STRUCTURE GEOTECHNICAL REPORT
PEDESTRIAN BRIDGE AND TRAIL
OVER IL ROUTE 59
VILLAGE OF STREAMWOOD
COOK COUNTY, ILLINOIS

For
TranSystems
222 South Riverside Plaza, Suite 610
Chicago, IL 60606

Submitted by
Wang Engineering, Inc.
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11. Abstract

A new pedestrian bridge and trail (boardwalk) over IL Route 59 is being proposed. The proposed structures will have a total length of about 2,245 feet and it will be supported by 87 piers and two abutments. This report provides geotechnical recommendations for the design of the proposed bridge and boardwalk piers shown in the preliminary general plan drawing.

Beneath the 4- to 36-inch thick topsoil, the general lithologic profile includes up to 10 feet of cohesive and granular fill or up to 10 feet of very soft to stiff silty clay to silty clay loam. Most of soil borings drilled west of IL 59 and a couple of borings drilled on the east of IL 59 revealed up to 35 feet of peat and organic soils. Deeper foundation soils include stiff to hard silty clay followed by medium dense to dense sand to sand and gravel to boring termination depths. Groundwater was at 0 to 30 feet below ground surface or at elevations of 746 to 774.0 feet. The sites classify in the Seismic Class D.

The proposed piers can be supported by drilled shafts installed into stiff to hard clay or medium dense to dense sand to sandy gravel at elevations ranging from 709 to 759 feet. Geotechnical parameters for shafts analyses under axial and lateral loads are provided. Casing will be required within the areas where peat and soft soils are present. Hard drilling conditions due to the presence of possible cobbles are anticipated at depths ranging from 5 to 73 feet below ground surface or at elevations of 701 to 769 feet.

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TRANSYSTEMS

1.0 INTRODUCTION

This report presents the results of Wang Engineering, Inc.'s (Wang) subsurface investigation, laboratory testing, geotechnical evaluations, and recommendations for the proposed design and construction of a Pedestrian Bridge crossing over IL Route 59 (IL 59) and associated trail (boardwalk) in the Village of Streamwood, Cook County, Illinois. A *Site Location Map* is presented as Exhibit 1.

The proposed structures will be constructed to connect the existing trail over IL 59. This report presents our subsurface investigation, engineering analyses, and recommendations for the design and construction of the proposed bridge and trails.

1.1 Proposed Structure

Based on the draft General Plan and Elevation (GPE) drawings provided on August 10, 2021, prepared by TranSystems Corporation (TranSystems), Wang understands that the proposed bridge and trail will be a multi-span structure with 87 piers and two abutments. The bridge and trail will have a total length of about 2,244.67 feet, ranging from Station 100+13.33 to Station 122+58.00. Draft GPE drawings are included as Appendix C. The three main sections of the structures are as follows:

- West Boardwalk Approach
  This section consists of 33 spans boardwalk starting from west abutment at Station 100+13.33 and continues from Pier #1 through Pier #33 at Station 106+68.85. The lengths of spans vary from 13'-10.9" to 20'-0". The boardwalk will be 15.25-foot wide and will be supported by drilled shafts.

- Bridge Truss Spans
  The proposed bridge truss will have five spans. The structure will be 14'-0" clear wide and 627'-0" long starting from Pier #33 at Station 106+68.55 to Pier #38 at Station 112+95.85. The lengths of spans vary from 105'-0" to 207'-0" with the span over IL 59 being the longest span.

- East Boardwalk Approach
  This section consists of 50 spans boardwalk starting from Pier #38 Station 112+95.85 through Pier #87 and east abutment at Station 122+58.00. Spans lengths range from 12'-2.6" to 20'-0". The boardwalk will be 15.25-foot wide and will be supported by drilled shafts.

The purpose of this investigation was to characterize the site soil and groundwater conditions, perform geotechnical analyses, and provide recommendations for the design and construction of the proposed bridge foundations and associated trails.

2.0 GEOLOGICAL SETTING

2.1 Physiography

Northwestern Cook County is part of the Wheaton Morainal Country within the Till Plains Physiographic Section (Leighton et al. 1948), which is characterized hummocky morainal uplands containing numerous kettles and man-made lakes (Stumpf 2007). The project site is situated at the limit between Valparaiso Morainic System and West Chicago Moraine, along an unnamed tributary to the Poplar Creek. This tributary flows through a hummocky topography that favored an irregular floodplain with low lands and mushes. Elevations across the proposed alignment range from 774 to 783 feet. Exhibit 2 illustrates the site geological map.

2.2 Site Pedological Features

After the Wisconsin glaciation, several types of soils developed through weathering of glacigenic sediments. In Cook County, the soil types were surveyed by the United States Department of Agriculture (2014). Summaries of the USDA soil types along the project area, including their relevant geotechnical index properties and suitability as subgrade and road fill, are shown in the Site Pedological Map and Data (Exhibit 2). The soil information provided by USDA is meant to be used as a general reference in the absence of a site-specific investigation. In this instance, our findings regarding soil features affecting suitability for proposed construction are mainly consistent with the information presented in Exhibit 3.

The pedological data show peat and organic soils along with fat clays make about 80% of the subsurface soil within the project limits. These soils are characterized by high shrink-swell potential, moderate to high organic matter content, high frost action, high ponding frequency, with slow to very slow infiltration rate.

2.3 Surficial Cover

The surficial cover is mainly the result of Wisconsin-age glacial activity (Hansel and Johnson, 1996). The glacigenic deposits were emplaced during pulsating advances and retreats of an icesheet lobe responsible for the formation of end moraines and associated low-relief till and lake plains. Kettle depressions and low-lying areas are filled with up to 15 feet of fine, sorted sediment of the Equality Formation, and peat and marl of the Grayslake Peat that veneers most of the project area. The project area is dominated by the Wadsworth Formation clayey diamicton and silty loamy diamicton and sorted sediments associated with the Haeger Member of the Lemont Formation. They are intercalated with lenses and layers of sorted sand and gravel outwash deposits of the Henry Formation, overlying thick deposits of clay loam diamicton of the Tiskilwa Formation. Multiple advances and retreats of the ice front account for the layers in the moraine (Hansel and Johnson 1996). The drift thickness along the project is about 125 feet (Leetaru et al. 2004).

2.4 Bedrock

In northwestern Cook County the surficial cover rests unconformably on top of Silurian-age dolostone. The top of the bedrock lies approximately 125 feet below the ground surface (bgs). The top of the bedrock lies at about 650 feet elevation (National Geodetic Vertical Datum) (Leetaru et al. 2004).

Our subsurface investigation results fit into the local geologic context. The borings drilled in the project area revealed that the native sediments consist of lacustrine clay to silty clay loam of the Equality Formation containing isolated areas of organic matter, peat and organic soil of the Grayslake Peat, silty clay to silty clay loam diamicton of the Wadsworth Formation, and sand and gravel outwash of the Henry Formation.

3.0 METHODS OF INVESTIGATION

The following sections outline the subsurface and laboratory investigations performed by Wang.

3.1 Field Investigation

The subsurface investigation consisted of four bridge borings, designated as TB-01 through TB-04, and 18 trail borings, designated as BWB-01 through BWB-15, BWB-02B, BWB-03B, and BWB-06-SH drilled by Wang from April 28 to May 18, 2021. Borings B-1 and B-2 drilled during the preliminary design stage in September 2020 were also considered to supplement our subsurface investigation. The borings were drilled from elevations of 773.6 to 780.8 feet to depths of 30 to 75 feet bgs. As-drilled northing and easting were surveyed by Wang and elevations, stations, and offsets were provided by TranSystems. Boring location data are presented in the *Boring Logs* (Appendix A) and the as-drilled boring locations are shown in the *Boring Location Plan* (Exhibit 3). The alignments, existing ground surface elevations, and the corresponding borings with termination depth ranges are summarized in Table 1.

Table 1: Subsurface Investigation Summary

Location	Reference Borings	Existing Surface Elevation (feet)	Boring Depth (feet)
West Boardwalk Approach	BWB-01 through BWB-06, BWB-02B, BWB-03B, and BWB-06-SH	773.6 to 774.4	30.0 to 60.0
Bridge	B-1, B-2, and TB-01 through TB-04	773.6 to 774.9	75.0
East Boardwalk Approach	BWB-07 through BWB-15	774.5 to 780.8	30.0

ATV-mounted drilling rig, equipped with hollow stem augers, was used to advance and maintain open boreholes. Mud rotary drilling techniques were used from below 10.0 feet bgs to advance Borings TB-01 through TB-04. Soil sampling was performed according to AASHTO T206, *"Penetration Test and Split Barrel Sampling of Soils."* The soil was sampled at 2.5-foot intervals to 30 feet bgs and at 5-foot intervals to the boring termination depths. Soil samples collected from each sampling interval were placed in sealed jars and transported to the laboratory for further examination and laboratory testing.

Field boring logs, prepared and maintained by a Wang field engineer, included lithological descriptions, visual-manual soil classifications, results of Rimac and pocket penetrometer unconfined compressive strength tests, and results of Standard Penetration Tests (SPT) recorded as blows per 6 inches of penetration.

Groundwater levels were measured while drilling and at completion of each boring. At each boring location, the borehole was backfilled upon completion with grouting and the surface was restored as much as possible to its original condition.

3.2 Laboratory Testing

The soil samples were tested in the laboratory for moisture content (AASHTO T265). Organic content (AASHTO T267), Atterberg limits (AASHTO T89 and T90), and particle size analysis (AASHTO T88) tests were performed on selected samples. Field visual descriptions of the soil samples were verified in the laboratory and index tested soils were classified according to the IDH Soil Classification System. The laboratory test results are shown in the *Boring Logs* (Appendix A) and in the *Laboratory Test Results* (Appendix B).

4.0 INVESTIGATION RESULTS

Detailed description of the soil condition encountered during the subsurface investigation is presented in the attached *Boring Logs* (Appendix A) and in the *Soil Profile* (Exhibit 4). Please note that strata contact lines represent approximate boundaries between soil types. The actual transition between soil types in the field may be gradual in horizontal and vertical directions.

4.1 Lithological Profile

The proposed improvements will be constructed through undeveloped area located south of Poplar Creek and both sides of IL 59. Topsoil thickness as encountered by our investigation range from 4 to 36 inches with an average of 9 inches. In descending order, the general lithologic succession encountered beneath the topsoil includes: 1) man-made ground (fill); 2) very soft to stiff silty clay to silty clay loam; 3) peat and organic soils; 4) stiff to hard silty clay; and 5) medium dense to dense sand to sand and gravel.

1) Man-made ground (fill)

Beneath the topsoil, Boring BWB-15 which is located at the east end of the trail, encountered 10.0 feet of fill. The fill consists of medium stiff to hard, gray to brown silty clay to silty clay loam and clay loam and 2.5 feet of medium dense, brown sand. The cohesive fill has unconfined compressive strength (Q_u) values of 0.5 to 5.1 tsf and moisture content values of 12 to 20%. The sand fill has a SPT N-value of 25 blows per foot and a moisture content value of 8%.

2) Very soft to stiff silty clay to silty clay loam

Beneath the topsoil, at depths of 0.3 to 3.0 feet bgs, the borings advanced through 2.3 to 10.0 feet of very soft to stiff silty clay to silty clay loam with some organic matter. This unit has Q_u values of less than 0.25 to 1.8 tsf and moisture content values of 13 to 28% with higher moisture content values of 31 to 95% indicating organic inclusions. Laboratory index testing on samples of this unit shows liquid limit (L_L) values of 34 and 63% and plastic limit (P_L) values of 18 to 24%.

3) Peat and organic soils

Beneath the topsoil or the soft silty clay to silty clay loam, at depths of 0.5 to 5.5 feet bgs (769 to 774 feet), all boring drilled on the west side of IL 59 and two borings on the east side of IL 59 augured through 2.5 to 35.0 feet of peat, organic soils, and soft silty clay. Borings BWB-04, BWB-06, and TB-01 revealed 2.5 and 10 feet of very loose sandy loam to sand interbedded within the organic soils. The peat is characterized by Q_u values of less than 0.08 to 0.5 tsf, SPT N-values of 0 to 6 blows per foot, and moisture content values of 181 to 686%. The organic silty clay is characterized by Q_u values of less than 0.08 to 0.33 tsf, SPT N-values of 0 to 1 blows per foot and moisture content values of 31 to 96%. The bottom soft silty clay to silty clay loam is characterized by 0.16 to 0.5 tsf and moisture content values of 21 to 35%. The interbedded sand has SPT-N values of 0 to 9 blows per foot and moisture content values of 18 to 23%. Laboratory index testing on samples of this unit shows L_L values of 28 to 73% and P_L values of 14 to 28%. The split spoon sampler advanced through this mostly under hammer weight.

4) Stiff to hard silty clay

At depths of 4.0 to 35.5 feet bgs (elevation 738.2 to 774.8 feet), the borings advanced through stiff to hard silty clay to silty clay loam with silt, sand, and gravel lenses. The soil has Q_u values of 1.1 to 6.5 tsf and moisture content values of 15 to 23%.

5) Medium dense to dense sand to sand and gravel

At depths of 3.0 to 28.0 feet bgs (elevation 746.1 to 771.4 feet), the borings advanced through medium dense to dense, saturated sand to sand and gravel. This soil unit has N-values of 6 to 54 blows per foot and moisture content values of 6 to 22%. Cobbles were encountered throughout this unit.

4.2 Groundwater Conditions

Groundwater was encountered while drilling and at the completion of drilling at elevations of 746 to 774 feet (0 to 30 feet bgs). We estimate the granular layers are water-bearing. In addition, during periods of precipitation, we anticipate ponding water to be common throughout the project area. It should be noted that groundwater levels might vary with seasonal rainfall patterns and long-term climate fluctuations or be influenced by local site conditions.

5.0 FOUNDATION ANALYSIS AND RECOMMENDATIONS

Geotechnical evaluations and recommendations for the bridge and trail are included in the following sections. The preliminary general plan drawing provided by TranSystems shows the proposed structure will have a total of 87 piers and two abutments. There are three main sections of the structure: west boardwalk approach (Piers 1 to 33), (Piers 33 to 38), and east boardwalk approach (Piers 38 to 87). As per information received from TranSystems, we understand the piers will be supported on drilled shafts. Recommendations for the design and construction of drilled shafts are discussed in the following sections.

5.1 Seismic Design Considerations

The seismic site class was determined in accordance with the IDOT All Geotechnical Manual Users (AGMU) 9.1 (2009) method of analysis. The soils within the top 100 feet have a weighted average N value of 19 blows per foot (AASHTO 2017; Method B controlling), and the results classify the site in the Seismic Site Class D.

The project location belongs to the Seismic Performance Zone 1. The seismic spectral acceleration parameters recommended for design in accordance with AASHTO LRFD Bridge Design Specifications (2017) are summarized in Table 2. According to the IDOT Bridge Manual (2012), liquefaction analysis is not required for sites in Seismic Performance Zone 1.

Table 2: Recommended Seismic Design Parameters

Spectral Acceleration Period (Sec)	Spectral Acceleration Coefficient[1] (% g)	Site Factors	Design Spectrum for Site Class D[2] (% g)
0	PGA= 4.3	F_{pga}= 1.6	**A_s= 6.9**
0.2	S_s= 9.4	F_a= 1.6	**S_{DS}= 15.0**
1	S_1= 3.5	F_v= 2.4	**S_{D1}= 8.4**

1) Spectral acceleration coefficients from AASHTO LRFD, 2020

2) Site Class D Spectrum to be included on plans; $A_s = PGA*F_{pga}$; $S_{DS}= S_s*F_a$; $S_{D1}= S_1*F_v$

5.2 Structure Foundations

According to the General Plan and Elevation (GPE) drawings prepared by TranSystems, Wang understands the proposed bridge piers will be supported on drilled shafts. The estimated maximum factored service and strength loads are summarized in Table 3.

Table 3: Preliminary Foundation Loads

Pier Type	Pier ID	Maximum Vertical Reaction (per Shaft)		Lateral Load (per shaft; kips)
		Service (kips)	Strength (kips)	
Boardwalk Bent	1 to 32, 39 to 87	29.0	42.7	2.7
Tulip Type Pier	33,34,37,38	111.0	132.0	5.3
“H” Type Pier	35, 36	90.6	111.2	4.5

According to the provided foundation plans, drilled shaft cap bottom elevations are shown at 6 feet below the existing grade elevation. Our subsurface investigation revealed up to 35 feet of peat and soft soil on most of the west side of IL 59 from Station 100+35 to Station 108+80 and some on the east side of IL 59 from Station 114+10 to Station 116+35 underlying the proposed shaft cap elevations.

The shafts capacities were calculated based on side resistance only for conservative approach with a shaft side resistance factor (ϕ_{qs}) of 0.55 for granular soil and 0.45 for cohesive soils (AASHTO 2017). The side resistance was estimated starting from the bottom of the very compressible soils (Layers 2 and 3). We have not included side resistance from these layers as the peat and organic soils tend to settle under their own weight and by organic matter breakdown. The possible settlement of these top layers will also generate downdrag loads on drilled shafts/piles. We consider these downdrag loads to be very small. We compensated the likelihood of downdrag loads by not considering the end resistance on our estimated shaft capacity and corresponding lengths. Since we have not considered the end resistance on the shaft length and capacity calculations, we recommend a minimum unconfined compressive strength of 1.5 tsf be achieved at the final shaft depth except for the locations where granular soil with properties described in the nearby soil boings is encountered at the designed shaft base elevations.

The factored resistances available, total shaft lengths, and estimated base elevations for 24-, 30-, and 36-inch diameter shafts are summarized below in Tables 4 through Table 24. The tables show approximate shaft lengths and capacities at the proposed maximum vertical reaction and at the boring termination depth.

Table 4: Estimated Resistances and Drilled Shafts Base Elevations for Piers 1 to 4

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
W. Abutment, Piers 1 to 4 BWB-01	768	24	45	22	746
			51	24	744[1)]
		30	45	17	751
			63	24	744[1)]
		36	45	14	754
			76	24	744[1)]

[1)] Boring termination depth

Table 5: Estimated Resistances and Drilled Shafts Base Elevations for Piers 5 to 9

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 5 to 9 BWB-02B	768	24	45	22	746
			55	24	744[1)]
		30	45	18	750
			70	24	744[1)]
		36	45	16	752
			83	24	744[1)]

1) Boring termination depth

Table 6: Estimated Resistances and Drilled Shafts Base Elevations for Piers 10 to 15

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 10 to 15 BWB-03B	768	24	45	27.5	740.5
			134	44	724[1)]
		30	45	26	742
			168	44	724[1)]
		36	45	24.5	743.5
			200	44	724[1)]

1) Boring termination depth

Table 7: Estimated Resistances and Drilled Shafts Base Elevations for Piers 16 to 20

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 16 to 20 BWB-04	768	24	45	29	739
			132	44	724[1)]
		30	45	27.5	740.5
			165	44	724[1)]
		36	45	26.5	741.5
			198	44	724[1)]

1) Boring termination depth

Table 8: Estimated Resistances and Drilled Shafts Base Elevations for Piers 21 to 25

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 21 to 25 BWB-05	767.5	24	30	23.5	744[1)]
			45	27	740.5[2)]
		30	38	23.5	744[1)]
			45	25	742.5[2)]
		36	45	23.5	744[1)]

1) Boring termination depth

2) Soil data was extrapolated

Table 9: Estimated Resistances and Drilled Shafts Base Elevations for Piers 26 to 30

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 26 to 30 BWB-06, BWB-06SH	768	24	45	46	722
			68	55	713[1)]
		30	45	43	725
			85	55	713[1)]
		36	45	41	727
			102	55	713[1)]

1) Boring termination depth

Table 10: Estimated Resistances and Drilled Shafts Base Elevations for Piers 31 to 33

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 31 to 33 TB-01	768	24	45	29	739
			140	59	709
			280	69	699[1)]
		30	45	26	742
			140	51	717
			350	69	699[1)]
		36	45	26	743.5
			140	45	723
			420	69	699[1)]

1) Boring termination depth

Table 11: Estimated Resistances and Drilled Shafts Base Elevations for Pier 34

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Pier 34 TB-02	768	24	140	48	720
			282	69	699[1)]
		30	140	39	729
			353	69	699[1)]
		36	140	35	733
			423	69	699[1)]

[1)] Boring termination depth

Table 12: Estimated Resistances and Drilled Shafts Base Elevations for Pier 35

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Pier 35 B-01	768	24	120	45	723
			262	69	699[1)]
		30	120	41	727
			328	69	699[1)]
		36	120	65	732
			394	69	699[1)]

[1)] Boring termination depth

Table 13: Estimated Resistances and Drilled Shafts Base Elevations for Pier 36

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Pier 36 B-02	769	24	120	36	733
			229	70	699[1)]
		30	120	27	742
			286	70	699[1)]
		36	120	24	745
			343	70	699[1)]

1) Boring termination depth

Table 14: Estimated Resistances and Drilled Shafts Base Elevations for Pier 37

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Pier 37 TB-03	769	24	140	33	736
			313	69	700[1)]
		30	140	28	741
			391	69	700[1)]
		36	140	25	744
			470	69	700[1)]

1) Boring termination depth

Table 15: Estimated Resistances and Drilled Shafts Base Elevations for Piers 38 to 43

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 38 to 43 TB-04	768.5	24	45	16	752.5
			140	38.5	730
			329	69	699.5[1)]
		30	45	13.5	755
			140	32	736.5
			411	69	699.5[1)]
		36	45	12.5	756
			140	27.5	741
			493	69	699.5[1)]

[1)] Boring termination depth

Table 16: Estimated Resistances and Drilled Shafts Base Elevations for Piers 44 to 50

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 44 to 50 BWB-07	768.5	24	45	20.5	748
			54	24	744.5[1)]
		30	45	18.5	751
			68	24	744.5[1)]
		36	45	15.5	753
			82	24	744.5[1)]

[1)] Boring termination depth

Table 17: Estimated Resistances and Drilled Shafts Base Elevations for Piers 51 to 55

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 51 to 55 BWB-08	768.5	24	45	18.5	750
			66	24	744.5[1)]
		30	45	16.5	752
			82	24	744.5[1)]
		36	45	14.5	754
			99	24	744.5[1)]

[1)] Boring termination depth

Table 18: Estimated Resistances and Drilled Shafts Base Elevations for Piers 56 to 59

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 56 to 59 BWB-09	769.5	24	45	16.5	753
			76	24	745.5[1)]
		30	45	14	755.5
			96	24	745.5[1)]
		36	45	12.5	757
			115	24	745.5[1)]

[1)] Boring termination depth

Table 19: Estimated Resistances and Drilled Shafts Base Elevations for Piers 60 to 65

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 60 to 65 BWB-10	771	24	45	27.5	743.5[2)]
		30	45	23	748
			50	25	746[1)]
		36	45	20	751
			60	25	746[1)]

1) Boring termination depth

2) Soil data was extrapolated

Table 20: Estimated Resistances and Drilled Shafts Base Elevations for Piers 66 to 71

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 66 to 71 BWB-11	770.5	24	45	14	756.5
			101	25	745.5[1)]
		30	45	12	758.5
			126	25	745.5[1)]
		36	45	11	759.5
			151	25	745.5[1)]

1) Boring termination depth

Table 21: Estimated Resistances and Drilled Shafts Base Elevations for Piers 72 to 76

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 72 to 76 BWB-12	770	24	45	18	752
			67	24	746[1)]
		30	45	15	755
			84	24	746[1)]
		36	45	13.5	756.5
			100	24	746[1)]

1) Boring termination depth

Table 22: Estimated Resistances and Drilled Shafts Base Elevations for Piers 77 to 81

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 77 to 81 BWB-13	770	24	45	18.5	751.5
			64	24	746[1)]
		30	45	16	754
			80	24	746[1)]
		36	45	14	756
			95	24	746[1)]

1) Boring termination depth

Table 23: Estimated Resistances and Drilled Shafts Base Elevations for Piers 82 to 85

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 82 to 85 BWB-14	770.5	24	45	16.5	754
			84	24.5	746[1)]
		30	45	15	755.5
			105	24.5	746[1)]
		36	45	13.5	757
			126	24.5	746[1)]

[1)] Boring termination depth

Table 24: Estimated Resistances and Drilled Shafts Base Elevations for Piers 86 to 87

Location (Boring)	Estimated Shaft Cap Base Elevation (feet)	Shaft Diameter (inches)	Factored Resistance Available (kips)	Total Shaft Length (feet)	Estimated Shaft Base Elevation (feet)
Piers 86 to 87 East Abutment BWB-15	771	24	45	17	754
			56	20	751[1)]
		30	45	15	756
			70	20	751[1)]
		36	45	13	758
			84	20	751[1)]

[1)] Boring termination depth

Lateral loads on the shafts should be analyzed for maximum moments and lateral deflections. Recommended soil parameters required for the lateral load analysis of shafts at Piers 1 through 87 are provided in Tables 25 through 45.

Table 25: Recommended Soil Parameters for Lateral Load Analysis
for West abutment, Piers 1 to 4, Ref. Boring BWB-01

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Stiff Peat EL 774.4 to 771.4	100	1000	0	500	0.7
M Dense SA Loam EL 771.4 to 768.4	115	0	30	90	--
M Dense SA Loam EL 768.4[(1)] to 766.4	53[(2)]	0	30	60	--
V Stiff SI Clay EL 766.4 to 763.9	58[(2)]	2000	0	1000	0.5
Loose to M Dense SA Loam EL 763.9 to 758.9	53[(2)]	0	30	60	--
M Stiff to V Stiff SI Clay EL 758.9 to 751.4	58[(2)]	1500	0	500	0.7
M Dense Silt EL 751.4 to 748.9	53[(2)]	0	29	60	--
Stiff to V Stiff SI Clay EL 748.9 to 744.4[(3)]	58[(2)]	1900	0	500	0.7

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 26: Recommended Soil Parameters for Lateral Load Analysis
for Piers 5 to 9, Ref. Boring BWB-02-B

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft Peat EL 774.3 to 770.3	70	100	0	30	2.0
V Soft Peat EL 770.3 to 767.8	10[(2)]	100	0	30	2.0

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Loose to M Dense Sand EL 767.8[(1)] to 763.8	53 [(2)]	0	29	20	--
Loose to M Dense SA Gravel EL 763.8 to 756.3	53 [(2)]	0	30	60	--
Stiff to V Stiff SI Clay EL 756.3 to 746.3	58 [(2)]	2000	0	1000	0.5
Loose Silt EL 746.3 to 744.3[(3)]	48 [(2)]	0	28	20	--

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 27: Recommended Soil Parameters for Lateral Load Analysis
for Piers 10 to 15, Ref. Boring BWB-03-B

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft Peat EL 773.9[(1)] to 760.9	10[(2)]	100	0	30	2.0
V Soft Organic SI CL to SI CL Loam EL 760.9 to 750.9	30 [(2)]	100	0	30	2.0
Soft SI CL Loam EL 750.9 to 748.4	48 [(2)]	400	0	30	2.0
M Dense Sand EL 748.4 to 745.9	53 [(2)]	0	30	60	--
M Dense SA Gravel EL 745.9 to 742.2	53 [(2)]	0	31	60	--
M Dense to Dense SAND EL 742.2 to 727.2	58 [(2)]	0	32	125	--
V Stiff SI Clay EL 727.2 to 723.9[(3)]	58 [(2)]	2000	0	1000	0.5

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 28: Recommended Soil Parameters for Lateral Load Analysis for Piers 16 to 20, Ref. Boring BWB-04

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft Peat EL 774.1 to 772.1	70	100	0	30	2.0
V Soft Peat EL 772.1[(1)] to 761.1	10[(2)]	100	0	30	2.0
Loose Sand EL 761.1 to 758.6	48[(2)]	0	27	20	--
V Soft Organic SI CL to SI CL Loam EL 758.6 to 746.1	30[(2)]	100	0	30	2.0
M Dense to Dense SA to SA Loam EL 746.1 to 727.4	58[(2)]	0	32	60	--
V Stiff SI Clay EL 727.4 to 724.1[(3)]	58[(2)]	2200	0	1000	0.5

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 29: Recommended Soil Parameters for Lateral Load Analysis for Piers 21 to 25, Ref. Boring BWB-05

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft Organic SI Clay EL 773.8 to 771.8	90	100	0	30	2.0
V Soft Organic SI Clay EL 771.8[(1)] to 770.8	30[(2)]	100	0	30	2.0
V Soft Peat EL 770.8 to 760.8	10[(2)]	100	0	30	2.0
V Soft to M Stiff Organic SI CL to SI CL Loam EL 760.8 to 750.8	30[(2)]	100	0	30	2.0

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Stiff to Hard SI Clay EL 750.8 to 743.8[3]	58[2]	2800	0	1000	0.5

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 30: Recommended Soil Parameters for Lateral Load Analysis
for Piers 26 to 30, Ref. Borings BWB-06 & BWB-06-SH

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft to M Stiff Peat EL 773.7 to 758.2	70	100	0	30	2.0
V Soft Organic SI Clay EL 758.2 to 755.7	90	100	0	30	2.0
V Loose SA Loam to Sand EL 755.7[1] to 745.7	48[2]	0	27	20	--
V Soft Organic SI CL to SI CL Loam EL 745.7 to 738.2	30[2]	100	0	30	2.0
Stiff SI Clay EL 738.2 to 713.6[3]	58[2]	2000	0	1000	0.5

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 31: Recommended Soil Parameters for Lateral Load Analysis
for Piers 31 to 33, Ref. Boring TB-01

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff SI Clay EL 774.0 to 771.0	115	500	0	100	1.0

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft to M Stiff Peat EL 771.0 to 761.00	70	180	0	30	2.0
V Loose SA Loam EL 761.0[(1)] to 758.5	30[(2)]	0	27	20	--
V Soft to M Stiff SI CL Loam EL 758.5 to 753.5	48[(2)]	230	0	30	2.0
Stiff to V Stiff SI Clay EL 753.5 to 716.5	58[(2)]	2000	0	1000	0.5
V Dense Sand EL 716.5 to 712.3	63[(2)]	0	33	125	--
Hard SI CL Loam EL 712.3 to 707.3	63[(2)]	4000	0	2000	0.4
M Dense Sand EL 707.3 to 702.3	53[(2)]	0	31	60	--
Dense SA Gravel EL 707.2 to 699.0[(3)]	58[(2)]	0	32	125	--

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 32: Recommended Soil Parameters for Lateral Load Analysis for Pier 34. Boring TB-02

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff SI Clay EL 773.6 to 770.6	120	1000	0	500	0.7
V Soft Peat EL 770.6 to 757.6	70	100	0	30	2.0
V Soft to M Stiff SI CL Loam EL 757.6[(1)] to 753.1	30[(2)]	300	0	30	2.0
Stiff to Hard SI Clay EL 753.1 to 731.9	58[(2)]	3000	0	1000	0.5

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Dense GR Sand EL 731.9 to 724.4	53[2]	0	30	60	--
V Stiff SI Clay EL 724.4 to 716.0	58[2]	2400	0	1000	0.5
Soft SI Clay EL 716.0 to 711.9	48[2]	400	0	30	2.0
M Dense to Dense SA GR to Gravel EL 711.9 to 698.6[3]	58[2]	0	32	125	--

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 33: Recommended Soil Parameters for Lateral Load Analysis for Pier 35, Ref. Boring B-1

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Stiff SI CL Loam Topsoil EL 774.6 to 771.6	120	3500	0	1000	0.5
V Soft to M Stiff Peat, CL to SI CL Loam EL 771.6 to 754.1	110	350	0	30	2.0
SA Gravel EL 754.1[1] to 753.3	53[2]	0	28	20	--
Stiff SI CL to SI CL Loam EL 753.3 to 746.6	58[2]	1600	0	500	0.7
Stiff to Hard SI CL to SI CL Loam EL 746.6 to 727.9	58[2]	2900	0	1000	0.5
Medium Dense M Sand EL 727.9 to 720.6	53[2]	0	32	60	--
V Stiff SI CL EL 720.6 to 712.9	58[2]	2100	0	1000	0.5

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Dense SA to SA Loam EL 712.9 to 699.6[3]	53[2]	0	32	60	--

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 34: Recommended Soil Parameters for Lateral Load Analysis for Pier 36, Ref. Boring B-2

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, cu (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε50 (%)
Soft to Stiff SI Clay EL 774.4 to 770.4	115	900	0	100	1.0
Loose Silt EL 770.4 to 768.9	110	0	28	20	--
Stiff to Hard SI Clay EL 768.9 to 747.7	120	2500	0	1000	0.5
M Dense SA Gravel EL 747.7 [1] to 740.4	53[2]	0	32	60	--
Stiff to V Stiff SI Clay Loam EL 740.4 to 735.1	58[2]	1900	0	500	0.7
Medium Dense to Dense Sand EL 735.1 to 730.4	58[2]	0	32	60	--
Stiff SI Clay EL 730.4 to 722.6	58[2]	1400	0	500	0.7
M Dense SI Loam EL 722.6 to 717.6	53[2]	0	32	60	--
Stiff SI Clay EL 717.6 to 705.6	58[2]	1300	0	500	0.7
M Dense SI Loam to SA Gravel EL 705.6 to 699.4[3]	53[2]	0	32	60	--

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 35: Recommended Soil Parameters for Lateral Load Analysis
for Pier 37, Ref. Boring TB-03

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff SI Clay EL 774.9 to 771.9	120	1000	0	500	0.7
Stiff SI Clay EL 771.9 to 768.9	120	3800	0	1000	0.5
Stiff to Hard SI Clay EL 768.9(1) to 749.4	58(2)	3000	0	1000	0.5
M Dense SA Grave to Gravel EL 749.4 to 738.2	53(2)	0	30	60	--
Stiff SI CL Loam EL 738.2 to 733.2	58(2)	1000	0	500	0.7
M Dense to Dense Sand to SA Gravel EL 733.2 to 723.2	58(2)	0	31	60	--
M Dense SI to SI Loam EL 723.2 to 708.2	53(2)	0	30	60	--
V Stiff SI Clay EL 708.2 to 703.2	58(2)	3200	0	1000	0.5
M Dense SA Gravel EL 703.2 to 699.9(3)	53(2)	0	30	60	--

(1)Water table elevation; (2)Submerged unit weight; (3)Boring termination depth

Table 36: Recommended Soil Parameters for Lateral Load Analysis
for Piers 38 to 43, Ref. Boring TB-04

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Soft SI Clay EL 774.6 to 773.1	110	330	0	30	2.0
V Soft to Soft SI Clay EL 773.1(1) to 769.1	30(2)	200	0	30	2.0

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Dense SA Loam EL 769.1 to 766.6	53[(2)]	0	30	60	--
V Stiff to Hard SI Clay EL766.6 to 756.6	58[(2)]	3400	0	1000	0.5
Stiff to V Stiff SI Clay EL 756.6 to 737.9	58[(2)]	2100	0	1000	0.5
M Dense SA Gravel EL 737.9 to 732.9	53[(2)]	0	30	60	--
V Stiff SI Clay EL 732.9 to 727.9	58[(2)]	2600	0	1000	0.5
V Dense Sand EL 727.9 to 722.9	63[(2)]	0	33	125	--
M Dense to Dense SA Gravel to Silty Loam EL 722.9 to 707.9	58[(2)]	0	31	60	--
M Stiff to Stiff SI Clay EL 707.9 to 699.6[(3)]	58[(2)]	1000	0	500	0.7

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

Table 37: Recommended Soil Parameters for Lateral Load Analysis for Piers 44 to 50, Ref. Boring BWB-07

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Soft to Soft Organic SI CL to SI CL Loam EL 774.5 to 771.5	90	250	0	30	2.0
V Soft Organic SI Clay EL 771.5[(1)] to 764.0	10[(2)]	100	0	30	2.0
M Stiff to V Stiff SI CL to SI CL Loam EL 764.0 to 751.5	58[(2)]	1700	0	500	0.7

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Dense SA Gravel EL 751.5 to 749.0	63[2]	0	33	125	--
Stiff to V Stiff SI Clay EL 749.0 to 744.5[3]	58[2]	1700	0	500	0.7

[1]Water table elevation; [2]Submerged unit weight; [3]Boring termination depth

Table 38: Recommended Soil Parameters for Lateral Load Analysis for Piers 51 to 55, Ref. Boring BWB-08

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Soft to M Stiff SI CL Loam EL 774.6 to 769.1	115	500	0	100	1.0
V Soft Peat EL 769.1 to 761.6	90	100	0	30	2.0
M Stiff to Stiff SI CL to SI CL Loam EL 761.6 to 724.1	115	900	0	100	1.0
Stiff to Hard SI CL to SI CL Loam EL 724.1 to 744.6[1]	120	3700	0	1000	0.5

[1]Boring termination depth

Table 39: Recommended Soil Parameters for Lateral Load Analysis for Piers 56 to 59, Ref. Boring BWB-09

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff to V Stiff SI CL to SI CL Loam EL 775.6 to 765.1	120	2200	0	1000	0.5
Stiff to V Stiff SI CL to SI CL Loam EL 765.1 to 752.6	120	2400	0	1000	0.5
V Stiff to Hard SI CL to SI CL Loam EL 752.6 to 745.6(1)	120	3900	0	1000	0.5

(1)Boring termination depth

Table 40: Recommended Soil Parameters for Lateral Load Analysis for Piers 60 to 65, Ref. Boring BWB-10

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff to V Stiff SI CL to SI CL Loam EL 776.1 to 763.1	120	2300	0	1000	0.5
M Stiff GR Clay Loam EL 763.1(1) to 760.6	53(2)	800	0	100	1.0
Soft to Stiff SI CL to SI CL Loam EL 760.6 to 746.1(3)	58(2)	1300	0	500	0.7

(1)Water table elevation; (2)Submerged unit weight; (3)Boring termination depth

Table 41: Recommended Soil Parameters for Lateral Load Analysis
for Piers 66 to 71, Ref. Boring BWB-11

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Stiff SI Clay EL 775.4 to 772.4	120	1800	0	500	0.7
Soft SI Clay EL 772.4 to 769.9	110	300	0	30	2.0
Stiff SI CL to SI CL Loam EL 769.9 to 759.4	120	1200	0	500	0.7
V Stiff SI CL to SI CL Loam EL 759.4 to 745.4(1)	120	3300	0	1000	0.5

(1)Boring termination depth

Table 42: Recommended Soil Parameters for Lateral Load Analysis
for Piers 72 to 76, Ref. Boring BWB-12

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
V Stiff SI Clay EL 775.9 to 772.9	120	1200	0	500	0.7
V Soft SI Clay EL 772.9 to 770.4	110	200	0	30	2.0
Loose SI Loam EL 770.4 to 767.9	110	0	27	20	--
Soft SI Clay EL 767.9 to 765.4	110	490	0	30	2.0
Stiff to Hard SI Clay EL 765.4 to 745.9(1)	120	2300	0	1000	0.5

(1)Boring termination depth

Table 43: Recommended Soil Parameters for Lateral Load Analysis for Piers 77 to 81, Ref. Boring BWB-13

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Soft to M Stiff SI Clay EL 776.1 to 770.6	115	600	0	100	1.0
Soft to M Stiff SI Clay to SI CL Loam EL 770.6 to 763.1	110	490	0	30	2.0
Stiff to V Stiff SI CL to SI CL Loam EL 763.1 to 746.1	110	2400	0	1000	0.5

(1) Boring termination depth

Table 44: Recommended Soil Parameters for Lateral Load Analysis for Piers 82 to 85, Ref. Boring BWB-14

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
Stiff SI Clay EL 776.2 to 773.2	120	1000	0	500	0.7
Soft to Soft SI Clay to SI CL Loam EL 773.2 to 763.2	90	150	0	30	2.0
V Stiff to Hard SI CL to SI CL Loam EL 763.2 to 746.2(1)	120	3200	0	1000	0.5

(1) Boring termination depth

Table 45: Recommended Soil Parameters for Lateral Load Analysis
for Piers 86 to 87 and East Abutment, Ref. Boring BWB-15

Elevation (feet) Soil Type	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Lateral Soil Modulus Parameter, k (pci)	Estimated Soil Strain Parameter, ε_{50} (%)
M Stiff SI Clay Fill EL 780.8 to 777.8	115	500	0	100	1.0
Hard SI Clay Fill EL 777.8 to 775.3	125	5000	0	2000	0.4
V Stiff CL Loam Fill EL 775.3 to 772.8	120	2500	0	1000	0.5
M Dense SA Loam Fill EL 772.8 to 770.3	115	0	30	90	--
Stiff to Hard SI Clay to SI CL Loam EL 770.3 to 762.3	120	4900	0	2000	0.4
Stiff to V Stiff SI CL to SI CL Loam EL 762.3[(1)] to 750.8[(3)]	53[(2)]	2500	0	1000	0.5

[(1)]Water table elevation; [(2)]Submerged unit weight; [(3)]Boring termination depth

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Site Preparation

Vegetation, surface topsoil, and debris should be cleared and stripped where the structure will be placed. If unstable or unsuitable materials are exposed during excavation, they should be removed and replaced with compacted fill as described in Section 6.3.

6.2 Excavation, Dewatering, and Utilities

Excavations should be performed in accordance with local, state, and federal regulations. The potential effect of ground movements upon nearby utilities should be considered during construction. In general, the groundwater level is within 20 feet bgs. Water that does accumulate in open excavations by seepage or runoff should be immediately removed by sump pump.

The Contractor should ensure proper surface grading to prevent the pooling of water and runoff into open excavations. Water that does accumulate into open excavations by seepage or runoff should be immediately removed by sump pump. Any soils allowed to soften under standing water should be removed and replaced with compacted fill as described in Section 6.4.

6.3 Filling and Backfilling

Fill material used to attain final design elevations should be as per IDOT Standard Specifications. The fill material should be free of organic matter and debris and should be placed in lifts and compacted according to the IDOT Section 205, *Embankment* (IDOT 2016). For new fill to be placed on existing slopes, we recommend benching the slopes.

Backfill materials for the abutments must be pre-approved by the Resident Engineer. To backfill the abutments, we recommend porous granular material conforming to the requirements specified in the IDOT Special Provision No.76, *Granular Backfill for Structures*. Backfill material should be placed and compacted in accordance with the Special Provision. For new fill to be placed on existing slopes, we recommend benching the slopes according to IDOT embankment construction details.

6.4 Earthwork Operations

The required earthwork can be accomplished with conventional construction equipment. Moisture and traffic will cause deterioration of exposed subgrade soils. Precautions should be taken by the Contractor to prevent water erosion of the exposed subgrade. A compacted subgrade will minimize water runoff erosion.

Earth moving operations should be scheduled to not coincide with excessive cold or wet weather (early spring, late fall or winter). Any soil allowed to freeze or soften due to the standing water should be removed. Wet weather can cause problems with subgrade compaction.

It is recommended that an experienced geotechnical engineer be retained to inspect the exposed subgrade, monitor earthwork operations, and provide material inspection services during the construction phase of this project.

6.5 Drilled Shafts

The installation of drilled shafts through and on top of the peat material may present challenges. This will be encountered especially for the construction on the west of IL 59. The Contractor should be prepared to install casing to the bottom of peat and soft soils. The approximate bottom of peat and soft soil for each pier is summarized below in Table 46. The shafts should be constructed in accordance with FHWA Publication NHI-10-016, *Drilled Shafts: Construction Procedures and LRFD Design Methods* (Brown et al. 2010).

Table 45: Approximate Bottom Elevation of Peat and Soft Soils

Pier Number	Boring Reference	Approximate Bottom Elevation of Peat and Soft Soil (feet)
1 to 4	BWB-01	771
5 to 9	BWB-02B	767
10 to 15	BWB-03B	748
16 to 20	BWB-04	746
21 to 25	BWB-05	750
26 to 30	BWB-06	738
31 to 33	TB-01	758
34	TB-02	753
35	B-01	754
36 to 37	B-02 and TB-03	NA
38 to 43	TB-04	769
44 to 50	BWB-07	764
51 to 55	BWB-08	761
56 to 83	BWB-09 to BWB-15	NA

Based on the proposed loads for different pier types, the 2-foot diameter drilled shafts will be established at elevations of about 730 to 758 feet. Based on soil and groundwater conditions encountered, temporary or permanent casings, slurry or other method approved by engineer would be required to prevent caving of granular layers and possible excess water flow.

For drilled constructed for Piers 50 to 87, the drilled shafts may be constructed using the dry method. However, the Contractor should be prepared for minor dewatering efforts during

construction. Further groundwater study is recommended. We do not anticipate a need for temporary or permanent casing. Concrete should be place in dry holes. Any excess water in the excavation (if any) should be removed prior to concrete pouring.

Rig chatter and hard drilling conditions due to possible cobbles were observed in Borings B-01, B-02, TB-01 through TB-03, and BWB-07. The Contractor should be aware of this condition prior to casing installations and drilled shaft constructions.

Thick vegetation covers most of the area of proposed improvements. Moreover, we expect most of the drilled shafts west of the IL59 and some drilled shaft adjacent to IL 59 on the east side will be installed within persistent wet areas and extremely soft upper soils. A significant area of the project site is also subjected to frequent water ponding and flooding as shown in Exhibit 3-1. The contractor should be informed and be aware of these difficult site access conditions and the need to plan to establish a stable working platform. This special site access with the construction equipment should be included in the contractor's means and methods of constructions.

7.0 QUALIFICATIONS

The analysis and recommendations submitted in this report are based upon the data obtained from the borings drilled at the locations shown on the boring logs and in Exhibit 3. This report does not reflect any variations that may occur between the borings or elsewhere on the site, variations whose nature and extent may not become evident until the course of construction. In the event that any changes in the design and/or location of the new foundation are planned, we should be timely informed so that our recommendations can be adjusted accordingly.

It has been a pleasure to assist TranSystems and the Village of Streamwood on this project. Please call if there are any questions, or if we can be of further service.

Respectfully Submitted,

WANG ENGINEERING, INC.

Andri Kurnia, P.E.
Project Manager

Nesam S. Balakumaran, P.Eng.
Project Geotechnical Engineer

Corina T. Farez, P.E., P.G.
QA/QC Reviewer

REFERENCES

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (2002) "AASHTO Standard Specifications for Highway Bridges." United States Depart of Transportation, Washington, D.C

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS (2017) "AASHTO LRFD Bridge Design Specifications." United States Depart of Transportation, Washington, D.C.

BAUER, R.A., CURRY, B.B., GRAESE, A.M., VAIDEN, R.C., SU, W.J., and HASEK, M.J., 1991, Geotechnical Properties of Selected Pleistocene, Silurian, and Ordovician Deposits of Northeastern Illinois: Environmental Geology 139, Illinois State Geological Survey, 69 p.

BRETZ, J.H., 1955, Geology of the Chicago Region, Part II - The Pleistocene, 31 p.

BRETZ, J.H., 1932, Surficial Geology of the Palos Park and Hinsdale Quadrangle Maps, Illinois State Geological Survay Division.

FHWA, (2002), Geotechnical Engineering Circular No.6, Shallow Foundations.

HANSEL, A.K., and JOHNSON, W.H. (1996) Wedron and Mason Groups: Lithostratigraphic Reclassification of the Wisconsin Episode, Lake Michigan Lobe Area: ISGS Bulletin 104: Champaign, Illinois State Geological Survey, 116 p.

IDOT (2012) *Bridge Manual.* Illinois Department of Transportation.

IDOT (2015) *Geotechnical Manual.* Illinois Department of Transportation.

IDOT (2016) *Standard Specifications for Road and Bridge Construction.* Illinois Department of Transportation. 1098 pp.

JOHNSON, W.H., and HANSEL, A.K., 1999, Wisconsin Episode glacial landscape of central Illinois: A product of subglacial deformation process?, *in* Mickelson, D.M., and Attig, J.W., eds., Glacial Processes Past and Present: GSA Special Paper 337, Geological Society of America, p. 121-135.

LEIGHTON, M.M., EKBLAW, G.E., and HORBERG, L., 1948, Physiographic Divisions of Illinois: The Journal of Geology, v. 56, p. 16-33.

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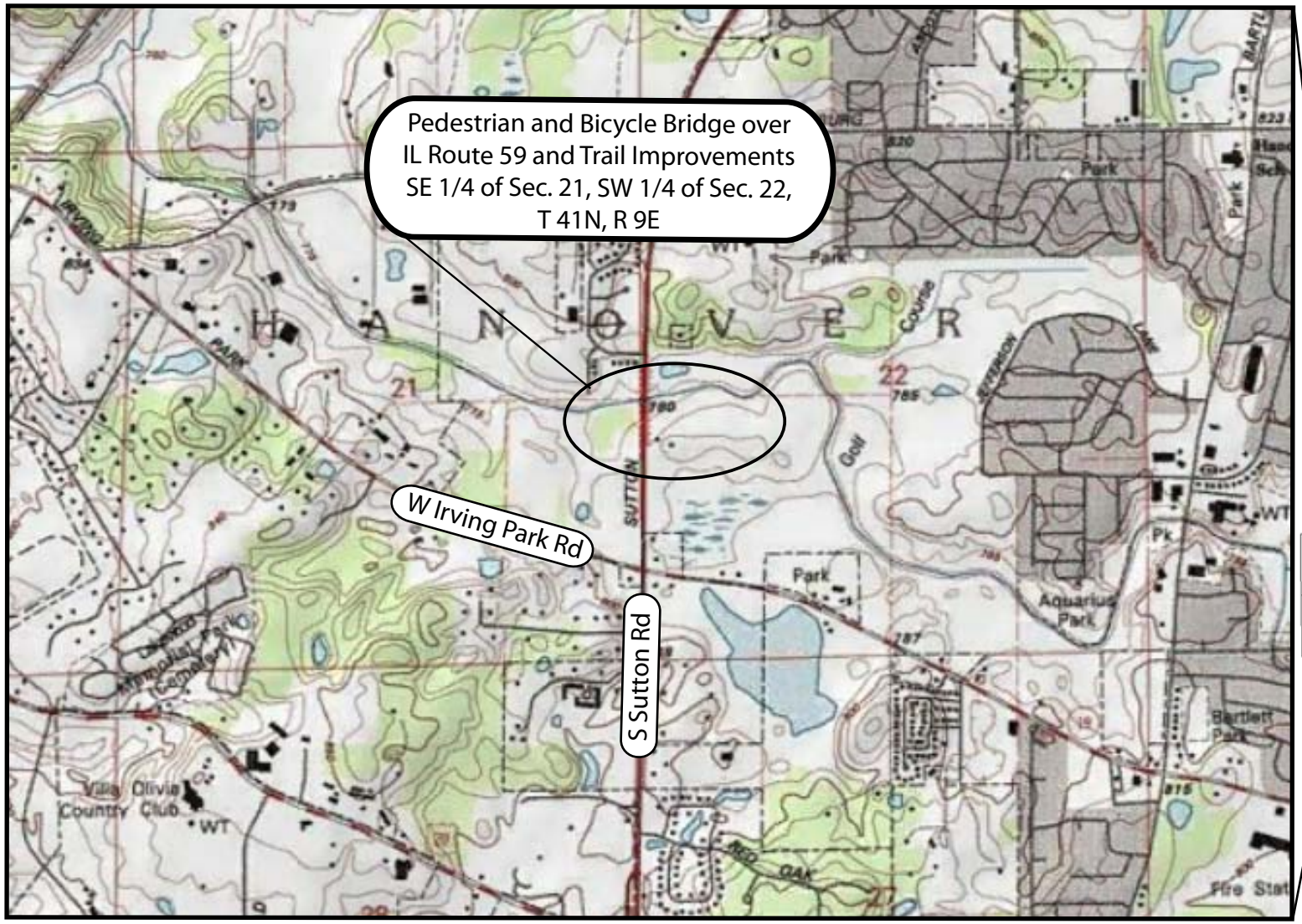
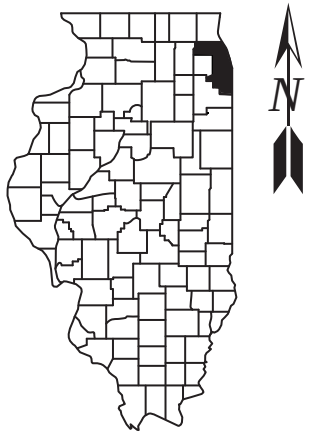
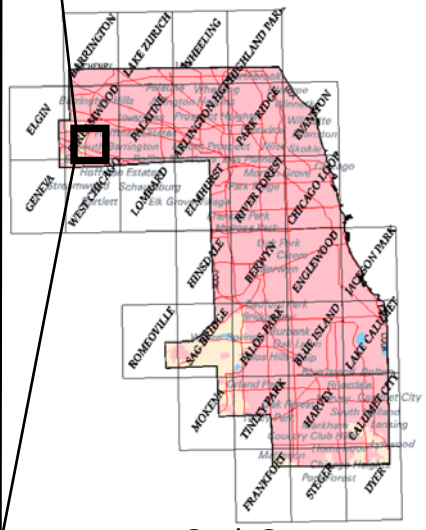
EXHIBITS







Scale

0 0.5 1.0 Mile

SITE LOCATION MAP: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS		
SCALE: GRAPHICAL	EXHIBIT 1	DRAWN BY: J. Bensen CHECKED BY: A. Kurnia
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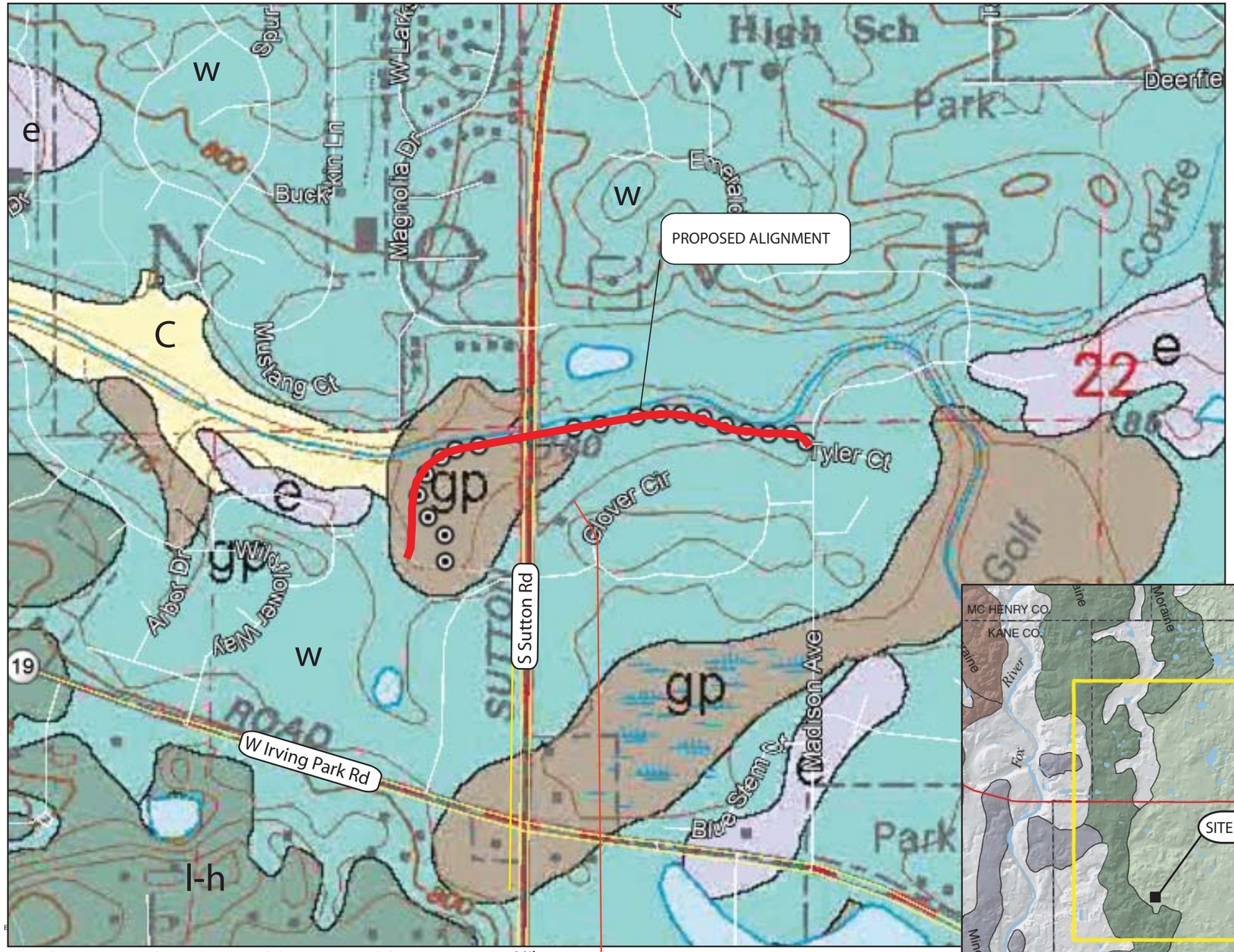

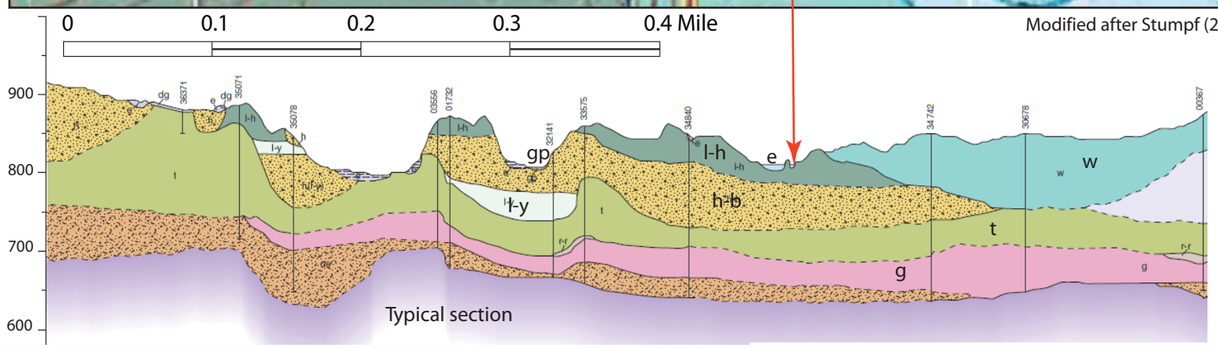

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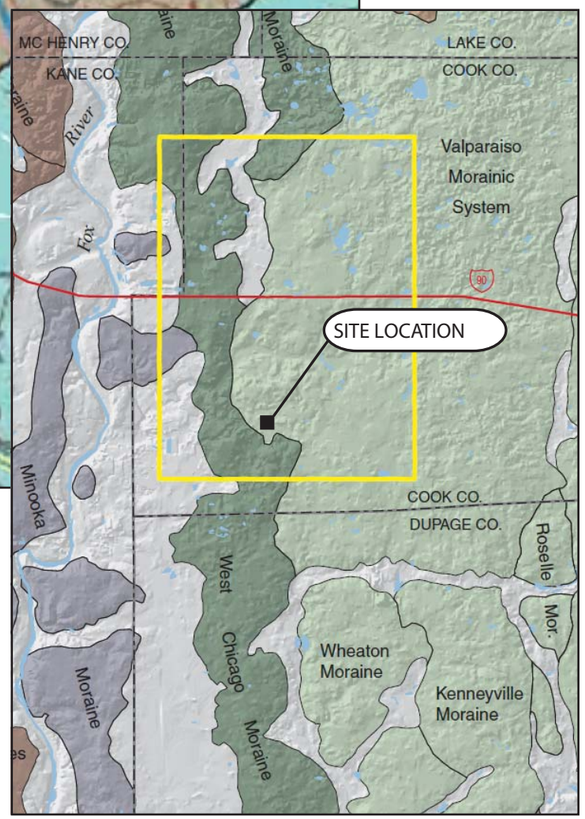
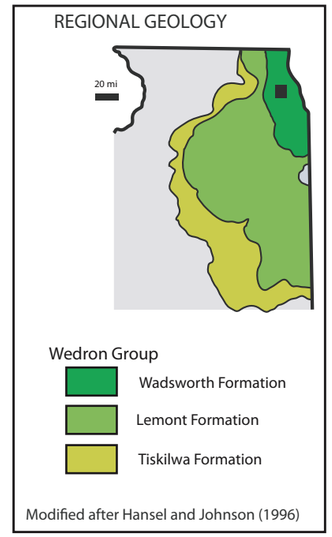


Proposed project alignment



LEGEND

QUATERNARY DEPOSITS

HUDSON EPISODE (~12,500 years before present [B.P.] to today)

- c — **Cahokia Formation** — Silt and clay with occasional sand lenses; postglacial (modern) alluvial deposits present on active floodplains, natural levees
- gp — **Grayslake Peat** — Decomposed wetland vegetation and sediment; peat and muck, may contain interbeds of silt, clay, and some fine sand

WISCONSIN EPISODE (~25,000-12,500 years B.P.)

- e — **Equality Formation** — Lake deposits in kettles and valleys; silt, clay, and fine sand; layered to massive
- w — **Wadsworth Formation** — Diamicton; subglacial and ice-marginal sediment; gray to yellowish brown silty clay to silty clay loam, containing silt and sand inclusions and sand and gravel lenses
- l-h — **Lemont Formation, Haeger Member** — Diamicton; subglacial and ice-marginal sediment; yellowish brown sandy loam to loam; dolomite rich; contains lenses or beds of sand and gravel

Cross section only

- h-b — **Henry Formation, Beverly Tongue**
- l-y — **Lemont Formation, Yorkville Member**
- t — **Tiskilwa Formation**
- g — **Glasford Formation**

Modified after Stumpf (2007)

SITE GEOLOGICAL MAP: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 2	DRAWN BY: J. Bensen CHECKED BY: A. Kurnia

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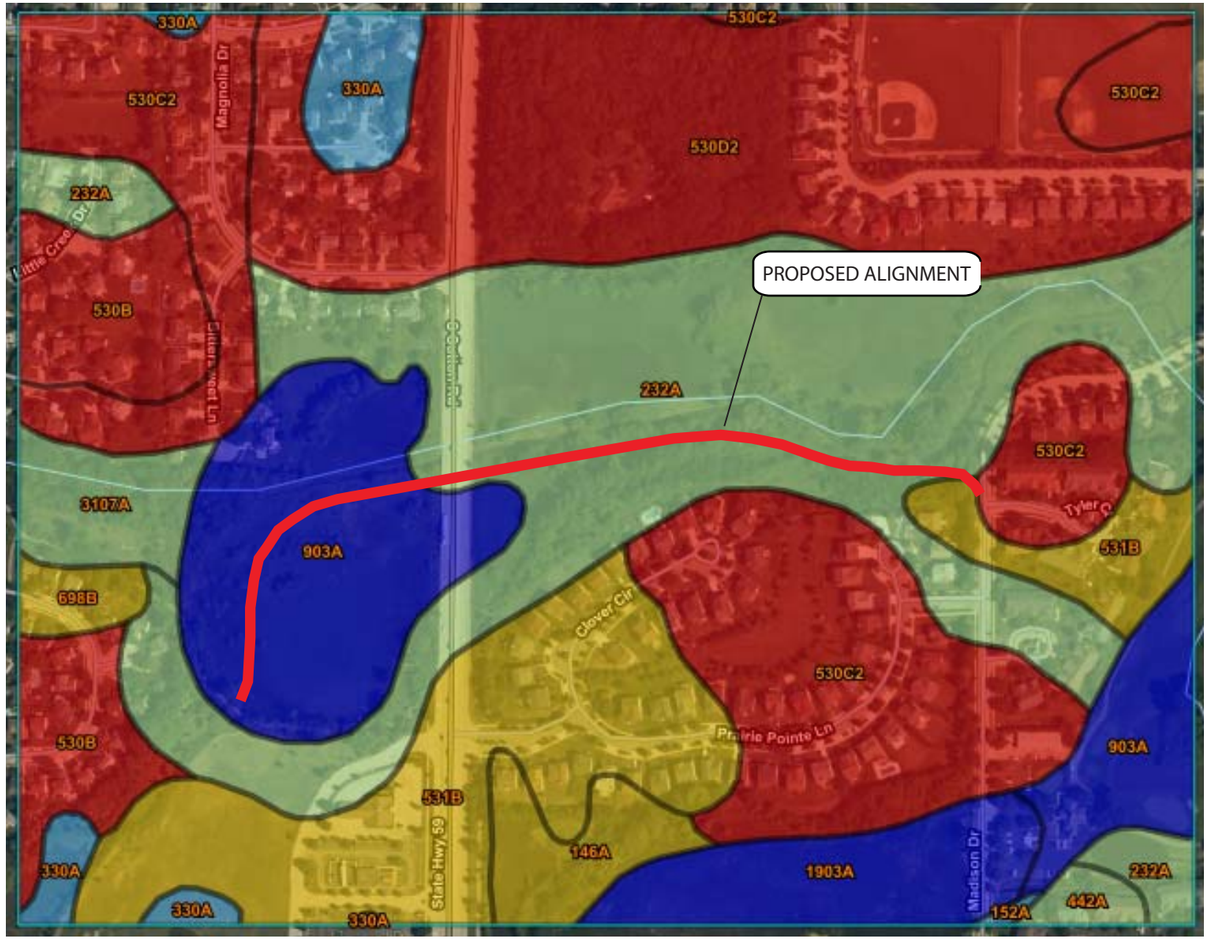

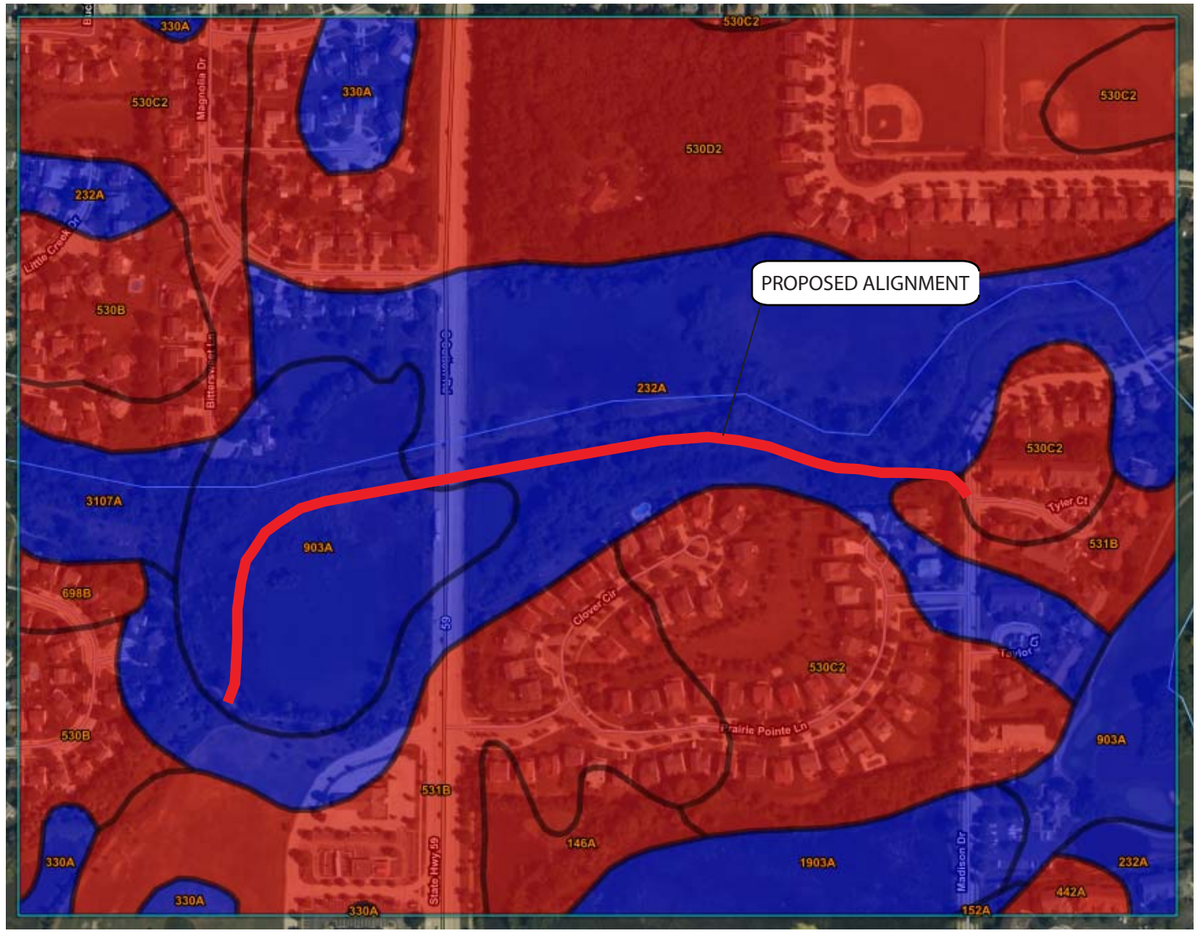

N

0 800 1600 Feeet

Organic Matter rating (%)

- <= 0.58 %
- > 0.58 and <= 1.02
- > 1.02 and <= 1.52
- > 1.52 and <= 2.39
- > 2.39 and <= 41.14

Ponding Frequency Class

- None
- Frequent

Frost Action rating

- Moderate
- High

Data Source Information
Soil Survey Area: Cook County, Illinois
Survey Area Data: Version 14, May 29, 2020

PEDOLOGY MAP AND DATA: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT 3-1 | DRAWN BY: J. Bensen, CHECKED BY: A. Kurnia

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Map unit symbol and soil name	Depth	USDA texture	Classification		Pct Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Erosion factors			Liquid limit	Plasticity index	Hydrologic group
			Unified	AASHTO	>10 inches	3-10 inches							Kw	Kf	T			
	In				*L-R-H*	*L-R-H*	%	%	%	*g/cc*	*micro m/sec*	%				*L-R-H*	*L-R-H*	
146A—Elliott silt loam, 0 to 2 percent slopes																		
Elliott	0-6	Silt loam	CL, ML	A-6, A-7-6	0- 0- 0	0- 0- 0	2-10- 15	58-65- 76	22-25- 27	1.30-1.40-1.45	4.23-9.17-14.11	3.0- 4.3-5.0	0.32	0.32	4	38-44-47	15-17-1 8	C/D
	6-11	Silty clay loam	MH, CL, ML	A-7-6	0- 0- 0	0- 0- 0	2- 8- 15	50-62- 71	27-30- 35	1.25-1.35-1.45	4.23-9.17-14.11	2.5- 3.3-4.0	0.28	0.28		41-46-53	18-21-24	
	11-16	Silty clay, silty clay Loam	CL, CH	A-7-6	0- 0- 0	0- 0- 0	2- 7- 15	40-51- 61	37-42- 49	1.35-1.45-1.55	1.41-2.82-4.23	0.5- 1.0-1.6	0.32	0.32		46-52-60	26-30-35	
	16-41	Silty clay loam, silty clay	CH, CL	A-7-6, A-6	0- 0- 0	0- 0- 1	2-10- 20	40-55- 65	27-35- 45	1.45-1.55-1.75	0.42-1.41-4.23	0.1- 0.4-0.8	0.37	0.37		34-43-55	17-24-32	
	41-60	Silty clay loam	CL	A-7-6, A-6	0- 0- 0	0- 0- 2	3-10- 20	42-60- 70	27-30- 38	1.65-1.75-1.85	0.42-0.92-1.41	0.0- 0.2-0.5	0.49	0.49		34-38-46	16-19-26	
152A—Drummer silty clay loam, 0 to 2 percent slopes																		
Drummer, drained	0-14	Silty clay loam	ML, MH, CL	A-7-6, A-7-5	0- 0- 0	0- 0- 0	0- 8- 15	50-61- 73	27-31- 35	1.20-1.30-1.42	4.23-9.17-14.11	3.5- 5.5-7.0	0.24	0.24	5	44-51-58	18-21-24	B/D
	14-41	Silty clay loam, silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 8- 15	50-61- 78	22-31- 35	1.20-1.33-1.50	4.23-9.17-14.11	0.5- 1.2-2.7	0.37	0.37		33-43-50	15-22-25	
	41-47	Loam, sandy loam, clay loam, silt loam	CL, SC	A-7-6, A-6, A-4	0- 0- 0	0- 0- 1	15-35- 55	12-41- 70	15-24- 33	1.30-1.43-1.59	4.23-9.17-14.11	0.2- 0.3-0.5	0.37	0.37		25-35-44	9-16-23	
	47-60	Stratified sandy loam to clay loam	CL, CL- ML, SC, SC-SM	A-4, A-6, A-7-6	0- 0- 0	0- 1- 4	20-48- 65	3-31- 53	12-21- 32	1.45-1.55-1.65	4.23-11.64-14.11	0.0- 0.1-0.4	0.32	0.32		22-31-42	6-14-23	
232A—Ashkum silty clay loam, 0 to 2 percent slopes																		
Ashkum, drained	0-12	Silty clay loam	CH, MH	A-7-6, A-7-5	0- 0- 0	0- 0- 0	1- 8- 15	45-55- 64	35-37- 40	1.20-1.35-1.45	1.41-2.82-4.23	3.0- 5.0-8.0	0.20	0.20	5	51-58-67	25-26-28	C/D
	12-29	Silty clay loam, silty clay	CL, CH	A-7-6	0- 0- 0	0- 0- 0	2- 8- 15	43-51- 63	35-41- 42	1.30-1.40-1.50	1.41-2.82-4.23	0.5- 1.3-2.5	0.32	0.32		46-54-58	25-30-30	
	29-54	Silty clay loam, silty clay	CL, CH	A-6, A-7-6	0- 0- 0	0- 0- 1	5- 9- 20	40-58- 65	30-33- 42	1.50-1.60-1.70	1.41-2.82-4.23	0.1- 0.3-1.0	0.43	0.43		39-43-53	21-23-30	
	54-60	Silty clay loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 1	5- 9- 20	45-61- 68	27-30- 35	1.55-1.65-1.75	1.41-2.82-4.23	0.0- 0.3-1.0	0.43	0.43		37-41-47	19-21-25	
330A—Peotone silty clay loam, 0 to 2 percent slopes																		
Peotone, drained	0-7	Silty clay loam	MH	A-7-6, A-7-5	0- 0- 0	0- 0- 0	1- 5- 10	50-60- 67	32-35- 40	1.20-1.30-1.40	1.41-2.82-4.23	4.5- 6.2-7.5	0.24	0.24	5	50-57-65	22-25-28	C/D
	7-27	Silty clay loam, silty clay	CL, MH, CH	A-7-6, A-7-5	0- 0- 0	0- 0- 0	1- 5- 10	45-56- 64	35-39- 45	1.30-1.40-1.55	1.41-2.82-4.23	1.5- 3.2-6.0	0.28	0.28		48-56-68	25-28-32	
	27-50	Silty clay loam, silty clay	CL, CH	A-7-6	0- 0- 0	0- 0- 1	1- 6- 12	43-53- 66	33-41- 45	1.35-1.45-1.60	1.41-2.82-4.23	0.5- 1.3-2.7	0.32	0.32		43-54-61	23-29-33	
	50-60	Silty clay loam, silt loam	CH, CL	A-6, A-7-6	0- 0- 0	0- 0- 3	1-11- 20	40-55- 74	25-34- 40	1.40-1.53-1.65	1.41-2.82-4.23	0.0- 0.5-1.2	0.37	0.37		34-44-52	17-24-29	
442A—Mundelein silt loam, 0 to 2 percent slopes																		
Mundelein	0-17	Silt loam	CL, ML	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 9- 15	58-68- 80	20-24- 27	1.15-1.23-1.30	4.23-9.17-14.11	3.0- 4.0-5.0	0.28	0.28	5	35-41-47	13-16-1 8	B/D
	17-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 9- 15	50-61- 75	25-30- 35	1.20-1.33-1.45	4.23-9.17-14.11	0.5- 1.3-2.0	0.37	0.37		36-43-49	17-21-25	
	31-42	Sandy loam, silt loam, clay loam, loam	CL, SC	A-4, A-6	0- 0- 0	0- 0- 0	10-25- 60	10-52- 75	15-23- 30	1.40-1.48-1.55	4.23-9.17-14.11	0.2- 0.3-0.5	0.43	0.43		25-33-40	9-15-21	
	42-60	Stratified sandy loam to silt loam	CL, CL- ML, SC- SM, SC	A-2-4, A-4, A-6, A-2-6	0- 0- 0	0- 0- 0	10-40- 75	5-45- 80	5-15- 25	1.50-1.60-1.70	4.23-23.29-42.34	0.0- 0.1-0.2	0.43	0.43		16-26-35	2-10-17	
530B—Ozaukee silt loam, 2 to 4 percent slopes																		
Ozaukee	0-4	Silt loam	CL, ML	A-4, A-7-6, A-6	0- 0- 0	0- 0- 1	7-14- 23	52-67- 76	15-19- 27	1.30-1.40-1.50	4.23-9.17-14.11	1.2- 2.0-3.0	0.43	0.43	3	28-33-43	9-12-18	C
	4-10	Silt loam	CL	A-6	0- 0- 0	0- 0- 1	5-10- 18	57-69- 76	17-21- 27	1.35-1.45-1.55	4.23-9.17-14.11	0.3- 0.6-1.0	0.55	0.55		27-32-38	11-15-1 9	
	10-21	Clay, silty clay loam, silty clay	CL	A-7-6, A-6	0- 0- 1	0- 1- 4	5-11- 18	34-48- 58	35-41- 50	1.45-1.55-1.65	0.42-2.33-4.23	0.2- 0.5-0.9	0.32	0.32		31-38-48	15-19-25	
	21-39	Silty clay loam, silty clay	CL	A-6	0- 1- 2	0- 1- 5	5-12- 20	40-52- 64	29-36- 42	1.55-1.65-1.70	0.42-0.92-1.41	0.1- 0.3-0.6	0.37	0.37		24-31-37	11-15-1 9	
	39-60	Silty clay loam, clay loam	CL	A-4, A-6	0- 1- 2	0- 2- 7	7-14- 23	50-55- 64	27-31- 35	1.60-1.70-1.85	0.42-0.75-1.41	0.0- 0.2-0.5	0.43	0.43		21-26-30	9-12-14	
530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded																		
Ozaukee, eroded	0-7	Silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 1	5-12- 22	53-66- 75	18-22- 27	1.30-1.43-1.55	4.23-9.17-14.11	1.0- 1.7-2.5	0.43	0.43	3	30-35-42	12-14-1 8	C
	7-26	Silty clay loam, clay, silty clay	CL	A-7-6, A-6	0- 0- 1	0- 1- 4	5-11- 18	34-48- 58	35-41- 50	1.45-1.55-1.65	0.42-2.33-4.23	0.2- 0.5-0.9	0.32	0.32		31-38-48	15-19-25	
	26-37	Silty clay loam, silty clay	CL	A-6	0- 1- 2	0- 1- 5	5-12- 20	40-52- 64	29-36- 42	1.55-1.65-1.70	0.42-0.92-1.41	0.1- 0.3-0.6	0.37	0.37		24-31-37	11-15-1 9	
	37-60	Silty clay loam, clay loam	CL	A-6, A-4	0- 1- 2	0- 2- 7	7-14- 23	50-55- 64	27-31- 35	1.60-1.70-1.85	0.42-0.75-1.41	0.0- 0.2-0.5	0.43	0.43		21-26-30	9-12-14	

Data Source Information
Soil Survey Area: Cook County, Illinois
Survey Area Data: Version 14, May 29, 2020

PEDOLOGY MAP AND DATA: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT 3-2 | DRAWN BY: J. Bensen, CHECKED BY: A. Kurnia

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Map unit symbol and soil name	Depth	USDA texture	Classification		Pct Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Erosion factors			Liquid limit	Plasticity index	Hydrologic group
			Unified	AASHTO	>10 inches	3-10 inches							Kw	Kf	T			
	In				*L-R-H*	*L-R-H*	%	%	%	*g/cc*	*micro m/sec*	%				*L-R-H*	*L-R-H*	
530D2—Ozaukee silt loam, 6 to 12 percent slopes, eroded																		
Ozaukee, eroded	0-7	Silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 1	7-14- 23	52-65- 73	18-21- 27	1.30-1.45-1.55	4.23-9.17-14.11	1.0- 1.7-2.5	0.43	0.43	3	30-35-42	12-15-1 9	C
	7-11	Silty clay loam, silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 1	5-10- 18	50-59- 69	24-31- 34	1.40-1.50-1.60	4.23-9.17-14.11	0.3- 0.6-1.0	0.43	0.43		34-41-45	16-21-24	
	11-27	Silty clay, silty clay loam, clay	CL, CH	A-7-6, A-6	0- 0- 1	0- 1- 4	5-11- 18	34-48- 58	35-41- 50	1.45-1.55-1.65	0.42-2.33-4.23	0.2- 0.5-0.9	0.32	0.32		30-38-52	15-19-26	
	27-32	Silty clay loam, silty clay	CL	A-6	0- 1- 2	0- 1- 5	5-12- 20	40-52- 64	29-36- 42	1.55-1.65-1.70	0.42-0.92-1.41	0.1- 0.3-0.6	0.37	0.37		24-31-37	11-15-1 9	
	32-60	Silty clay loam, clay loam	CL	A-6, A-4	0- 1- 2	0- 2- 7	7-14- 23	50-55- 64	27-31- 35	1.65-1.75-1.85	0.42-0.75-1.41	0.0- 0.2-0.5	0.43	0.43		21-26-31	9-12-15	
531B—Markham silt loam, 2 to 4 percent slopes																		
Markham	0-8	Silt loam	ML, CL	A-7-6, A-6	0- 0- 0	0- 0- 1	5-10- 15	58-66- 75	20-24- 27	1.30-1.40-1.50	4.23-9.17-14.11	2.0- 3.0-4.0	0.37	0.37	3	34-41-46	13-16-1 9	C
	8-21	Clay, silty clay, silty clay loam	CH, CL	A-7-6	0- 0- 1	0- 1- 4	5-12- 20	30-49- 60	35-39- 50	1.40-1.50-1.60	0.42-2.33-4.23	0.2- 0.6-1.0	0.37	0.37		43-48-60	25-28-36	
	21-32	Silty clay loam, silty clay	CH, CL	A-6, A-7-6	0- 1- 1	0- 3- 4	5-12- 20	40-52- 65	30-36- 45	1.55-1.65-1.75	0.42-0.92-1.41	0.1- 0.3-0.5	0.37	0.37		37-44-53	19-25-32	
	32-60	Clay loam, silty clay loam	CL	A-7-6, A-6	0- 1- 1	0- 2- 4	5-15- 25	40-53- 68	27-32- 38	1.65-1.75-1.85	0.42-0.92-1.41	0.0- 0.3-0.5	0.43	0.43		34-40-47	17-22-27	
696C2—Zurich silt loam, 4 to 6 percent slopes, eroded																		
Zurich, eroded	0-10	Silt loam	CL, ML	A-7-6, A-4, A-6	0- 0- 0	0- 0- 0	0- 9- 15	58-68- 85	15-23- 27	1.25-1.35-1.45	4.23-9.17-14.11	1.0- 1.5-2.0	0.43	0.43	5	27-35-41	9-15-19	C
	10-27	Silty clay loam, silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 9- 15	50-61- 75	25-30- 35	1.20-1.33-1.45	4.23-9.17-14.11	0.2- 0.6-1.0	0.43	0.43		35-41-47	17-21-25	
	27-40	Silt loam, sandy loam, loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0- 0- 0	0- 0- 0	10-25- 60	13-53- 75	10-22- 27	1.45-1.55-1.65	4.23-9.17-14.11	0.2- 0.3-0.5	0.43	0.43		21-32-38	6-15-19	
	40-60	Stratified loamy sand to silt loam	CL, SC- SM, SC, CL- ML	A-2-4, A-4, A-6, A-2-6	0- 0- 1	0- 1- 4	10-45- 85	0-37- 80	5-18- 25	1.50-1.63-1.75	4.23-23.29-42.34	0.0- 0.3-0.5	0.32	0.32		16-28-36	2-12-17	
698B—Grays silt loam, 2 to 4 percent slopes																		
Grays	0-8	Silt loam	CL, ML	A-7-6, A-4, A-6	0- 0- 0	0- 0- 0	0- 9- 15	58-70- 85	15-21- 27	1.15-1.23-1.30	4.23-9.17-14.11	2.0- 3.0-4.0	0.37	0.37	5	29-37-45	9-14-18	C
	8-11	Silt loam	CL	A-4, A-6	0- 0- 0	0- 0- 0	0- 9- 15	58-71- 85	15-20- 27	1.20-1.28-1.35	4.23-9.17-14.11	0.5- 0.8-1.0	0.49	0.49		26-31-39	9-13-19	
	11-34	Silty clay loam, silt loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 9- 15	50-61- 75	25-30- 35	1.25-1.35-1.45	4.23-9.17-14.11	0.2- 0.6-1.0	0.43	0.43		35-41-47	17-21-2 5	
	34-42	Silt loam, sandy loam, loam	CL, SC, CL-ML, SC-SM	A-6, A-4	0- 0- 0	0- 0- 0	15-42- 60	15-42- 75	8-17- 25	1.40-1.50-1.60	4.23-9.17-14.11	0.2- 0.3-0.5	0.37	0.37		19-27-36	4-11-17	
	42-60	Stratified loamy sand to silt loam	CL, SC- SM, SC, CL- ML	A-2-4, A-4, A-6, A-2-6	0- 0- 1	0- 1- 4	15-45- 85	0-43- 80	5-13- 20	1.50-1.60-1.70	4.23-23.29-42.34	0.0- 0.1-0.2	0.43	0.43		16-23-31	2-8 -13	
903A—Muskego and Houghton mucks, 0 to 2 percent slopes																		
Muskego	0-5	Muck	PT	A-8	—	—	—	—	—	0.10-0.16-0.21	4.23-23.29-42.34	60.0-75.0-90.0			1	0-0 -0	NP	C/D
	5-36	Muck	PT	A-8	—	—	—	—	—	0.10-0.16-0.21	4.23-23.29-42.34	60.0-75.0-90.0				0-0 -0	NP	
	36-80	Coprogenous silt loam, coprogenous silty clay loam, coprogenous earth	MH, OH, OL	A-7-5	0- 0- 0	0- 0- 0	4-14- 25	40-60- 78	18-26- 35	0.30-0.70-1.10	0.42-0.92-1.41	6.0-13.0-20.0	0.37	0.37		42-64-86	12-17-2 3	
Houghton	0-19	Muck	PT	A-8	—	—	—	—	—	0.20-0.28-0.35	1.41-21.88-42.34	70.0-84.5-99.0			2	0-0 -0	NP	A/D
	19-60	Muck	PT	A-8	—	—	—	—	—	0.15-0.20-0.25	1.41-21.88-42.34	70.0-84.5-99.0				0-0 -0	NP	
1903A—Muskego and Houghton mucks, undrained, 0 to 2 percent slopes																		
Muskego	0-5	Muck	PT	A-8	—	—	—	—	—	0.10-0.16-0.21	4.23-23.29-42.34	60.0-75.0-90.0			1	0-0 -0	NP	C/D
	5-27	Muck	PT	A-8	—	—	—	—	—	0.10-0.16-0.21	4.23-23.29-42.34	60.0-75.0-90.0				0-0 -0	NP	
	27-60	Coprogenous silt loam, coprogenous silty clay loam, coprogenous earth	OH, MH, OL	A-7-5	0- 0- 0	0- 0- 0	4-14- 25	40-60- 78	18-26- 35	0.30-0.70-1.10	0.42-0.92-1.41	6.0-13.0-20.0	0.37	0.37		42-64-86	12-17-2 3	
Houghton	0-19	Muck	PT	A-8	—	—	—	—	—	0.20-0.28-0.35	1.41-21.88-42.34	70.0-84.5-99.0			2	0-0 -0	NP	A/D
	19-60	Muck	PT	A-8	—	—	—	—	—	0.15-0.20-0.25	1.41-21.88-42.34	70.0-84.5-99.0				0-0 -0	NP	
3107A—Saw mill silty clay loam, heavy till plain, 0 to 2 percent slopes, frequently flooded																		
Saw mill, heavy till plain, frequently flooded	0-8	Silty clay loam	CL, CH	A-7-6, A-6	0- 0- 0	0- 0- 0	2- 7- 15	50-62- 71	27-31- 35	1.43-1.44-1.46	4.23-9.17-14.11	1.0- 3.0-4.0	0.28	0.28	5	39-47-53	19-22-25	B/D
	8-30	Silty clay loam	CL, CH	A-7-6, A-6	0- 0- 0	0- 0- 0	2-10- 15	50-59- 71	27-31- 35	1.30-1.34-1.39	4.23-9.17-14.11	1.0- 2.0-4.0	0.32	0.32		39-45-53	19-22-25	
	30-51	Silty clay loam, clay loam, loam, silt loam	CL	A-7-6, A-6	0- 0- 0	0- 0- 0	3-11- 25	45-59- 72	20-30- 35	1.35-1.38-1.41	4.23-9.17-14.11	0.0- 0.8-2.0	0.43	0.43		31-42-49	14-21-25	
	51-65	Clay loam, silty clay loam, silt loam, loam	CL	A-6, A-7-6	0- 0- 0	0- 0- 0	5-11- 25	40-65- 77	18-24- 35	1.40-1.42-1.44	4.23-9.17-14.11	0.0- 0.4-1.0	0.49	0.49		29-39-47	12-19-2 5	

Data Source Information
Soil Survey Area: Cook County, Illinois
Survey Area Data: Version 14, May 29, 2020

PEDOLOGY MAP AND DATA: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT 3-3 | DRAWN BY: J. Bensen, CHECKED BY: A. Kurnia

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0 0.25 Mile

Legend

Boring Location

BORING LOCATION PLAN: PEDESTRIAN AND BICYCLE BRIDGE OVER IL ROUTE 59 AND TRAIL IMPROVEMENTS, COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 4	DRAWN BY: J. Bensen CHECKED BY: A. Kurnia

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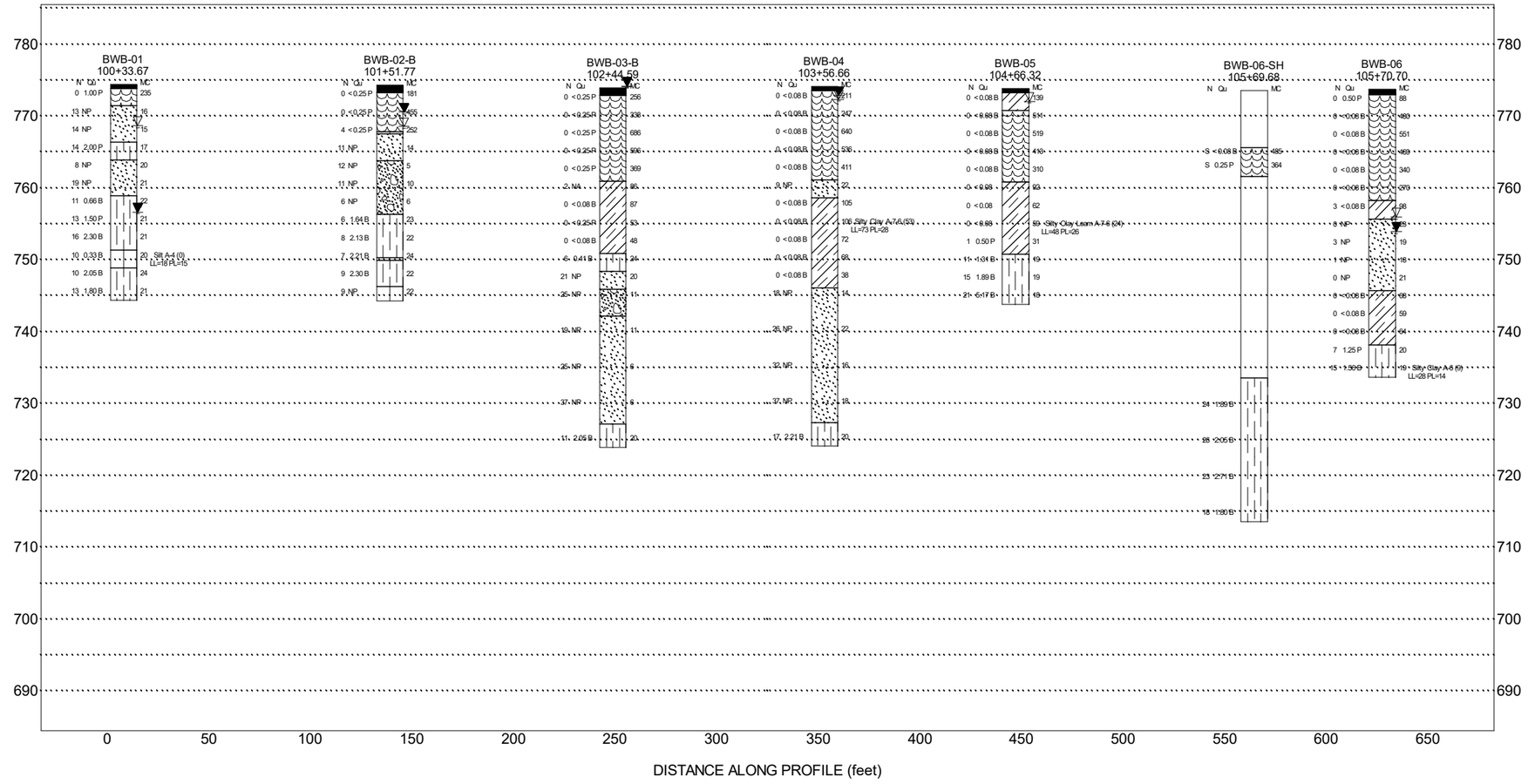
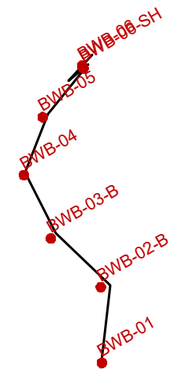
7901-12-02



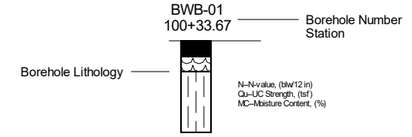
Lithology Graphics

- Topsoil
- USCS Peat
- IDH Sand, Sandy Loam
- IDH Silty Clay, Silty Clay Loam
- IDH Silt, Silty Loam
- Gravelly sand, sandy gravel
- USCS High Plasticity Organic silt or clay



Site Map Scale 1 inch equals 240 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

0 — 65

Horizontal Scale (feet)

Vertical Exaggeration: 3.5x

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Soil Profile

Pedestrian Bridge and Trail over IL 59
Streamwood, IL

JOB NUMBER	PLATE NUMBER
7901-12-02	EXHIBIT 5-1

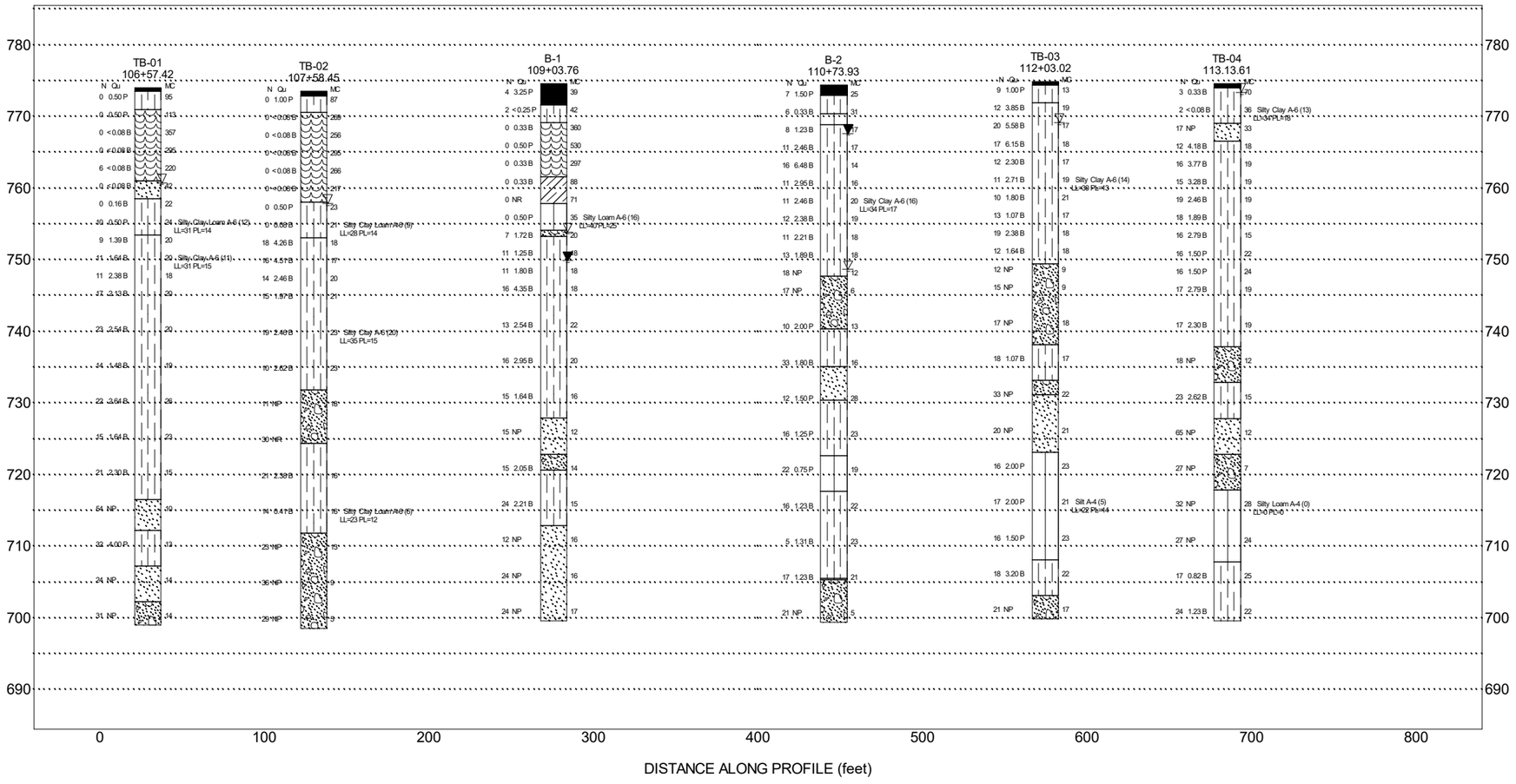
WEI SINCE 1982

WEI 11X17 7901202.GPJ WANGENG.GDT 8/26/21

W

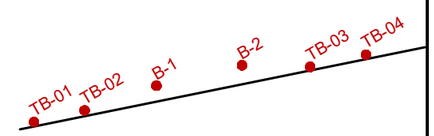
E

N



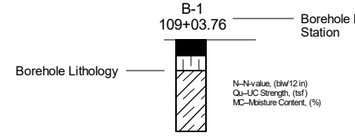
Lithology Graphics

- Topsoil
- IDH Silty Clay, Silty Clay Loam
- USCS Peat
- USCS High Plasticity Organic silt or clay
- IDH Silt, Silty Loam
- Gravelly sand, sandy gravel
- IDH Sand, Sandy Loam



Site Map Scale 1 inch equals 295 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

Horizontal Scale (feet)

Vertical Exaggeration: 4.5x

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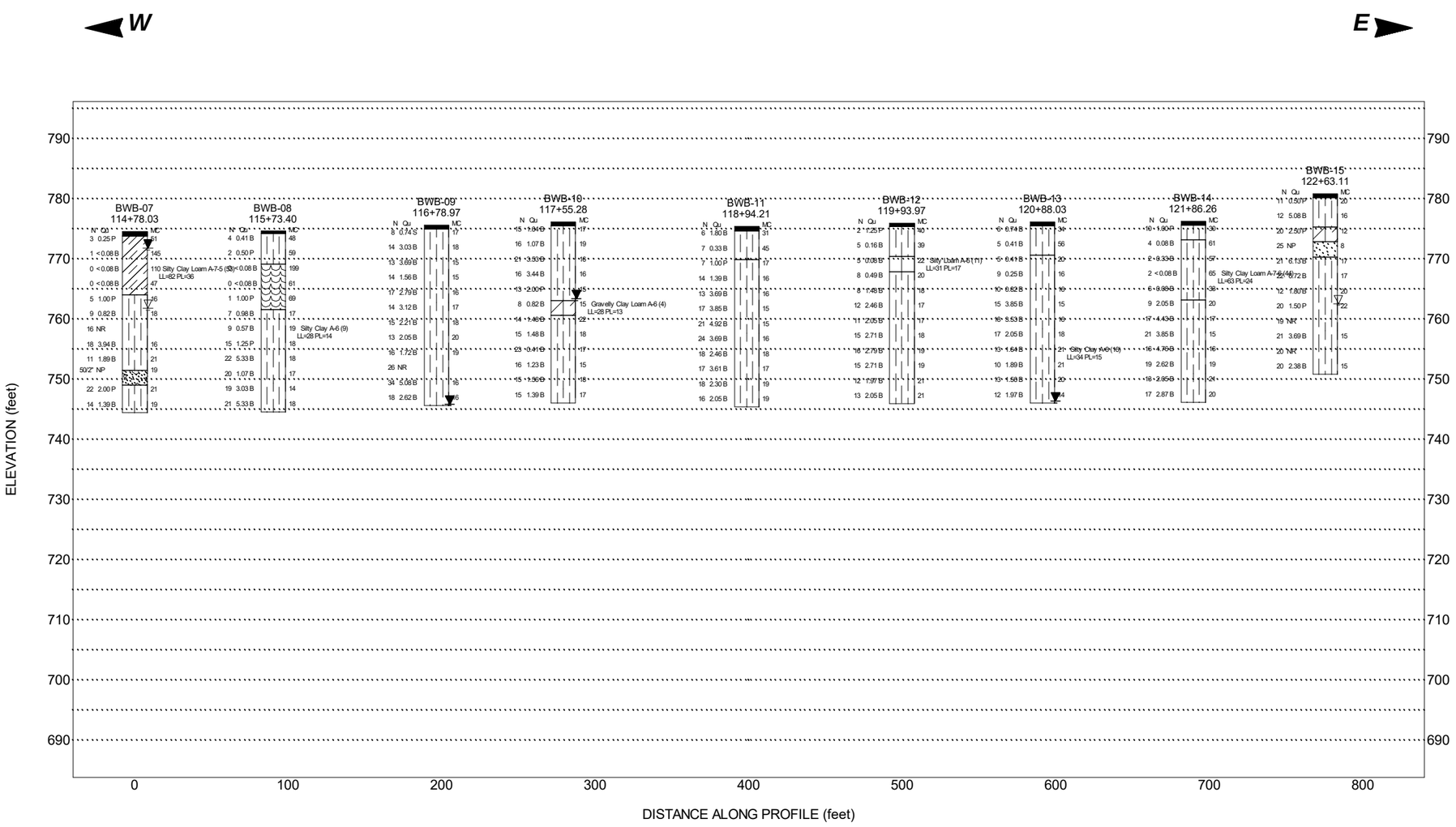
Soil Profile

WEI SINCE 1982

Pedestrian Bridge and Trail over IL 59
Streamwood, IL

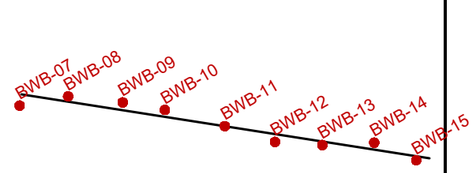
JOB NUMBER	PLATE NUMBER
7901-12-02	EXHIBIT 5-2

WEI 11X17 7901202.GPJ WANGENG.GDT 8/26/21



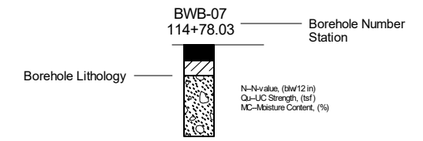
Lithology Graphics

- Topsoil
- USCS High Plasticity Organic silt or clay
- IDH Silty Clay, Silty Clay Loam
- Gravelly sand, sandy gravel
- USCS Peat
- IDH Clay Loam
- IDH Silt, Silty Loam
- IDH Sand, Sandy Loam



Site Map Scale 1 inch equals 295 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

0 80

Horizontal Scale (feet)

Vertical Exaggeration: 4x

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Soil Profile

WEI SINCE 1982

Pedestrian Bridge and Trail over IL 59
Streamwood, IL

JOB NUMBER	PLATE NUMBER
7901-12-02	EXHIBIT 5-3

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APPENDIX A

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Fax: 630 953-9938

BORING LOG B-1

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.64 ft
North: 1951349.79 ft
East: 1019593.51 ft
Station: 109+03.76
Offset: 17.00 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Very stiff, brown SILTY CLAY LOAM; damp						
		--TOPSOIL--			1	3 2 2	3.25 P	39
	771.6	Very soft, gray SILTY CLAY LOAM, trace organic matter; wet						
		--RDR 2--	5		2	1 1 1	< 0.25 P	42
	769.1	Soft to medium stiff, brown PEAT; moist to wet						
		--RDR 2--			3	0 0 0	0.33 B	360
		--Organic content= 54.1%--			4	0 0 0	0.50 P	530
			10		5	0 0 0	0.33 B	297
	761.6	Very loose, gray, organic SILTY LOAM; wet						
		--RDR 2--	15		6	0 0 0	0.33 B	88
	757.9	Medium stiff, gray SILTY LOAM to SILTY CLAY LOAM, trace organic matter; wet			7	0 0 0	NR	71
		--L_L(%)=40, P_L(%)=25--						
		--%Gravel=0.1--						
		--%Sand=3.5--						
		--%Silt=77.0--	20		8	0 0 0	0.50 P	35
	754.1	--%Clay=19.4--						
		--RDR 2--						
	753.3	Gray SANDY GRAVEL, some clay; saturated			9	2 3 4	1.72 B	20
		Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist						
		--RDR 2--	25		10	3 4 7	1.25 B	18
					11	3 5 6	1.80 B	18
			30		12	5 7 9	4.35 B	18
		--water exited through auger flights from the surface of boring while drilling--						
			35		13	3 5 8	2.54 B	22
			40		14	6 7 9	2.95 B	20

GENERAL NOTES

Begin Drilling: **09-04-2020** Complete Drilling: **09-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&J** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA, autohammer, backfilled upon completion**

WATER LEVEL DATA

While Drilling: **21.00 ft**
At Completion of Drilling: **25.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG B-1

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.64 ft
North: 1951349.79 ft
East: 1019593.51 ft
Station: 109+03.76
Offset: 17.00 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	6 7 8	1.64 B	16
	727.9	--slow hard drilling-- --rig chatter; possible cobbles-- Medium dense, gray, fine to medium SAND, some gravel; saturated --RDR 4--	50		16	5 9 6	NP	12
	722.9	Gray GRAVELLY SAND; saturated --RDR 3--						
	720.6	Very stiff, gray SILTY CLAY, trace gravel; damp to moist --RDR 2--	55		17	4 7 8	2.05 B	14
			60		18	8 10 14	2.21 B	15
	712.9	--hard drilling-- Medium dense, gray, medium SAND to SANDY LOAM; saturated --RDR 2-3--	65		19	3 4 8	NP	16
			70		20	11 11 13	NP	16
	699.6	Boring terminated at 75.00 ft	75		21	7 9 15	NP	17
			80					

GENERAL NOTES

Begin Drilling: **09-04-2020** Complete Drilling: **09-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&J** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA, autohammer, backfilled upon completion**

WATER LEVEL DATA

While Drilling: **21.00 ft**
At Completion of Drilling: **25.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG B-2

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.39 ft
North: 1951389.28 ft
East: 1019759.30 ft
Station: 110+73.93
Offset: 26.31 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		17-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
	773.0							
		Soft to stiff, brown to gray SILTY CLAY; moist to wet						
		--RDR 2--						
					1	7 4 3	1.50 P	25
	770.4							
		Loose, brown SILT; moist						
			5		2	2 2 4	0.33 B	31
	768.9	--rig chatter; possible cobbles--						
		Stiff to hard, gray SILTY CLAY, trace gravel; damp to moist						
		--RDR 2-3--			3	2 3 5	1.23 B	17
			10		4	3 5 6	2.46 B	17
					5	4 6 10	6.48 B	14
		--rig chatter; possible cobbles--						
			15		6	3 5 6	2.95 B	16
		--L_L(%)=34, P_L(%)=17--						
		--%Gravel=1.9--						
		--%Sand=3.6--			7	4 4 7	2.46 B	20
		--%Silt=54.7--						
		--%Clay=39.8--						
					8	5 5 7	2.38 B	19
		--2-inch thick, silty clay loam lens;	20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		wet--						
					9	4 5 6	2.21 B	18
			25		10	4 5 8	1.89 B	18
	747.7							
		Medium dense, gray SANDY GRAVEL; saturated						
		--RDR 2--			11	6 9 9	NP	12
			30		12	6 7 10	NP	6
		--heaving sand in augers--						
	740.4							
		Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; moist to wet	35		13	9 6 4	2.00 P	13
		--RDR 2--						
	735.1							
		Gray, medium to coarse SAND;	40		14	6 16 17	1.80 B	16

GENERAL NOTES

Begin Drilling: **09-02-2020** Complete Drilling: **09-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&J** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA, autohammer, backfilled upon completion**

WATER LEVEL DATA

While Drilling: **26.00 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG B-2

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.39 ft
North: 1951389.28 ft
East: 1019759.30 ft
Station: 110+73.93
Offset: 26.31 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		saturated --RDR 2--						
	730.4	Stiff, gray SILTY CLAY; moist --RDR 2-- --laminated sand and silt seams; wet--	45		15	7 5 7	1.50 P	28
		--laminated sand and silt seams; wet--	50		16	5 6 10	1.25 P	23
	722.6	Medium dense, gray SILTY LOAM; saturated --RDR 2-- --laminated silty clay and sand seams--	55		17	6 9 13	0.75 P	19
	717.6	Stiff, gray SILTY CLAY; moist to wet --RDR 2-- --laminated silty loam seams; saturated--	60		18	6 7 9	1.23 B	22
		--water exited through auger flights from the surface of boring while drilling--						
		--laminated sand and silt seams; saturated--	65		19	3 2 3	1.31 B	23
	705.6 705.4	Gray SILTY LOAM, trace gravel; saturated	70		20	7 8 9	1.23 B	21
		Medium dense, gray SANDY GRAVEL; saturated --RDR 2-- --heaving sand in augers; flushed augers with water--						
	699.4	Boring terminated at 75.00 ft	75		21	11 11 10	NP	5
			80					

GENERAL NOTES

Begin Drilling: **09-02-2020** Complete Drilling: **09-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&J** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA, autohammer, backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **26.00 ft**
At Completion of Drilling: ▼ **7.00 ft**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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BORING LOG BWB-01

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.40 ft
North: 1950788.53 ft
East: 1019305.04 ft
Station: 100+33.67
Offset: 38.78 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.8	7-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
		Stiff, brown PEAT; moist						
		--RDR 2--			1	0 0 0	1.00 P	235
	771.4							
		Medium dense, gray, SANDY LOAM, little gravel; moist						
		--RDR 2--	5		2	4 6 7	NP	16
					3	6 5 9	NP	15
	766.4							
		Very stiff, gray SILTY CLAY, trace gravel; moist						
		--RDR 2--	10		4	5 6 8	2.00 P	17
	763.9							
		Loose to medium dense, gray SANDY LOAM; saturated						
		--RDR 2--			5	3 4 4	NP	20
			15		6	5 6 13	NP	21
	758.9							
		Medium stiff to very stiff, gray SILTY CLAY, trace gravel; moist to wet						
		--RDR 2--			7	3 5 6	0.66 B	22
			20		8	4 6 7	1.50 P	21
	751.4							
		Medium dense, gray SILT; wet						
		--RDR 2--			9	5 6 10	2.30 B	21
		--L_L(%)=18, P_L(%)=15--						
		--%Gravel=0.0--						
		--%Sand=1.2--	25		10	5 4 6	0.33 B	20
	748.9	--%Silt=80.3--						
		--%Clay=18.5--						
		--A-4 (0)--						
		Stiff to very stiff, gray SILTY CLAY, trace gravel; moist						
		--RDR 2--			11	4 4 6	2.05 B	24
					12	5 6 7	1.80 B	21
	744.4		30					
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-07-2021** Complete Drilling: **05-07-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **18.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-02

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.00 ft
North: 1950884.44 ft
East: 1019167.42 ft
Station: 101+29.58
Offset: 98.84 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.5	6-inch thick, black CLAY LOAM --TOPSOIL--						
		Very soft, brown PEAT; saturated --RDR 1--			1	0 0 0	< 0.08 B	159
			5		2	0 0 0	< 0.08 B	497
					3	0 0 0	< 0.08 B	486
			10		4	0 0 0	< 0.08 B	214
	763.5	Medium dense, brown GRAVEL; wet --RDR 2--			5	9 9 9	NP	
	761.0	Medium dense, gray SANDY LOAM to coarse SAND, trace gravel; saturated --RDR 2--	15		6	8 10 7	NP	13
					7	20 12 9	NP	19
	756.0	Dense, gray SILTY LOAM; moist --RDR 2--			8	41 35 13	0.50 P	16
			20					
	753.5	Medium stiff to stiff, gray SILTY CLAY, trace gravel; damp to moist --RDR 2--			9	3 6 10	1.56 B	22
			25		10	3 3 4	0.82 B	23
					11	3 5 7	1.23 B	22
	744.0		30		12	2 6 6	1.80 B	22
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-05-2021** Complete Drilling: **05-05-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **2.00 ft**
At Completion of Drilling: **2.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-02-B

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.30 ft
North: 1950907.43 ft
East: 1019303.23 ft
Station: 101+51.77
Offset: 37.00 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, black SILTY CLAY --TOPSOIL--						
	773.3	Very soft, black to brown PEAT; wet --RDR 2-1--			1	0 0 0	< 0.25 P	181
			5		2	0 0 0	< 0.25 P	455
	767.8							
	767.6	Gray SILTY CLAY; moist --RDR 1--			3	2 1 3	< 0.25 P	252
		Loose to medium dense, coarse SAND; saturated --RDR 1-2--	10		4	5 5 6	NP	14
	763.8	Loose to medium dense, gray SANDY GRAVEL; saturated --RDR 2--			5	6 6 6	NP	5
			15		6	8 6 5	NP	10
					7	5 4 2	NP	6
	756.3	Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--	20		8	2 3 3	1.64 B	23
	750.3							
	750.0	Gray SILT; saturated --RDR 2--	25		9	2 4 4	2.13 B	22
		Very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--			10	4 4 3	2.21 B	24
					11	4 3 6	2.30 B	22
	746.3	Loose, gray SILT; saturated --RDR 2--			12	3 5 4	NP	22
	744.3	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-18-2021** Complete Drilling: **05-18-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&R** Logger: **I. Nenn** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **4.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-03

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.10 ft
North: 1950983.51 ft
East: 1019179.23 ft
Station: 102+74.63
Offset: 37.93 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.5	7-inch thick, black SILTY CLAY LOAM --TOPSOIL--						
		Very soft, black, brown to gray PEAT; wet to saturated --RDR 2-1--			1	0 0 0	< 0.08 B	158
			5		2	0 0 0	< 0.08 B	514
					3	0 0 0	< 0.08 B	652
			10		4	0 0 0	< 0.08 B	456
	763.6	Very soft gray, organic SILTY CLAY; wet --RDR 1--			5	0 0 0	< 0.08 B	88
			15		6	0 0 0	< 0.08 B	96
	758.6	Medium dense, gray SANDY GRAVEL; saturated --RDR 2--			7	7 7 6	NP	13
	756.1	Dense, gray, medium to coarse SAND; saturated --RDR 2--			8	7 19 25	NP	22
			20					
	753.6	Medium dense to very dense, gray GRAVELLY SAND to SANDY GRAVEL; saturated --RDR 2--			9	7 7 5	NP	13
			25		10	32 31 23	NP	20
					11	38 15 10	NP	9
	746.1	Medium dense, gray, fine SAND; saturated --RDR 2--			12	6 5 5	NP	23
	744.1	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-10-2021** Complete Drilling: **05-10-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **1.50 ft**
At Completion of Drilling: **2.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-03-B

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.90 ft
North: 1950984.20 ft
East: 1019224.66 ft
Station: 102+44.59
Offset: 6.39 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	772.9	12-inch thick, black LOAM; saturated						
		--TOPSOIL--						
		Very soft, black, brown to olive gray PEAT; saturated						
		--RDR 1--						
					1	0 0 0	< 0.25 P	256
					2	0 0 0	< 0.25 P	338
			5					
					3	0 0 0	< 0.25 P	686
					4	0 0 0	< 0.25 P	596
			10					
					5	0 0 0	< 0.25 P	369
	760.9	Very soft, gray to black, organic SILTY CLAY to SILTY CLAY LOAM; wet to saturated						
		--RDR 1--						
					6	0 1 1	NA	86
			15					
					7	0 0 0	< 0.08 B	87
					8	0 0 0	< 0.25 P	53
			20					
					9	0 0 0	< 0.08 B	48
	750.9	Soft, gray SILTY CLAY LOAM; moist						
		--RDR 2--						
					10	3 3 3	0.41 B	24
			25					
	748.4	Medium dense, gray, coarse SAND; saturated						
		--RDR 2--						
					11	9 12 9	NP	20
	745.9	Medium dense, gray SANDY GRAVEL; saturated						
		--RDR 2--						
					12	12 14 11	NP	11
			30					
	742.2	Medium dense to dense, gray, coarse SAND, little to some gravel; saturated						
		--RDR 2--						
					13	28 12 7	NP	11
			35					
					14	9 12 13	NP	6
			40					

GENERAL NOTES

Begin Drilling: **05-18-2021** Complete Drilling: **05-18-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&R** Logger: **I. Nenn** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **0.00 ft**
At Completion of Drilling: **0.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-03-B

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.90 ft
North: 1950984.20 ft
East: 1019224.66 ft
Station: 102+44.59
Offset: 6.39 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	12 16 21	NP	6
	727.2							
		Very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--						
			50		16	15 4 7	2.05 B	20
	723.9	Boring terminated at 50.00 ft						
			55					
			60					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **05-18-2021** Complete Drilling: **05-18-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&R** Logger: **I. Nenn** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **0.00 ft**
At Completion of Drilling: **0.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-04

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.10 ft
North: 1951083.72 ft
East: 1019182.30 ft
Station: 103+56.66
Offset: 10.77 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.5	7-inch thick, black SILTY CLAY --TOPSOIL--						
		Very soft, black to brown PEAT; wet to saturated --RDR 1--			1	0 0 0	< 0.08 B	211
			5		2	0 0 0	< 0.08 B	247
					3	0 0 0	< 0.08 B	640
			10		4	0 0 0	< 0.08 B	536
					5	0 0 0	< 0.08 B	411
	761.1	Loose, gray, fine SAND; moist --RDR 2--	15		6	0 4 5	NP	22
	758.6	Very soft, gray, organic SILTY CLAY to SILTY CLAY LOAM; moist to wet --RDR 2--			7	0 0 0	< 0.08 B	105
		--L_L(%)=73, P_L(%)=28-- --%Gravel=0.0-- --%Sand=0.8--	20		8	0 0 0	< 0.08 B	106
		--%Silt=68.8-- --%Clay=30.4-- --A-7-6 (53)--			9	0 0 0	< 0.08 B	72
			25		10	0 0 0	< 0.08 B	68
					11	0 0 0	< 0.08 B	38
	746.1	Medium dense to dense, gray, coarse SAND to SANDY LOAM; saturated --RDR 2--	30		12	7 8 10	NP	14
			35		13	13 13 13	NP	22
		--trace gravel--	40		14	25 16 16	NP	16

GENERAL NOTES

Begin Drilling: **05-10-2021** Complete Drilling: **05-11-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **2.00 ft**
At Completion of Drilling: **1.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-04

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.10 ft
North: 1951083.72 ft
East: 1019182.30 ft
Station: 103+56.66
Offset: 10.77 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--trace gravel--	45		15	21 16 21	NP	18
	727.4							
		Very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--						
	724.1		50		16	8 8 9	2.21 B	20
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling: **05-10-2021** Complete Drilling: **05-11-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **2.00 ft**
At Completion of Drilling: **1.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-05

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.80 ft
North: 1951174.80 ft
East: 1019211.97 ft
Station: 104+66.32
Offset: 18.35 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.2	7-inch thick, brown CLAY LOAM --TOPSOIL--						
		Very soft, gray, organic SILTY CLAY; wet --RDR 1--			1	0 0 0	< 0.08 B	139
	770.8	Very soft, brown PEAT; saturated --RDR 1--	5		2	0 0 0	< 0.08 B	511
					3	0 0 0	< 0.08 B	519
			10		4	0 0 0	< 0.08 B	413
					5	0 0 0	< 0.08 B	310
	760.8	Very soft to medium stiff, gray, organic SILTY CLAY to SILTY CLAY LOAM; moist to wet --RDR 1--	15		6	0 0 0	< 0.08	92
					7	0 0 0	< 0.08	62
		--L_L(%)=48, P_L(%)=26-- --%Gravel=0.1-- --%Sand=3.6--	20		8	0 0 0	< 0.08	59
		--%Silt=74.8-- --%Clay=21.5-- --A-7-6 (24)--			9	0 0 1	0.50 P	31
	750.8	Stiff to hard, gray SILTY CLAY, trace gravel; damp to moist --RDR 2--	25		10	1 3 8	1.31 B	19
					11	3 7 8	1.89 B	19
	743.8		30		12	6 9 12	5.17 B	18
		Boring terminated at 30.00 ft	35					
			40					

GENERAL NOTES

Begin Drilling: **05-05-2021** Complete Drilling: **05-05-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **2.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-06

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.70 ft
North: 1951255.88 ft
East: 1019273.96 ft
Station: 105+70.70
Offset: 1.33 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.0	9-inch thick, brown CLAY LOAM --TOPSOIL--						
		Very soft to medium stiff, brown PEAT; moist to wet --RDR 1--			1	0 0 0	0.50 P	88
			5		2	0 0 0	< 0.08 B	480
					3	0 0 0	< 0.08 B	551
			10		4	0 0 0	< 0.08 B	469
					5	0 0 0	< 0.08 B	340
			15		6	0 0 0	< 0.08 B	270
	758.2	Very soft, gray, organic SILTY CLAY; wet --RDR 1--			7	3 1 2	< 0.08 B	98
	755.7	Very loose, gray SANDY LOAM to fine SAND; saturated --RDR 2--			8	0 0 0	NP	23
			20					
	745.7	Very soft, gray, organic SILTY CLAY to SILTY CLAY LOAM; wet --RDR 1--			9	2 1 2	NP	19
			25		10	1 0 1	NP	18
					11	0 0 0	NP	21
			30		12	0 0 0	< 0.08 B	68
					13	0 0 0	< 0.08 B	59
			35		14	0 0 0	< 0.08 B	64
	738.2	Stiff, gray SILTY CLAY, trace gravel; damp to moist --RDR 2--			15	2 2 5	1.25 P	20
		--L_L(%)=28, P_L(%)=14-- --%Gravel=7.0-- --%Sand=15.4--			16	4 6 9	1.56 B	19
	733.7		40					

GENERAL NOTES

Begin Drilling: **05-05-2021** Complete Drilling: **05-05-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **20.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-06

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.70 ft
North: 1951255.88 ft
East: 1019273.96 ft
Station: 105+70.70
Offset: 1.33 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=49.4-- --%Clay=28.3-- --A-6 (9)--						
		Boring terminated at 40.00 ft						
			45					
			50					
			55					
			60					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **05-05-2021** Complete Drilling: **05-05-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **20.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-06-SH

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.60 ft
North: 1951251.94 ft
East: 1019275.80 ft
Station: 105+69.68
Offset: 2.97 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Blind drill to 8.0 feet	5					
	765.6							
		Very soft, brown PEAT; moist	10		1	PUSH	< 0.08 B	485
					2	PUSH	0.25 P	364
	761.6							
		Blind drill from 12.0 to 40.0 feet	15					
			20					
	733.6		25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-10-2021** Complete Drilling: **05-10-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-06-SH

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.60 ft
North: 1951251.94 ft
East: 1019275.80 ft
Station: 105+69.68
Offset: 2.97 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff to very stiff, gray SILTY CLAY, trace gravel; damp to moist						
		--RDR 2--						
			45		17	7 10 14	1.89 B	
			50		18	8 11 15	2.05 B	
			55		19	5 10 13	2.71 B	
	713.6		60		20	6 9 9	1.80 B	
		Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling: **05-10-2021** Complete Drilling: **05-10-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-07

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.50 ft
North: 1951438.44 ft
East: 1020161.06 ft
Station: 114+78.03
Offset: 3.09 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.8	8-inch thick, black CLAY LOAM --TOPSOIL--						
		Very soft to soft, black, brown to gray organic SILTY CLAY LOAM to SILTY CLAY; moist to wet --RDR 2--			1	1 1 2	0.25 P	51
			5		2	0 0 1	< 0.08 B	145
		--L_L(%)=82, P_L(%)=36-- --%Gravel=0.0-- --%Sand=6.4-- --%Silt=71.2-- --%Clay=22.4-- --A-7-5 (53)--			3	0 0 0	< 0.08 B	110
			10		4	0 0 0	< 0.08 B	47
	764.0	Medium stiff to very stiff, gray SILTY CLAY LOAM to SILTY CLAY, trace gravel; moist to wet --RDR 2--			5	1 2 3	1.00 P	16
			15		6	2 4 5	0.82 B	18
					7	9 8 8	NR	
			20		8	6 8 10	3.94 B	16
					9	3 4 7	1.89 B	21
	751.5	Very dense, gray SANDY GRAVEL, some cobble fragments; saturated --RDR 3-- --rig chatter; possible cobbles--	25		10	50/2"	NP	19
	749.0	Stiff to very stiff, gray SILTY CLAY, trace gravel; moist --RDR 2--			11	7 9 13	2.00 P	21
	744.5	Boring terminated at 30.00 ft	30		12	4 6 8	1.39 B	19
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-03-2021** Complete Drilling: **05-03-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **3.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-08

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.60 ft
North: 1951456.35 ft
East: 1020255.11 ft
Station: 115+73.40
Offset: 4.83 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	774.3	4-inch thick, black CLAY LOAM --TOPSOIL--						
		Soft to medium stiff, black to gray, SILTY CLAY LOAM, organic matter; moist --RDR 2--			1	1 1 3	0.41 B	48
			5		2	0 1 1	0.50 P	59
	769.1	Very soft to stiff, brown to gray PEAT; wet --RDR 2--			3	0 0 0	< 0.08 B	199
			10		4	0 0 0	< 0.08 B	61
					5	0 0 1	1.00 P	69
	761.6	Medium stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp to wet --wood fragments-- --RDR 2--	15		6	1 3 4	0.98 B	17
		--L_L(%)=28, P_L(%)=14-- --%Gravel=5.1-- --%Sand=15.5-- --%Silt=50.5-- --%Clay=29.0-- --A-6 (9)--			7	3 4 5	0.57 B	19
			20		8	6 6 9	1.25 P	18
			25		9	5 10 12	5.33 B	18
					10	10 8 12	1.07 B	17
			30		11	8 7 12	3.03 B	14
	744.6	Boring terminated at 30.00 ft			12	8 11 10	5.33 B	18
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-04-2021** Complete Drilling: **05-04-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-09

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 775.60 ft
North: 1951444.59 ft
East: 1020360.93 ft
Station: 116+78.97
Offset: 3.22 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	775.0	7-inch thick, black CLAY LOAM --TOPSOIL--						
		Medium stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; moist --RDR 2--			1	2 2 6	0.74 S	17
			5		2	3 5 9	3.03 B	18
					3	4 6 7	3.69 B	15
			10		4	3 6 8	1.56 B	15
					5	6 7 10	2.79 B	16
		--cobble fragments--	15		6	4 7 7	3.12 B	17
		--cobble fragments--			7	4 7 8	2.21 B	18
			20		8	4 6 7	2.05 B	20
			25		10	10 12 14	NR	
					11	5 8 26	5.08 B	16
	745.6		30		12	3 10 8	2.62 B	16
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-29-2021** Complete Drilling: **04-29-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **30.00 ft**
At Completion of Drilling: **30.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-10

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 776.10 ft
North: 1951430.03 ft
East: 1020442.25 ft
Station: 117+55.28
Offset: 24.30 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	775.5	7-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
		Stiff to very stiff, brown to gray SILTY CLAY, trace gravel; damp to moist						
		--RDR 2--			1	2 5 10	1.64 B	17
			5		2	5 6 10	1.07 B	19
					3	5 9 12	3.53 B	16
			10		4	5 6 10	3.44 B	16
					5	3 7 6	2.00 P	15
	763.1							
		Medium stiff, gray, gravelly CLAY LOAM; moist to wet			6	2 3 5	0.82 B	15
		--RDR 2--						
		--L_L(%)=28, P_L(%)=13--						
		--%Gravel=16.0--	15					
	760.6	--%Sand=32.0--						
		--%Silt=31.3--						
		--%Clay=20.7--						
		--A-6 (4)--			7	4 6 8	1.48 B	22
		Soft to stiff, gray SILTY CLAY LOAM to SILTY CLAY, trace gravel; damp to moist						
		--RDR 2--						
			20		8	5 7 8	1.48 B	18

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			25		9	5 13 10	0.41 B	17
					10	5 6 10	1.23 B	15
					11	3 6 9	1.56 B	18
	746.1		30		12	4 6 9	1.39 B	17
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-29-2021** Complete Drilling: **04-29-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **13.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG BWB-11

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 775.40 ft
North: 1951398.61 ft
East: 1020558.16 ft
Station: 118+94.21
Offset: 31.17 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	774.7	9-inch thick, black CLAY LOAM --TOPSOIL--						
		Soft to stiff, black to gray SILTY CLAY, trace organic matter; moist --RDR 2--			1	1 3 3	1.80 B	31
			5		2	2 2 5	0.33 B	45
	769.9							
		Stiff to hard, brown to gray SILTY CLAY LOAM to SILTY CLAY, trace gravel; damp to moist --RDR 2--			3	1 2 5	1.00 P	17
			10		4	5 6 8	1.39 B	16
					5	3 5 8	3.69 B	16
			15		6	3 8 9	3.85 B	15
					7	7 9 12	4.92 B	15
			20		8	8 13 11	3.69 B	16
			25		9	3 8 10	2.46 B	18
					10	4 6 11	3.61 B	17
					11	6 8 10	2.30 B	19
	745.4		30		12	4 8 8	2.05 B	19
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-28-2021** Complete Drilling: **04-28-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-12

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 775.90 ft
North: 1951368.16 ft
East: 1020655.74 ft
Station: 119+93.97
Offset: 4.05 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	775.4	6-inch thick, black CLAY LOAM --TOPSOIL--						
		Very soft to stiff, black to gray SILTY CLAY, trace organic matter; moist --RDR 2--			1	0 0 2	1.25 P	40
			5		2	1 2 3	0.16 B	39
	770.4	Loose, gray SILTY LOAM; wet --RDR 2-- --L_L(%)=31, P_L(%)=17-- --%Gravel=4.6-- --%Sand=10.8-- --%Silt=67.3-- --%Clay=17.3-- --A-6 (11)--			3	1 2 3	0.08 B	22
	767.9	Soft to very stiff, brown to gray SILTY CLAY, trace gravel; damp to moist --RDR 2--	10		4	1 2 6	0.49 B	20
					5	5 3 5	1.48 B	18
			15		6	3 5 7	2.46 B	17
					7	4 4 7	2.05 B	17
			20		8	5 6 9	2.71 B	18
			25		9	5 7 9	2.79 B	19
					10	5 6 9	2.71 B	19
					11	4 4 8	1.97 B	21
			30		12	4 6 7	2.05 B	21
	745.9	Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-28-2021** Complete Drilling: **04-28-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-13

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 776.10 ft
North: 1951362.07 ft
East: 1020747.35 ft
Station: 120+88.03
Offset: 13.68 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	775.5	7-inch thick, black CLAY LOAM --TOPSOIL--						
		Soft to medium stiff, gray SILTY CLAY, trace organic matter; damp to moist --RDR 2--			1	3 2 4	0.74 B	34
			5		2	0 1 4	0.41 B	56
	770.6							
		Soft to very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2--			3	0 2 3	0.41 B	20
			10		4	1 4 5	0.25 B	16
					5	5 4 6	0.82 B	16
			15		6	4 5 10	3.85 B	15
					7	4 8 10	3.53 B	16
			20		8	5 8 9	2.05 B	18
		--L_L(%)=34, P_L(%)=15-- --%Gravel=2.1-- --%Sand=9.1-- --%Silt=52.1-- --%Clay=36.7-- --A-6 (16)--			9	5 6 7	1.64 B	21
			25		10	3 4 6	1.89 B	21
					11	5 6 7	1.56 B	20
		--moist to wet--			12	1 5 7	1.97 B	14
	746.1	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-28-2021** Complete Drilling: **04-28-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **30.00 ft**
At Completion of Drilling: **30.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-14

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 776.20 ft
North: 1951366.61 ft
East: 1020847.58 ft
Station: 121+86.26
Offset: 11.82 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	775.6	7-inch thick, black CLAY LOAM --TOPSOIL--						
		Stiff, black SILTY CLAY, trace organic matter; moist --RDR 2--			1	4 4 6	1.00 P	30
	773.2	Very soft to soft, gray, SILTY CLAY to SILTY CLAY LOAM, organic matter; moist to wet --RDR 2--	5		2	1 2 2	0.08 B	61
					3	0 1 1	0.33 B	57
		--L_L(%)=63, P_L(%)=24-- --%Gravel=0.0-- --%Sand=2.3-- --%Silt=70.7-- --%Clay=26.9-- --A-7-6 (44)--	10		4	0 1 1	< 0.08 B	65
					5	1 2 4	0.08 B	33
	763.2	Very stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2--	15		6	2 3 6	2.05 B	20
					7	5 8 9	4.43 B	17
			20		8	5 9 12	3.85 B	15
			25		9	4 5 11	4.76 B	16
					10	6 11 8	2.62 B	19
					11	5 5 8	2.05 B	21
	746.2	Boring terminated at 30.00 ft	30		12	4 8 9	2.87 B	20
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-28-2021** Complete Drilling: **04-28-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG BWB-15

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 780.80 ft
North: 1951332.60 ft
East: 1020929.18 ft
Station: 122+63.11
Offset: 22.36 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	780.2	7-inch thick, brown SILTY CLAY LOAM						
		--TOPSOIL--						
		Medium stiff to hard, gray to brown SILTY CLAY; damp to moist			1	5 6 5	0.50 P	20
		--FILL--						
		--RDR 2--			2	5 5 7	5.08 B	16
	775.3	Very stiff, brown CLAY LOAM, trace gravel; damp	5					
		--FILL--			3	3 7 13	2.50 P	12
		--RDR 2--						
	772.8	Medium dense, brown SANDY LOAM, trace gravel; damp						
		--FILL--			4	4 10 15	NP	8
		--RDR 2--	10					
	770.3	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to wet			5	4 8 13	6.13 B	17
		--RDR 2--						
					6	6 9 13	6.72 B	17
			15					
					7	3 4 8	1.80 B	20
				▽				
					8	19 13 7	1.50 P	22
			20					
					9	4 7 12	NR	
					10	5 7 14	3.69 B	15
			25					
					11	7 9 11	NR	
					12	8 8 12	2.38 B	15
	750.8	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **04-29-2021** Complete Drilling: **04-29-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA; boring completed upon completion**

WATER LEVEL DATA

While Drilling ▽ **18.50 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG TB-01

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.00 ft
North: 1951279.67 ft
East: 1019356.23 ft
Station: 106+57.42
Offset: 9.56 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	773.6	5-inch thick, black SILTY CLAY LOAM --TOPSOIL--						
		Medium stiff, brown, SILTY CLAY, organic matter; wet --RDR 2--			1	0 0 0	0.50 P	95
	771.0	Very soft to medium stiff, black, brown to gray PEAT; moist --RDR 1-2--	5		2	0 0 0	0.50 P	113
					3	0 0 0	< 0.08 B	357
			10		4	0 0 0	< 0.08 B	295
					5	0 3 3	< 0.08 B	220
	761.0	Very loose, gray SANDY LOAM; wet --RDR 2--	15		6	0 0 0	< 0.08 B	42
	758.5	Very soft to medium stiff, gray SILTY CLAY LOAM; damp to moist --RDR 2--			7	0 0 0	0.16 B	22
		--L_L(%)=31, P_L(%)=14-- --%Gravel=3.8-- --%Sand=13.7--	20		8	3 5 5	0.50 P	24
	753.5	--%Silt=53.8-- --%Clay=28.7-- --A-6 (12)-- Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--			9	2 4 5	1.39 B	20
		--L_L(%)=31, P_L(%)=15-- --%Gravel=3.2-- --%Sand=15.1-- --%Silt=52.6-- --%Clay=29.1-- --A-6 (11)--	25		10	3 5 6	1.64 B	20
					11	2 5 6	2.38 B	18
			30		12	5 8 9	2.13 B	20
			35		13	6 9 14	2.54 B	20
			40		14	5 6 8	1.48 B	19

GENERAL NOTES

Begin Drilling: **05-06-2021** Complete Drilling: **05-06-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 25', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.50 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-01

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.00 ft
North: 1951279.67 ft
East: 1019356.23 ft
Station: 106+57.42
Offset: 9.56 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 3--					
		--rig chatter; possible cobbles--					
	716.5						
		Very dense, gray, fine SAND, trace cobble fragments; saturated					
		--RDR 2-3--					
45			15		5 10 12	2.64 B	26
50			16		4 5 10	1.64 B	23
55			17		7 9 12	2.30 B	15
60			18		8 23 31	NP	10
	712.3						
		Hard, gray SILTY CLAY LOAM, trace gravel; damp to moist					
		--RDR 3-4--					
		--rig chatter, 60.0 to 68.0 feet--					
65			19		14 17 15	4.00 P	13
	707.3						
		Medium dense, gray, coarse SAND, little gravel; saturated					
		--RDR 3--					
		--rig chatter, possible cobbles--					
70			20		11 10 14	NP	14
	702.3						
		Dense, gray SANDY GRAVEL; saturated					
		--RDR 3--					
		--rig chatter, possible cobbles--					
75	699.0		21		10 13 18	NP	14
		Boring terminated at 75.00 ft					
80							

GENERAL NOTES

Begin Drilling: **05-06-2021** Complete Drilling: **05-06-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 25', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.50 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-02

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.60 ft
North: 1951301.99 ft
East: 1019454.49 ft
Station: 107+58.45
Offset: 5.27 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	772.9	8-inch thick, brown SILTY CLAY LOAM						
		--TOPSOIL--						
		Stiff, brown,SILTY CLAY, organic matter; moist			1	0 0 0	1.00 P	87
		--RDR 2--						
	770.6	Very soft, brown PEAT; moist						
		--RDR 1--			2	0 0 0	< 0.08 B	269
			5					
					3	0 0 0	< 0.08 B	256
					4	0 0 0	< 0.08 B	295
			10					
					5	0 0 0	< 0.08 B	266
					6	0 0 0	< 0.08 B	217
			15					
	758.1	Very soft to medium stiff, brown SILTY CLAY LOAM, trace gravel; moist						
		--RDR 1--			7	0 0 0	0.50 P	23
		--L_L(%)=28, P_L(%)=14--						
		--%Gravel=5.8--						
		--%Sand=16.5--			8	0 0 0	0.08 B	21
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	753.1	--%Silt=51.6--						
		--%Clay=26.0--						
		--A-6 (9)--						
		Stiff to hard, gray SILTY CLAY, trace gravel; damp to moist			9	5 8 10	4.26 B	18
		--RDR 2--						
					10	4 6 10	4.51 B	17
			25					
					11	4 6 8	2.46 B	20
					12	4 6 9	1.97 B	21
			30					
		--L_L(%)=35, P_L(%)=15--						
		--%Gravel=0.3--						
		--%Sand=0.8--						
		--%Silt=54.7--	35		13	6 9 10	2.46 B	23
		--%Clay=44.2--						
		--A-6 (20)--						
					14	4 4 6	2.62 B	23
			40					

GENERAL NOTES

Begin Drilling: **05-07-2021** Complete Drilling: **05-07-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 30', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-02

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 773.60 ft
North: 1951301.99 ft
East: 1019454.49 ft
Station: 107+58.45
Offset: 5.27 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--rig chatter; possible cobbles--						
	731.9	Medium dense, gray GRAVELLY SAND; saturated --RDR 2-3--	45		15	2 5 6	NP	18
	724.4	Soft to very stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2--	50		16	10 13 17	NR	
			55		17	6 10 11	2.38 B	16
		--L_L(%)=23, P_L(%)=12-- --%Gravel=8.0-- --%Sand=11.8--	60		18	8 9 5	0.41 B	16
		--%Silt=58.3-- --%Clay=21.8-- --A-6 (6)--						
	711.9	--rig chatter; possible cobbles--						
		Medium dense to dense, gray SANDY GRAVEL to GRAVEL; saturated --RDR 3-4--	65		19	10 13 10	NP	13
			70		20	18 13 23	NP	9
	698.6		75		21	13 14 15	NP	5
		Boring terminated at 75.00 ft	80					

GENERAL NOTES

Begin Drilling: **05-07-2021** Complete Drilling: **05-07-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 30', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-03

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.90 ft
North: 1951386.20 ft
East: 1019891.04 ft
Station: 112+03.02
Offset: 0.20 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	774.4	6-inch thick, black CLAY LOAM --TOPSOIL--						
		Stiff, gray SILTY CLAY LOAM, little gravel; damp --RDR 2--			1	2 4 5	1.00 P	13
	771.9	Stiff to hard, gray SILTY CLAY, trace gravel; damp to wet --RDR 2--			2	3 5 7	3.85 B	19
		--wet spoon recovery--	5		3	8 9 11	5.58 B	17
					4	4 7 10	6.15 B	18
			10		5	3 6 6	2.30 B	17
		--L_L(%)=30, P_L(%)=13-- --%Gravel=2.4-- --%Sand=4.4-- --%Silt=56.7-- --%Clay=36.5-- --A-6 (14)--			6	2 5 6	2.71 B	19
			15		7	2 4 6	1.80 B	21
					8	3 5 8	1.07 B	17
			20					
					9	6 9 10	2.38 B	18
			25		10	3 6 6	1.64 B	18
	749.4	Medium dense, gray SANDY GRAVEL to GRAVEL; wet --RDR 2-4--			11	4 4 8	NP	9
		--rig chatter; possible cobbles--			12	9 6 9	NP	9
			30					
	738.2	Stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-3--			13	7 8 9	NP	18
			35					
					14	4 7 11	1.07 B	17
			40					

GENERAL NOTES

Begin Drilling: **05-04-2021** Complete Drilling: **05-04-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-03

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.90 ft
North: 1951386.20 ft
East: 1019891.04 ft
Station: 112+03.02
Offset: 0.20 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	733.2	Gray SANDY GRAVEL; saturated						
	731.2	Medium dense to dense, gray, fine SAND; saturated --RDR 2--	45		15	11 15 18	NP	22
	723.2	Medium dense, gray SILT to SILTY LOAM; wet --RDR 2--	50		16	8 10 10	NP	21
			55		17	6 7 9	2.00 P	23
		--L_L(%)=22, P_L(%)=14-- --%Gravel=0.0-- --%Sand=4.9--	60		18	10 8 9	2.00 P	21
		--%Silt=80.3-- --%Clay=14.8-- --A-4 (5)--	65		19	5 7 9	1.50 P	23
	708.2	Very stiff, gray SILTY CLAY, trace gravel; damp to moist --RDR 2--	70		20	4 6 12	3.20 B	22
	703.2	Medium dense, gray SANDY GRAVEL; saturated --RDR 2--	75		21	12 10 11	NP	17
	699.9	Boring terminated at 75.00 ft	80					

GENERAL NOTES

Begin Drilling: **05-04-2021** Complete Drilling: **05-04-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TB-04

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.60 ft
North: 1951409.89 ft
East: 1019999.14 ft
Station: 113.13.61
Offset: 3.86 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	774.0	7-inch thick, black CLAY LOAM --TOPSOIL--						
		Very soft to soft, black to gray, SILTY CLAY, organic matter; wet --RDR 2--			1	1 1 2	0.33 B	70
		--L_L(%)=34, P_L(%)=18-- --%Gravel=3.2-- --%Sand=9.7-- --%Silt=50.6-- --%Clay=36.4-- --A-6 (13)--	5		2	0 1 1	< 0.08 B	36
	769.1	Medium dense, gray SANDY LOAM, trace gravel and cobble fragments; wet --RDR 2--			3	6 9 8	NP	33
	766.6	Stiff to hard, gray SILTY CLAY, trace to little gravel; damp to moist --RDR 2-4--	10		4	6 6 6	4.18 B	18
					5	4 7 9	3.77 B	19
			15		6	4 8 7	3.28 B	19
					7	5 8 11	2.46 B	19
			20		8	4 8 10	1.89 B	19
		--rig chatter, 20.0 to 23.0 feet-- --possible cobbles--			9	7 6 10	2.79 B	15
			25		10	3 8 8	1.50 P	22
					11	4 6 10	1.50 P	24
			30		12	5 8 9	2.79 B	19
			35		13	5 8 9	2.30 B	19
		--rig chatter; possible cobbles--						
	737.9	Medium dense, gray SANDY GRAVEL; wet --RDR 3-4--						
			40		14	5 8 10	NP	12

GENERAL NOTES

Begin Drilling: **05-03-2021** Complete Drilling: **05-03-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **1.50 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG TB-04

WEI Job No.: 7901-12-02

Client: **TranSystems Corporation**
Project: **Pedestrian Bridge and Trail over IL 59**
Location: **Streamwood, IL**

Datum: NAVD 88
Elevation: 774.60 ft
North: 1951409.89 ft
East: 1019999.14 ft
Station: 113.13.61
Offset: 3.86 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	732.9							
		Very stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 3--						
			45		15	7 11 12	2.62 B	15
	727.9							
		Very dense, gray, fine SAND, some gravel; saturated --RDR 3--						
			50		16	13 26 39	NP	12
	722.9							
		Medium dense, gray SANDY GRAVEL; wet --RDR 2--						
			55		17	8 10 17	NP	7
	717.9							
		Medium dense to dense, gray SILTY LOAM, trace gravel; wet --RDR 2-- --%Gravel=3.3-- --%Sand=29.1-- --%Silt=58.8--						
			60		18	6 16 16	NP	28
		--%Clay=8.8-- --A-4 (0)--						
			65		19	10 19 8	NP	24
	707.9							
		Medium stiff to stiff, gray SILTY CLAY, trace gravel; moist --RDR 2--						
			70		20	5 8 9	0.82 B	25
	699.6		75		21	4 10 14	1.23 B	22
		Boring terminated at 75.00 ft						
			80					

GENERAL NOTES

Begin Drilling: **05-03-2021** Complete Drilling: **05-03-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50A [87%]**
Driller: **K&A** Logger: **M. Rojo** Checked by: **J. Bensen**
Drilling Method: **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **1.50 ft**
At Completion of Drilling: **MUD**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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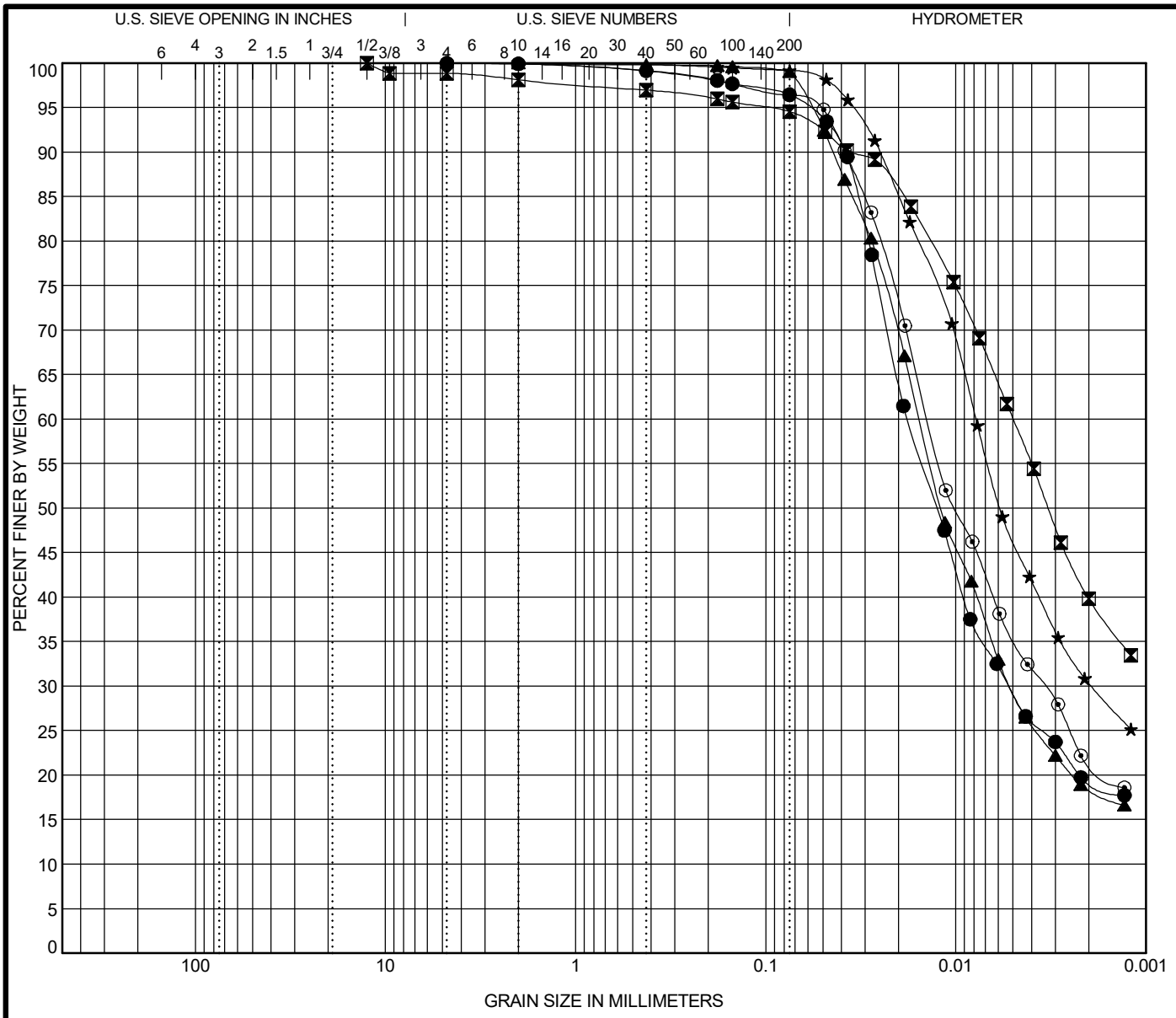
APPENDIX B



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	B-1#8	18.5 ft	**Silty Loam**	**40**	**25**	**15**		
⊠	B-2#7	16.0 ft	**Silty Clay**	**34**	**17**	**17**		
▲	BWB-01#10	23.5 ft	**Silt**	**18**	**15**	**3**		
★	BWB-04#8	18.5 ft	**Silty Clay**	**73**	**28**	**45**		
⊙	BWB-05#8	18.5 ft	**Silty Clay Loam**	**48**	**26**	**22**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1#8	18.5 ft	**4.75**	**0.018**	**0.005**		**0.1**	**3.5**	**77.0**	**19.4**
⊠	B-2#7	16.0 ft	**12.5**	**0.005**			**1.9**	**3.6**	**54.7**	**39.8**
▲	BWB-01#10	23.5 ft	**2**	**0.015**	**0.005**		**0.0**	**1.2**	**80.3**	**18.5**
★	BWB-04#8	18.5 ft	**2**	**0.008**	**0.002**		**0.0**	**0.8**	**68.8**	**30.4**
⊙	BWB-05#8	18.5 ft	**4.75**	**0.014**	**0.003**		**0.1**	**3.6**	**74.8**	**21.5**

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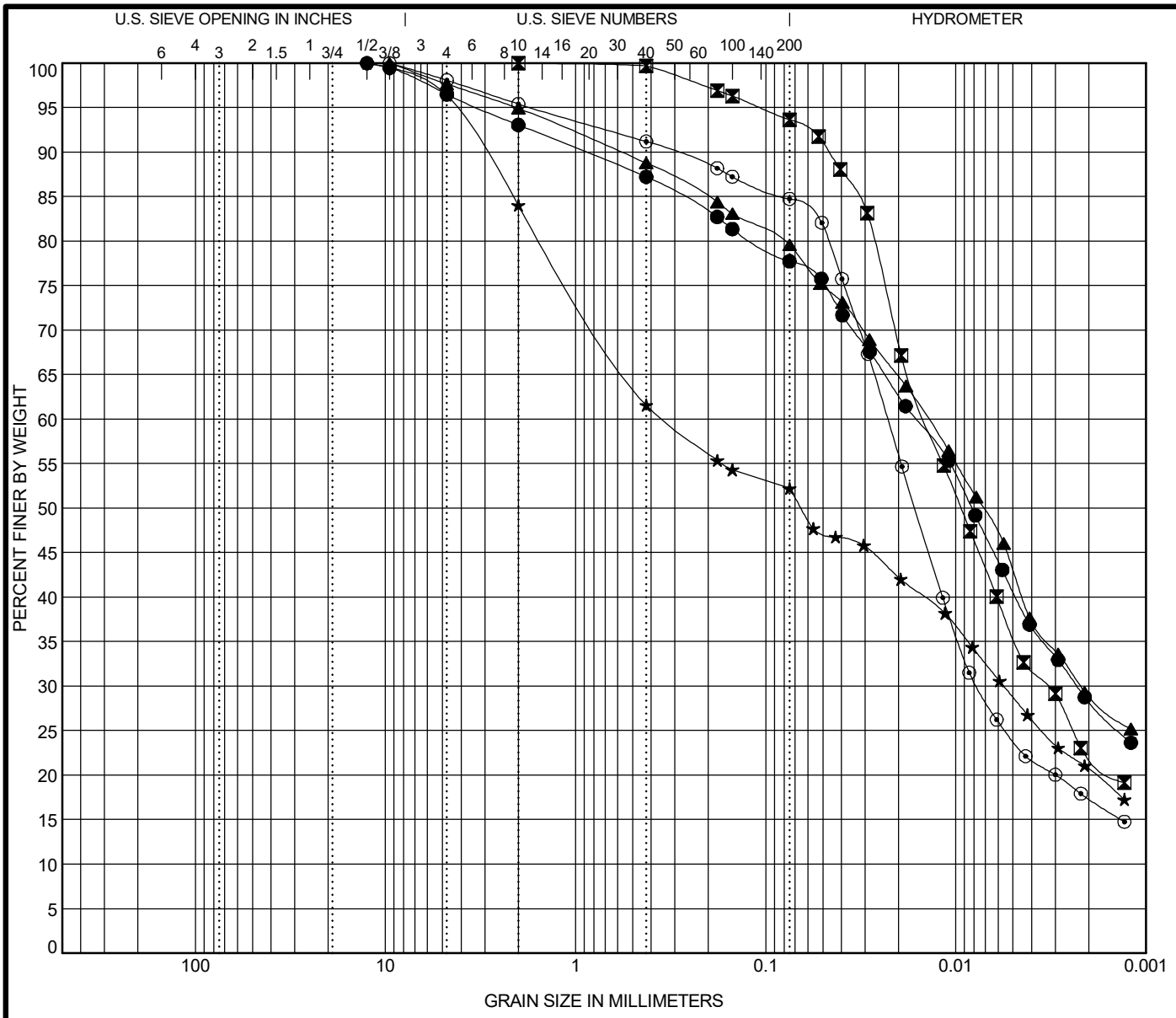
GRAIN SIZE DISTRIBUTION

Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● BWB-06#16	38.5 ft	**Silty Clay**	**28**	**14**	**14**		
⊠ BWB-07#3	6.0 ft	**Silty Clay Loam**	**82**	**36**	**46**		
▲ BWB-08#7	16.0 ft	**Silty Clay**	**28**	**14**	**14**		
★ BWB-10#6	13.5 ft	**Gravelly Clay Loam**	**28**	**13**	**15**		
⊙ BWB-12#3	6.0 ft	**Silty Loam**	**31**	**17**	**14**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● BWB-06#16	38.5 ft	**12.5**	**0.016**	**0.002**		**7.0**	**15.4**	**49.4**	**28.3**
⊠ BWB-07#3	6.0 ft	**2**	**0.014**	**0.003**		**0.0**	**6.4**	**71.2**	**22.4**
▲ BWB-08#7	16.0 ft	**9.5**	**0.014**	**0.002**		**5.1**	**15.5**	**50.5**	**29.0**
★ BWB-10#6	13.5 ft	**12.5**	**0.342**	**0.006**		**16.0**	**32.0**	**31.3**	**20.7**
⊙ BWB-12#3	6.0 ft	**9.5**	**0.023**	**0.008**		**4.6**	**10.8**	**67.3**	**17.3**

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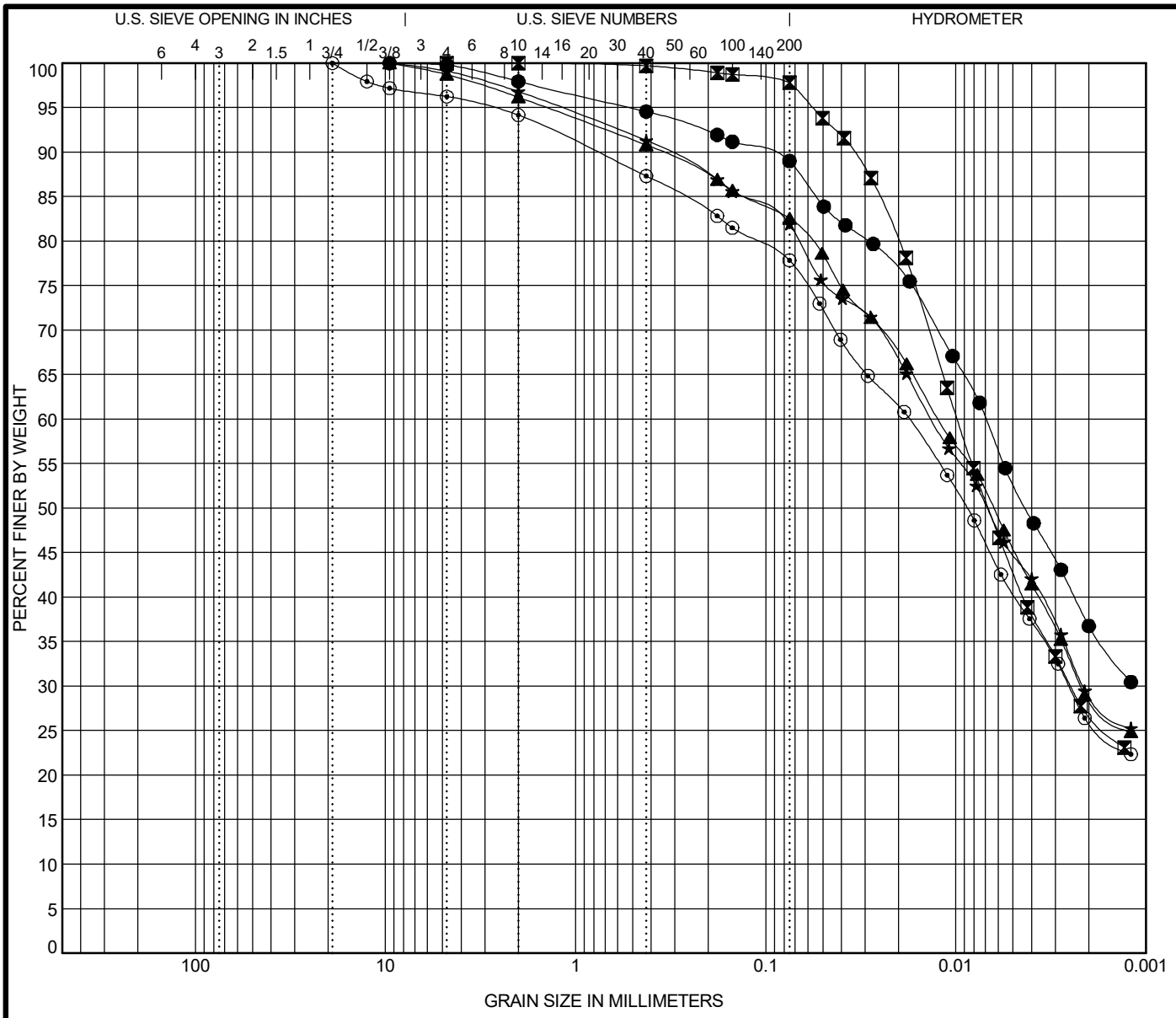
Location: Streamwood, IL

Number: 7901-12-02



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	BWB-13#9	21.0 ft	Silty Clay	34	15	19		
⊠	BWB-14#4	8.5 ft	Silty Clay Loam	63	24	39		
▲	TB-01#8	18.5 ft	Silty Clay Loam	31	14	17		
★	TB-01#10	23.5 ft	Silty Clay	31	15	16		
⊙	TB-02#8	18.5 ft	Silty Clay Loam	28	14	14		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	BWB-13#9	21.0 ft	9.5	0.007			2.1	9.1	52.1	36.7
⊠	BWB-14#4	8.5 ft	4.75	0.01	0.002		0.0	2.3	70.7	26.9
▲	TB-01#8	18.5 ft	9.5	0.012	0.002		3.8	13.7	53.8	28.7
★	TB-01#10	23.5 ft	9.5	0.013	0.002		3.2	15.1	52.6	29.1
⊙	TB-02#8	18.5 ft	19	0.018	0.003		5.8	16.5	51.6	26.0

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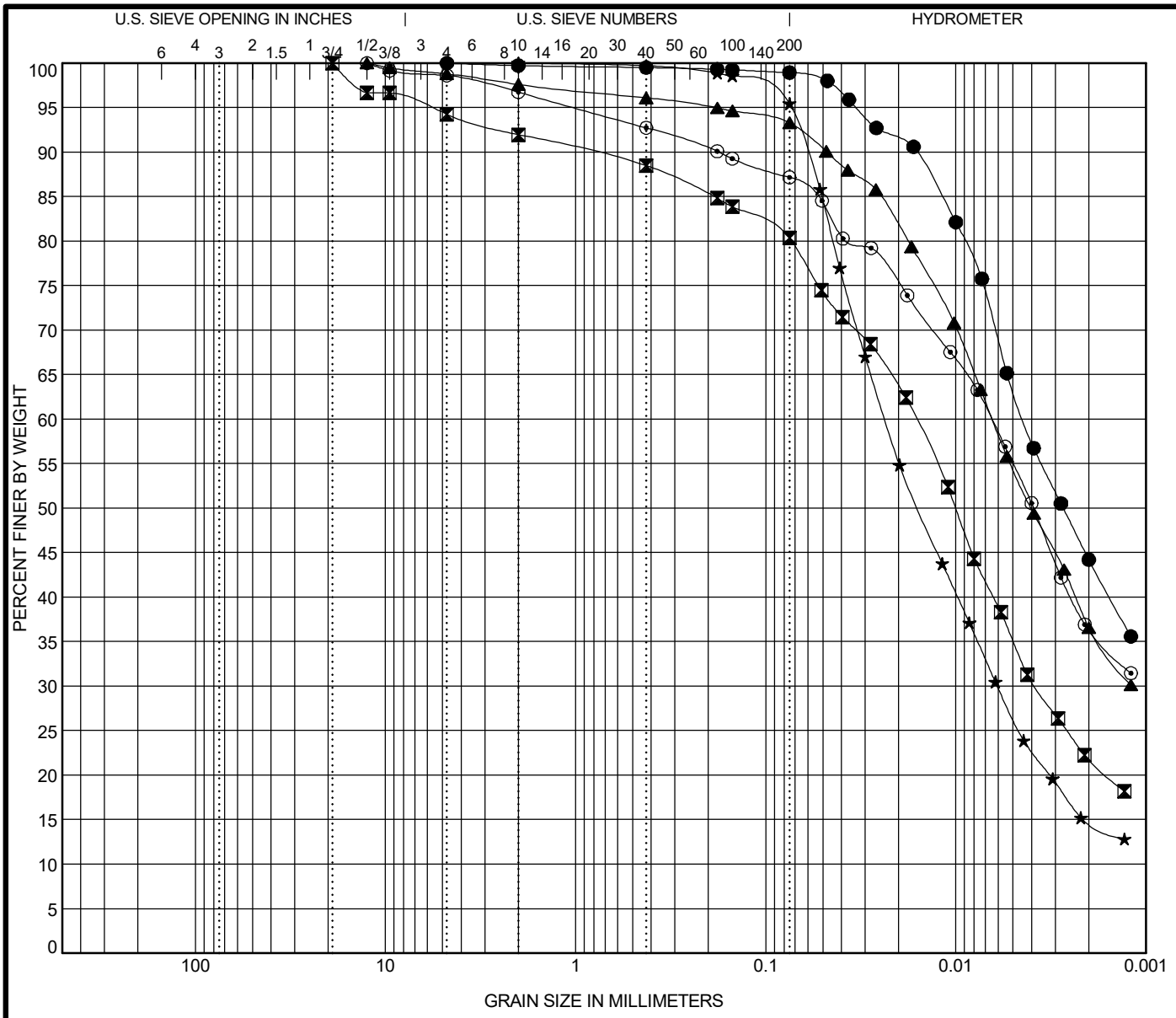
GRAIN SIZE DISTRIBUTION

Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	TB-02#13	33.5 ft	**Silty Clay**	**35**	**15**	**20**		
⊠	TB-02#18	58.5 ft	**Silty Clay Loam**	**23**	**12**	**11**		
▲	TB-03#6	13.5 ft	**Silty Clay**	**30**	**13**	**17**		
★	TB-03#18	58.5 ft	**Silt**	**22**	**14**	**8**		
⊙	TB-04#2	3.5 ft	**Silty Clay**	**34**	**18**	**16**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	TB-02#13	33.5 ft	**4.75**	**0.004**			**0.3**	**0.8**	**54.7**	**44.2**
⊠	TB-02#18	58.5 ft	**19**	**0.016**	**0.004**		**8.0**	**11.8**	**58.3**	**21.8**
▲	TB-03#6	13.5 ft	**12.5**	**0.006**			**2.4**	**4.4**	**56.7**	**36.5**
★	TB-03#18	58.5 ft	**2**	**0.024**	**0.006**		**0.0**	**4.9**	**80.3**	**14.8**
⊙	TB-04#2	3.5 ft	**12.5**	**0.006**			**3.2**	**9.7**	**50.6**	**36.4**

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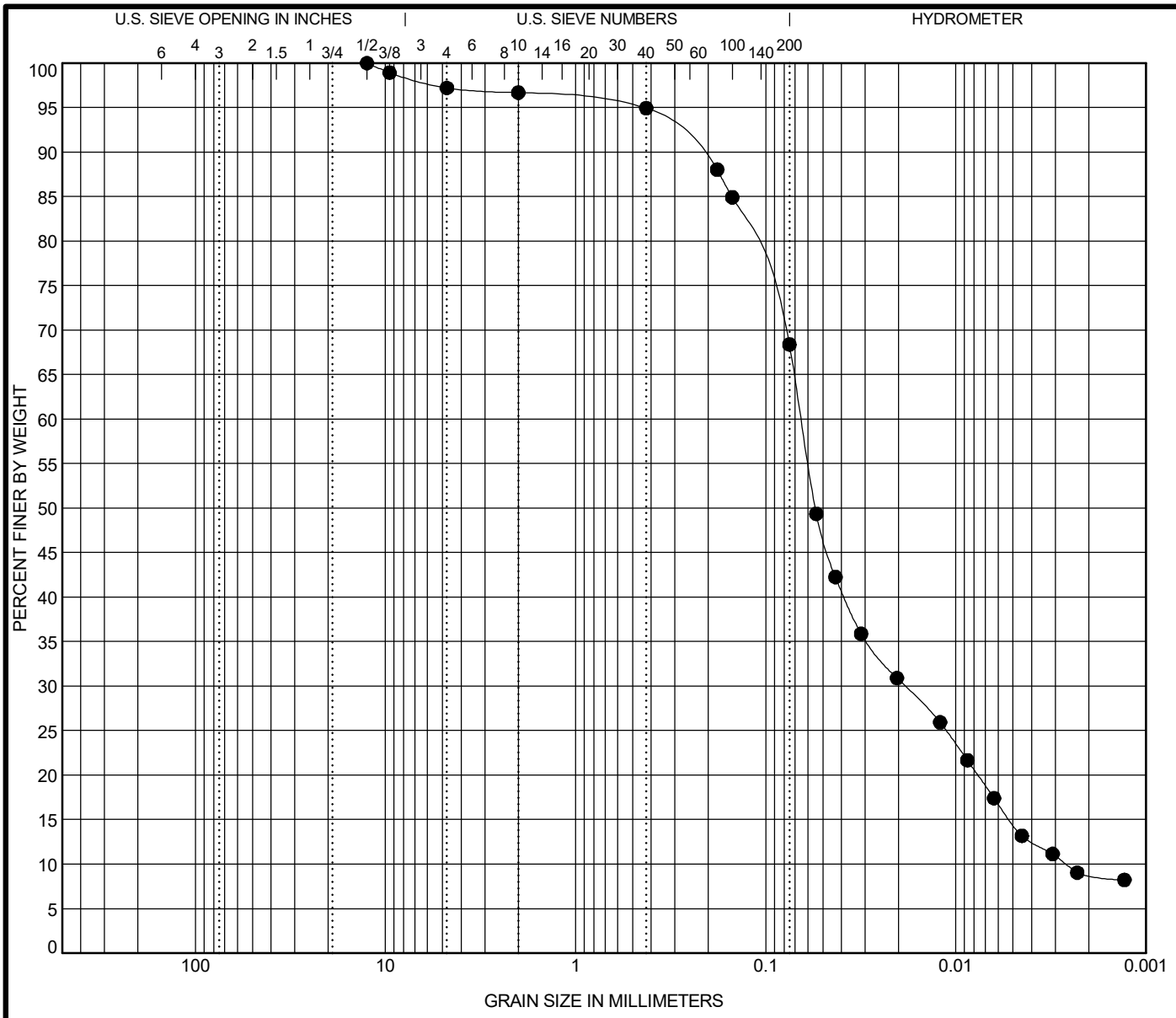
Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● **TB-04#18**	**58.5 ft**	**Silty Loam**	**NP**	**NP**	**NP**	**2.01**	**24.64**

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **TB-04#18**	**58.5 ft**	**12.5**	**0.065**	**0.019**	**0.003**	**3.3**	**29.1**	**58.8**	**8.8**

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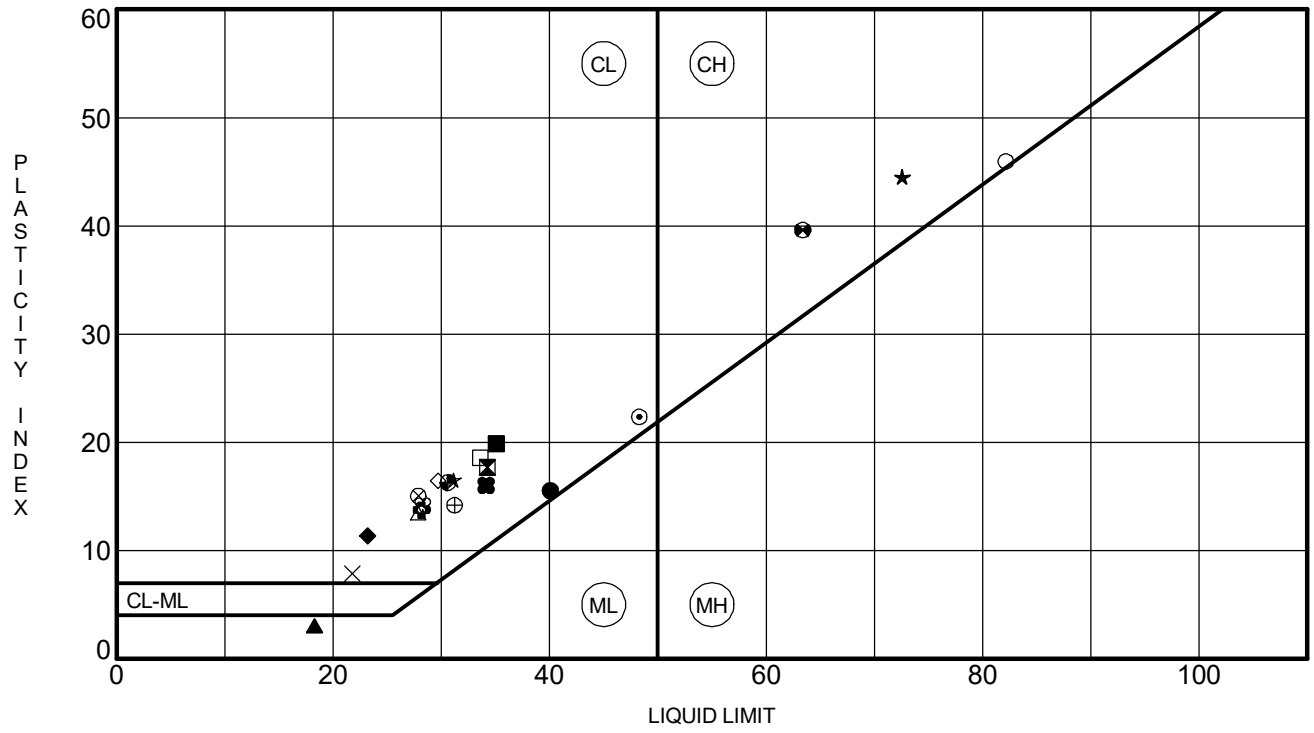
GRAIN SIZE DISTRIBUTION

Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02



Specimen Identification			LL	PL	PI	Fines	IDH Classification
●	B-1#8	18.5 ft	40	25	15	96	Silty Loam
⊠	B-2#7	16.0 ft	34	17	17	95	Silty Clay
▲	BWB-01#10	23.5 ft	18	15	3	99	Silt
★	BWB-04#8	18.5 ft	73	28	45	99	Silty Clay
⊙	BWB-05#8	18.5 ft	48	26	22	96	Silty Clay Loam
✿	BWB-06#16	38.5 ft	28	14	14	78	Silty Clay
○	BWB-07#3	6.0 ft	82	36	46	94	Silty Clay Loam
△	BWB-08#7	16.0 ft	28	14	14	80	Silty Clay
⊗	BWB-10#6	13.5 ft	28	13	15	52	Gravelly Clay Loam
⊕	BWB-12#3	6.0 ft	31	17	14	85	Silty Loam
□	BWB-13#9	21.0 ft	34	15	19	89	Silty Clay
⊛	BWB-14#4	8.5 ft	63	24	39	98	Silty Clay Loam
◕	TB-01#8	18.5 ft	31	14	17	83	Silty Clay Loam
☆	TB-01#10	23.5 ft	31	15	16	82	Silty Clay
⊠	TB-02#8	18.5 ft	28	14	14	78	Silty Clay Loam
■	TB-02#13	33.5 ft	35	15	20	99	Silty Clay
◆	TB-02#18	58.5 ft	23	12	11	80	Silty Clay Loam
◇	TB-03#6	13.5 ft	30	13	17	93	Silty Clay
×	TB-03#18	58.5 ft	22	14	8	95	Silt
■	TB-04#2	3.5 ft	34	18	16	87	Silty Clay

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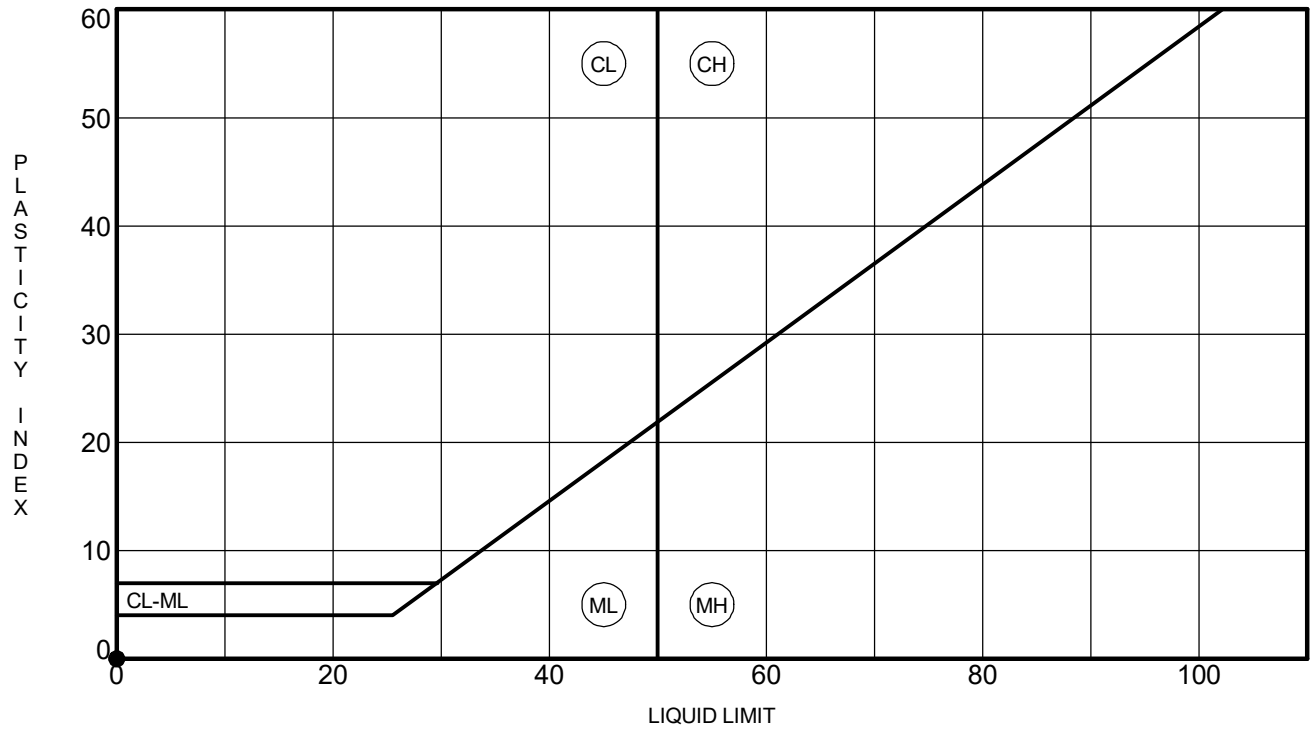
ATTERBERG LIMITS' RESULTS

Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02



Specimen Identification		LL	PL	PI	Fines	IDH Classification
● **TB-04#18**	**58.5 ft**	**NP**	**NP**	**NP**	**68**	**Silty Loam**

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ATTERBERG LIMITS' RESULTS

Project: Pedestrian Bridge and Trail over IL 59

Location: Streamwood, IL

Number: 7901-12-02

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ORGANIC CONTENT in SOILS by LOSS on IGNITION

ASTM D 2974, Method C

Client: TranSystems
Project: IL 59 Overpass
WEI Job: 7901 12 02
Type/Condition: SS
Testing Furnace Temp °C.: 440

Analyst Name: L. Varzaru
Date Received: 5/3-5/10/2021
Date Tested: 5/24/2021

Sample No./ Depth	BWB-06 S#3 (6-7.5 ft.)	BWB-06 S#13 (31-32.5 ft.)	BWB-07 S#3 (6-7.5 ft.)		
Sample Description	Peat	Silty Clay	Silty Clay Loam		
wet soil + tare	80.46	107.16	88.01		
Dry Soil + Tare	48.03	84.06	64.11		
Tare Mass	42.09	43.24	42.42		
w (%)	546	57	110		
Dry Soil + Tare	48.03	84.06	64.11		
Ash+ Tare	44.72	81.92	60.11		
Tare Mass	42.09	43.24	42.42		
Ash Content (%)	44	95	82		
Organic Content (%)	55.7	5.2	18.4		

Prepeared By:_____

Reviwed By:_____

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SHELBY TUBE DESCRIPTION

WEI JOB # 7901-12-02
PROJECT: IL-59 Overpass II
CLIENT: Transystems

ANALYST: M. Ciapas
EXTRUSION DATE: 6/25/2021

BORING ID: BWB-06
SAMPLE ID: ST-1
SAMPLE INTERVAL: 8-10ft

Length of Recovery 22"

TOP

BOTTOM

Soil Description

Very Soft Brown PEAT -wet-

* <0.25 QP

* <0.25 QP

* <0.25 QP

* <0.25 QP

	Tare Mass	42.21
TOP	Wet + tare	102.3
	Dry + tare	53.3
	Moisture Content	442%
	Tare Mass	11.1
MIDDLE	Wet + tare	46.1
	Dry + tare	16.06
	Moisture Content	606%
	Tare Mass	41.41
BOTTOM	Wet + tare	108.04
	Dry + tare	54.52
	Moisture Content	408%

* Penetrometer Reading

Moisture content taken in Hatched area

Unconfined Completed Y / **N**

AASHTO ACCREDITATION PROGRAM

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SHELBY TUBE DESCRIPTION

WEI JOB # 7901-12-02
PROJECT: IL-59 Overpass II
CLIENT: Transystems

ANALYST: M. Ciapas
EXTRUSION DATE: 6/25/2021

BORING ID: BWB-06
SAMPLE ID: ST-2
SAMPLE INTERVAL: 10-12ft

Length of Recovery 21.5"

TOP

BOTTOM

Soil Description

Very Soft Brown PEAT -wet-

* <0.25 QP

* <0.25 QP

* <0.25 QP

* <0.25 QP

	Tare Mass	43.52
TOP	Wet + tare	119.93
	Dry + tare	63.97
	Moisture Content	274%
	Tare Mass	11.1
MIDDLE	Wet + tare	48.01
	Dry + tare	18.93
	Moisture Content	371%
BOTTOM	Tare Mass	41.94
	Wet + tare	101.67
	Dry + tare	52.84
	Moisture Content	448%

* Penetrometer Reading

Moisture content taken in Hatched area

Unconfined Completed Y / **N**

AASHTO ACCREDITATION PROGRAM

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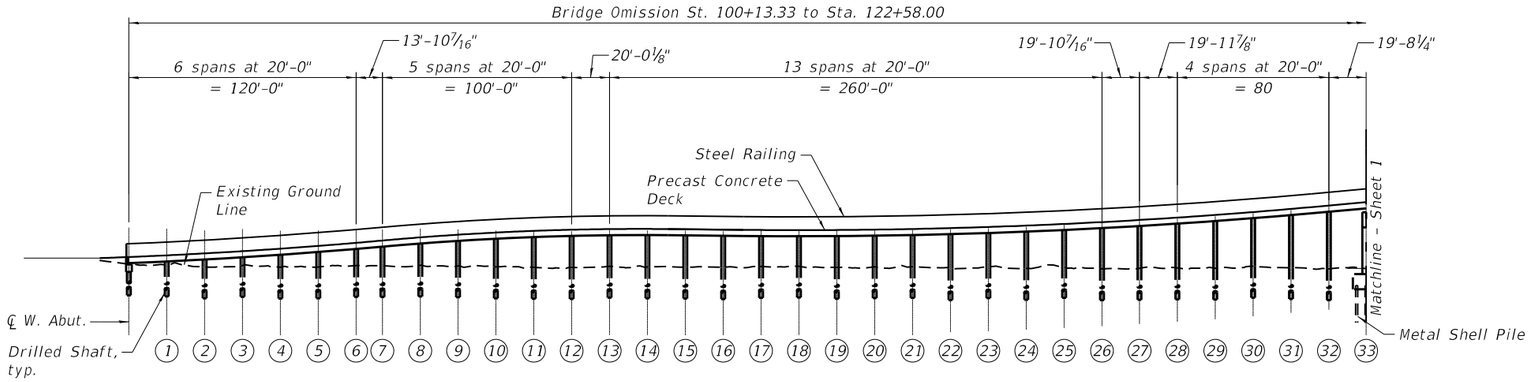
APPENDIX C

Benchmark:

Existing Structure: None. IL Rte. 59 (Sutton Rd.) traffic to be maintained utilizing Stage Construction

No Salvage



ELEVATION

All dimensions along path baseline
Scale shown is 1H:2V

SEISMIC DATA

Seismic Performance Zone (SPZ) =
Design Spectral Acceleration at 1.0 sec. (SD1) =
Design Spectral Acceleration at 0.2 sec. (SDS) =
Soil Site Class =

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition with 2015 Interims

LOADING

Pedestrian Live Load = 90 psf
Vehicle Live Load = H10

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)

CURVE DATA

P.I. Sta. =
Δ =
D =
R =
T =
L =
E =
e =
T.R. =
S.E. Run =
P.C. Sta. =
P.T. Sta. =

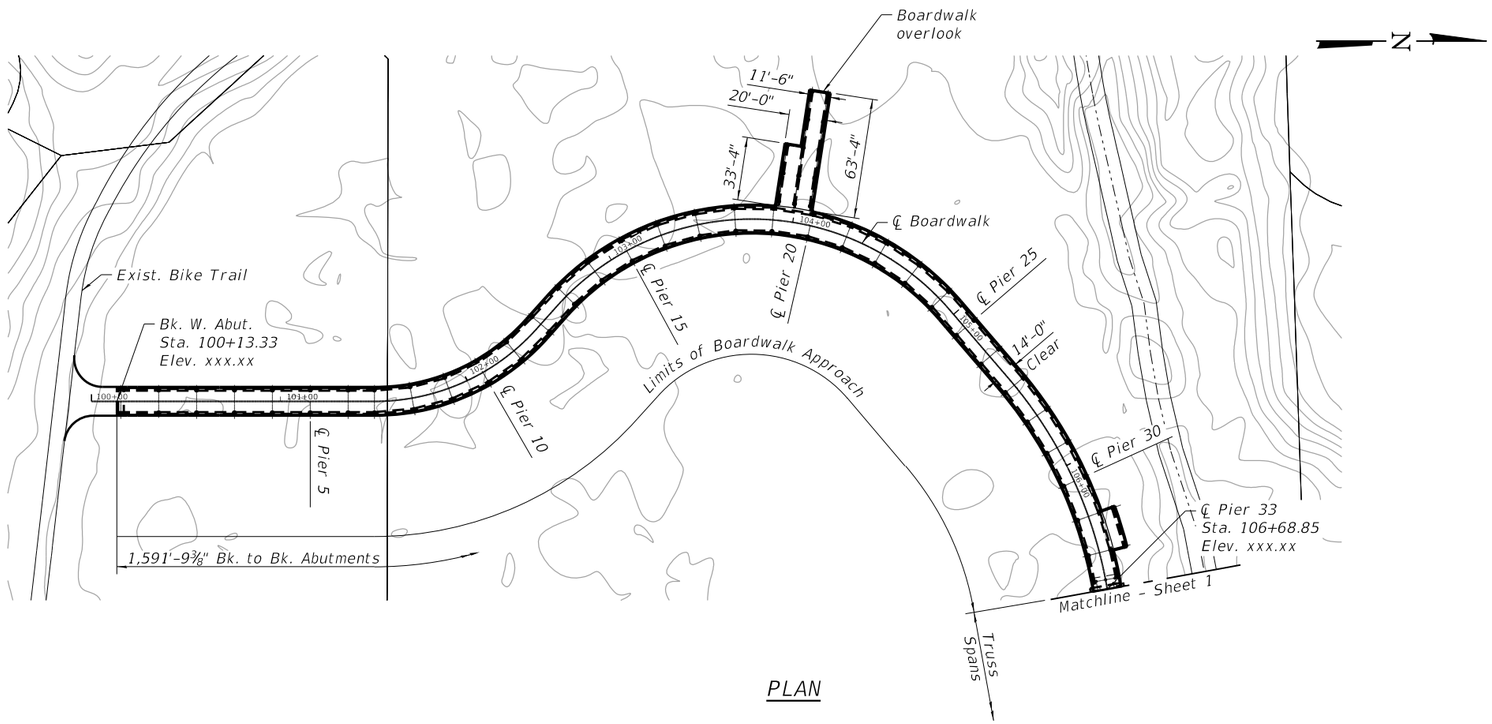
HIGHWAY CLASSIFICATION

Rte. – Rte.
Functional Class:
ADT: (20); (20)
ADTT: (20); (20)
DHV:
Design Speed: m.p.h.
Posted Speed: m.p.h.
-Way Traffic
Directional Distribution:

WATERWAY INFORMATION

Drainage Area = 5.90 Sq. Miles Low Grade Elev. 779.34 @ Sta. –

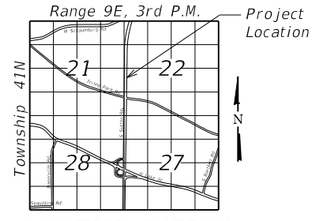
Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head – Ft. Exist.	Head – Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	10							
Design	30	441							
Base	100	673							
Overtopping	200	775							
Max. Calc.	500	1082							



PLAN

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) W. Abut.	Pier –	Pier –	E. Abut.	Item 113
Q100					
Q200					
Design					
Check					



LOCATION SKETCH

GENERAL PLAN & ELEVATION (1 OF 3)
TRAIL OVER ILLINOIS ROUTE 59
SECTION XX-XXXX-XX-XX
COOK COUNTY
STATION 100+00.00
STRUCTURE NUMBER XXX-XXXX

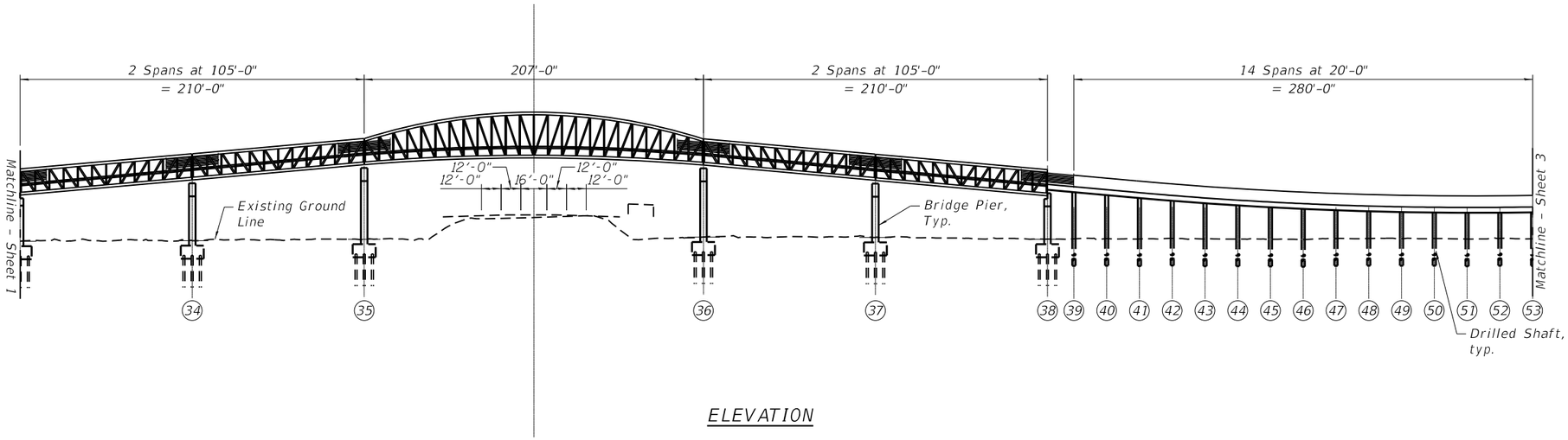
FILE NAME =	USER NAME =	DESIGNED -	REVISED -
		CHECKED -	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

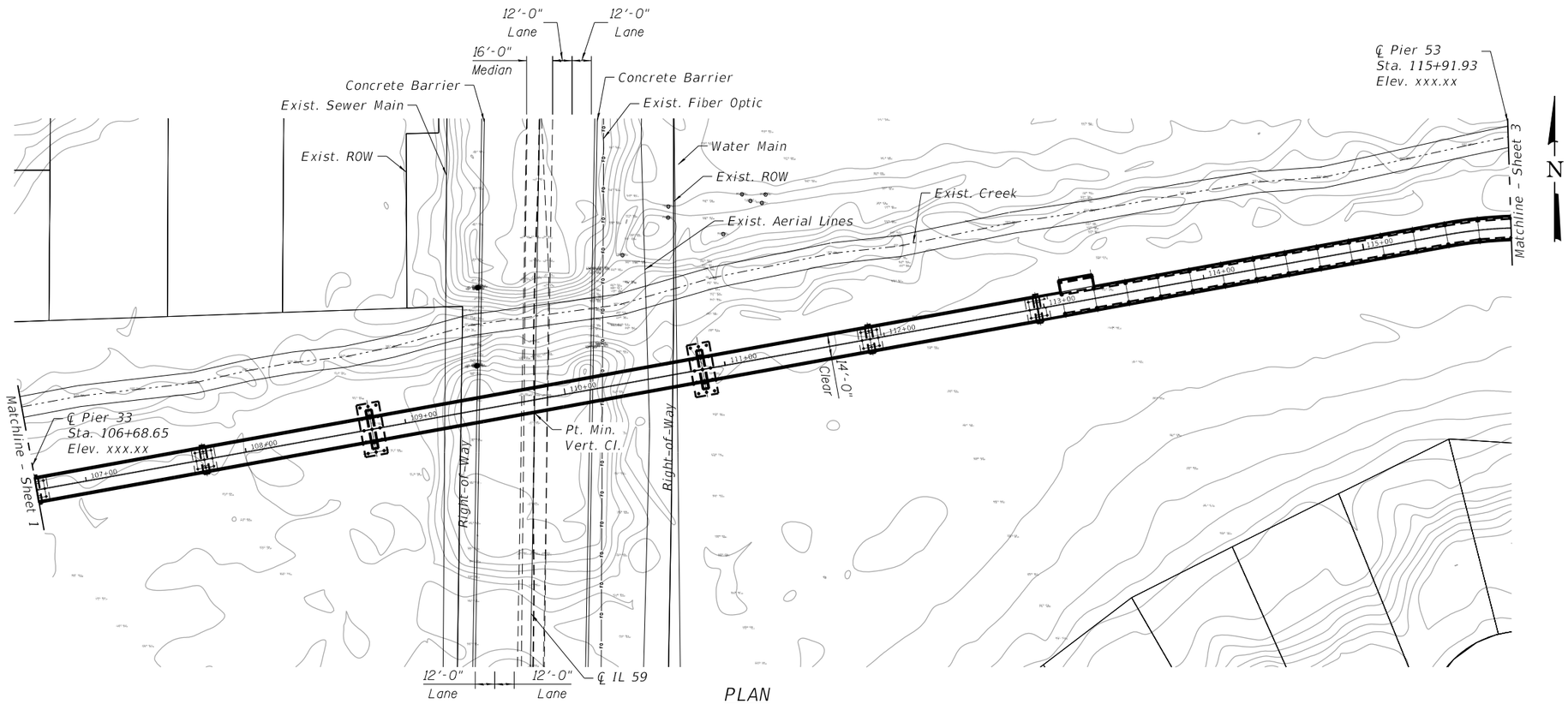
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

ILLINOIS FED. AID PROJECT



ELEVATION

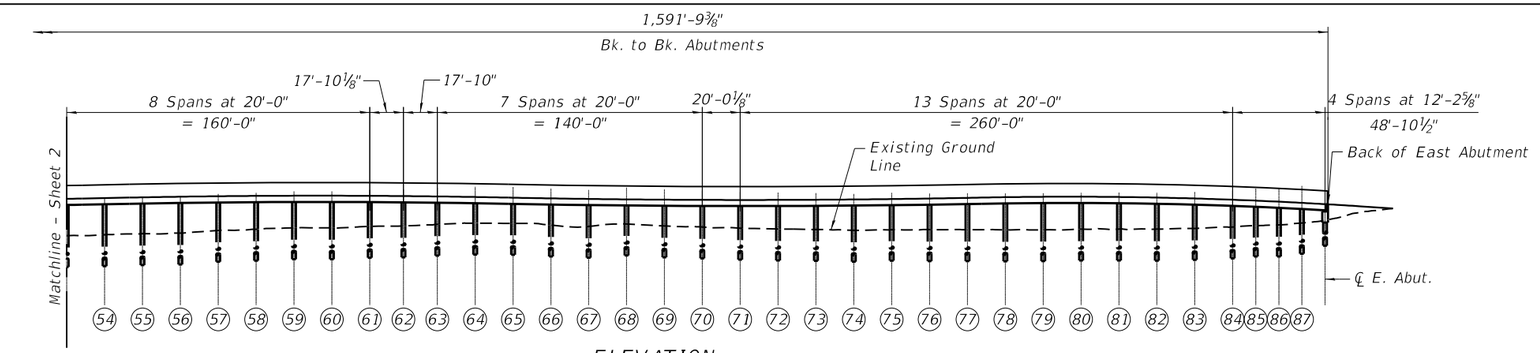


PLAN

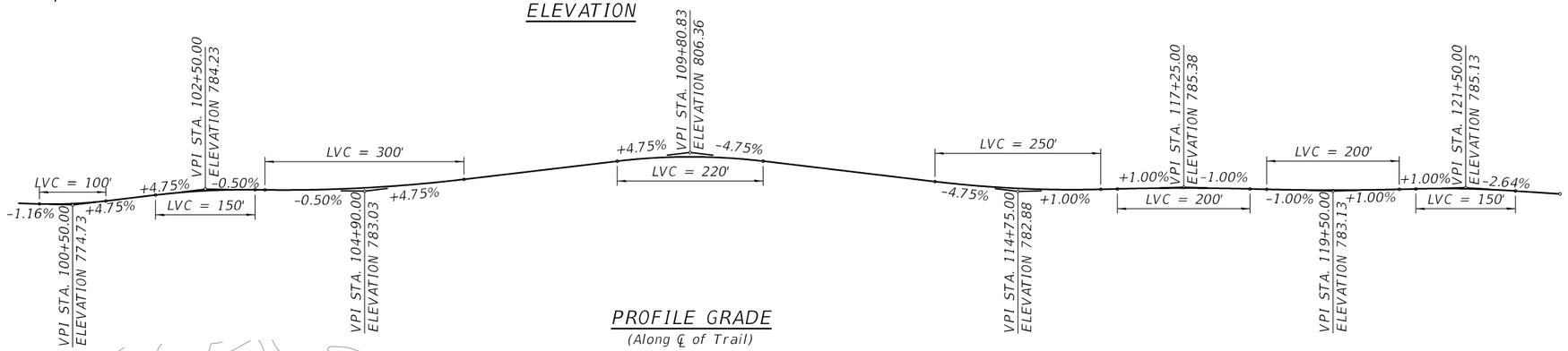
Pier No.	Design Elevations (ft.)			
	Station	Deck Elev. @ ℄ Path	Existing Ground	Design Scour
Bk. W. Abut.	100+13.33			
℄ W. Abut.	100+15.42	773.58	774.39	
Pier 1	100+35.42	773.64	774.33	
Pier 2	100+55.42	773.95	773.99	
Pier 3	100+75.42	774.49	774.14	
Pier 4	100+95.42	775.27	774.11	
Pier 5	101+15.42	776.21	774.01	
Pier 6	101+35.42	777.16	774.06	
Pier 7	101+49.29	777.82	774.04	
Pier 8	101+69.29	778.77	774.27	
Pier 9	101+89.29	779.69	774.09	
Pier 10	102+09.29	780.47	773.97	
Pier 11	102+29.29	781.11	773.99	
Pier 12	102+49.29	781.61	773.94	
Pier 13	102+69.30	781.97	774.00	
Pier 14	102+89.30	782.19	774.04	
Pier 15	103+09.30	782.27	774.12	
Pier 16	103+29.30	782.21	773.97	
Pier 17	103+49.30	782.12	774.02	
Pier 18	103+69.30	782.08	773.89	
Pier 19	103+89.30	782.12	773.72	
Pier 20	104+09.30	782.23	773.73	
Pier 21	104+29.30	782.41	773.78	
Pier 22	104+49.30	782.65	773.55	
Pier 23	104+69.30	782.97	773.55	
Pier 24	104+89.30	783.36	774.03	
Pier 25	105+09.30	783.82	773.66	
Pier 26	105+29.30	784.34	774.02	
Pier 27	105+49.17	784.94	774.14	
Pier 28	105+69.16	785.60	773.67	
Pier 29	105+89.16	786.34	773.72	
Pier 30	106+09.16	787.15	774.14	
Pier 31	106+29.16	788.03	773.69	
Pier 32	106+49.16	788.97	773.92	
Pier 33	106+68.85	789.90	773.86	
Pier 34	107+73.85	793.01	774.06	
Pier 35	108+78.85	798.00	774.28	
Pier 36	110+85.85	797.87	774.96	
Pier 37	111+90.85	792.88	774.98	
Pier 38	112+95.85	787.90	774.44	
Pier 39	113+11.93	789.01	774.52	
Pier 40	113+31.93	788.06	774.37	
Pier 41	113+51.93	787.10	774.36	
Pier 42	113+71.93	786.21	774.35	
Pier 43	113+91.93	785.40	774.34	
Pier 44	114+11.93	784.69	774.34	
Pier 45	114+31.93	784.07	774.20	
Pier 46	114+51.93	783.55	774.35	
Pier 47	114+71.93	783.11	774.44	
Pier 48	114+91.93	782.77	774.57	
Pier 49	115+11.93	782.52	774.33	
Pier 50	115+31.93	782.36	774.33	
Pier 51	115+51.93	782.29	774.30	
Pier 52	115+71.93	782.31	774.49	
Pier 53	115+91.93	782.43	774.51	

GENERAL PLAN & ELEVATION (2 OF 3)
TRAIL OVER ILLINOIS ROUTE 59
SECTION XX-XXXX-XX-XX
COOK COUNTY
STATION 100+00.00
STRUCTURE NUMBER XXX-XXXX

FILE NAME =	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS / SHEET NO.
		CHECKED -	REVISED -						
	PLOT SCALE =	DRAWN -	REVISED -					CONTRACT NO.	
	PLOT DATE =	CHECKED -	REVISED -				ILLINOIS	FED. AID PROJECT	

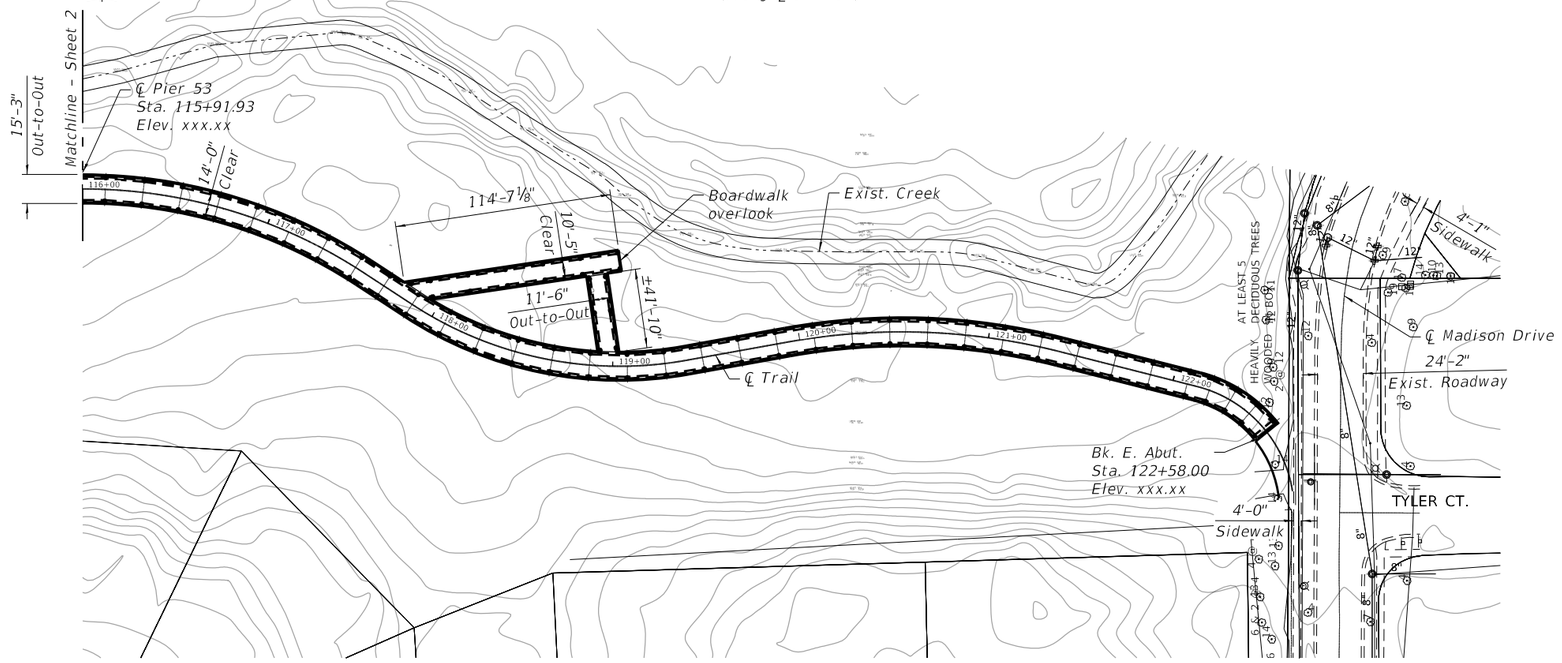


ELEVATION



PROFILE GRADE

(Along ℄ of Trail)



PLAN

Pier No.	Design Elevations (ft.)			
	Station	Deck Elev. @ ℄ Path	Existing Ground	Design Scour
Pier 54	116+11.93	782.62	774.48	
Pier 55	116+31.93	782.82	774.71	
Pier 56	116+51.93	782.99	774.93	
Pier 57	116+71.93	783.11	775.43	
Pier 58	116+91.93	783.20	775.99	
Pier 59	117+11.93	783.25	776.21	
Pier 60	117+31.93	783.25	776.21	
Pier 61	117+51.93	783.22	776.44	
Pier 62	117+69.77	783.15	776.76	
Pier 63	117+87.60	783.06	776.93	
Pier 64	118+07.60	782.91	777.34	
Pier 65	118+27.60	782.73	777.29	
Pier 66	118+47.60	782.53	776.90	
Pier 67	118+67.60	782.34	776.49	
Pier 68	118+87.60	782.20	777.07	
Pier 69	119+07.60	782.09	776.61	
Pier 70	119+27.60	782.03	776.56	
Pier 71	119+47.61	782.01	776.15	
Pier 72	119+67.61	782.02	775.94	
Pier 73	119+87.61	782.08	775.85	
Pier 74	120+07.61	782.17	775.90	
Pier 75	120+27.61	782.31	775.95	
Pier 76	120+47.61	782.48	775.95	
Pier 77	120+67.61	782.68	776.06	
Pier 78	120+87.61	782.86	776.00	
Pier 79	121+07.61	782.95	775.92	
Pier 80	121+27.61	782.95	775.96	
Pier 81	121+47.61	782.84	776.01	
Pier 82	121+67.61	782.64	776.06	
Pier 83	121+87.61	782.34	776.28	
Pier 84	122+07.61	781.95	776.58	
Pier 85	122+19.83	781.66	776.69	
Pier 86	122+32.05	781.34	776.84	
Pier 87	122+44.28	781.02	777.32	
℄ E. Abut	122+56.50	780.69	778.08	
Bk. E. Abut.	122+58.00			

GENERAL PLAN & ELEVATION (3 OF 3)
TRAIL OVER ILLINOIS ROUTE 59
SECTION XX-XXXX-XX-XX
COOK COUNTY
STATION XXX+XX.XX
STRUCTURE NUMBER XXX-XXXX

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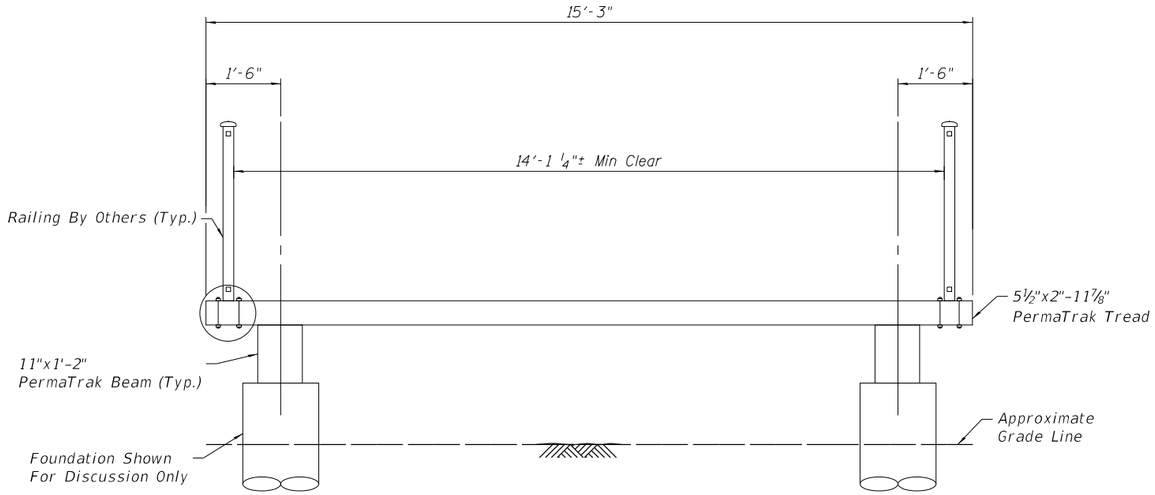
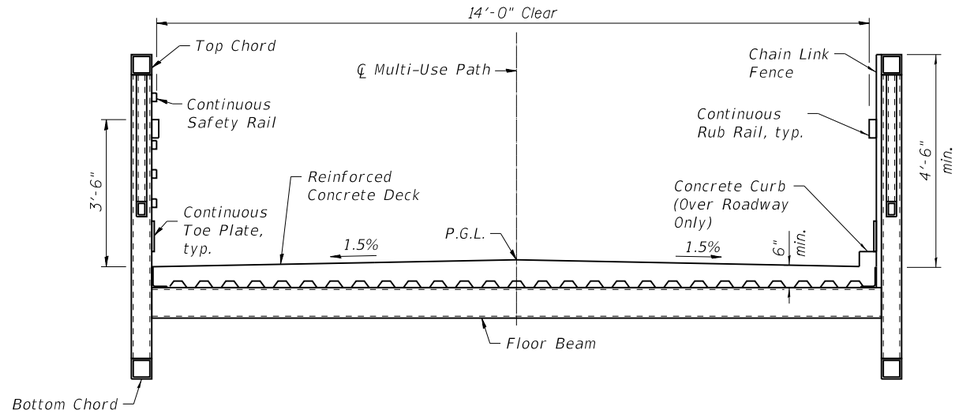
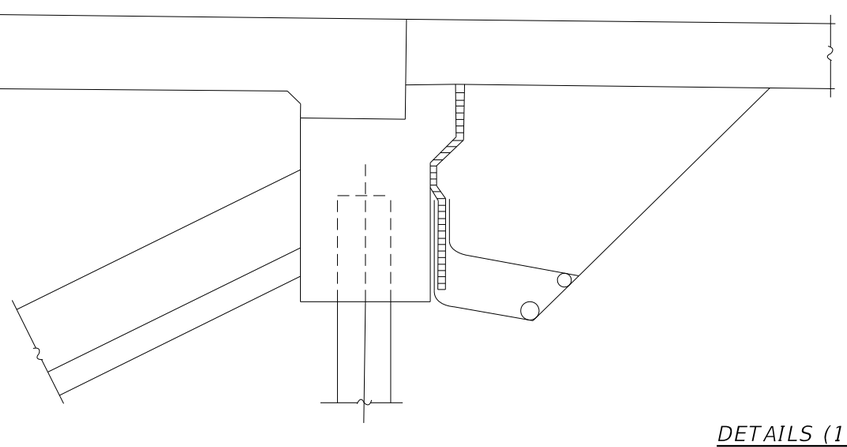


BOARDWALK CROSS SECTION



TRUSS CROSS SECTION



TRUSS PIER DETAIL

DETAILS (1 OF 2)
TRAIL OVER ILLINOIS ROUTE 59
SECTION XX-XXXX-XX-XX
COOK COUNTY
STATION XXX+XX.XX
STRUCTURE NUMBER XXX-XXXX

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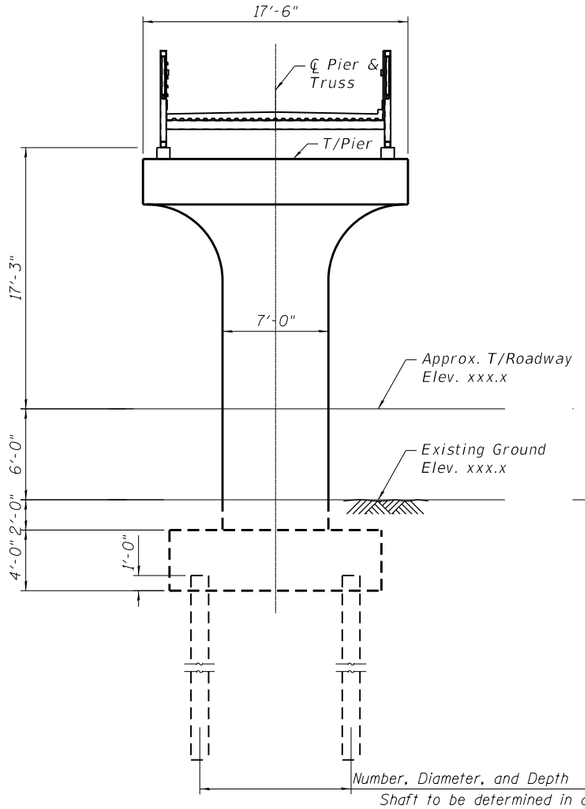
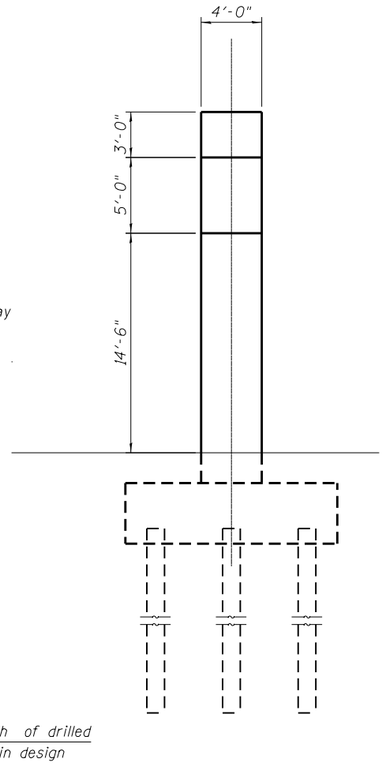
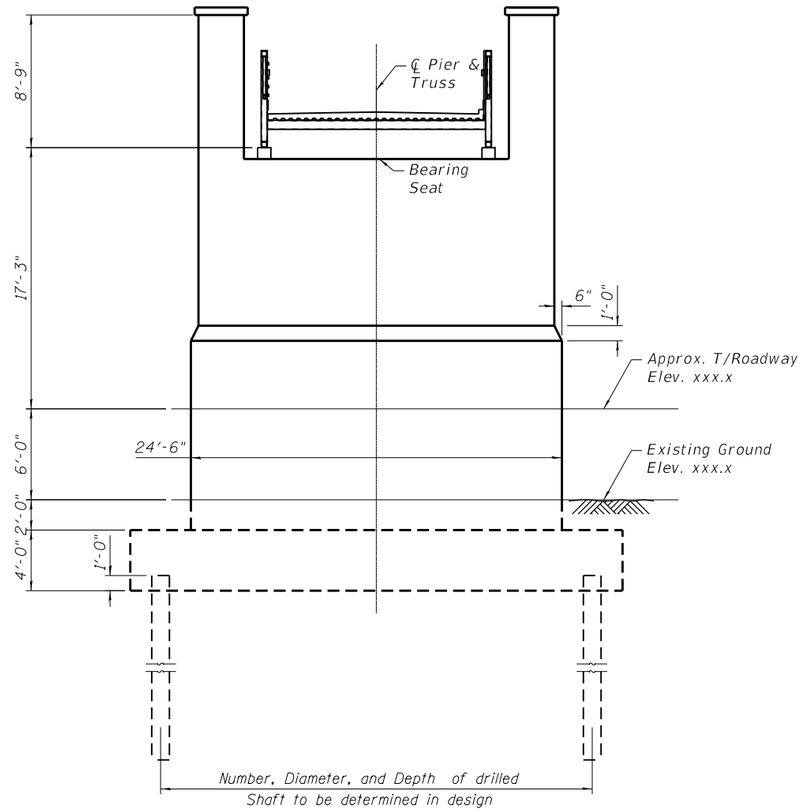


TRUSS PIER FRONT ELEVATION

(Pier No. 33 through Pier No. 38)

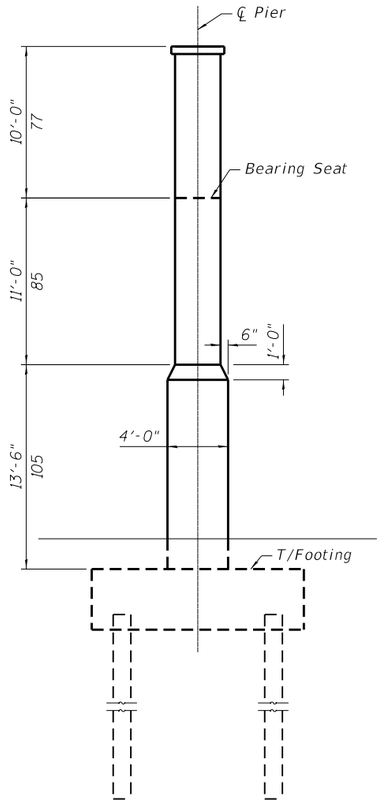


TRUSS PIER SIDE ELEVATION

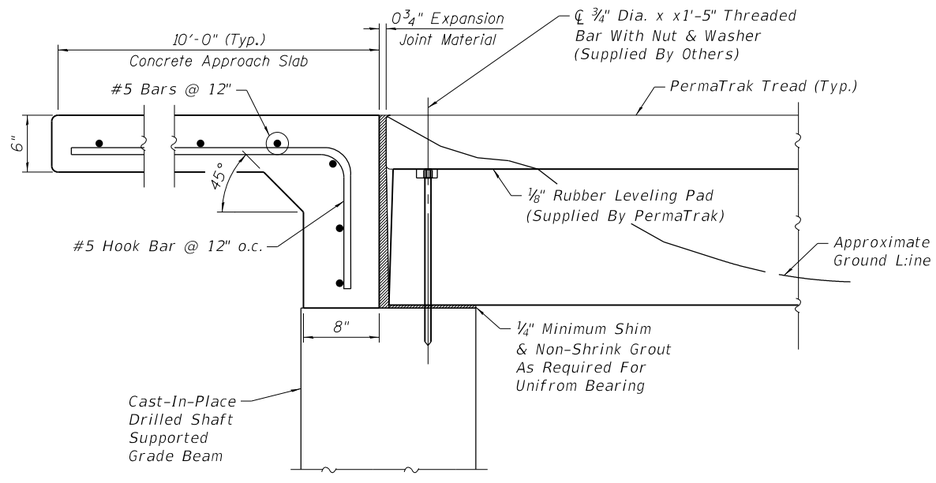


BOARDWALK PIER FRONT ELEVATION

(Pier No. 1 through Pier No. 32,
Pier No. 39 through Pier No. 87)



BOARDWALK PIER SIDE ELEVATION



SECTION THROUGH ABUTMENT

Railing not shown for clarity

DETAILS (2 OF 2)
TRAIL OVER ILLINOIS ROUTE 59
SECTION XX-XXXX-XX-XX
COOK COUNTY
STATION XXX+XX.XX
STRUCTURE NUMBER XXX-XXXX

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