH, Director

April 27, 2020

Richard Harding, Laboratory Manager  
EMSL Analytical, Inc. (IN)  
6340 Castleplace Dr.  
Indianapolis, IN 46250

RE: Environmental Lead Laboratory Approval Number E10040

Dear Richard Harding:

The Ohio Department of Health (ODH) Lead Poisoning Prevention Program has reviewed your Environmental Lead Analytical Laboratory application. Your laboratory has met all of the criteria for approval as specified in Chapter 3701-82 of the Ohio Administrative Code (O.A.C.) for the following substance(s):

**Air                      Dust                      Paint                      Soil**

Your laboratory approval number is **E10040**. The approval will expire on **05/03/2021**.

O.A.C. 3701-82-02 (C) requires you to notify ODH within twenty four hours if for any reason your National Lead Laboratory Accreditation Program (NLLAP) accreditation is denied, revoked, suspended or limited. Additionally, you shall notify ODH within five business days each time your laboratory's NLLAP accreditation as an Environmental Lead Analytical Laboratory is renewed or modified.

O.A.C. 3701-32-14 (A) requires you to submit a copy of your quarterly proficiency testing results from the "Environmental Lead Proficiency Analytical Testing" (ELPAT) program within five business days of receiving the results to ODH.

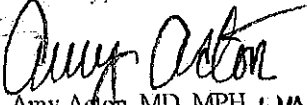
Please submit the required information by one of the following methods; first class mail to the address listed below or electronic mail to [lead@odh.ohio.gov](mailto:lead@odh.ohio.gov).

Ohio Department of Health  
Lead Poisoning Prevention Program  
246 North High Street  
Columbus, OH 43215

In accordance with Chapter 119. of the Ohio Revised Code, I may propose to deny or revoke the approval of an Environmental Lead Analytical Laboratory if at any time the laboratory does not meet the requirements of the O.A.C. or Chapter 3742. of the Revised Code.

If you have any questions about this approval letter, please contact John Belt at (614) 466-1450.

Sincerely,

  
Amy Acton, MD, MPH  
Director

# APPENDIX E

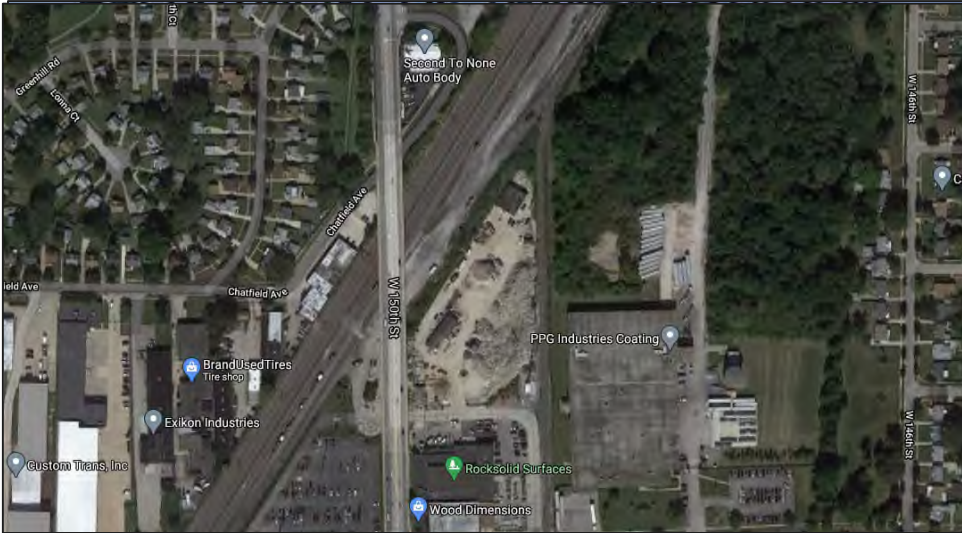
## Photograph Logs





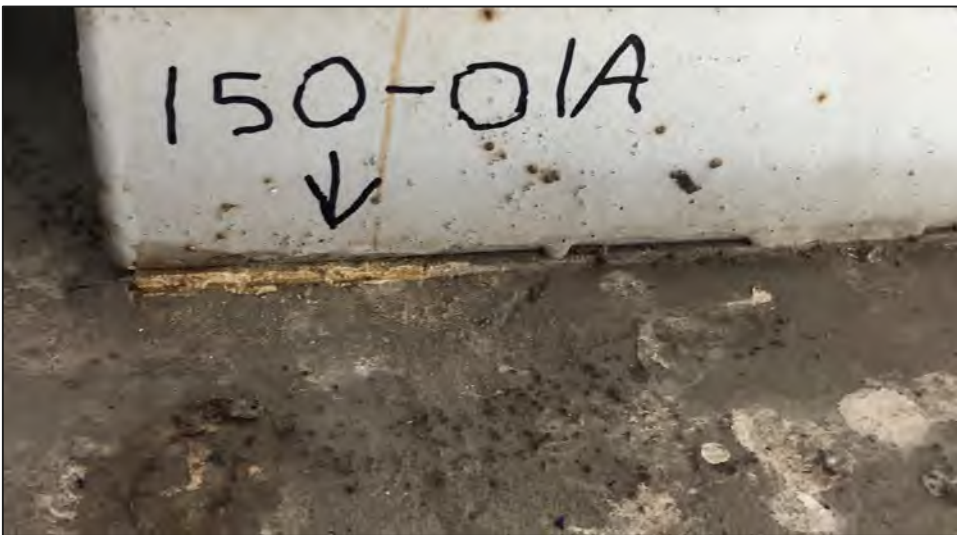
## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 01**

**Description:**  
Aerial View of Bridge



**Photo: 02**

**Date:** October 2, 2020

**Description:**  
150-01: Pad under Pot  
Bearing (White Fibers with  
Yellow Binder, Inseparable)

**HA Location:** Under Port  
Bearings on Piers and  
Abutments



**Photo: 03**

**Date:** October 2, 2020

**Description:**  
150-02: Coating on Metal  
Bridge Support Components,  
White

**HA Location:** Throughout on  
Metal Bridge Support  
Components

## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 04**

**Date:** October 2, 2020

**Description:**

150-03: Pipe Outer Coating,  
Off White

**HA Location:** City Waterline



**Photo: 05**

**Date:** October 2, 2020

**Description:**

150-04: Yellow Fiberglass Pipe  
Insulation associated with City  
Waterline

**HA Location:** City Waterline



**Photo: 06**

**Date:** October 2, 2020

**Description:**

150-05: Asphaltic Wire  
Wrapped Pipe Covering (Black  
over Gray, Inseparable)

**HA Location:** City Waterline



## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



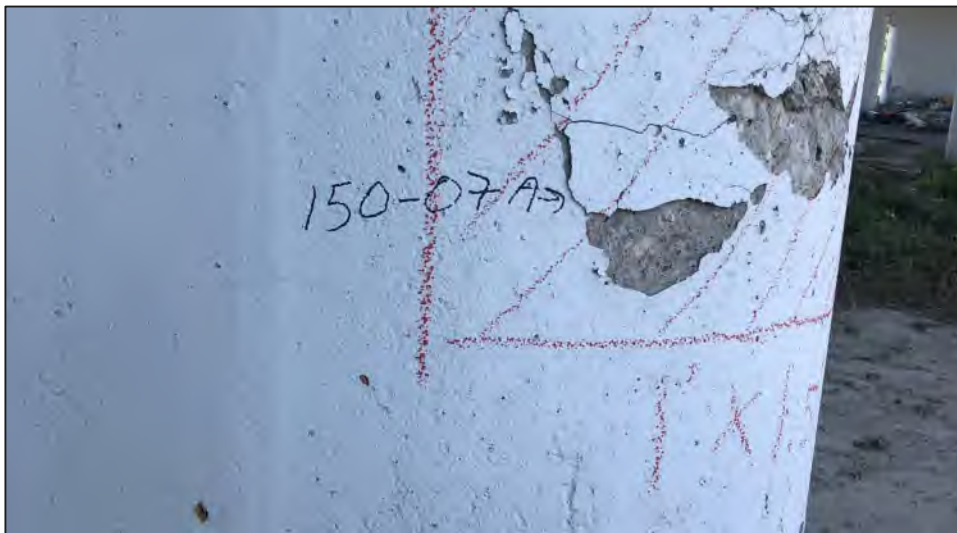
**Photo: 07**

**Date:** October 2, 2020

**Description:**

150-06: Asphaltic Hard Expansion Joint Material, Black

**HA Location:** Expansion Joints  
Base of Pier 1



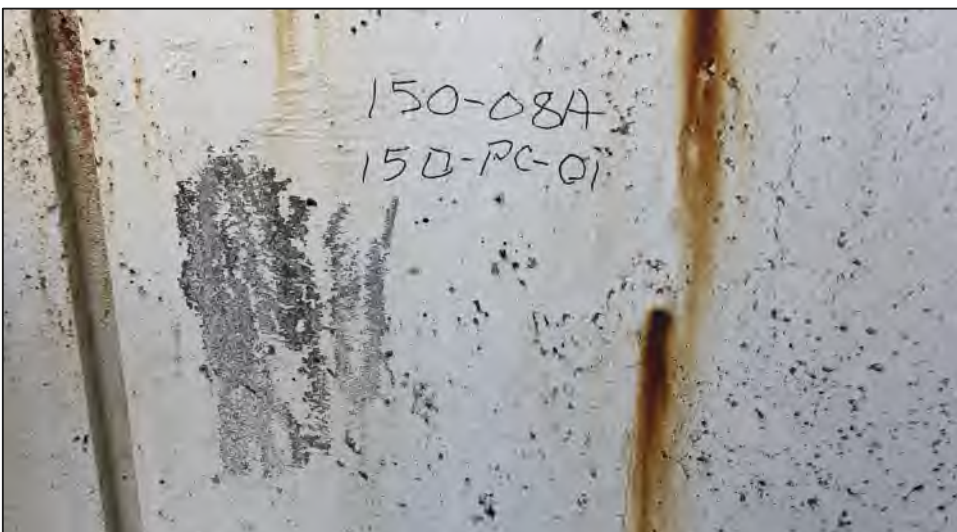
**Photo: 08**

**Date:** October 2, 2020

**Description:**

150-07: Gray Cementitious Patching Material associated with Piers and Walls

**HA Location:** Sporadically on  
Piers and Extensively on Walls



**Photo: 09**

**Date:** October 2, 2020

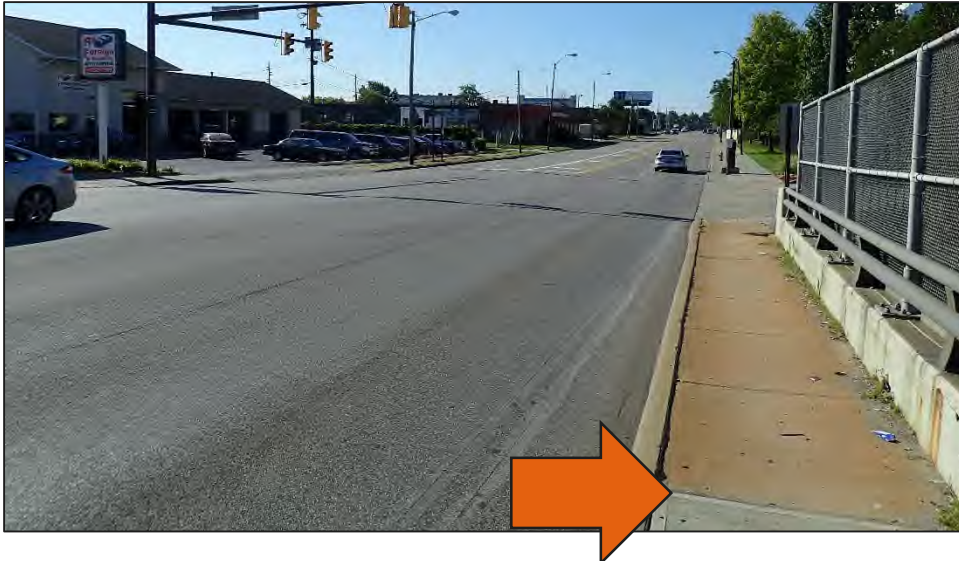
**Description:**

150-08: Gray Coating associated with Abutments and Piers

**HA Location:** Walls and Piers

## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 10**

**Date:** October 2, 2020

**Description:**

150-09 New Sidewalk  
Expansion Joint Material,  
Brown

**HA Location:** New Sidewalk  
Areas



**Photo: 11**

**Date:** October 2, 2020

**Description:**

150-10: Parapet Expansion  
Joint Material (Asphaltic  
Shingle Type), Dark Gray

**HA Location:** Parapet Wall  
Joints



**Photo: 12**

**Date:** October 2, 2020

**Description:**

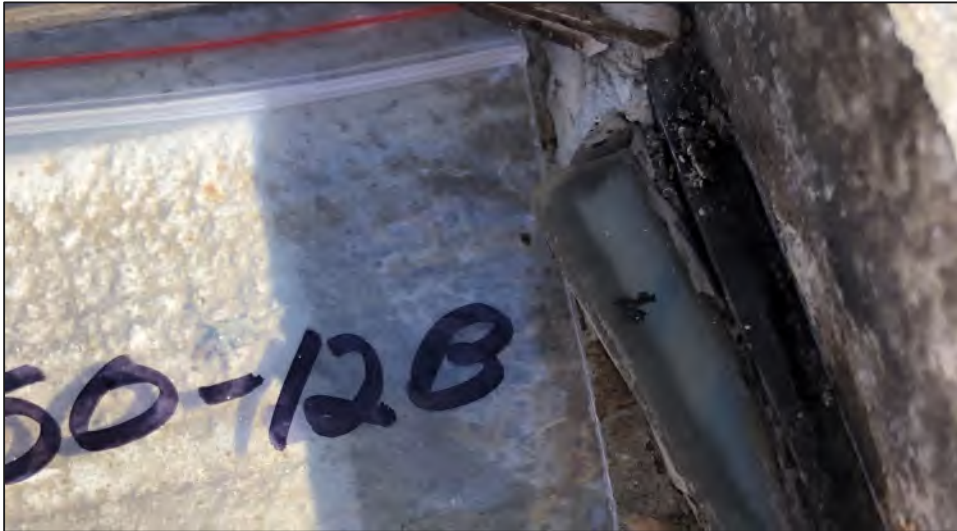
150-11: Gray Caulk at Security  
Fence Supports and Bottom  
Plates

**HA Location:** Security Fence  
Supports and Plates



## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 13**

**Date:** October 2, 2020

**Description:**

150-12: Brown Paper associated with Lamppost Shims and Security Fence Supports

**HA Location:** Security Fence Shims



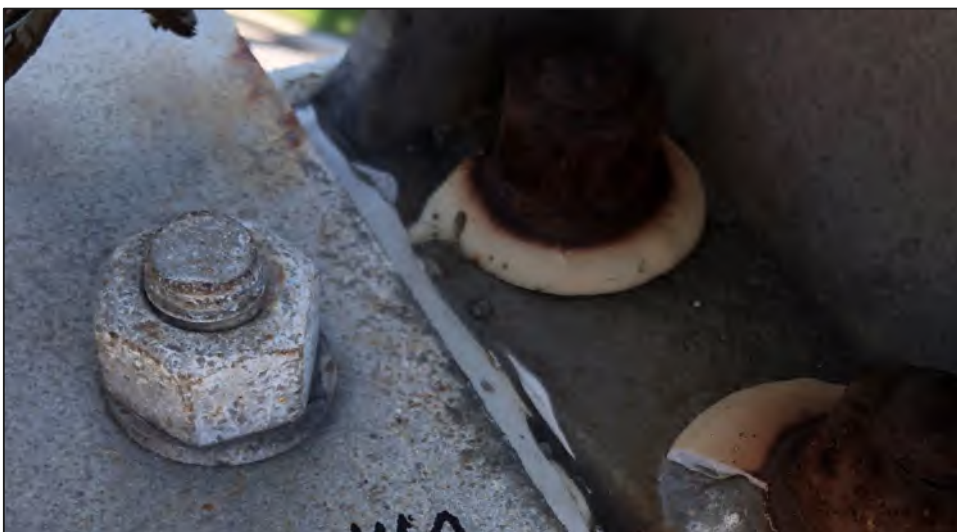
**Photo: 14**

**Date:** October 2, 2020

**Description:**

150-13: Black Caulk (Tar) associated with Sidewalk and Deck

**HA Location:** Sidewalk and Bridge Deck



**Photo: 15**

**Date:** October 2, 2020

**Description:**

150-14: White Caulk and Mastic associated with Guard Rail Bolts

**HA Location:** Guard Rail Bolts



## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



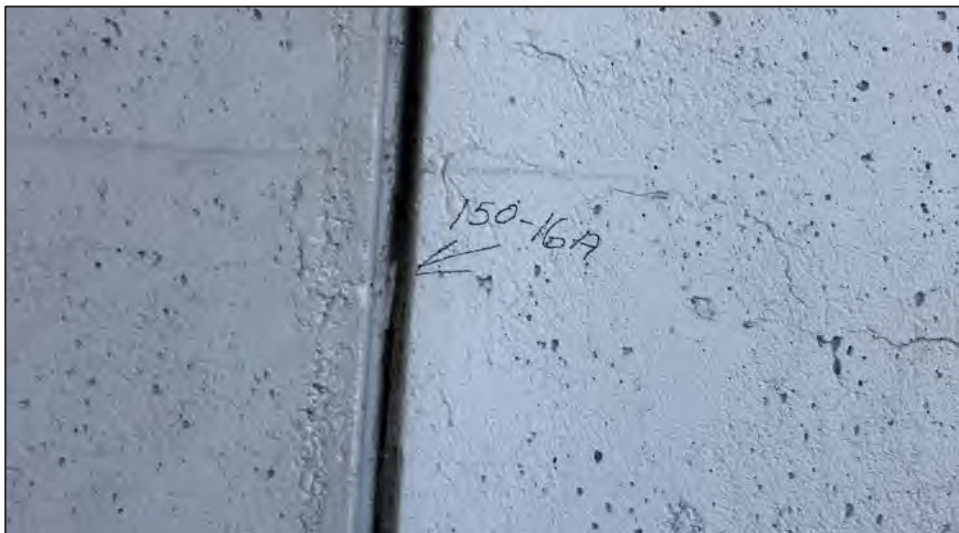
**Photo: 16**

**Date:** October 2, 2020

**Description:**

150-15: Parapet Wall Coating  
(Gray over Yellow, Inspirable)

**HA Location:** Parapet Walls



**Photo: 17**

**Date:** October 2, 2020

**Description:**

150-16: Expansion Joint  
Materials associated with  
Walls (Inspirable Layers)

**HA Location:** Wall Expansion  
Joints



**Photo: 18**

**Date:** October 2, 2020

**Description:**

150-17:  
Concrete

**HA Location:** Walls, Piers and  
Parapet



## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 19**

**Date:** October 2, 2020

**Description:**

150-18: Cementitious  
Patching Material on Parapet

**HA Location:** Parapet



**Photo: 20**

**Date:** October 2, 2020

**Description:**

150-19: Yellow Foam

Insulation

150-20: Gray PVC Piping

**HA Location:** Conduits



**Photo: 24**

**Date:** October 2, 2020

**Description:**

150-21: Electrical Wire  
Insulation (**assumed**)

**HA Location:** Conduits

## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo:** 22

**Date:** October 2, 2020

**Description:**

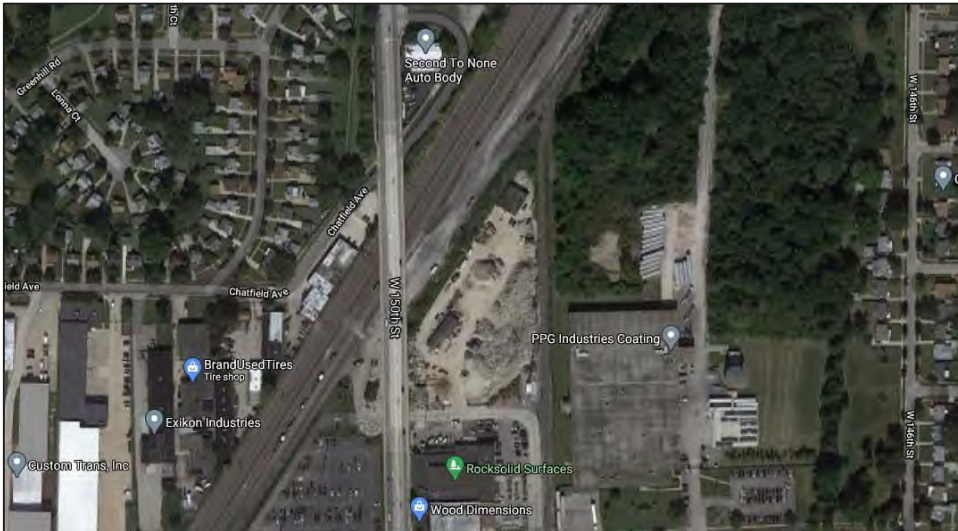
150-22: Black Rubber  
Expansion Joint Material

**HA Location:** Deck Expansion  
Joints



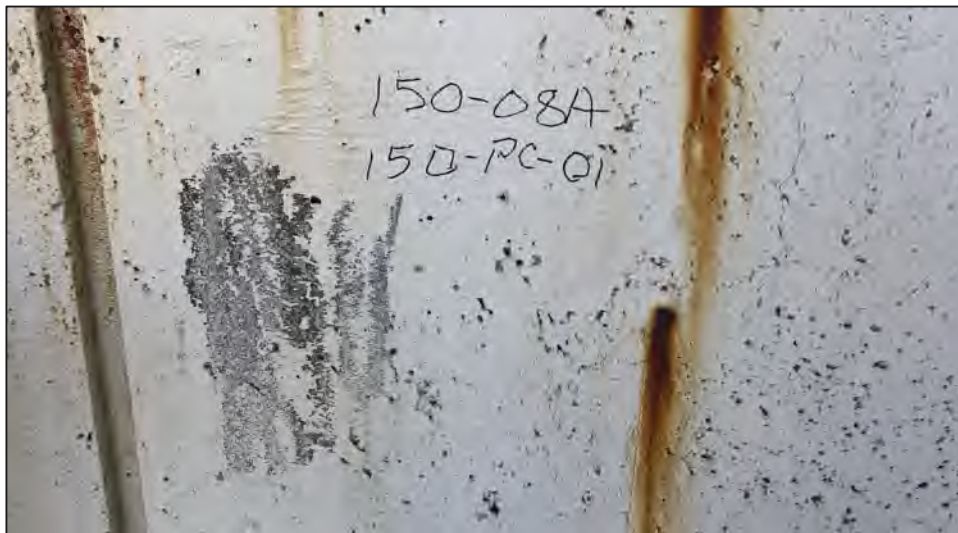
## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo: 01**

**Description:**  
Aerial View of Bridge



**Photo: 02**

**Date:** October 2, 2020

**Description:**  
150-PC-01: Gray Paint on  
Concrete Sample

**Location:** South Breast Wall



**Photo: 03**

**Date:** October 2, 2020

**Description:**  
150-PC-02: White Paint on  
Metal Sample

**Location:** City Waterline

## Project Photographs

Asbestos-Containing Materials  
W. 150th Street Bridge 01.94  
Cleveland, Ohio



**Photo:** 04

**Date:** October 2, 2020

**Description:**

150-PC-03: Gray Paint on Metal Sample

**Location:** Beam at Pier 1



**Photo:** 05

**Date:** October 2, 2020

**Description:**

150-PC-04: Gray Paint on Concrete Sample

**Location:** Parapet Wall



**Photo:** 06

**Date:** October 2, 2020

**Description:**

150-PC-05: Brown Paint on Metal Sample

**Location:** Central Lamppost on East Side



Arcadis U.S., Inc.

1111 Superior Avenue

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Cleveland, Ohio 44308

Tel 216.781.6177

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# APPENDIX F

## Load Rating



# BRIDGE LOAD RATING SUMMARY REPORT

## OFFICE OF STRUCTURAL ENGINEERING

### OHIO DEPARTMENT OF TRANSPORTATION

SFN	BRIDGE NUMBER	DISTRICT	GPS COORDINATES	
			LATITUDE:	LONGITUDE:
1833405	CUY-66-194 WB	12	41 26' 46.79"	81 48' 04.79"
ORIGINAL CONSTRUCTION YEAR	REHABILITATION YEAR	OVERALL STRUCTURE LENGTH	FEATURE INTERSECTED	
1967		709 ft	N&S Rr, Rta & Chatfield	

SPECIAL ASSUMPTIONS & COMMENTS	Original plans dated June 1966 & Rehab plans dated March 1988 were available.			
	This is a two-unit, continuous span steel beam with composite concrete deck bridge. Unit 1 has spans of 63', 65', 91', 89', & 66'-1/4" measured along CL of bridge. Unit 2 has spans of 66'-1/4", 67', 67', and 60' measured along CL of the bridge. Deck thickness is 8.5" and out-to-out deck width of 63'-11-1/2". Parapet is a 1' wide concrete parapet with noise barrier and 4'-11-7/8" wide sidewalk. The inside face to face of parapets is 61'-11-1/2" and inside face to face of sidewalks is 51'-11-7/8". The sidewalks are assumed to be unmountable. The skews vary from 56 deg 31" to 0 deg. Deterioration was noted on Beams E and F of Span 7.			

PLEASE SELECT ON RIGHT, WHERE APPROPRIATE, BY USING THE DROP DOWN ARROW BUTTON	
LOAD RATING PURPOSE :	8 - Update Analysis Model and Software
GENERAL APPRAISAL (0-9) :	4
(708) LOAD RATING SOFTWARE :	3 - AASHTO BrR (VIRTIS)
SOFTWARE VERSION :	6.8.3
(709) RATING SOURCE :	1 - Plan information available for load rating analysis
(63)(65) RATING METHOD :	6 - Load Factor (LF) rating reported by rating factor (RF)
(31) ORIGINAL DESIGN LOADING :	6 - HS20-44 & Alternate Military Loading

STRUCTURE RATING SUMMARY			
OHIO LEGAL VEHICLES			
Loading Type	GVW (Tons)	Operating Rating RF	Legal Weight (Tons)
2F1	15	3.351	15.00
3F1	23	2.202	23.00
4F1	27	1.897	27.00
5C1	40	1.489	40.00
SPECIALIZED HAULING VEHICLES (SHV)			
SU4	27	1.898	27.00
SU5	31	1.678	31.00
SU6	34.75	1.504	34.75
SU7	38.75	1.368	38.75
EMERGENCY VEHICLES (EV)			
Check box if this is an NBI bridge <input checked="" type="checkbox"/>			
EV2	28.75	1.799	28.75
EV3	43	1.425	43.00
DESIGN VEHICLE		Rating by RF	
Loading Type		Operating	Inventory
HS20 Loading		1.063	0.636
Overall Legal Posting Rating		135%	
Posting Recommendation		No Load Posting is Recommended	
Sign Posting Recommendation:			

AGENCY/FIRM/OFFICE	Arcadis	Report Date	12/9/2020
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Rated By		Reviewed By	
Name:	Ryan Brinkman	Name:	Christine Dohy
PE Number:	81226	PE Number:	62819
Phone Number:	513-985-8059	Phone Number:	330-515-5708
Email:	Ryan.Brinkman@arcadis.com	Email:	christine.dohy@arcadis.com



## Bridge Rating Results Report

	Bridge Id	Vehicle	Rating Level	Rating Factor	Rating Method	Capacity (Ton)	Time Stamp	Rated By	Impact	Lane	Up To Date	DB	Vehicle Path
	1833405	HS 20-44	Inventory	0.636	LFD	22.91	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	HS 20-44	Operating	1.063	LFD	38.26	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	EV2	Legal Operating	1.799	LFD	51.72	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	EV3	Legal Operating	1.425	LFD	51.85	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	SU4	Legal Operating	1.898	LFD	51.25	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	SU5	Legal Operating	1.678	LFD	52.01	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	SU6	Legal Operating	1.504	LFD	52.28	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	SU7	Legal Operating	1.368	LFD	52.99	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	OH-2F1	Legal Operating	3.351	LFD	50.26	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	OH-3F1	Legal Operating	2.202	LFD	50.66	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	OH-4F1	Legal Operating	1.897	LFD	51.23	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	1833405	OH-5C1	Legal Operating	1.489	LFD	59.58	Wednesday,	brr	As Req	As Re	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Ra ted	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam A	HS 20-44	Inventory	1.29	46.60	100.656	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	HS 20-44	Operating	2.16	77.83	100.656	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	HS 20-44	Inventory	1.25	45.01	215.615	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	HS 20-44	Operating	2.09	75.17	215.615	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	HS 20-44	Inventory	1.24	44.74	219.063	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	HS 20-44	Operating	2.08	74.72	219.063	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	HS 20-44	Inventory	1.24	44.60	222.521	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	HS 20-44	Operating	2.07	74.49	222.521	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	HS 20-44	Inventory	1.63	58.69	225.979	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	HS 20-44	Operating	2.72	98.01	225.979	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	HS 20-44	Inventory	1.21	43.57	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	HS 20-44	Operating	2.02	72.76	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	HS 20-44	Inventory	0.93	33.39	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	HS 20-44	Operating	1.55	55.77	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	HS 20-44	Inventory	0.93	33.42	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	HS 20-44	Operating	1.55	55.82	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	HS 20-44	Inventory	0.92	33.19	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	HS 20-44	Operating	1.54	55.43	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	HS 20-44	Inventory	0.87	31.46	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	HS 20-44	Operating	1.46	52.54	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	HS 20-44	Inventory	1.28	46.07	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	HS 20-44	Operating	2.14	76.94	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	HS 20-44	Inventory	0.64	22.91	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	HS 20-44	Operating	1.06	38.26	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	HS 20-44	Inventory	1.29	46.32	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	HS 20-44	Operating	2.15	77.36	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	HS 20-44	Inventory	1.35	48.62	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	HS 20-44	Operating	2.25	81.20	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	HS 20-44	Inventory	1.71	61.66	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	HS 20-44	Operating	2.86	102.96	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	HS 20-44	Inventory	1.41	50.86	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	HS 20-44	Operating	2.36	84.94	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	HS 20-44	Inventory	1.18	42.64	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		



## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Ra ted	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam G	HS 20-44	Operating	1.98	71.21	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	HS 20-44	Inventory	1.28	45.99	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	HS 20-44	Operating	2.13	76.81	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	HS 20-44	Inventory	1.31	47.34	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	HS 20-44	Operating	2.20	79.06	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	HS 20-44	Inventory	1.35	48.79	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	HS 20-44	Operating	2.26	81.48	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	EV2	Legal Operating	2.60	74.62	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	EV2	Legal Operating	2.53	72.76	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	EV2	Legal Operating	2.54	72.94	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	EV2	Legal Operating	2.55	73.30	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	EV2	Legal Operating	3.28	94.28	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	EV2	Legal Operating	2.50	71.83	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	EV2	Legal Operating	1.90	54.51	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	EV2	Legal Operating	1.89	54.46	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	EV2	Legal Operating	1.89	54.38	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	EV2	Legal Operating	1.88	54.11	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	EV2	Legal Operating	2.50	71.97	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	EV2	Legal Operating	1.80	51.72	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	EV2	Legal Operating	2.50	71.97	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	EV2	Legal Operating	2.59	74.35	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	EV2	Legal Operating	3.28	94.27	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	EV2	Legal Operating	2.73	78.40	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	EV2	Legal Operating	2.28	65.54	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	EV2	Legal Operating	2.45	70.43	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	EV2	Legal Operating	2.52	72.37	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	EV2	Legal Operating	2.59	74.58	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	EV3	Legal Operating	2.03	73.81	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	EV3	Legal Operating	1.98	71.97	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	EV3	Legal Operating	1.98	72.21	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	EV3	Legal Operating	1.99	72.56	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	EV3	Legal Operating	2.57	93.38	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	EV3	Legal Operating	1.99	72.34	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Ti m	Ra ted	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam G	EV3	Legal Operating	1.50	54.62	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	EV3	Legal Operating	1.50	54.63	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	EV3	Legal Operating	1.51	54.92	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	EV3	Legal Operating	1.49	54.31	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	EV3	Legal Operating	1.96	71.32	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	EV3	Legal Operating	1.43	51.85	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	EV3	Legal Operating	1.96	71.31	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	EV3	Legal Operating	2.02	73.61	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	EV3	Legal Operating	2.56	93.31	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	EV3	Legal Operating	2.13	77.58	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	EV3	Legal Operating	1.78	64.86	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	EV3	Legal Operating	1.92	69.69	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	EV3	Legal Operating	1.97	71.61	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	EV3	Legal Operating	2.03	73.77	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU4	Legal Operating	2.66	71.88	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU4	Legal Operating	2.60	70.12	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU4	Legal Operating	2.60	70.33	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU4	Legal Operating	2.62	70.69	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU4	Legal Operating	3.37	90.97	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU4	Legal Operating	2.65	71.51	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU4	Legal Operating	2.00	54.02	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU4	Legal Operating	2.00	54.05	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU4	Legal Operating	2.01	54.18	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU4	Legal Operating	1.99	53.70	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU4	Legal Operating	2.58	69.74	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU4	Legal Operating	1.90	51.25	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU4	Legal Operating	2.58	69.67	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU4	Legal Operating	2.65	71.59	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU4	Legal Operating	3.36	90.75	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU4	Legal Operating	2.80	75.64	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU4	Legal Operating	2.34	63.18	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU4	Legal Operating	2.51	67.83	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU4	Legal Operating	2.58	69.65	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Ra ted	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam K	SU4	Legal Operating	2.66	71.75	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU5	Legal Operating	2.42	75.03	338.030	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU5	Legal Operating	2.36	73.19	340.261	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU5	Legal Operating	2.37	73.47	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU5	Legal Operating	2.38	73.83	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU5	Legal Operating	3.06	94.96	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU5	Legal Operating	2.33	72.31	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU5	Legal Operating	1.76	54.66	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU5	Legal Operating	1.77	54.74	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU5	Legal Operating	1.77	54.80	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU5	Legal Operating	1.75	54.31	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU5	Legal Operating	2.33	72.28	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU5	Legal Operating	1.68	52.01	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU5	Legal Operating	2.33	72.35	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU5	Legal Operating	2.42	74.91	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU5	Legal Operating	3.06	94.96	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU5	Legal Operating	2.54	78.87	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU5	Legal Operating	2.13	65.99	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU5	Legal Operating	2.29	70.95	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU5	Legal Operating	2.35	72.93	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU5	Legal Operating	2.42	75.14	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU6	Legal Operating	2.18	75.89	338.030	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU6	Legal Operating	2.13	74.05	340.261	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU6	Legal Operating	2.14	74.51	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU6	Legal Operating	2.15	74.89	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU6	Legal Operating	2.77	96.32	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU6	Legal Operating	2.09	72.59	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU6	Legal Operating	1.58	54.93	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU6	Legal Operating	1.58	55.05	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU6	Legal Operating	1.58	55.04	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU6	Legal Operating	1.57	54.60	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU6	Legal Operating	2.10	73.10	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU6	Legal Operating	1.50	52.28	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Rated	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam C	SU6	Legal Operating	2.11	73.24	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU6	Legal Operating	2.19	76.05	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU6	Legal Operating	2.77	96.41	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU6	Legal Operating	2.30	79.93	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU6	Legal Operating	1.93	66.92	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU6	Legal Operating	2.07	71.99	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU6	Legal Operating	2.13	74.03	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU6	Legal Operating	2.19	76.27	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU7	Legal Operating	2.01	77.89	100.656	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU7	Legal Operating	1.96	76.10	104.115	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU7	Legal Operating	1.99	77.25	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU7	Legal Operating	2.00	77.65	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU7	Legal Operating	2.58	99.86	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU7	Legal Operating	1.89	73.21	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU7	Legal Operating	1.43	55.41	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU7	Legal Operating	1.43	55.52	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU7	Legal Operating	1.43	55.53	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU7	Legal Operating	1.42	55.06	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	SU7	Legal Operating	1.94	75.27	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	SU7	Legal Operating	1.37	52.99	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	SU7	Legal Operating	1.95	75.56	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	SU7	Legal Operating	2.04	79.04	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	SU7	Legal Operating	2.59	100.20	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	SU7	Legal Operating	2.13	82.73	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	SU7	Legal Operating	1.79	69.37	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	SU7	Legal Operating	1.93	74.73	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	SU7	Legal Operating	1.99	76.94	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	SU7	Legal Operating	2.05	79.27	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	OH-2F1	Legal Operating	4.45	66.74	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	OH-2F1	Legal Operating	4.34	65.11	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	OH-2F1	Legal Operating	4.35	65.32	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	OH-2F1	Legal Operating	4.38	65.68	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	OH-2F1	Legal Operating	5.63	84.50	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

## Member Rating Results Report

Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Ra ted	Imp act	La ne	Vehi cle	Di stri
1833405	Superstructure Def	Beam F	OH-2F1	Legal Operating	4.68	70.19	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	OH-2F1	Legal Operating	3.55	53.29	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	OH-2F1	Legal Operating	3.56	53.39	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	OH-2F1	Legal Operating	3.55	53.20	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	OH-2F1	Legal Operating	3.52	52.82	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	OH-2F1	Legal Operating	4.38	65.62	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	OH-2F1	Legal Operating	3.35	50.26	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	OH-2F1	Legal Operating	4.35	65.29	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	OH-2F1	Legal Operating	4.42	66.24	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	OH-2F1	Legal Operating	5.60	83.95	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	OH-2F1	Legal Operating	4.70	70.45	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	OH-2F1	Legal Operating	3.91	58.72	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	OH-2F1	Legal Operating	4.19	62.84	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	OH-2F1	Legal Operating	4.29	64.43	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	OH-2F1	Legal Operating	4.42	66.36	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	OH-3F1	Legal Operating	3.03	69.66	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	OH-3F1	Legal Operating	2.95	67.92	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	OH-3F1	Legal Operating	2.96	68.17	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	OH-3F1	Legal Operating	2.98	68.53	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	OH-3F1	Legal Operating	3.83	88.19	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	OH-3F1	Legal Operating	3.07	70.67	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	OH-3F1	Legal Operating	2.33	53.64	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	OH-3F1	Legal Operating	2.33	53.63	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam J	OH-3F1	Legal Operating	2.33	53.52	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam K	OH-3F1	Legal Operating	2.32	53.27	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam A	OH-3F1	Legal Operating	2.95	67.95	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam B	OH-3F1	Legal Operating	2.20	50.66	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam C	OH-3F1	Legal Operating	2.95	67.78	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam D	OH-3F1	Legal Operating	3.01	69.29	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam E	OH-3F1	Legal Operating	3.82	87.82	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam F	OH-3F1	Legal Operating	3.19	73.38	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam G	OH-3F1	Legal Operating	2.66	61.24	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
1833405	Superstructure Def	Beam H	OH-3F1	Legal Operating	2.85	65.67	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

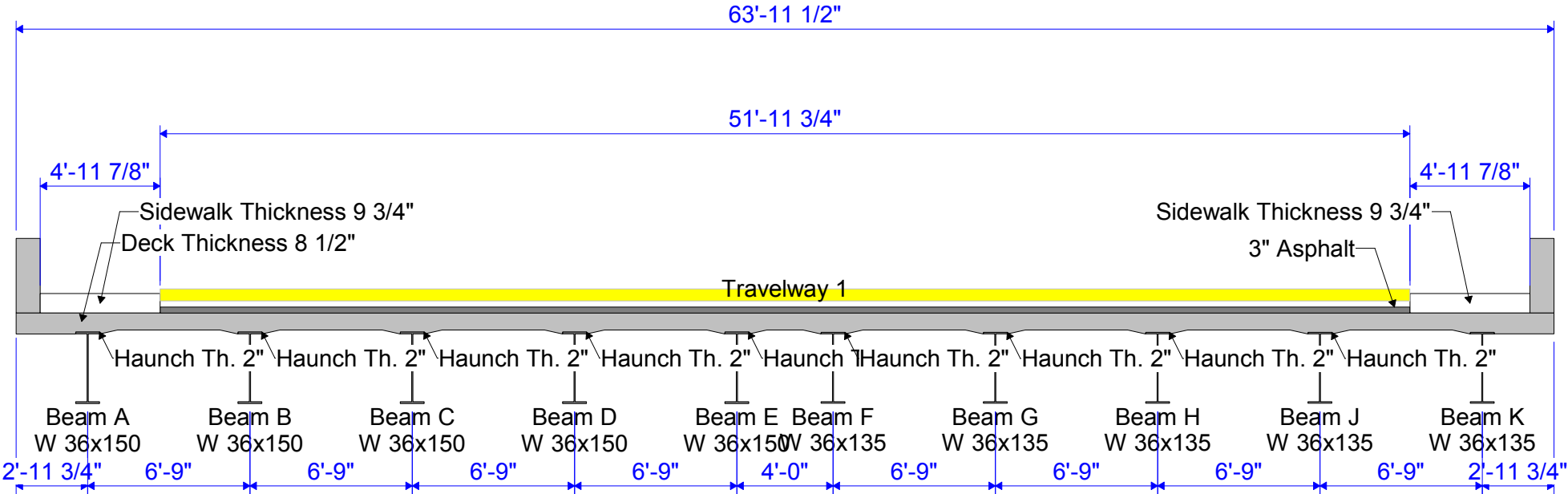


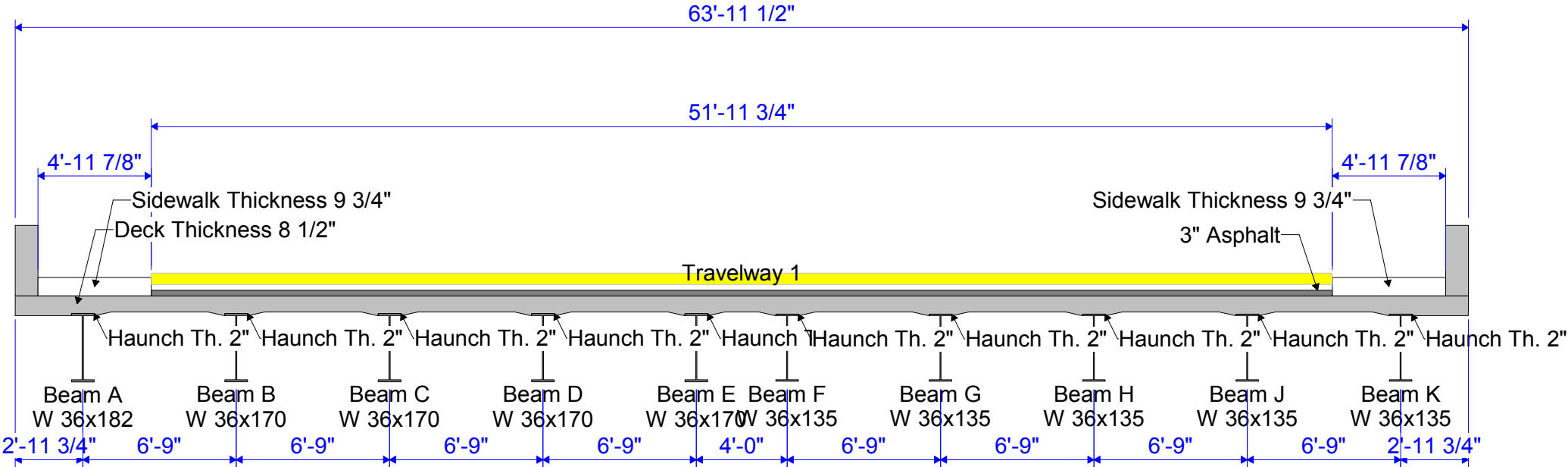
## Member Rating Results Report

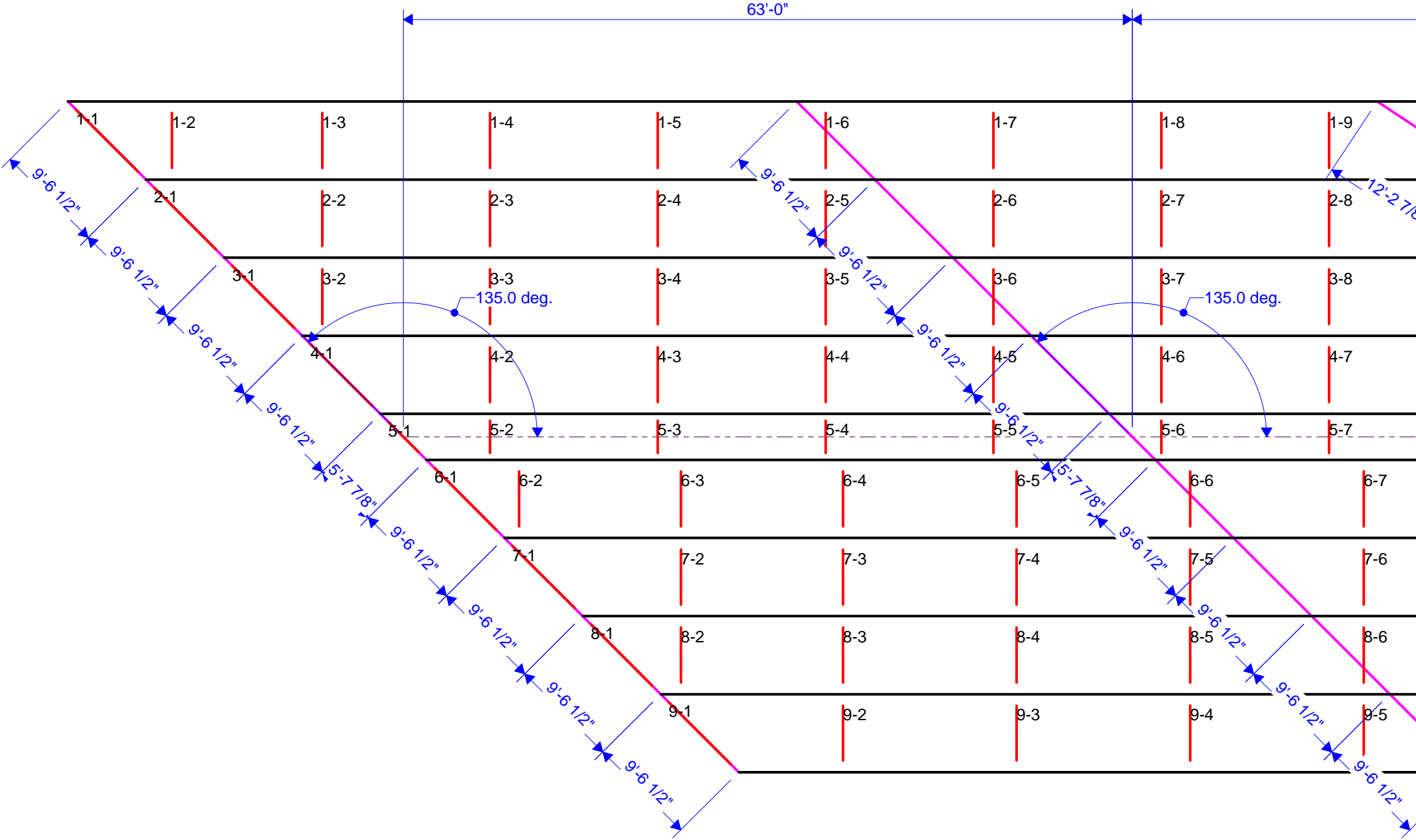
	Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Ra ted	Imp act	La ne	Vehi cle	Di stri
	1833405	Superstructure Def	Beam J	OH-3F1	Legal Operating	2.93	67.39	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam K	OH-3F1	Legal Operating	3.02	69.42	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam A	OH-4F1	Legal Operating	2.68	72.45	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam B	OH-4F1	Legal Operating	2.62	70.69	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam C	OH-4F1	Legal Operating	2.63	70.87	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam D	OH-4F1	Legal Operating	2.64	71.24	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam E	OH-4F1	Legal Operating	3.39	91.64	25.200	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam F	OH-4F1	Legal Operating	2.64	71.36	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam G	OH-4F1	Legal Operating	2.00	53.91	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam H	OH-4F1	Legal Operating	2.00	53.95	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam J	OH-4F1	Legal Operating	2.00	54.06	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam K	OH-4F1	Legal Operating	1.98	53.55	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam A	OH-4F1	Legal Operating	2.60	70.17	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam B	OH-4F1	Legal Operating	1.90	51.23	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam C	OH-4F1	Legal Operating	2.60	70.13	28.286	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam D	OH-4F1	Legal Operating	2.67	72.16	313.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam E	OH-4F1	Legal Operating	3.39	91.48	305.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam F	OH-4F1	Legal Operating	2.82	76.21	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam G	OH-4F1	Legal Operating	2.36	63.67	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam H	OH-4F1	Legal Operating	2.53	68.37	24.531	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam J	OH-4F1	Legal Operating	2.60	70.22	276.109	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam K	OH-4F1	Legal Operating	2.68	72.35	267.945	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam A	OH-5C1	Legal Operating	2.40	95.95	100.656	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam B	OH-5C1	Legal Operating	2.34	93.51	104.115	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam C	OH-5C1	Legal Operating	2.40	96.02	107.563	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam D	OH-5C1	Legal Operating	2.45	97.88	111.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam E	OH-5C1	Legal Operating	3.18	127.26	114.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam F	OH-5C1	Legal Operating	2.27	90.85	316.021	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam G	OH-5C1	Legal Operating	1.73	69.05	319.479	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam H	OH-5C1	Legal Operating	1.72	68.92	322.938	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam J	OH-5C1	Legal Operating	1.73	69.01	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam K	OH-5C1	Legal Operating	1.72	68.87	326.385	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam A	OH-5C1	Legal Operating	2.74	109.50	29.920	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

## Member Rating Results Report

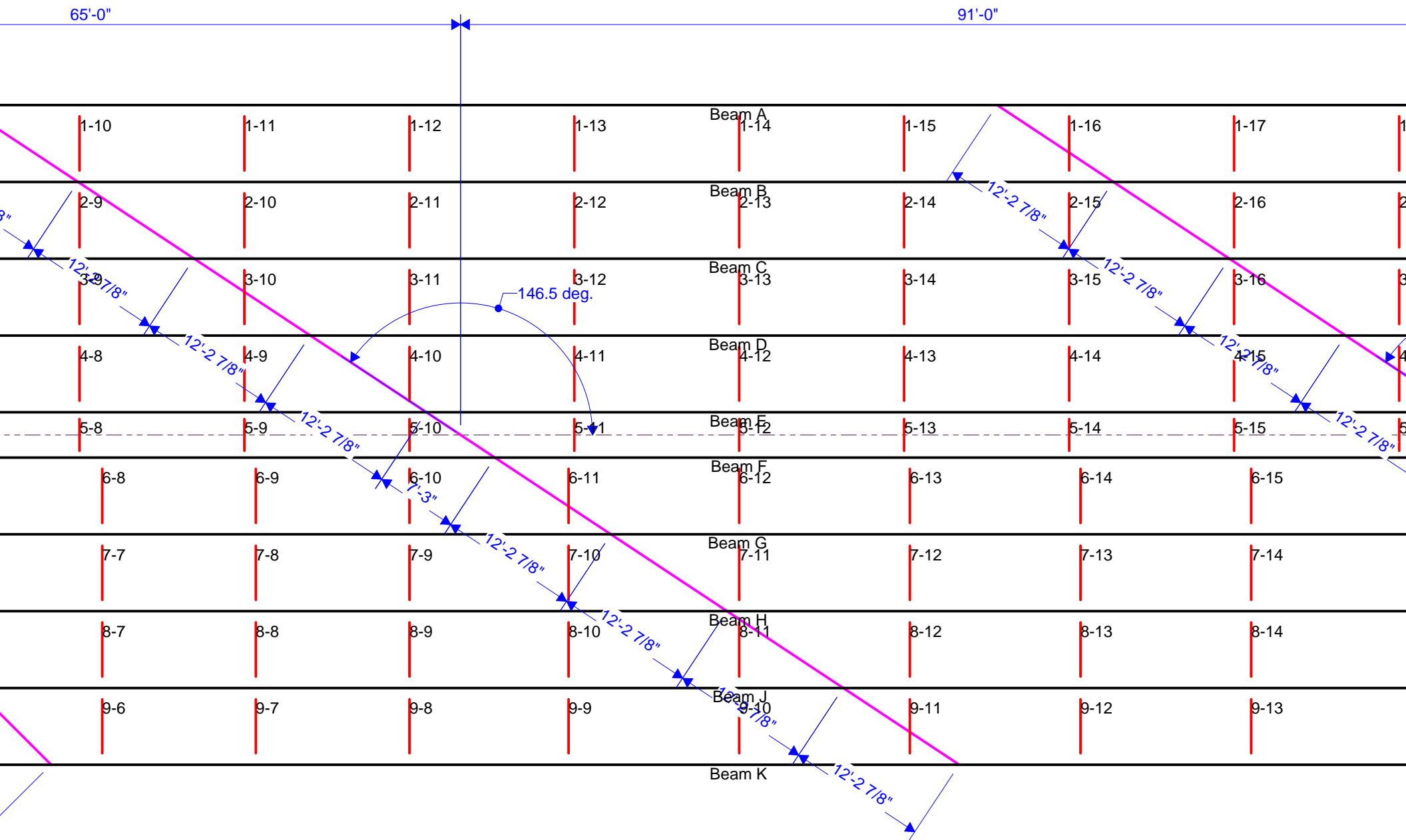
	Bridge Id	Structure	Member	Vehicle	Rating Level	Rating Factor	Capacity (Ton)	Location (ft)	Rating Metho	Up To	DB	Tim	Rated	Impact	Lane	Vehicle	Distri
	1833405	Superstructure Def	Beam B	OH-5C1	Legal Operating	1.49	59.58	72.760	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
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	1833405	Superstructure Def	Beam D	OH-5C1	Legal Operating	2.90	116.02	277.604	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam E	OH-5C1	Legal Operating	3.90	155.89	269.440	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam F	OH-5C1	Legal Operating	3.20	127.93	26.166	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam G	OH-5C1	Legal Operating	2.71	108.58	25.349	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam H	OH-5C1	Legal Operating	2.80	111.84	252.260	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam J	OH-5C1	Legal Operating	2.88	115.06	244.094	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		
	1833405	Superstructure Def	Beam K	OH-5C1	Legal Operating	3.05	121.94	235.927	LFD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	W	brr	As	A		

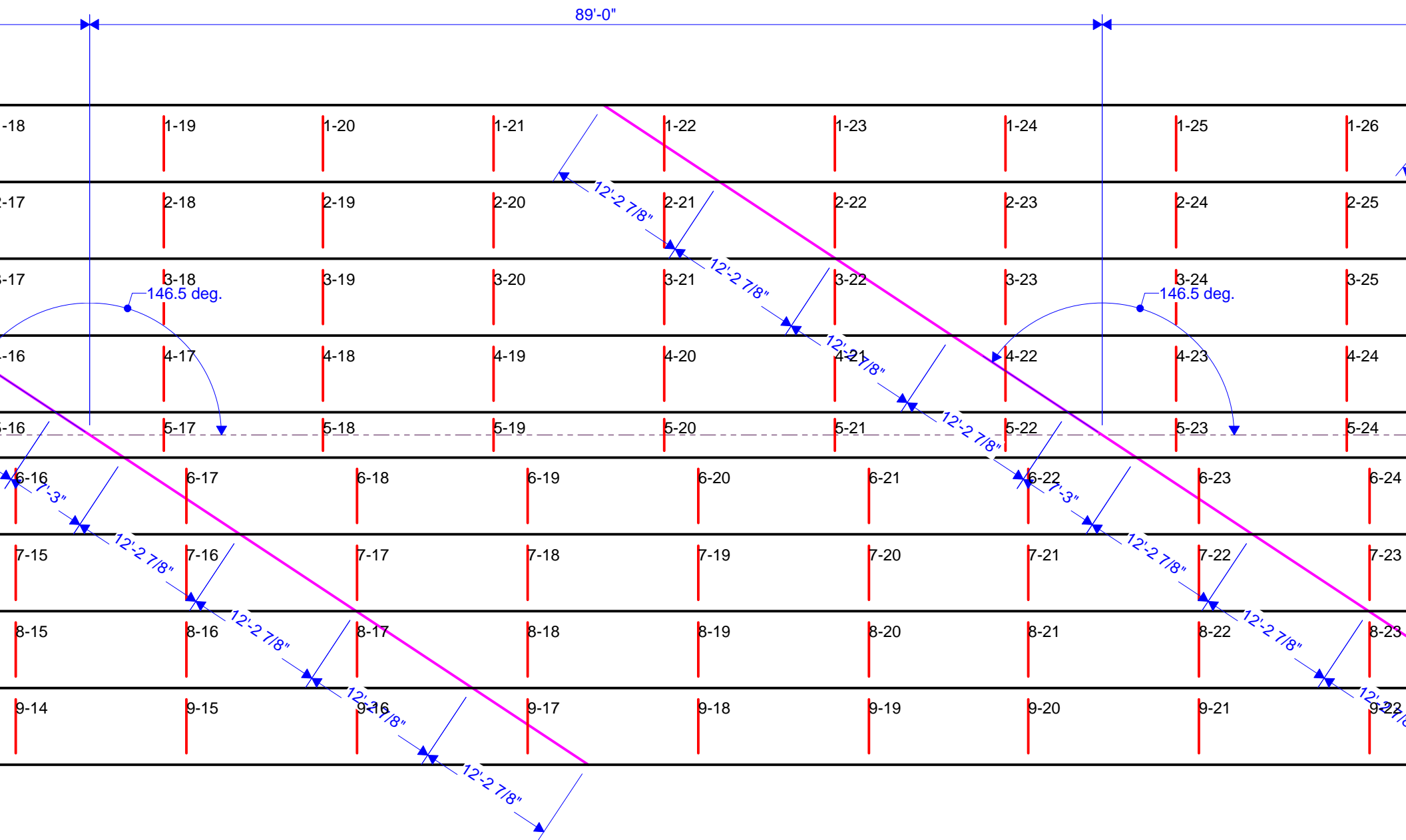


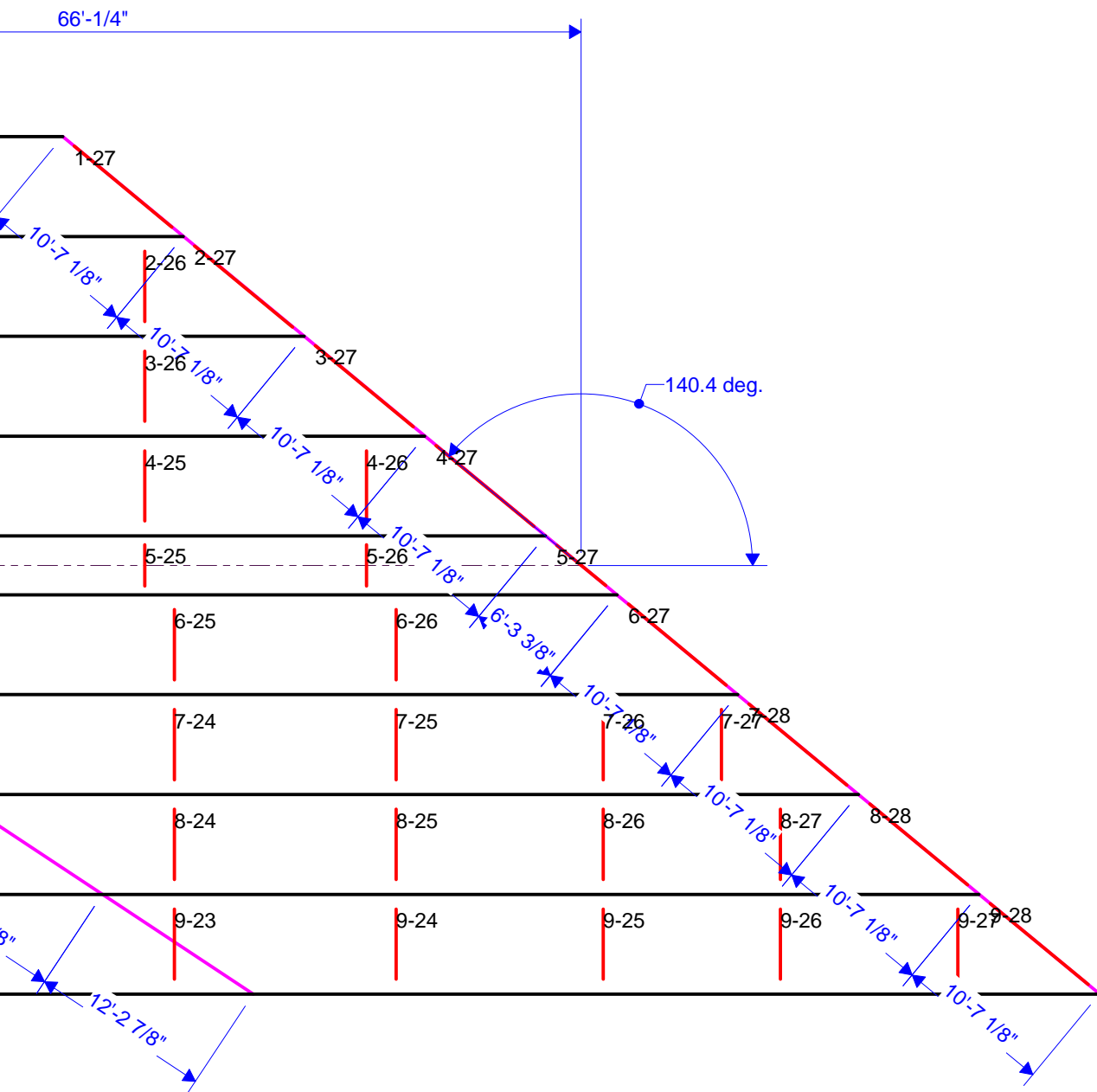


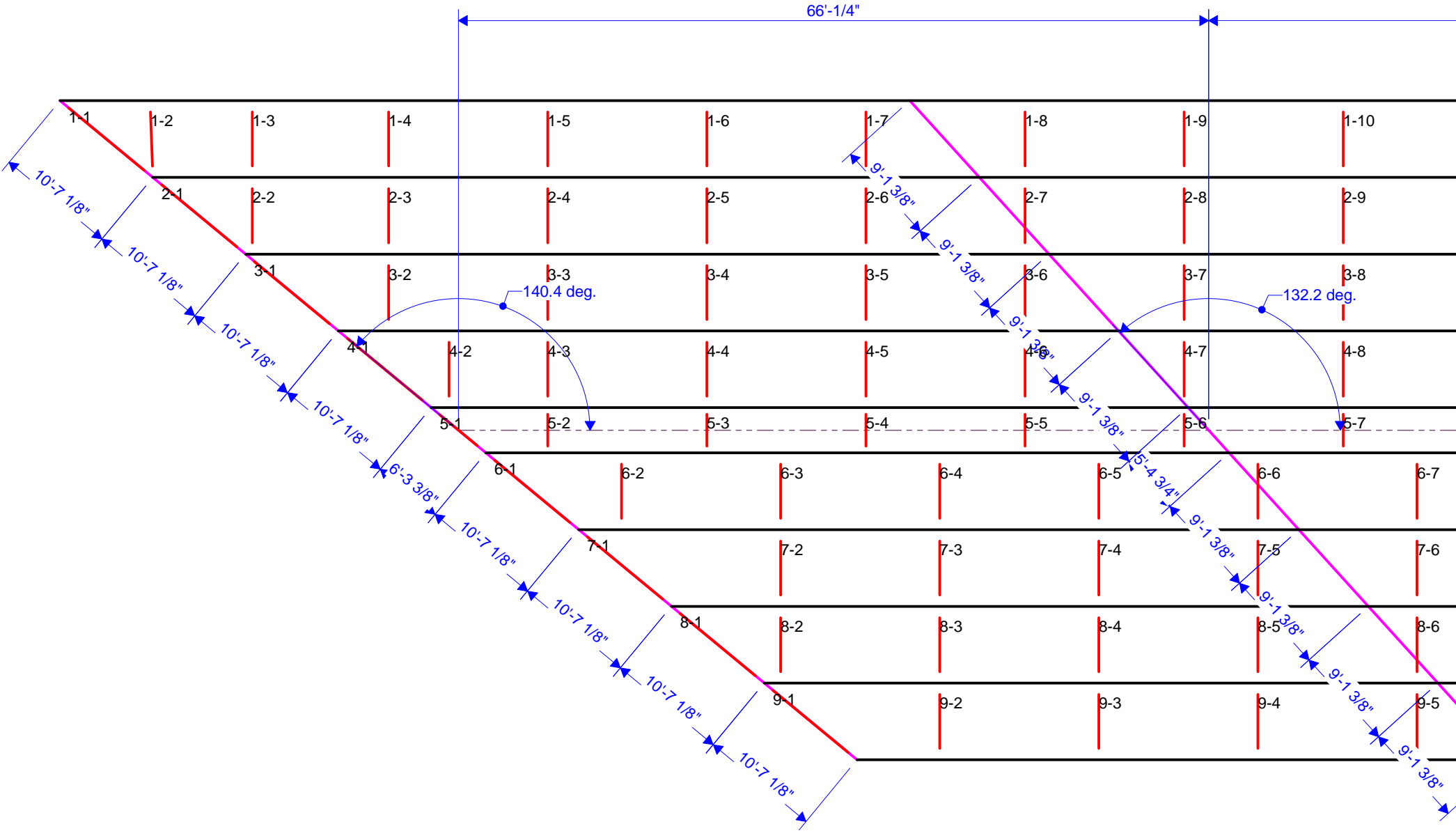


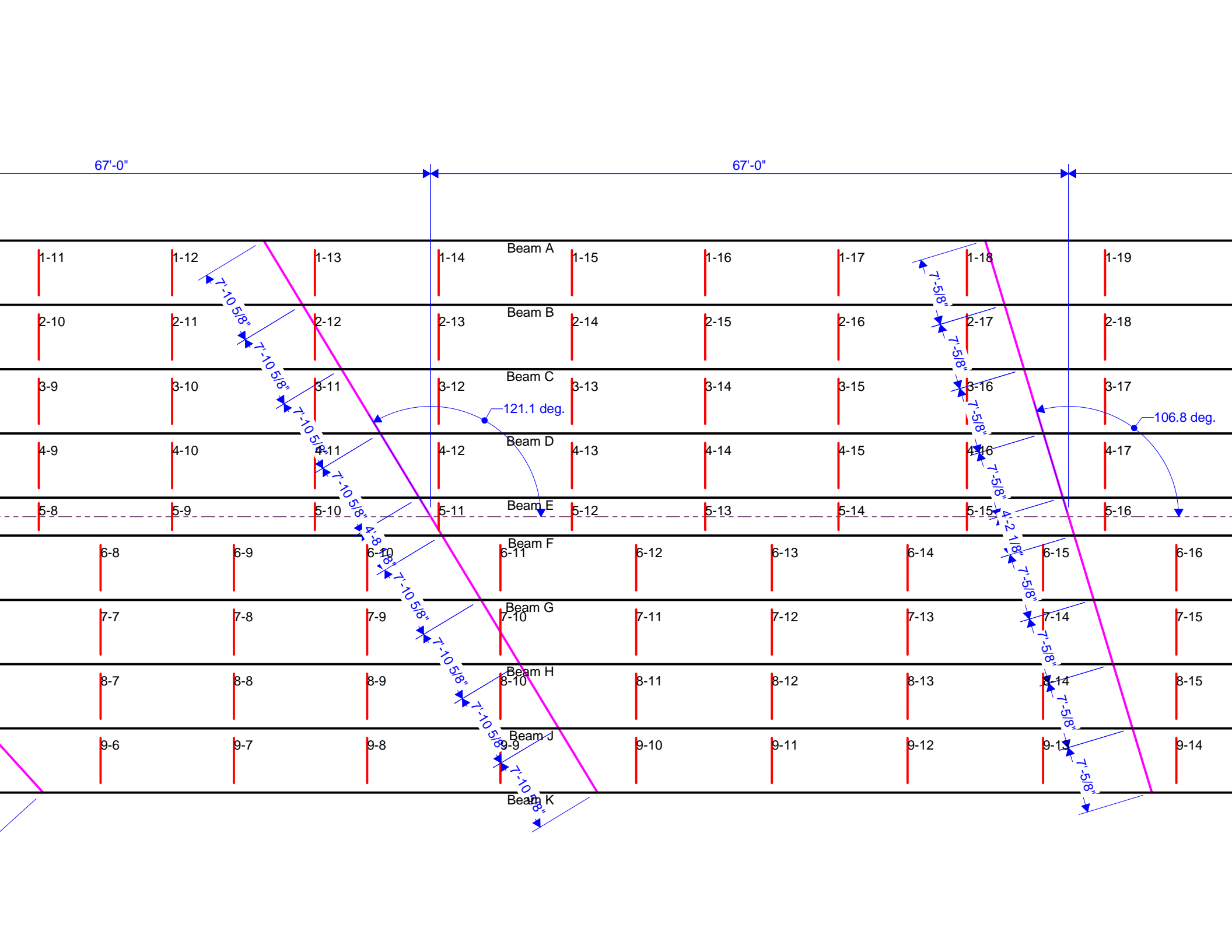




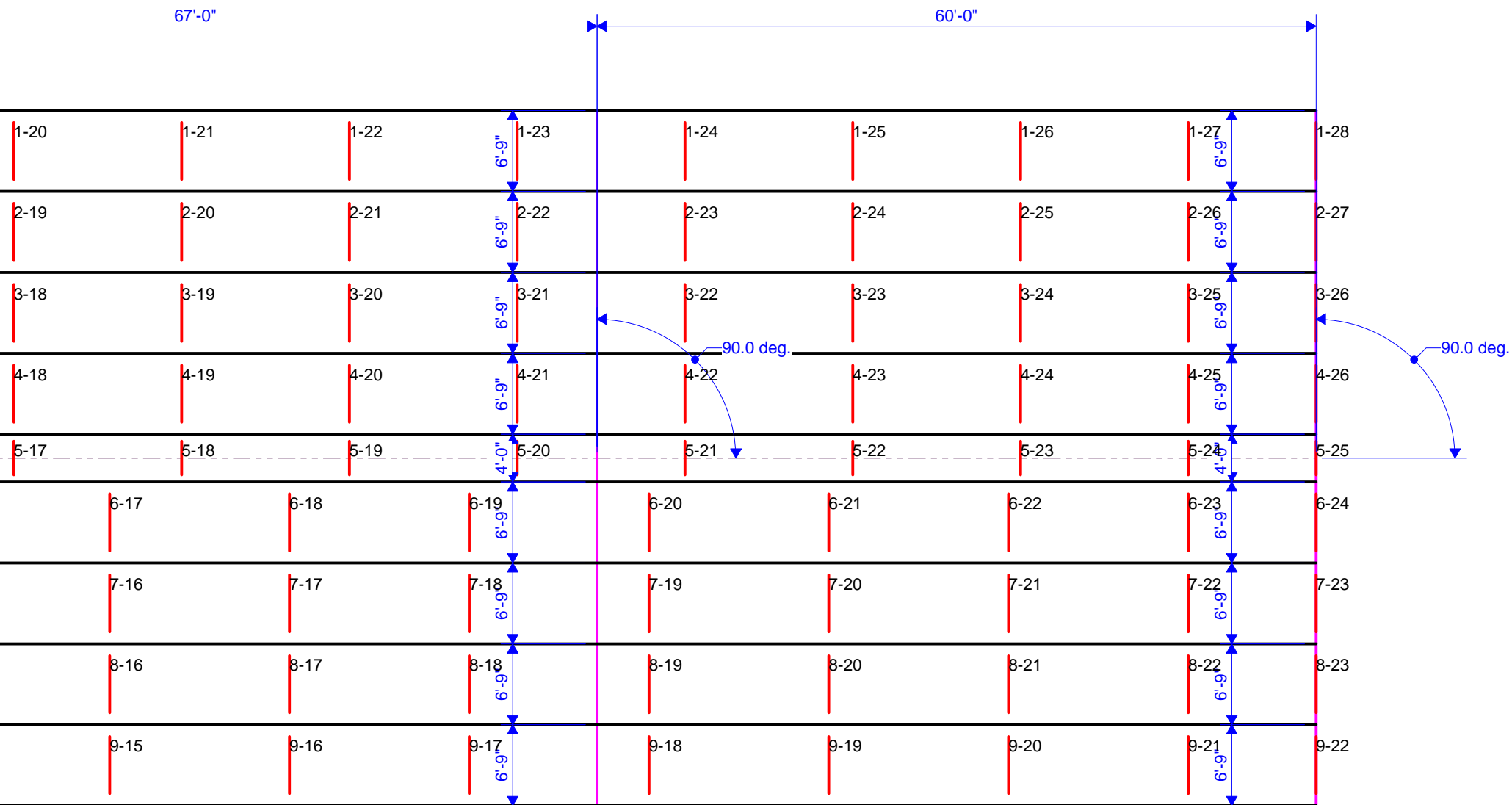












# APPENDIX G

## Cost Estimates

### Estimated Construction Costs

Long-Range Capital Improvements (50 Years)				
	Qty	Unit	Unit Cost	Total Cost
Complete Bridge Replacement	76,800	SF	\$250.00	\$19,200,000
			20% Contingency	\$3,840,000
			Engineering	\$3,456,000
			<b>Long Range Replacement (30 Year) Subtotal</b>	<b>\$26,496,000</b>
			<b>Inflated @ 3% per year to 2070</b>	<b>\$113,000,000</b>

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