ROADWAY GEOTECHNICAL REPORT
US ROUTE 20 IMPROVEMENTS
WEST OF RANDAL RD TO EAST OF SHALES PKWY
EAST LEG
STATION 332+80 TO STATION 443+31
IDOT CONTRACT D-91-453-20
KANE AND COOK COUNTIES, ILLINOIS

For

Gannett Fleming, Inc.

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Submitted by

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Original Report: September 30, 2022

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Technical Report Documentation Page

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11. Abstract

The proposed improvements include the reconstruction and widening of US Route 20 (US 20) between Station 142+87 and 443+31 with an omission between Station 272+05 and Station 332+80. This report addresses the east leg, roadway section between Station 332+80 and Station 443+31. The US 20 roadway will primarily be realigned and widened from two - three lanes and narrow shoulders and no interior shoulder to two - three lanes and wider shoulders and median wide shoulders each direction. Most of the widening will occur over the existing grassy areas on each side of the roadway cutting into existing ground or fill to existing embankment slopes and ditches.

At the surface, the borings encountered 3 to 36 inches topsoil. The recommended topsoil thickness to be stripped is 14 inches. The existing pavements are made of both asphalt and concrete with thicknesses of up to 17 inches, over aggregate base. The existing subgrade consists of stiff to hard silty clay to silty clay loam fill or stiff to hard silty clay to silty clay loam and sand and gravel native soils. Few borings encountered perched groundwater between 3 and 6 feet bgs within the granular lenses; however, the groundwater is mainly found in sand and gravel outwash deposit (Unit 3) below 6 feet.

The proposed subgrade will generally provide a stable working platform for the placement of fill and pavement construction. We recommend subgrade treatment of 12 to 24 inches undercuts for the sections summarized in Table 10. We recommend placing geofabric at the base of undercut areas.

For a mechanistic pavement design, the pavement sections should be designed using an SSR of POOR. For an AASHTO pavement design, the pavement sections should be designed using an IBR of 2.

We estimate that the critical embankment widening and cut slope sections to have adequate factor of safety against slope instability. The critical embankment sections analyzed showed total settlements to be 1 inch or less that is satisfactory for roadways.

For estimating purposes, the topsoil thickness to be stripped is 14 inches and a shrinkage factor of 15% should be used to measure borrowed and furnished excavation quantities.

12. Path to archived file

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ROADWAY GEOTECHNICAL REPORT
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FOR
GANNETT FLEMING, INC

1.0 INTRODUCTION

This report presents the results of our geotechnical subsurface investigation, laboratory testing, and engineering analysis and evaluations for the improvements along US Route 20 (US 20) from West of Randal Road to East of Shales Parkway. The project addresses the east leg roadway improvement that extends from west of IL Route 31 (State Street) to east of Poplar Creek in Kane County, Illinois. A Site Location Map is presented as Exhibit 1.

Wang understands the project limits extend along US Route 20 (US 20) for 6.9 miles including the omission of the 1.3-mile section near McClean Boulevard. The US 20 consists of roadway widening, bridge reconstruction or rehabilitation, retaining and noise walls construction, interchange modifications, channelization, auxiliary lanes, bike path construction, safety improvements, and traffic signals construction. The project is divided into two roadway improvement sections. The first section starts at west of Randal Road and extends to east of Longcommon Parkway, between Stations 142+87 and 272+05 (West Leg), and the other at west of IL 31 to east of Poplar Creek, between Stations 332+80 and 443+31 (East Leg). The omission area near McClean Boulevard is part of a separate interchange reconstruction project completed by IDOT in Fall 2016.

This report addresses the East Leg roadway improvement section of the US 20. Based on drawings and information provided by Gannett Fleming, Inc. (GF) and dated May 2021, Wang Engineering, Inc. a Terracon Company (Wang) understands the proposed improvement includes:

- US 20 between Station 332+80 and Station 443+31 roadway reconstruction and widening to accommodate the proposed bridges reconstruction or rehabilitation with wider lanes and shoulders with profile raise.

- Ramp M, between Station 22+50 and Station 30+75; roadway reconstruction and widening.
- Ramp N, between Station 50+00 and Station 61+00; roadway reconstruction and widening.
- Grace Street turn lanes; roadway reconstruction and widening of turn lanes in and out of US 20:
    - Ramp O, Grace Street to WB US 20, between Station 39+00 and Station 45+67.
    - Ramp P, EB US 20 to Grace Street, between Station 9+00 and Station 12+99.
    - Ramp Q, Grace Street to EB US 20, between Station 19+00 and Station 24+37.
    - Ramp R, WB US 20 to Grace Street, between Station 29+00 and Station 32+13.
- Raymond Street, between Station 20+00 and Station 26+60; roadway reconstruction to accommodate a new bike path; and
- Bike path, between Station 0+00 and Station 29+01.90; new bike path between IL 31 and Raymond Street.

The purpose of our investigation was to characterize the pavement, subgrade, and groundwater conditions, perform geotechnical engineering analyses, and provide geotechnical recommendations for the design and construction of the proposed roadway improvements. The structures are addressed in separate Structure Geotechnical Reports (SGRs) by others.

2.0 GEOLOGICAL SETTING

The project area extends through Kane and Cook Counties, Illinois. On the USGS *Elgin 7.5 Minute Series Quadrangle* map, the project runs from west to east through Section 23 and 24, of Tier 41N, Range 8E of the Elgin Township and through Section19 of Tier 41N, Range 9E of the Hanover Township, the Third Principal Meridian.

The following review of published geologic data, with emphasis on factors that might influence the design and construction of the proposed engineering works, is meant to place the project area within a geological framework and confirm the dependability and consistency of the subsurface investigation results. For the study of the regional geologic framework, Wang considered northeastern Illinois in general and Kane and Cook Counties in particular.

2.1 Physiography

The project area is located within the Wheaton Morainal Country physiographic subsection of the Great Lake Section (Leighton et al. 1948). This intermorainic area, border to the west by Minooka Moraine and to the east by the West Chicago Moraine a Valparaiso System Moraine. The surface is hummocky, characterized by glacial morainic topography, represented by a variety of elongated hills, mounds,

basins, sag, and valleys. The surface along the project alignment slopes west to east, from the up-ice slope of the Minooka Moraine into intermorainal area between Minooka and West Chicago Moraines. The project runs on both sides of Fox River, just west of Poplar Creek with relief sloping toward Fox River from 765 feet to 690 feet near the river and then up again to 740 feet west of Poplar Creek. Fox river runs south through a 330 feet wide channel at the US 20 crossing.

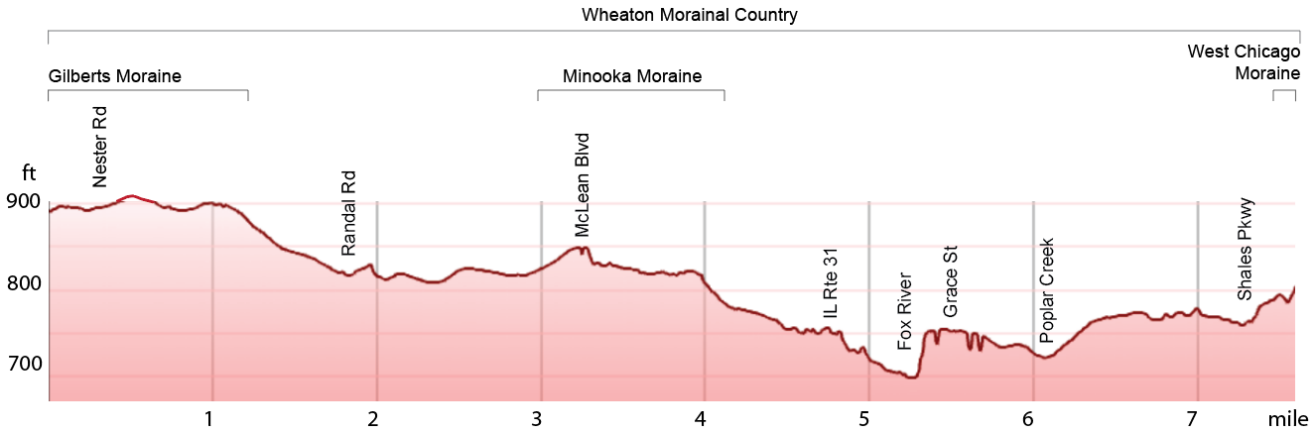

Figure 1: Physiographic features along the project alignment

2.2 Pedological Features

After the Wisconsin glaciation, several types of soils developed through weathering of glacigenic sediments. In Kane County, the soil types were surveyed by the USDA (2021). A summary of the USDA soil types presents within the project area, including their relevant geotechnical index properties and suitability as subgrade and road fill are shown in Exhibits 2-1 to 2-4. 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 highway and street construction are in general in agreement with the information presented in the exhibits.

2.3 Surficial Cover

The surficial cover is the result of Wisconsinan-age and Illinois-age glacial activity. The glacigenic deposits were emplaced during pulsating advances and retreats of an ice-sheet lobe responsible for the formation of end moraines and associated low-relief till and lake plains (Hansel and Johnson 1996). Along the project area, the drift thickness varies from about 40 feet to 90 feet west of Fox River and more than 90 feet east of the river. Predominantly the drift is dominated by sand and gravel outwash of the Henry Formation that interfinger with silty clay loam diamicton of the Yorkville member of the Lemont Formation and clayey loam diamicton of the Tiskilwa Formation (Wisconsin-age), resting over

loamy diamicton of the Glasford Formation (Illinois-age) (Curry 2007). In the project area, within Fox River and Poplar valleys, alluvium of the Cahokia Formation resting over sand and gravel outwash of the Henry Formation may be encountered (Curry 2007). Mainly east of the river, beneath the Henry Formation outwash, about 100-foot thick loamy and sandy diamicton of the Grasford Formation is found filling bedrock valleys. Exhibit 3 illustrates the *Site and Regional Geology*.

The Cahokia Alluvium, less than 10 feet thick, consists of brown, sand, and gravel grading laterally to organic-rich silt and clay deposits (Curry 2007). The Henry Formation consists of stratified sand and gravel outwash with thicknesses of up to 60 feet (Curry 2007). The Yorkville Member of the Lemont Formation, encountered east of Fox River, up to 50-foot thick, consists of yellowish brown to gray silty clay to silty clay loam diamicton that contains lenses of gravel, sand, silt, and clay (Hansel and Johnson 1996, Curry 2007). The Glasford Formation, up to 100-foot thick, consisting of pinkish brown loamy diamicton and sorted sand and gravel (Curry 2007) rest on top of the bedrock.

From a geotechnical viewpoint, the Henry Formation is characterized by high density and low compressibility; the Yorkville Member is characterized by low to moderate plasticity, high strength, and low to moderate moisture content (Bauer et al. 1991). Besides the existing fill, the Henry Formation deposits, and the Yorkville member deposits make most of the subgrade.

2.4 Bedrock

Within the project limits, the surficial cover rests unconformably on top of Silurian-age bedrock that dips east and Ordovician. The top of the bedrock lies at 40 to 150 feet below the ground surface (bgs). Saint Charles Bedrock Valley runs north-south Just east of the project. Within the project area, Silurian dolostone is underlain by Ordovician shales of the Maquoketa Group (Kolata 2005). The dolostone bedrock is slightly weathered.

Structurally, the site is located on the eastern flank of the Wisconsin Arch. The northwest to southeast trending inactive Sandwich Fault Zone runs 30 miles south of the project. The eastern section is the downthrown block with Silurian-age dolostone bedrock. No active faults are known in the area.

2.5 Climatological Data

The subsurface investigation was performed from October to December of 2021 and continued from February to May of 2022. To assess the possible effects of precipitation and temperature on water table data and soil moisture, the climatic conditions for the investigation period and three months

prior to the start of the investigation are summarized graphically in Figures 1 and 2. The precipitation and temperature data for the investigation period are compared against thirty-year monthly data (1991 to 2020) in box-and-whiskers format to show deviations from "normal" climate conditions during the current investigation. Local climate data were obtained from the O'Hare Station (NCDC 2022).

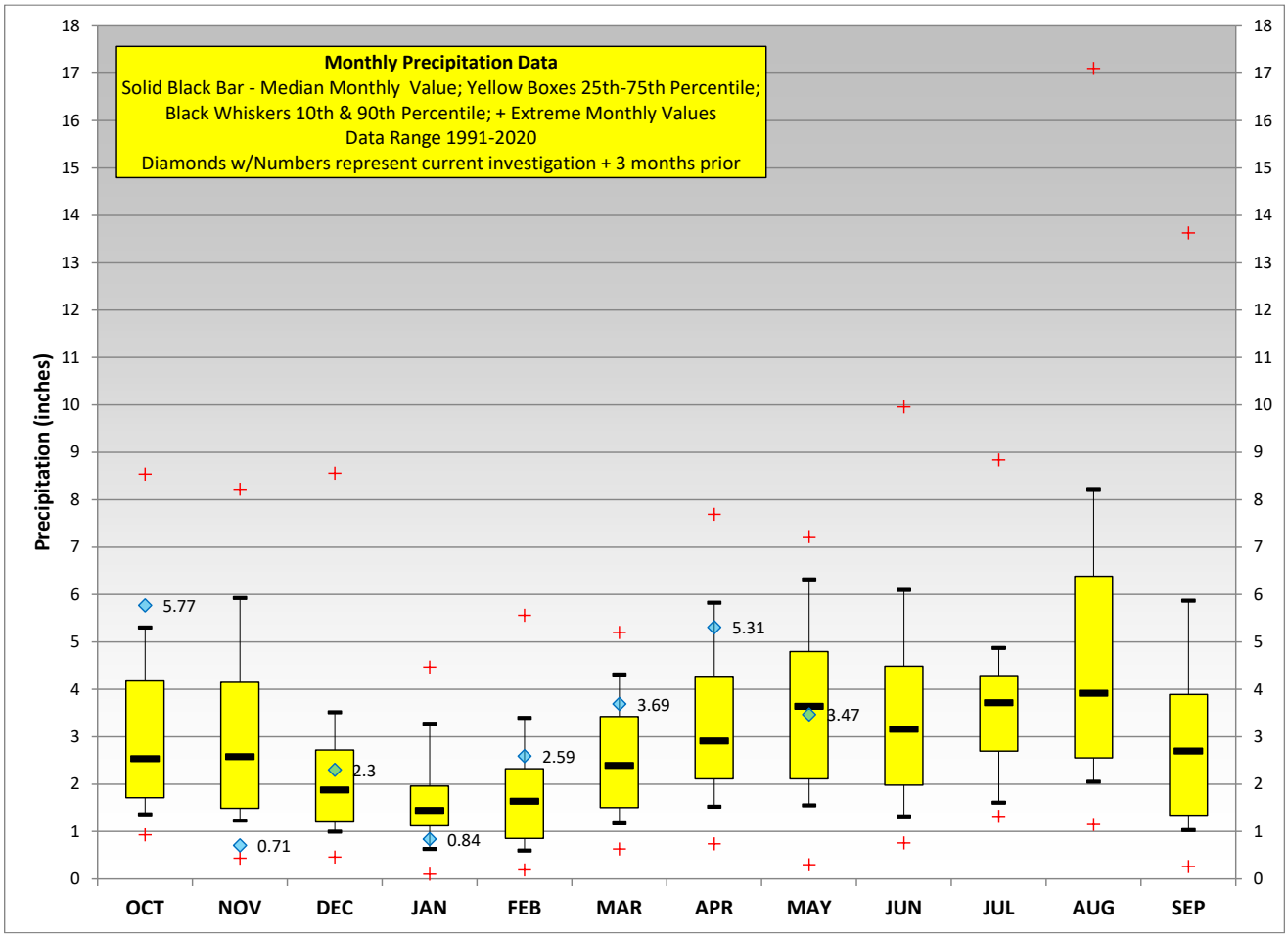

Figure 2: Monthly Precipitation Data for 2021 to 2022

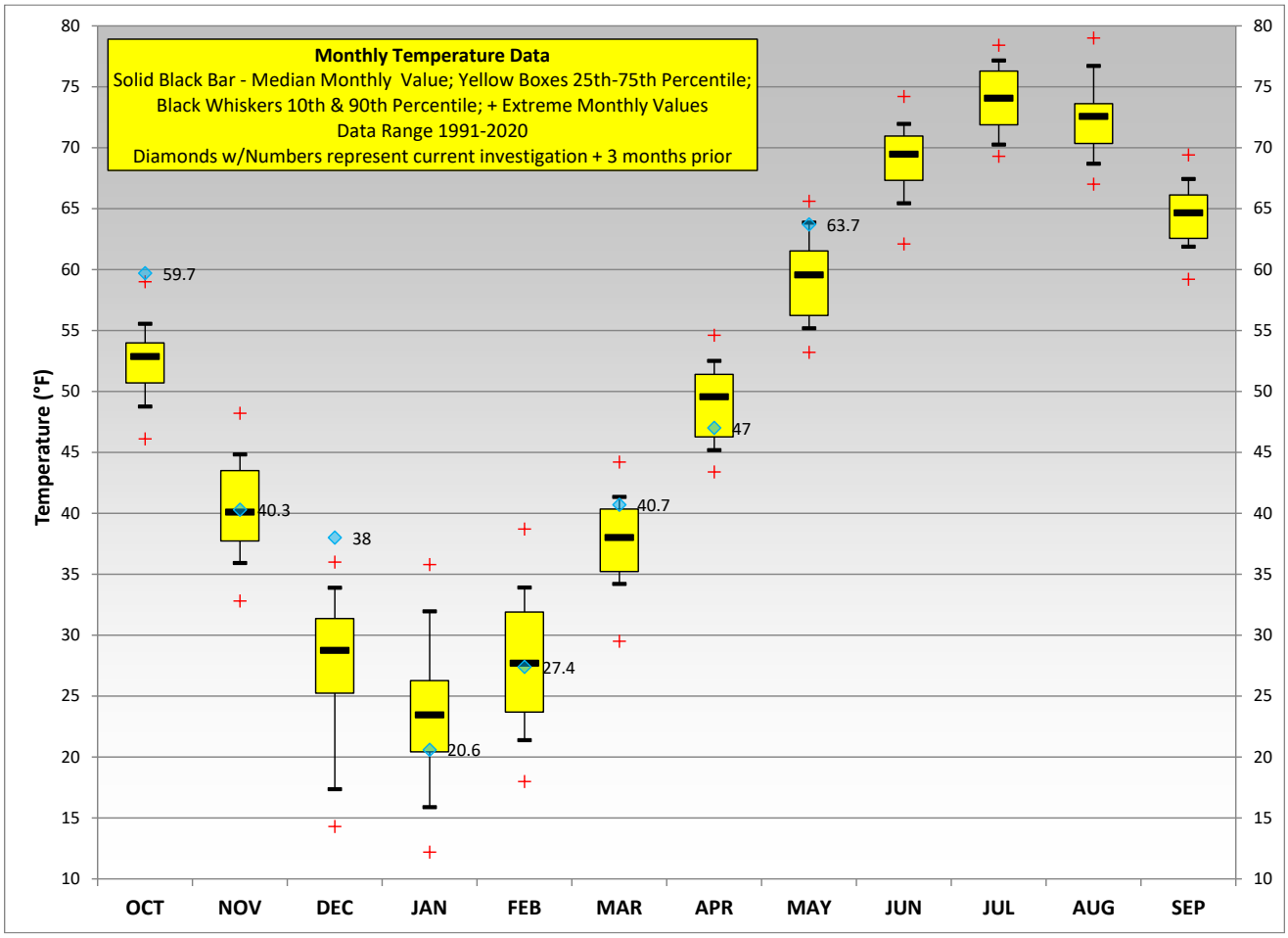

Figure 3: Monthly Temperature Data for 2021 to 2022

The deviations from the historical 30-year climate data show the investigation period was characterized in general by average precipitations with exception of above average precipitation in October 2021. The temperature values were average with the exceptions of record high temperatures in October and December 2021 and above average in May 2022. Observations of perched water within the granular fill may have been influenced by these climate factors.

3.0 METHODS OF INVESTIGATION

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

3.1 Field Investigation

Our subsurface investigation for the roadway consisted of subgrade borings (SGB) drilled along the US

20 and adjacent ramps and streets. We also considered nearby structures such as bridge (BSB) borings, noise wall (NAW) borings, overhead structure (OSS) borings, and retaining wall (RWB) borings for our analysis. The borings were drilled by Wang between October 2021 and March 2023, from surface elevations of 704.5 to 802.7 feet, to depths of 4.0 to 90.0 feet bgs. A summary of soil borings, associated roadway alignments, ground surface elevations, and termination depths is provided in Table 1.

Table 1: Surface Investigation Summary

Roadway Alignment	Alignment Limits (Station to Station)	Reference Borings IDs	Ground Surface Elevations (feet)	Termination Depths (feet)
US 20	332+80.00 to 443+31.00	SGB-14 to SGB-28; B7-NAW-28 to B7-NAW-35; B9-2-NAW-01 to B9-2-NAW-04; B9-3-NAW-02, B9-3-NAW-03, RWB-2-01 to RWB-2-15; 45-0004-BSB-01, 45-0004-BSB-05, 45-0004-BSB-09 RWB-3-01 to RWB-3-05 RWB-4-01 to RWB-4-02, 45-0005-BSB-01, 45-0005-BSB-03, 45-0005-BSB-02, 45-0005-BSB-06,	704.5 to 802.7	4.0 to 90.0
Ramp M	22+50.00 to 30+75.00	RWB-1-01 to RWB-1-11	725.8 to 739.0	9.0 to 40.0
Ramp N	50+00.00 to 61+00	SGB-17, B9-NAW-02B B9-NAW-01 to B9-NAW-06(/SGB-19);	727.9 to 760.1	15.0 to 40.0
Ramp O (Grace Street)	39+00.00 to 45+66.69	SGB-26. B9-3-NAW-04 to B9-3-NAW-06;	756.9 to 758.9	10.0 to 20.0
Ramp P (Grace Street)	9+00.00 to 12+98.70	OSS-03, RWB-4-02	754.0 to 754.4	40.0 to 50.0
Ramp Q (Grace Street)	19+00.00 to 24+37.33	B10-NAW-01, 45-0006-BSB-03	739.0 to 753.0	20.0 to 60.0
Ramp R (Grace Street)	29+00.00 to 32+12.87	OSS-04; B9-3-NAW-06, B11-13-NAW-01	755.5 to 758.9	20.0 to 50.0

Roadway Alignment	Alignment Limits (Station to Station)	Reference Borings IDs	Ground Surface Elevations (feet)	Termination Depths (feet)
Raymond Street	20+00.00 to 26+60.00	45-0005-BSB-04	738.7	60.0
Bike Path	0+00.00 to 29+00.00	SGB-24, B9-NAW-01 to B9-NAW-06. B9-2-NAW-01 to B9-2-NAW-04 45-0004-BSB-01; B9-3-NAW-02, B9-3-NAW-03, 45-0005-BSB-01	727.9 to 760.1	11.0 to 60.0

The as-drilled northing and easting coordinates were surveyed by Wang with a mapping-grade GPS unit, whereas the stations, offsets, and elevations were provided by GF. Boring location data are presented in the *Boring Logs* (Appendix A) and the as-drilled locations are shown in the *Soil Borings Location Plans and Profiles* (Appendix F).

ATV- and truck-mounted drilling rigs equipped with hollow stem augers were used to advance and maintain open boreholes. Soil sampling was performed according to AASHTO T206, *"Penetration Test and Split Barrel Sampling of Soils."* The soil was sampled continuously to 11 feet bgs, at 2.5-foot intervals to 30 feet, and at 5-foot intervals thereafter in SGB borings. The BSB, NAW, RWB, and OSS borings were sampled at 2.5-foot intervals to 30 feet, and at 5-foot intervals thereafter. A manually operated, jackhammer-driven, LB-sized Geoprobe was used to continuously sample the soil in areas with limited access. 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/or pocket penetrometer unconfined compressive strength tests, and results of Standard Penetration Tests (SPT) recorded as blows per 6 inches of penetration. The N-values shown in the *Soil Borings Location Plans and Profiles* (Appendix F) are the sum of the second and third set of blows per 6 inches of penetration.

Groundwater levels were measured while drilling and at the completion of each boring. For safety considerations each borehole was backfilled upon completion with soil cuttings and bentonite chips and the pavement surface was restored as close as possible to its original condition.

3.2 Laboratory Testing

The soil samples were tested in the laboratory for moisture content (AASHTO T265). Atterberg limits (AASHTO T89 and T90), particle size analysis (AASHTO T88), and organic content by loss on ignition (ASTM D2974, Method C) tests were performed on select samples. Field visual descriptions of the soil samples were verified in the laboratory and the soils were classified according to the IDH and AASHTO Soil Classification Systems. The laboratory test results are shown in the *Boring Logs* (Appendix A), in the *Laboratory Test Results* (Appendix B), in the *IDOT Forms* (Appendix C), and in the *Soil Borings Location Plans and Profiles* (Appendix F).

4.0 INVESTIGATION RESULTS

Detailed descriptions of the soil conditions encountered during the subsurface investigation are presented in the attached *Boring Logs* (Appendix A) and in the *Soil Borings Location Plans and Profiles* (Appendix F). Please note that the strata contact lines shown on the logs and profiles 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 Surface Characterization

The proposed improvement will include roadway widening and realignment along US 20, Ramp M, Ramp N, Ramp O, Ramp P, Ramp Q, and Ramp R, reconstruction along the Reymond Street, and construction of new Bike Path. About 33% of the borings were drilled through pavement. The remaining borings were advanced through either topsoil or bare ground, off shoulders or on embankment slopes. Topsoil thicknesses are summarized in Table 2.

Table 2: Summary of Topsoil Thickness

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
US 20	54	3 to 36	12
Ramp M	9	2 to 4	3
Ramp N	5	3 to 12	9
Ramp O (Grace Street)	2	6	6
Ramp P (Grace Street)	1	17	17

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
Ramp Q (Grace Street)	0	NA	NA
Ramp R (Grace Street)	3	6 to 12	10
Raymond Street	0	NA	NA
Bike Path	5	3 to 12	9

NA = not available

One third of the borings were drilled through paved shoulders and lines. The borings drilled in the existing roadway show various pavement structures consisting of asphalt, asphalt over concrete, or just concrete. The pavement thickness ranges from 7 to 17 inches with an average of 12 inches. The aggregate base consists of either crushed stone or gravelly sand and its thickness ranges from 2 to 33 inches. Pavement structure thicknesses are summarized in Table 3.

Table 3: Summary of Existing Pavement Thickness and Composition

Alignment	Total Number of Measurements (No)	Pavement Structure Thickness (inches)			Pavement Average Thickness (inches)
		Asphalt No[1]/Range	Concrete No[1]/Range	Total Pavement No[1]/Range	
US 20	35	33/1-12	26/5-16	35/8-17	12
Ramp M	2	2/3	2/9	2/12	12
Ramp N	3	3/3	3/8-9	3/11-12	12
Ramp O (Grace Street)	1	1 /2	1/7	1/9	9
Ramp P (Grace Street)	1	1/11	1/0	1/11	11
Ramp Q (Grace Street)	2	2/2-7	1/9	2/7-11	9
Ramp R (Grace Street)	0	NA	NA	NA	NA
Raymond Street	1	1/10	0	1/10	10
Bike Path	9	9/2-9	8/9-12	9/9-17	13

[1]No = number of measurements along the alignment

4.2 Subgrade Conditions

Beneath the surface, in descending order, the lithologic succession encountered includes: 1) man-made ground (fill); 2) soft to very stiff clay to silty clay loam; 3) medium dense to very dense sand and gravel; 4) stiff to hard silty clay to silty clay loam diamicton; 5) stiff to hard clay loam to silty clay loam diamicton; 6) strong dolostone bedrock. The following section presents the subgrade and foundation conditions encountered along the roadway alignments by our subsurface investigation. The top four units' geotechnical properties are presented below.

1) Man-made ground (fill) (Unit 1)

Beneath the surface, the borings encountered 0.5 to 40.6 feet of granular and cohesive and fill along the US 20 alignment, up to 13.4 feet along Ramp M, up to 6.8 feet along Ramp N, up to 9.2 feet along Ramp O, about 2.8 feet along Ramp P, up to 18.8 feet along Ramp Q, up to 5.0 feet along Ramp R, up to 4.7 feet along Raymond Street, and 1.3 to 40.3 feet along the Bike Path. Granular fill makes about 30% of the fill, consists of loose to very dense silty loam, loam, sandy loam, sand, to gravelly sand, with N values of 5 blows-per-foot to sampler refusal. The cohesive fill generally consists of medium stiff to hard clay loam to silty clay loam and silty loam with unconfined compressive strength (Q_u) values of 0.5 to 10.3 tsf rarely soft (0.3 to tsf) with an average of 2.9 tsf, SPT N-value of 3 to 38 blows-per-foot averaging 17 blows-per-foot, and moisture content values of 6 to 31% with an average of 17%. Laboratory index testing shows liquid limit (L_L) values of 23 to 48% and plastic limit (P_L) values of 11 to 22%. The soil belongs primarily to the A-6 group in accordance with AASHTO.

Table 4: Summary of Existing Unit 1 Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
US 20	0.3-10.3/2.8	9->50/23	3-29/13	23-47	11-22
Ramp M	0.4-3.8/1.9	5-13/10	3-21/13	48	16
Ramp N	0.9-4.5/2.6	10-22/17	8-23/16	NA	NA
Ramp O (Grace Street)	0.5-4.9/3.3	4-19/12	12-22/18	NA	NA
Ramp P (Grace Street)	2.0/2.0	15/15	14/14	NA	NA

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
Ramp Q (Grace Street)	1.0-4.0/2.5	3-34/13	12-20/16	NA	NA
Ramp R (Grace Street)	2.5-4.5/3.5	8-12/10	19-21/20	NA	NA
Raymond Street	NA	NA	NA	NA	NA
Bike Path	1.0-4.7/2.4	5->50/22	2-31/12	23	11

Buried topsoil was encountered below the fill in one boring, Boring 45-00004-BSB-05, about 5-foot thick of black silty clay with Q_u value of 1.5 tsf, SPT N-value of 19 blows-per-foot, and moisture content of 19%. The buried topsoil and a few high moisture soils were tested for organic content and the results show values of 3.3 to 5.1%.

2) Soft to very stiff silty clay to silty clay loam (Unit 2)

Below surface or Unit 1, at elevations of 702 to 755 feet (1 foot to more than 10 feet bgs), the borings advanced through soft to very stiff silty clay to silty clay loam. This unit is discontinuous, in pockets, mainly west of the Fox River. The unit thickness varies from 2 to up to 10 feet, unit is characterized by Q_u values of 0.5 to 2.2 tsf averaging 1.4 tsf, SPT N-values of 3 to 17 blows-per-foot averaging 9 blows-per-foot, moisture content values of 13 to 31% averaging 24%, L_L values of 37 to 43%, and PI of 24 to 27%. Organic content was run on selected samples and results show 3.8% value.

Table 5: Summary of Unit 2 Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
US 20	0.8-2.1/1.7	3-10/7	24-29/26	NA	NA
Ramp M	NA	NA	NA	NA	NA
Ramp N	0.5-2.2/1.2	5-17/11	13-31/22	37-43	24-27
Ramp O (Grace Street)	NA	NA	NA	NA	NA

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
Ramp P (Grace Street)	NA	NA	NA	NA	NA
Ramp Q (Grace Street)	NA	NA	NA	NA	NA
Ramp R (Grace Street)	NA	NA	NA	NA	NA
Raymond Street	NA	NA	NA	NA	NA
Bike Path	0.5-0.8/0.6	5-14/9	13-25/20	37-43	13-15

3) Medium dense to very dense sand and gravel outwash (Unit 3)

Beneath the fill, buried topsoil, Unit 2, or at the surface, borings encountered up to 30 feet of loose to very dense sand and gravel outwash, making most of the subgrade. The unit is characterized by SPT N-values of 4 blows-per-foot to spoon refusal, averaging 34 blows-per-foot, moisture content of 2 to 29% and an average of 7. The AASHTO soil classification show the soil belongs to A-1 group. This unit is water bearing.

Table 6: Summary of Existing Unit 3 Properties

Alignment	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	AASHTO Classification
US 20	5->50/33	2-25/8	A-1
Ramp M	4->50/38	1-29/4	NA
Ramp N	13->50/35	2-13/4	A-1
Ramp O (Grace Street)	19/19	10/10	NA
Ramp P (Grace Street)	16->50/44	2-13/6	NA
Ramp Q (Grace Street)	8-47/28	4-13/7	NA

Alignment	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	AASHTO Classification
Ramp R (Grace Street)	NA	NA	NA
Raymond Street	>50	6-7/6	NA
Bike Path	9->50/31	3-17/5	NA

Within this unit, layers of silt and clay are discontinuously encountered. Layers were 5 feet or less, with Q_u values of 0.3 to 4.5 tsf averaging 2.0 tsf, SPT N-values of 7 to 45 blows-per-foot, and moisture content of 9 to 26%. About 25% of these lenses show Q_u values less than 1.0 tsf and moisture content no more than 26%related with the degree of saturation within Unit 3.

4) Stiff to hard silty clay to silty clay loam diamicton (Unit 4)

Below surface or interfinger with Unit 3, at elevations of 730 to 757 feet (1 to more than 20 feet bgs), the borings advanced through stiff to hard silty clay to silty clay loam diamicton. This unit is part of the Yorkville member of the Lemont Formation that interfingers with the outwash of the Henry Formation covering most of the subgrade east of the Fox River with thickness varying from 5 to 20 feet near the Raymond Road. Throughout this unit, occasional silt, sand, and gravel wet or saturated lenses are encountered. The unit is characterized by Q_u values of 1.0 to greater than 4.5 tsf averaging 4.6 tsf, SPT N-values of 3 blows-per-foot to spoon refusal averaging 20 blows-per-foot, moisture content values of 3 to 25% averaging 17%, L_L values of 32 to 37%, and PI of 18 to 22%.

Below saturated granular layers, the silty clay loam may be softer. It shows Q_u values of 0.5 to 0.8 tsf, N-values of 3 to 12 blows-per-foot, and moisture content of 14 to 22%.

Table 7: Summary of Existing Unit 4 Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
US 20	0.5-10.3/4.5	7->50/21	3-25/16	25-35	11-15

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
Ramp M	NA	NA	NA	NA	NA
Ramp N	NA	NA	NA	NA	NA
Ramp O (Grace Street)	1.6-7.3/3.6	8-23/14	5-22/17	NA	NA
Ramp P (Grace Street)	2.5-9.0/5.8	12-24/19	15-24/17	NA	NA
Ramp Q (Grace Street)	1.5-5.3/3.4	6-32/18	11-21/16	32	14
Ramp R (Grace Street)	1.0-6.4/3.9	8-23/15	13-21/18	NA	NA
Raymond Street	0.8-8.3/4.4	7-40/18	15-25/19	NA	NA
Bike Path	2.5-4.6/3.5	9-34/20	15-23/18	NA	NA

5) Stiff to hard loamy diamicton (Unit 5)

Encountered below Unit 3 or Unit 4, at elevations of 670 to 740 feet (16 to more than 58 feet bgs), the borings advanced through stiff to hard loam, clay loam to silty clay loam diamicton. This unit is part of the Glasford Formation, resting over the bedrock, thickness varies from 5 to 50 feet within the bedrock valley. Throughout this unit, occasional sand and gravel lenses are encountered. The unit is characterized by Q_u values of 1.2 to greater than 4.5 tsf averaging 3.2 tsf, SPT N-values of 9 blows-per-foot to spoon refusal averaging 27 blows-per-foot, moisture content values of 3 to 20% averaging 13%, L_L values of 25 to 26%, and P_L of 11%.

Table 8: Summary of Existing Unit 5 Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
US 20	1.2-6.3/3.1	9->50/27	3-20/13	25-26	11

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows-per-foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plasticity Index Min-Max (%)
Ramp M	2.0-3.6/2.8	22-28/25	14-18/16	NA	NA
Ramp N	NA	NA	NA	NA	NA
Ramp O (Grace Street)	NA	NA	NA	NA	NA
Ramp P (Grace Street)	2.1-4.5/3.4	13-23/18	11-12/11	NA	NA
Ramp Q (Grace Street)	3.4-4.5/3.8	22-26/24	12-13/13	NA	NA
Ramp R (Grace Street)	1.2-6.6/3.0	13->50/35	3-13/9	NA	NA
Raymond Street	1.8-2.8/2.1	17-40/25	14/14	NA	NA
Bike Path	NA	NA	NA	NA	NA

4.3 Groundwater Conditions

Groundwater was recorded during and upon completion of drilling. The groundwater was encountered in 38% of the borings, mainly in Unit 3 or perched within granular lenses within the fill. However, it should be noted that groundwater levels might change and may vary with seasonal rainfall patterns and long-term climate fluctuations, Fox River level, or may be influenced by local site conditions. A groundwater data summary is presented in Table 9.

Table 9: Summary of Groundwater Measurements

Roadway Alignment	Groundwater measurements No[1]./out of [2]	Groundwater while drilling (feet)		Groundwater after drilling (feet)	
		Depth min-max	Elevation min-max	Depth min-max	Elevation min-max
US 20	38/95	3.0-53.5	696.9-788.7	3.0-68.0	673.0-799.7

Roadway Alignment	Groundwater measurements No[1]./out of [2]	Groundwater while drilling (feet)		Groundwater after drilling (feet)	
		Depth min-max	Elevation min-max	Depth min-max	Elevation min-max
Ramp M	4/11	26.0-31.0	699.8-702.4	26.0-29.0	699.5-699.9
Ramp N	0/4	NA	NA	NA	NA
Ramp O (Grace Street)	1 /4	8.0	749.4	Dry	NA
Ramp P (Grace Street)	0 /2	Dry	NA	Dry	NA
Ramp Q (Grace Street)	1 /2	38.5	714.6	48.0	705.1
Ramp R (Grace Street)	1 /3	38.0	717.5	Dry	NA
Raymond Street	1 / 1	16.0	722.7	Dry	NA
Bike Path	3/15	3.5-53.5	701.4-755.7	53.0-55.0	696.9-703.7

[1]No = number of borings that encountered groundwater; [2] total number of borings drilled along the alignment

5.0 ANALYSIS AND RECOMMENDATIONS

According to the drawings provided by GF, Wang understands the following improvements are proposed for the section of the project that is defined as the East Leg:

- Reconstruction, widening and realignment of US 20, between Station 332+80 and Station 443+31 excluding the bridge over Fox River (Stations 1396+84.14 to 1403+60.86), the bridge over Raymond Street (Stations 416+98.97 to 418+56.41), and the bridge over St. Charles Street (Stations 420+04.95 to 422+11.45).
- Reconstruction and widening of Ramp M to IL 31, between Station 22+50 and Station 30+75.
- Reconstruction and widening of Ramp N off IL 31, between Station 50+00 and Station 61+00.
- Reconstruction and widening of Ramp O, Grace Street to WB US 20, between Station 39+00 and Station 45+67.
- Reconstruction and widening of Ramp P, EB US 20 to Grace Street, between Station 9+00 and Station 12+99.

- Reconstruction and widening of Ramp Q, Grace Street to EB US 20, between Station 19+00 and Station 24+37.
- Reconstruction and widening of Ramp R, WB US 20 to Grace Street, between Station 29+00 and Station 32+13.
- Reconstruction of Raymond Street, between Station 20+00 and Station 26+60.
- Construction of bike path, between Station 0+00 and Station 29+00.

Design and cross-section drawings indicate the proposed grade along the alignments will change from slightly to completely; the proposed roadway widening will require new embankment fill in some areas up to 42 feet of fill or cut sections into side slopes or existing terrain. The cut sections are as deep as 12 feet along the roadway and as deep as 20 feet along the bike path. The roadway widening extends horizontally to more than 40 feet into existing terrain. The side slope will be graded no steeper than 1:2 (V:H). and for tall embankment fill, benching may be needed.

As per GF draft cross sections, the typical pavement design is:

US 20

Lanes	Shoulders
13.75″ full depth Hot-Mix Asphalt (HMA).	12″ Aggregate Subgrade
12″ Aggregate Subgrade Improvement (ASI)	

Ramp M and Ramp N

Lane	Shoulder
10.25″ HMA.	Aggregate Shoulders
12″ Aggregate Subgrade Improvement	

Bike Path

Lane

3″ HMA.

6″ Aggregate Base

5.1 Site Preparation

For the proposed reconstruction, it is recommended that topsoil and existing pavement be stripped within the limits of the proposed improvements. For estimating purposes, the topsoil thickness to be stripped is 14 inches, representing the 75 percentile of topsoil thickness. As per IDOT District One, a shrinkage factor of 15% should be used to measure borrowed and furnished excavation quantities.

As per IDOT District One, *we recommend that all topsoil that is stripped be stockpiled, sorted, and reused for the proposed landscaping improvements. The pay item for this is TOPSOIL EXCAVATION AND PLACEMENT (CU YD). We recommend that a plan note containing the stockpiling information be included in the contract documents. The actual removal depth and the quantity of topsoil removal should be verified in the field.*

After stripping, the stability of the exposed subgrade should be observed for the presence of any unsuitable and/or unstable soils to determine if remedial treatment is necessary. The prepared subgrade should be proofrolled to check for rutting and subgrade deformation. Using a static or dynamic cone penetrometer, any unstable and/or unsuitable soils revealed during proofrolling should be tested and evaluated according to the IDOT *Subgrade Stability Manual* (IDOT 2005). The side slopes along high embankments along US 20 should be benched to accommodate the new embankment fill.

5.2 Subgrade Treatment Recommendations

Based on the results of our investigation, the subgrade will generally consist of stiff to very stiff silty clay to silty clay loam fill, stiff to hard silty clay to silty clay loam diamicton, or medium dense to very dense sand and gravel natural ground. The proposed pavement structure will be supported mainly on both existing fill and natural ground.

Soil borings indicate the proposed subgrade generally consists of soils with Q_u values greater than 1.0 tsf, moisture contents of less than 25%, and L_L values below 50%. Overall, the subgrade soils will provide a stable working platform for the construction of the new pavement structure and the aggregate base. However, a few borings revealed soil with Q_u values less than 1.0 tsf, moisture content values higher than 30%, and/or L_L values above 50%. The proposed treatment undercuts are below the 12 inches of aggregate subgrade improvement that is included as part of the proposed pavement section.

Additionally, a few borings encountered borderline soils with either high moisture levels (approaching 30%) or Q_u values ranging from 0.5 to 0.9 tsf, or loose to medium dense sand affection stability of

slopes in deep cut sections or settlement issues within tall embankments. These areas may not require undercuts at this time; however, the field engineer should offer solution for reducing the risks of failure. These potential problem areas are summarized in Table 10.

The improved subgrade should be in accordance with the IDOT Bureau of Design and Environment (BDE) *Aggregate Subgrade Improvement* Special Provision. We recommend placing geotextile fabric at the base of undercut areas. Fabric should meet the requirements of Article 210, Fabric for Ground Stabilization of IDOT *Standard Specifications* (IDOT 2022).

Table 10: Summary of Subgrade Treatment Recommendations

Alignment	Limits	Treatment Width	Treatment Type	Treatment Depth[(1)] (inch)	Reference Boring, Subgrade Concerns
	Station to Station				
US 20	1385+50 to 1387+50 or (29+00 to 30+25)	EB embankment widening area	Aggregate Subgrade Improvement	12	RWB-1-10; RWB-1-11 (Qu=0.6-0.9tsf; MC=13%)
US 20	1390+00 to 1394+50	EB embankment widening area	Remove and replace with Embankment Fill	24	RWB-2-6HA to RWB-2-10HA; (Qu=0.3-0.8tsf; MC=24-32%; LL=57%)

(1) The treatment depths are below 12 inches of aggregate improvement that is included in proposed pavement section.

As per IDOT District One, *in addition to the undercuts recommended in* Table 10*, we recommend that a plan quantity of Aggregate Subgrade Improvement (CU YD) equal to 25% of the planned full depth pavement area assuming a thickness of 12 inches should be added for estimating purposes. This material should be used to replace any unsuitable soils below the bottom of the improved subgrade layer that are encountered in the field during construction. The actual need for removal and replacement with Aggregate Subgrade Improvement should be determined in the field at the time of construction by the Geotechnical Engineer or soils inspector. All potentially unstable soils should be tested with a cone penetrometer and treated in accordance with Article 301.04 of the SSRBC and the undercut guidelines in the IDOT Subgrade Stability Manual. Any material not needed for undercut replacement at the time of construction should be deleted from the contract with no extra compensation to the contractor.*

Based on the above recommendation, there will be a need for two separate Aggregate Subgrade Improvement line items in the Schedule of Quantities (SOQ) included in the design plans:

- *AGGREGATE SUBGRADE IMPROVEMENT 12" (SQ YD) – This will be used for the 12-inch aggregate subgrade improvement below new pavement sections and widening pavement sections.*

- *AGGREGATE SUBGRADE IMPROVEMENT (CU YD) – This will be used in locations where there are undercuts (below the 12-inch improved subgrade layer) where poor soils were removed.*

It should be noted that both above items refer to the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022).

The subgrade should be proofrolled and tested as outlined in Section 5.1. If low strength and/or high moisture soils are encountered during construction other locations not shown in Table 10, they should be either disk and dried or removed to a minimum depth of 6 inches and replaced with compacted granular fill.

As per IDOT District One, *we also recommend including a plan quantity of* ***geotechnical fabric for ground stabilization*** *(SQ YD) equal to at least 25% of the planned pavement area in addition to the areas in the Table 8. We recommend placing geotextile fabric at the base of undercut areas where low strength subgrade soils are encountered. The 12 inches of improved subgrade is not considered an undercut, and we do not recommend placing the fabric at the base of the proposed 12-inch improved subgrade layer unless it is determined to be necessary to achieve stability by the Geotechnical Engineer or soils inspector at the time of construction. Fabric should meet the requirements of Article 210, Fabric for Ground Stabilization, of the SSRBC. Any material not needed at time of construction should be deleted from the contract with no extra compensation to the contractor.*

The frost depth for pavement design in northern Illinois could be expected to range from 45 to 60 inches (IDOT 2022). Within the frost susceptible depths, most of the samples tested in the laboratory had plasticity indices (PI) of 12 to 32% and only one boring encountered groundwater within this depth. In our opinion, the soils will exhibit low to moderate frost susceptibility. Adequate drainage will suffice to alleviate frost heave.

5.3 Pavement Design Recommendations

For a Mechanistic Pavement Design (MPD), IDOT rates the subgrade using the Subgrade Support Rating (SSR). Laboratory testing on representative samples of the subgrade soil shows SSR ratings of POOR to FAIR (Exhibit 4). Considering the worst subgrade conditions, we recommend that an SSR of POOR be used for the purpose of pavement design. Pavement structure conforming to IDOT's MPD requires a minimum of 12 inches of improved subgrade below the design pavement structure to ensure stability during construction and long-term pavement performance (IDOT 2022).

For an AASHTO pavement design, the subgrade soil support is characterized using the Illinois Bearing

Ratio (IBR). Based on soil tests and classifications (A-6 and A-6-7), we recommend that the pavement be designed based on an IBR value of 2 (IDOT 2020).

5.4 Embankment and cut sections

Based on the cross-section drawings, the proposed US 20 embankment widenings will require up to 40 feet high fill placed on the existing embankment slope and cut as deep as 20 feet into existing ground for the new bike path. The slope will be graded no stepper than 1:2 (V:H). We have evaluated the potential long-term settlement and global slope stability of the cut and fill sections along the proposed improvements.

5.4.1 Settlement

We performed settlement analysis along US 20 at selected most critical sections with most added fill. Settlement estimates have been made based on correlations to measured index properties obtained from the laboratory tests (Appendix B) and with the use of latest IDOT settlement spreadsheets. Settlement evaluations are summarized and presented in Table 11.

Table 11: Summary of Estimated Consolidation Settlements

Alignment	Approximate Station	New Fill Height (feet)	Reference Boring(s)	Estimated Settlement (inches)
US 20	1386+00	5.5	RWB-01-09 and B9-NAW-06/SGB-19	0.18
US 20	1393+00	29.5	RWB-2-08, RWB-2-09HA and SGB-22	0.73
US 20	1395+00	30.4	SGB-23, RWB-2-12HA and RWB-2-13 HA	0.18
US 20	1396+00	29.9	45-0004-BSB-01 and 45-0004-BSB-05	0.36
US 20	1404+00	12.8	AGB-25 and RWB-3-02	0.37
US 20	1406+00	9.2	45-0005-BSB-01 and RWB-3-05	0.25
US 20	1408+00	7.4	45-0005-BSB-02 and 45-0005-BSB-06	0.32

The sections analyzed show total settlements below 1 inch. It should be noted that the settlements for the retaining walls have not been evaluated for this project since they are part of separate SGRs

that will be completed by others.

5.4.2 Global Stability

The proposed embankment and cut side slopes will be graded at 1:2 to 1:6 (V: H). The global stability at critical sections along US 20 for the highest fill and deepest cut sections was analyzed based on the soil information from the nearest borings. The analysis indicates that the factors of safety (FOS) meet IDOT's minimum requirement of 1.5 for fill and 1.7 for cut sections. Slope stability analyses results are included in Appendix D. Slope stability factor of safety (FOS) evaluations are summarized and presented in Table 12.

Table 12: Summary of Estimated Factor of Safety

Alignment	Approximate Station	New Fill / Cut Height (feet)	Reference Boring(s)	Factor of Safety Undrained	Factor of Safety Drained
US 20	374+00	15.0 Cut	SGB-14 and B7-NAW-34	3.33	1.91
US 20	379+00	18.0 Cut	SGB-16, B9-NAW-02 & 2B and B9-NAW-03	2.92	1.75
US 20	1393+00	29.5 Fill	RWB-2-08, RWB-2-09HA and SGB-22	3.52	2.27
US 20	1395+00	30.4 Fill	SGB-23, RWB-2-12HA and RWB-2-13 HA	2.58	2.07
US 20	1396+00	29.9 Fill	45-0004-BSB-01 and 45-0004-BSB-05	2.62	2.07
US 20	1404+00	12.8 Fill	AGB-25 and RWB-3-02	12.46	3.16
US 20	1406+00	9.2 Fill	45-0005-BSB-01 and RWB-3-05	2.15	1.76

5.5 Roadway Drainage

The proposed subgrade and pavement should have proper surface grading to prevent the pooling of water. The soils encountered beneath the proposed subgrade will exhibit poor to fair drainage characteristics. The fill material to be placed in support of the widening will likely be cohesive and will exhibit poor drainage characteristics. We recommend installing longitudinal pipe underdrains under the edge of new pavement in widening areas, and transverse pipe underdrains using a spacing of 300-foot, at the low points in the profile, and at the base of any undercuts. The pipe underdrains should be 4 inches in diameter and should be installed per Article 601 in the IDOT *Standard*

Specifications (IDOT 2022) and consist of Type 2 underdrains.

Any highly moist soils, if not otherwise unsuitable or unstable, encountered within the exposed roadway subgrade should be disked or tilled, dried, and compacted before placing the new pavement structure.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 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. Excavations should be sloped at no steeper than 1:2 (V: H) for cohesive soils and 1:2.5(V:H) for granular soils, or deep cuts should be sustained by temporary walls.

We do not anticipate the need for special dewatering systems. However, during and immediately following periods of heavy precipitation, the excavations may encounter perched groundwater within any granular layers interbedded within the cohesive layers. Therefore, the Contractor should ensure proper surface grading to prevent pooling of water and run-off into open excavations. Any water allowed to enter excavations should immediately be removed via sump-pump.

6.2 Filling and Backfilling

Fill material used for replacement of any poor soils encountered during construction should be pre-approved by the Engineer. The fill material should be free of organic matter and debris and should be placed in lifts compacted in accordance with Section 205, *Embankment* (IDOT 2022). For new fill to be placed on existing slopes, we recommend the existing slopes should be plowed deeply, steps should be keyed into the existing slopes by stepping and benching before construction of the embankment is started in accordance with Section 205.03, *Preparation of Existing Ground Surface* (IDOT 2022).

6.3 Reuse of Materials

Soil excavated from the existing subgrade may be reused as embankment fill if testing shows it conforms to the following criteria: a) L_L less than 50%; b) PI value of more than 12%; c) maximum dry density greater than 90 pcf according to AASHTO T99; and d) organic content less than 10%. The excavated soils should be removed, brought to within ±2% of the optimum moisture content and recompacted according to Section 205, *Embankment* (IDOT 2022).

6.4 Earthwork Operations

The required earthwork can be accomplished with conventional construction equipment. Moisture and traffic will cause deterioration of the 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 avoid 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.

7.0 QUALIFICATIONS

The analysis and recommendations submitted in this report are based upon data obtained from the borings drilled at the locations shown on the *Boring Logs* (Appendix A) and in the *Soil Borings Location Plans and Profiles* (Appendix F). 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 changes in the design and/or location of the proposed improvements are planned, we should be timely informed so that our recommendations can be adjusted accordingly.

It has been a pleasure to assist Gannett Fleming, Inc., and the Illinois Department of Transportation on this project. Please call if there are any questions, or if we can be of further service.

Respectfully Submitted,
WANG ENGINEERING, INC.

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REFERENCES

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.

CARON, O.J., 2017, Surficial Geology of Joliet Quadrangle, Will County, Illinois: Illinois State Geological Survey, USGS-STATEMAP contract report, 2 sheets, 1:24,000;

CURRY, B.B., 2007, *Surficial Geology of Elgin Quadrangle*, Kane and Cook Counties, Illinois: Illinois State Geological Survey, Illinois Geologic Quadrangle Map, IGQ Elgin-SG, 1:24,000.

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

IDOT (2005) *Subgrade Stability Manual.* Illinois Department of Transportation. 34 pp.

IDOT (2020) *Geotechnical Manual.* Illinois Department of Transportation. 546 pp.

IDOT (2022) *Standard Specifications for Road and Bridge Construction.* Illinois Department of Transportation. 1098 pp.

KOLATA, D.R. 2005, Bedrock Geology of Illinois, Illinois Map 14: Illinois State Geological Survey.

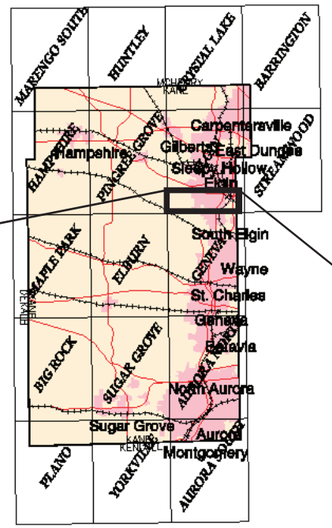
LEIGHTON, M.M., EKBLAW, G.E., and HORBERG, L. (1948) *Physiographic Divisions of Illinois.* The Journal of Geology, v. 56, p. 16-33.

NCDC (2021 and 2022) National Climatic Data Center: Global Historical Climatological Network Data, http://www.ncdc.noaa.gov/ghcn/ghcn.SELECT.html.

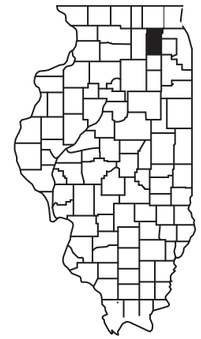
WILLMAN, H.B., ATHERTON, E., BUSCHBACH, T.C., COLLINSON, C., FRYE, J.C., HOPKINS, M.E., LINEBACK, J.A., and SIMON, J.A., 1971, Handbook of Illinois Stratigraphy: ISGS Bulletin 95: Urbana, Illinois State Geological Survey, 261 p.

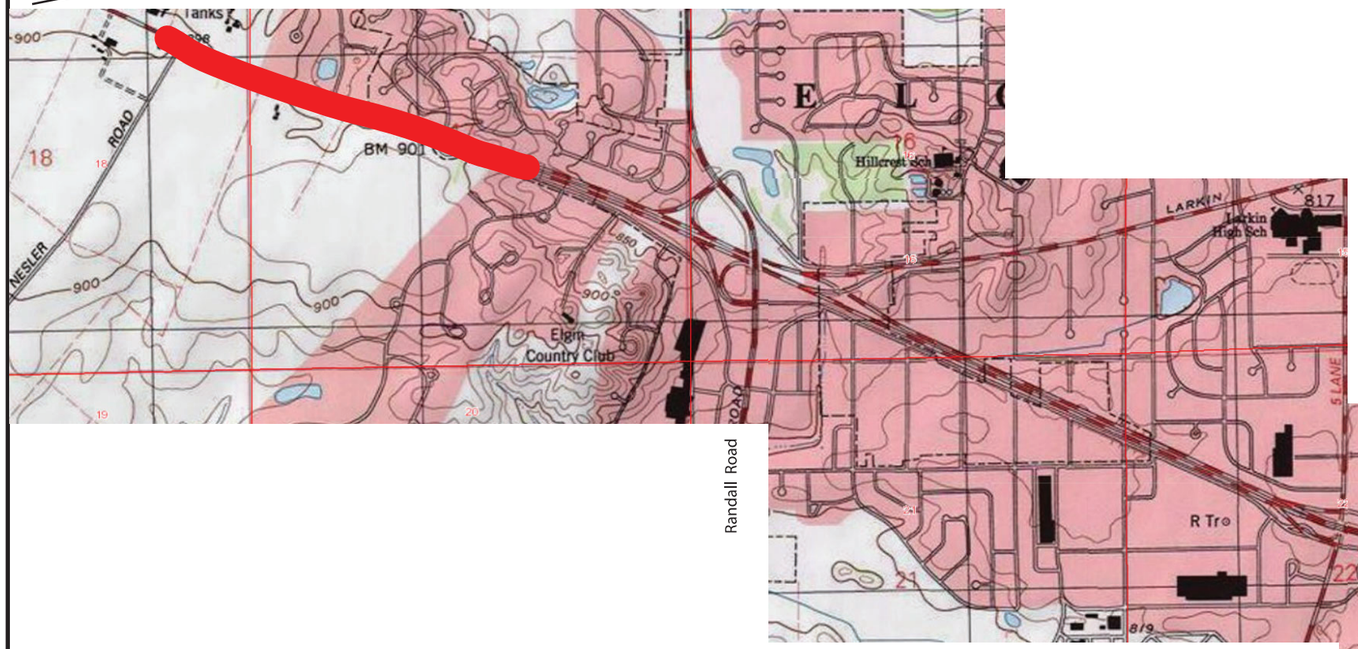
EXHIBITS

US 20
West Section
NE 1/4 Sec.18 and Sec. 17,
T16N, R8E of 3rd PM



Kane County

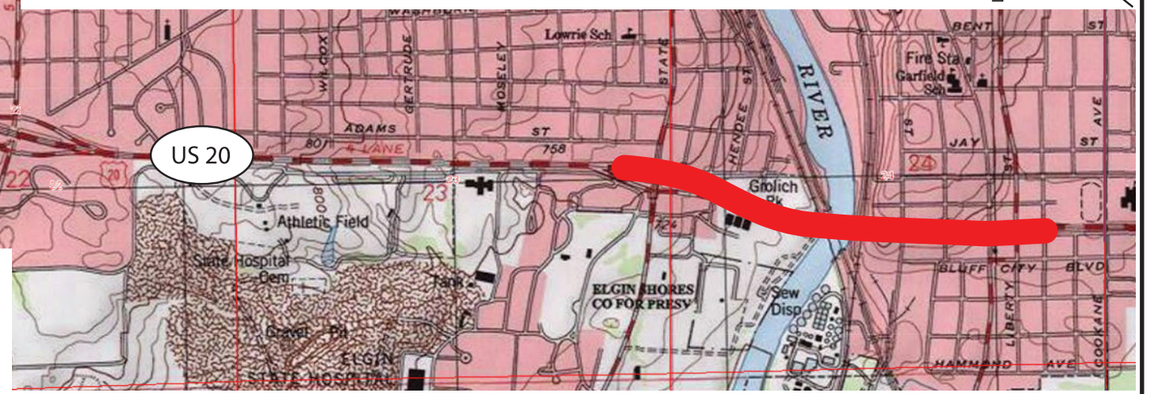




US 20
East Section
SE 1/4 Sec 23, S 1/2 Sec 24,
T41N, R8E of 3rd PM

LaFox Road

Liberty Road



0 0.25 0.50 0.75 1.0 Mile

Contours interval at 10 feet

Project alignment

SITE LOCATION MAP: US 20; RANDALL ROAD to SHALES PKWY
ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL	EXHIBIT 1	DRAWN BY: E. Yim CHECKED BY: C. Marin

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FOR GANNETT FLEMING, INC. | 121-03-01

W

E

N

0 100 200 300 400 Yards

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
Soil Survey Area: Kane County, Illinois
Survey Area Data: Version 15, August 31, 2021

PROJECT PEDOLOGY MAP: US 20, RANDALL ROAD to SHALES ROAD, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL	EXHIBIT 2-1	DRAWN BY: C. Marin CHECKED BY: M. Seyhun

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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	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local Roads and Streets	Shallow Excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class; and Limiting futures	Rating class; and Limiting futures	Rating class; and Limiting futures
	In			*L-R-H*	*L-R-H*	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*Pct*	*L-R-H*	*L-R-H*						
206A—Thorp silt loam, 0 to 2 percent slopes																			
Thorp, drained	0-14	Silt loam	A-6, A-7-5, A-7-	0- 0- 0	0- 0- 0	0- 5- 10	63-72- 80	20-23- 27	1.15-1.25-1.35	4.23-9.17-14.11	4.0- 5.0-6.0	39-44-50	13-15-18	0.37	0.37	5	Poor; Wetness, Dusty	Very limited; Depth to saturated zone, Ponding, Low strength, Shrink-swell	Very limited; Depth to saturated zone, Ponding, Dusty, Unstable excavation walls
	14-19	Silt loam	A-6	0- 0- 0	0- 0- 0	0- 5- 10	65-74- 82	18-21- 25	1.30-1.40-1.50	1.41-2.82-4.23	0.2- 0.6-1.0	29-32-37	12/14/2017	0.49	0.49				
	19-43	Silt loam, silty clay loam	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 5- 10	55-67- 78	22-28- 35	1.35-1.45-1.55	0.42-0.92-1.41	0.2- 0.6-1.0	32-39-47	15-20-25	0.49	0.49				
	43-50	Sandy clay loam, loam, clay loam	A-2-6, A-6, A-7-	0- 0- 0	0- 0- 0	20-50- 55	15-26- 50	18-24- 30	1.40-1.50-1.60	4.23-9.17-14.11	0.2- 0.3-0.5	28-35-41	12/17/2021	0.28	0.28				
	50-79	Stratified loamy sand to loam	A-1-b, A-4, A-6	0- 0- 0	0- 0- 0	48-58- 80	1-29- 47	5-13- 20	1.50-1.60-1.70	4.23-23.29-	0.0- 0.1-0.1	16-23-30	2-8 -13	0.28	0.28				
323C2—Casco loam, 4 to 6 percent slopes, eroded																			
Casco	0-6	Loam	A-4	0- 0- 0	0- 3- 4	25-37- 50	28-44- 50	12-19- 25	1.35-1.45-1.55	4.23-9.17-14.11	1.0- 1.5-2.0	20-25-30	3-7 -10	0.37	0.37	2	Good	Somewhat limited; Frost action	Somewhat limited; Dusty, Unstable excavation walls
	6-18	Clay loam, sandy clay loam, gravelly loam	A-2-6, A-6, A-7-6	0- 0- 1	0- 3- 3	20-40- 60	10-32- 50	18-28- 35	1.55-1.60-1.65	4.23-9.17-14.11	0.2- 0.6-1.0	25-36-46	11/19/2026	0.28	0.28				
	18-60	Stratified sand to extremely gravelly coarse sand	A-1-a, A-1-b, A-3	0- 1- 2	0- 8- 20	87-92- 98	0- 6- 13	0- 2- 5	1.45-1.57-1.70	141.14-423.42-705.00	0.0- 0.3-0.5	0-7 -14	NP	0.02	0.02				
323D2—Casco loam, 6 to 12 percent slopes, eroded																			
Casco, eroded	0-5	Loam	A-4	0- 0- 0	0- 0- 0	30-44- 52	28-41- 57	10-15- 20	1.42-1.47-1.51	4.23-9.17-14.11	1.0- 2.0-3.0	23-30-37	6-9 -13	0.32	0.32	2	Good	Somewhat limited; Frost action, Slope	Somewhat limited; Unstable excavation walls, Dusty, Slope
	5-17	Clay loam, loam	A-6, A-7	0- 1- 1	0- 3- 4	23-35- 40	25-38- 55	18-27- 35	1.51-1.52-1.53	4.23-9.17-14.11	0.0- 0.3-0.5	28-37-46	12/19/2025	0.32	0.32				
	17-79	Very gravelly coarse sand, extremely gravelly coarse sand, stratified sand to gravel	A-1-a, A-1-b, A-3	0- 1- 2	0- 4- 11	85-93- 95	1- 4- 11	0- 3- 4	1.37-1.59-1.62	141.10-282.05-423.00	0.0- 0.3-0.5	0-0 -16	NP-0 -1	0.02	0.02				
325B—Dresden silt loam, 2 to 4 percent slopes																			
Dresden	0-7	Silt loam	A-6, A-7-6	0- 0- 0	0- 0- 0	2-18- 30	50-60- 78	18-23- 27	1.29-1.36-1.42	4.23-9.17-14.11	2.0- 3.0-4.0	32-38-45	12/15/2018	0.32	0.32	3	Fair; Dusty	Somewhat limited; Frost action, Low strength	Somewhat limited; Dusty, Unstable excavation walls
	7-19	Silty clay loam	A-6	0- 0- 0	0- 0- 0	5-18- 20	42-52- 65	27-30- 38	1.44-1.44-1.45	4.23-9.17-14.11	0.2- 0.6-1.0	37-40-49	19-21-27	0.43	0.43				
	19-32	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	A-2-6, A-6	0- 0- 0	0- 1- 3	30-48- 70	0-23- 48	20-29- 30	1.50-1.58-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	29-39-40	13-20-21	0.24	0.24				
	32-79	Stratified gravelly loamy sand to extremely gravelly coarse sand, very gravelly sand	A-1-a, A-1-b	0- 0- 0	4-23- 24	80-91- 99	0- 6- 18	1- 3- 5	1.56-1.60-1.64	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -17	NP-0 -2	0.02	0.05				
325C2—Dresden silt loam, 4 to 6 percent slopes, eroded																			
Dresden, eroded	0-7	Silt loam	A-6, A-7-6	0- 0- 0	0- 0- 0	2-18- 30	50-60- 78	18-23- 27	1.29-1.36-1.42	4.23-9.17-14.11	2.0- 3.0-4.0	32-38-45	12/15/2018	0.32	0.32	3	Fair; Dusty	Somewhat limited; Frost action, Low strength	Somewhat limited; Dusty, Unstable excavation walls
	7-18	Silty clay loam	A-6	0- 0- 0	0- 0- 0	5-18- 20	42-52- 65	27-30- 38	1.44-1.44-1.45	4.23-9.17-14.11	0.2- 0.6-1.0	37-40-49	19-21-27	0.43	0.43				
	18-31	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	A-2-6, A-6	0- 0- 0	0- 1- 3	30-48- 70	0-23- 48	20-29- 30	1.50-1.58-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	29-39-40	13-20-21	0.24	0.24				
	31-79	Stratified gravelly loamy sand to extremely gravelly coarse sand, very gravelly sand	A-1-a, A-1-b	0- 0- 0	4-23- 24	80-91- 99	0- 6- 18	1- 3- 5	1.56-1.60-1.64	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -17	NP-0 -2	0.02	0.05				

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
Soil Survey Area: Kane County, Illinois
Survey Area Data: Version 15, August 31, 2021

PROJECT PEDOLOGY DATA: US 20, RANDALL ROAD to SHALES ROAD, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | **EXHIBIT 2-2** | DRAWN BY: C. Marin CHECKED BY: M. Seyhun

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FOR GANNETT FLEMING, INC. | **121-03-01**

Map unit symbol and soil name	Depth	USDA texture	Classification	Pct Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local Roads and Streets	Shallow Excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class; and Limiting futures	Rating class; and Limiting futures	Rating class; and Limiting futures
	In			*L-R-H*	*L-R-H*	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*Pct*	*L-R-H*	*L-R-H*						
327C2—Fox silt loam, 4 to 6 percent slopes, eroded																			
Fox, eroded	0-6	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	5-18- 30	50-62- 80	15-20- 25	1.34-1.37-1.40	4.23-9.17-14.11	1.0- 2.0-3.0	28-34-41	9-13-17	0.37	0.37	3	Fair; Dusty	Somewhat limited; Frost action, Low strength	Somewhat limited; Dusty, Unstable excavation walls
	6-11	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 1- 1	5-18- 30	50-50- 77	18-32- 35	1.48-1.52-1.57	4.23-9.17-14.11	0.2- 0.3-0.5	28-42-46	12/22/2025	0.37	0.37				
	11-32	Clay loam, sandy clay loam, gravelly loam	A-7-6	0- 1- 1	0- 1- 4	20-42- 75	5-26- 50	18-32- 35	1.48-1.57-1.66	4.23-9.17-14.11	0.0- 0.3-0.5	28-42-46	12/22/2025	0.24	0.24				
	32-79	Stratified gravelly sand to very gravelly coarse sand to extremely gravelly coarse sand	A-1-b	1- 1- 2	1- 3- 5	90-92- 98	0- 7- 10	0- 1- 2	1.55-1.61-1.67	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -14	NP	0.02	0.02				
344C2—Harvard silt loam, 5 to 10 percent slopes, eroded																			
Harvard	0-7	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 8- 15	58-69- 80	20-24- 27	1.15-1.25-1.35	4.23-9.17-14.11	2.0- 2.5-3.0	30-35-40	8-12-15	0.43	0.43	5	Poor; Low strength, Dusty, Shrink-swell	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Dusty
	7-32	Silty clay loam, silt loam	A-4, A-6, A-7-6	0- 0- 0	0- 0- 0	0- 8- 15	50-63- 75	25-30- 35	1.25-1.40-1.55	4.23-9.17-14.11	0.2- 0.6-1.0	35-40-45	10/15/2020	0.43	0.43				
	32-40	Clay loam, silt loam, sandy loam	A-4, A-6, A-7-6	0- 0- 0	0- 1- 3	15-43- 60	10-30- 70	15-28- 35	1.30-1.45-1.60	4.23-9.17-14.11	0.0- 0.3-0.5	30-38-45	5-13-20	0.32	0.32				
	40-60	Stratified sand to clay loam	A-2-4,A-2-6, A-4, A-6	0- 0- 0	0- 3- 4	30-59- 87	0-24- 65	5-18- 30	1.40-1.55-1.70	4.23-23.29-42.34	0.0- 0.3-0.5	20-30-40	NP-10-20	0.20	0.20				
656B—Octagon silt loam, 2 to 4 percent slopes																			
Octagon	0-7	Silt loam	A-4	0- 0- 0	0- 0- 0	10-23- 35	50-57- 75	15-21- 27	1.30-1.35-1.40	4.23-9.17-14.11	2.0- 3.0-4.0	20-25-30	5-10-15	0.32	0.32	5	Fair; Dusty, Wetness	Samewhat limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Depth to saturated zone, Dense layer,
	7-30	Clay loam, loam, silty clay loam	A-6	0- 0- 0	0- 0- 0	10-28- 45	21-45- 65	22-28- 34	1.35-1.43-1.50	4.23-9.17-14.11	0.5- 0.8-1.0	30-35-40	10/15/2020	0.37	0.37				
	30-60	Loam	A-4	0- 0- 0	0- 1- 2	35-43- 50	30-43- 50	10-15- 20	1.70-1.80-1.90	1.41-2.82-4.23	0.0- 0.1-0.2	10/18/2025	3-9 -15	0.49	0.49				
662B—Barony silt loam, 2 to 5 percent slopes																			
Barony	0-8	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 8- 15	58-72- 85	15-21- 27	1.15-1.25-1.35	4.23-9.17-14.11	2.0- 3.0-4.0	25-30-35	7-12-16	0.37	0.37	5	Fair; Dusty, Shrink-swell, Wetness	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Depth to saturated zone, Dusty, Unstable excavation walls
	8-34	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 8- 15	50-63- 75	25-30- 35	1.25-1.40-1.55	4.23-9.17-14.11	0.2- 0.6-1.0	25-35-45	11/18/2025	0.43	0.43				
	34-54	Clay loam, silt loam, sandy loam	A-4, A-6, A-7-6	0- 0- 0	0- 1- 3	15-38- 60	10-35- 70	15-28- 32	1.30-1.45-1.60	4.23-9.17-14.11	0.0- 0.3-0.5	20-33-45	5-15-25	0.32	0.32				
	54-85	Stratified sand to clay loam	A-2-4, A-4, A-6	0- 0- 0	0- 3- 4	20-55- 90	0-29- 75	5-17- 28	1.40-1.55-1.70	4.23-23.29-	0.0- 0.3-0.5	15-25-35	NP-10-20	0.37	0.37				
668A—Somonauk silt loam, 0 to 2 percent slopes																			
Somonauk	0-4	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 5- 10	63-75- 86	14-21- 27	1.25-1.35-1.45	4.23-9.17-14.11	1.0- 2.0-3.0	20-28-35	5-10-15	0.37	0.37	5	Fair; Dusty, Shrink-swell, Wetness	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Depth to saturated zone, Dusty, Unstable excavation walls
	4-9	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 5- 10	63-75- 86	14-21- 27	1.30-1.40-1.50	4.23-9.17-14.11	0.5- 0.8-1.0	20-28-35	5-10-15	0.49	0.49				
	9-34	Silty clay loam, silt loam	A-6	0- 0- 0	0- 0- 0	0- 5- 10	55-67- 78	22-29- 35	1.35-1.45-1.55	4.23-9.17-14.11	0.2- 0.6-1.0	25-33-40	15-20-25	0.43	0.43				
	34-70	Sandy loam, clay loam, loam	A-2, A-4, A-6	0- 0- 0	0- 1- 3	15-43- 70	5-34- 70	15-24- 32	1.45-1.55-1.65	4.23-9.17-14.11	0.0- 0.2-0.5	20-30-40	5-10-15	0.32	0.32				
	70-80	Stratified silt loam to gravelly sand	A-2, A-4	0- 0- 0	0- 2- 4	20-55- 90	0-33- 75	5-13- 20	1.55-1.62-1.70	4.23-23.29-	0.0- 0.2-0.5	0-12 -25	NP-5-10	0.20	0.32				
668B—Somonauk silt loam, 2 to 5 percent slopes																			
Somonauk	0-9	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 5- 10	63-75- 86	14-20- 27	1.25-1.35-1.45	4.23-9.17-14.11	1.0- 2.0-3.0	20-28-35	5-10-15	0.43	0.43	5	Fair; Dusty, Shrink-swell, Wetness	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Depth to saturated zone, Dusty, Unstable excavation walls
	9-26	Silty clay loam, silt loam	A-6	0- 0- 0	0- 0- 0	0- 5- 10	55-67- 78	22-29- 35	1.35-1.45-1.55	4.23-9.17-14.11	0.2- 0.6-1.0	25-33-40	15-20-25	0.43	0.43				
	26-55	Sandy loam, clay loam, loam	A-2-4, A-4, A-6	0- 0- 0	0- 1- 3	15-43- 70	5-34- 70	15-24- 32	1.45-1.55-1.65	4.23-9.17-14.11	0.0- 0.2-0.5	20-30-40	5-10-15	0.37	0.37				
	55-60	Stratified silt loam to gravelly sand	A-1-b, A-2-4, A-4	0- 0- 0	0- 3- 4	30-55- 90	0-33- 65	5-13- 20	1.55-1.62-1.70	4.23-23.29-	0.0- 0.2-0.5	0-12 -25	NP-5-10	0.37	0.37				
792B—Bowes silt loam, 2 to 4 percent slopes																			
Bowes	0-7	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 6- 10	63-72- 82	18-22- 27	1.30-1.40-1.50	4.23-9.17-14.11	2.0- 3.0-4.0	25-30-35	5-13-20	0.32	0.32	4	Poor; Low strength, Dusty, Shrink-swell	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Dusty, Unstable excavation walls
	7-37	Silt loam, silty clay loam	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 6- 10	55-63- 75	25-31- 35	1.30-1.40-1.50	4.23-9.17-14.11	0.2- 0.6-1.0	35-40-45	15-20-25	0.43	0.43				
	37-43	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	A-2-4, A-4, A-6	0- 1- 1	0- 6- 13	30-35- 85	2-35- 50	10-30- 32	1.55-1.65-1.75	4.23-23.29-42.34	0.1- 0.3-0.5	10/20/1930	NP-8-15	0.10	0.24				
	43-60	Stratified extremely gravelly coarse sand to gravelly sandy loam	A-1-a, A-1-b	0- 1- 1	4-15- 23	75-87- 98	0- 7- 23	2- 6- 10	1.60-1.70-1.80	141.14-423.42-705.00	0.0- 0.3-0.5	0-10 -20	NP-2 -3	0.02	0.02				

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
Soil Survey Area: Kane County, Illinois
Survey Area Data: Version 15, August 31, 2021

PROJECT PEDOLOGY DATA: US 20, RANDALL ROAD to SHALES ROAD, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | **EXHIBIT 2-3** | DRAWN BY: C.Marin CHECKED BY: M. Seyhun

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FOR GANNETT FLEMING, INC. | **121-03-01**

Map unit symbol and soil name	Depth	USDA texture	Classification	Pct Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local Roads and Streets	Shallow Excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class; and Limiting features	Rating class; and Limiting features	Rating class; and Limiting features
	In			*L-R-H*	*L-R-H*	*Pct*	*Pct*	*Pct*	*g/cc*	*micro m/sec*	*Pct*	*L-R-H*	*L-R-H*						
327A—Fox silt loam, 0 to 2 percent slopes																			
Fox	0-9	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	25-31- 40	50-56- 65	10-14- 17	1.35-1.37-1.39	4.23-9.17-14.11	1.0- 2.0-3.0	23-28-34	6-8 -11	0.32	0.32	3	Fair; Dusty	Somewhat limited; Frost action, Low strength	Somewhat limited; Dusty, Unstable excavation walls
	9-21	Silty clay loam, silt loam	A-6, A-7	0- 0- 0	0- 0- 0	1-18- 19	46-55- 72	18-27- 35	1.41-1.46-1.52	4.23-9.17-14.11	0.0- 0.3-0.5	28-37-46	12/19/2025	0.43	0.43				
	21-31	Gravelly loam, sandy clay loam	A-2, A-6, A-7	0- 0- 0	0- 3- 4	46-56- 72	0-18- 36	18-27- 35	1.60-1.62-1.63	4.02-9.17-14.11	0.0- 0.3-0.5	28-37-46	12/18/2025	0.20	0.20				
	31-79	Gravelly sand, very gravelly coarse sand, stratified sand to gravel	A-1, A-1- b, A-2, A-3	0- 0- 0	0- 4- 7	85-93- 95	1- 4- 11	0- 3- 4	1.55-1.59-1.63	42.34-91.74-41.14	0.0- 0.3-0.5	0-0 -16	NP-0 -1	0.02	0.02				
327C2—Fox silt loam,4o 6 percent slopes, eroded																			
Fox, eroded	0-6	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	5-18- 30	50-62- 80	15-20- 25	1.34-1.37-1.40	4.23-9.17-14.11	1.0- 2.0-3.0	28-34-41	9-13-17	0.37	0.37	3	Fair; Dusty	Somewhat limited; Frost action;	Somewhat limited; Dusty, Unstable excavation walls
	6-11	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 1- 1	5-18- 30	50-50- 77	18-32- 35	1.48-1.52-1.57	4.23-9.17-14.11	0.2- 0.3-0.5	28-42-46	12/22/2025	0.37	0.37				
	11-32	Clay loam, sandy clay loam, gravelly loam	A-7-6	0- 1- 1	0- 1- 4	20-42- 75	5-26- 50	18-32- 35	1.48-1.57-1.66	4.23-9.17-14.11	0.0- 0.3-0.5	28-42-46	12/22/2025	0.24	0.24				
	32-79	Stratified gravelly sand to very gravelly coarse sand to extremely gravelly coarse sand	A-1-b	1- 1- 2	1- 3- 5	90-92- 98	0- 7- 10	0- 1- 2	1.55-1.61-1.67	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -14	NP	0.02	0.02				
327D2—Fox loam, 6 to 12 percent slopes, eroded																			
Fox, eroded	0-5	Loam	A-4	0- 0- 0	0- 0- 0	30-44- 52	28-41- 50	10-15- 20	1.48-1.52-1.57	4.23-9.17-14.11	0.5- 0.8-2.0	21-25-31	2-6 -12	0.37	0.37	3	Fair; Dusty	Somewhat limited; Frost action, Slope	Somewhat limited, Slope, Dusty, Unstable excavation walls
	5-21	Clay loam, gravelly loam	A-6	0- 0- 0	0- 5- 5	23-35- 40	20-38- 53	18-27- 40	1.46-1.48-1.50	1.41-3.00-4.23	0.0- 0.3-0.5	27-36-49	10/18/1930	0.32	0.32				
	21-33	Gravelly loam, sandy clay loam	A-2, A-6, A-7	0- 0- 0	0- 3- 4	46-56- 72	0-18- 36	18-27- 35	1.60-1.62-1.63	4.02-9.17-14.11	0.0- 0.3-0.5	25-36-46	12/20/2027	0.17	0.17				
	33-79	Gravelly sand, very gravelly coarse sand, stratified sand to gravel	A-2-4	0- 0- 0	0- 4- 7	85-93- 95	1- 4- 11	0- 3- 4	1.55-1.59-1.63	42.34-91.74-14 1.14	0.0- 0.3-0.5	0-0 -14	NP	0.02	0.02				
369A—Waupecan silt loam, 0 to 2 percent slopes																			
Waupecan	0-13	Silt loam	A-4, A-6, A-7-6	0- 0- 0	0- 0- 0	5-10- 15	68-69- 80	15-21- 27	1.15-1.23-1.30	4.23-9.17-14.11	3.0- 4.0-5.0	31-39-47	9-14-18	0.32	0.32	4	Poor; Low Strength, Dusty	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Dusty, Unstable excavation walls
	13-38	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 0- 0	5-10- 15	50-60- 70	25-30- 35	1.30-1.40-1.50	4.23-9.17-14.11	0.5- 0.8-1.0	36-42-47	17-21-25	0.43	0.43				
	38-55	Stratified gravelly sandy loam to clay loam	A-1-b, A-2-4, A-2-6, A-4, A-6	0- 0- 0	0- 0- 2	35-55- 75	5-26- 50	10-19- 30	1.55-1.65-1.75	14.11-28.23-42.34	0.2- 0.3-0.5	21-30-40	6-12-21	0.24	0.24				
	55-70	Stratified gravelly loamy sand to extremely gravelly coarse sand	A-1-a, A-1-b, A-2-4, A-3	0- 1- 3	4- 9- 36	80-92- 99	0- 3- 20	0- 5- 10	1.60-1.70-1.80	141.14-423.42-705.00	0.2- 0.3-0.5	0-18 -23	NP-2 -6	0.02	0.02				
369B—Waupecan silt loam, 2 to 4 percent slopes																			
Waupecan	0-11	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	5-10- 15	68-69- 80	15-21- 27	1.15-1.23-1.30	4.23-9.17-14.11	3.0- 4.0-5.0	20-28-35	8-12-15	0.32	0.32	4	Poor; Low Strength, Dusty, Shrink-swell	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Dusty, Unstable excavation walls
	11-38	Silty clay loam, silt loam	A-6, A-7	0- 0- 0	0- 0- 0	5-10- 15	50-60- 70	25-30- 35	1.30-1.40-1.50	4.23-9.17-14.11	0.5- 0.8-1.0	35-40-45	15-20-25	0.43	0.43				
	38-55	Stratified gravelly loamy sand to loam	A-2, A-4	0- 0- 0	0- 0- 0	35-55- 75	5-28- 50	10-18- 25	1.55-1.65-1.75	14.11-28.23-42.34	0.2- 0.3-0.5	0-10 -20	NP-5-10	0.15	0.28				
	55-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	A-1	0- 2- 3	4-14- 23	85-92- 99	0- 3- 15	0- 5- 10	1.60-1.70-1.80	141.14-419.57-698.00	0.2- 0.3-0.5	0-7 -14	NP	0.02	0.15				
792B—Bowes silt loam, 2 to 4 percent slopes																			
Bowes	0-7	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	0- 6- 10	63-72- 82	18-22- 27	1.30-1.40-1.50	4.23-9.17-14.11	2.0- 3.0-4.0	25-30-35	5-13-20	0.32	0.32	4	Poor; Low Strength, Dusty, Shrink-swell	Very limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Dusty, Unstable excavation walls
	7-37	Silt loam, silty clay loam	A-6, A-7-6	0- 0- 0	0- 0- 0	0- 6- 10	55-63- 75	25-31- 35	1.30-1.40-1.50	4.23-9.17-14.11	0.2- 0.6-1.0	35-40-45	15-20-25	0.43	0.43				
	37-43	Gravelly clay loam, gravelly sandy loam, very gravelly loamy sand	A-2-4, A-4, A-6	0- 1- 1	0- 6- 13	30-35- 85	2-35- 50	10-30- 32	1.55-1.65-1.75	4.23-23.29-42.34	0.1- 0.3-0.5	10/20/1930	NP-8-15	0.10	0.24				
	43-60	Stratified extremely gravelly coarse sand to gravelly sandy loam	A-1-a, A-1-b	0- 1- 1	4-15- 23	75-87- 98	0- 7- 23	2- 6- 10	1.60-1.70-1.80	141.14-423.42-705.00	0.0- 0.3-0.5	0-10 -20	NP-2 -3	0.02	0.02				
802B—Orthents, loamy, undulating																			
Orthents, loamy	0-8	Loam	A-6, A-7-6	0- 1- 1	0- 2- 4	23-35- 50	23-41- 50	22-24- 27	1.70-1.73-1.75	1.41-2.82-4.23	0.5- 1.3-2.0	32-36-41	15-16-19	0.37	0.37	5	Poor; Low Strength, Dusty, Shrink-swell	Somewhat limited; Frost action, Low strength, Shrink-swell	Somewhat limited; Depth to saturated zone, Dusty, Unstable excavation walls
	8-60	Loam, silt loam, clay loam	A-6, A-7-6	0- 1- 1	0- 2- 4	20-40- 50	20-34- 58	22-26- 30	1.70-1.75-1.80	1.41-2.82-4.23	0.2- 0.6-1.0	33-38-43	15-18-21	0.32	0.32				
969E2—Casco- Rodman complex,2 to 20 percent slopes, eroded																			
Casco, eroded	0-5	Loam	A-4	0- 0- 0	0- 0- 0	30-44- 52	28-41- 50	10-15- 20	1.42-1.47-1.51	4.23-9.17-14.11	1.0- 2.0-3.0	23-30-37	6-9 -13	0.32	0.32	2	Fair; Slope	Very limited; Frost action, Slope	Very limited; Slope, Dusty, Unstable excavation walls
	5-17	Clay loam, loam	A-6, A-7	0- 1- 1	0- 3- 4	23-35- 40	25-38- 53	18-27- 35	1.51-1.52-1.53	4.23-9.17-14.11	0.0- 0.3-0.5	28-37-46	12- 19-2 5	0.32	0.32				
	17-79	Stratified sand to gravel, very gravelly coarse sand, extremely gravelly coarse sand	A-1-a, A-1-b, A-3	0- 1- 2	0- 4- 11	85-93- 95	1- 4- 11	0- 3- 4	1.37-1.59-1.62	141.10-282.05-423.00	0.0- 0.3-0.5	0-0 -16	NP-0 -1	0.02	0.02				
Rodman, eroded	0-4	Loam, gravelly sandy loam	A-4	0- 0- 0	0- 1- 1	44-67- 75	16-27- 50	3- 6- 20	1.39-1.50-1.60	14.11-28.00-42.34	2.0- 3.0-4.0	0-24 -39	NP-3-13	0.10	0.20	2	Fair; Slope	Very limited; Slope	Very limited; Slope, Unstable excavation walls
	4-10	Very gravelly loam, gravelly sandy loam, loam	A-1, A-2, A-4	0- 0- 0	0- 1- 1	44-67- 75	18-25- 45	5- 8- 20	1.43-1.52-1.62	14.11-28.00-42.34	0.0- 1.0-2.0	16-21-35	2-4 -13	0.15	0.24				
	10-79	Stratified very gravelly extremely gravelly coarse sand, stratified sand to gravel	A-1-a	0- 1- 1	1- 2- 3	85-90- 95	0- 7- 15	0- 3- 5	1.57-1.63-1.69	141.14-423.42-705.00	0.0- 0.5-1.0	0-0 -18	NP-0 -2	0.02	0.02				
8076A—Otter silt loam, 0 to 2 percent slopes, occasionally flooded																			
Otter	0-26	Silt loam	A-4, A-6, A-7	0- 0- 0	0- 0- 0	0- 8- 15	58-70- 82	18-23- 27	1.10-1.18-1.25	4.23-9.17-14.11	3.0- 5.0-7.0	25-35-45	7-14-20	0.28	0.28	5	Poor; Wetness, Low strength, Dusty	Very limited; Frost action, Low strength, Depth to saturated zone, Ponding, Flooding	Very limited; Ponding, Depth to saturated zone, Flooding, Dusty, Unstable excavation walls
	26-42	Silt loam, loam, silty clay loam	A-6, A-7	0- 0- 0	0- 0- 0	0-13- 25	46-64- 82	18-24- 29	1.20-1.33-1.45	4.23-9.17-14.11	1.0- 2.0-3.0	30-38-45	10-15-2 0	0.43	0.43				
	42-60	Silt loam, sandy loam, silty clay loam, loam	A-4, A-6, A-7	0- 0- 0	0- 0- 0	15-35- 55	17-44- 70	15-22- 28	1.30-1.43-1.55	4.23-9.17-14.11	0.5- 1.3-2.0	25-35-45	5-13-20	0.49	0.49				

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)
Soil Survey Area: Kane County, Illinois
Survey Area Data: Version 15, August 31, 2021

PROJECT PEDOLOGY DATA: US 20, RANDALL ROAD to SHALES ROAD, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | **EXHIBIT 2-4** | DRAWN BY: C. Marin CHECKED BY: M. Seyhun

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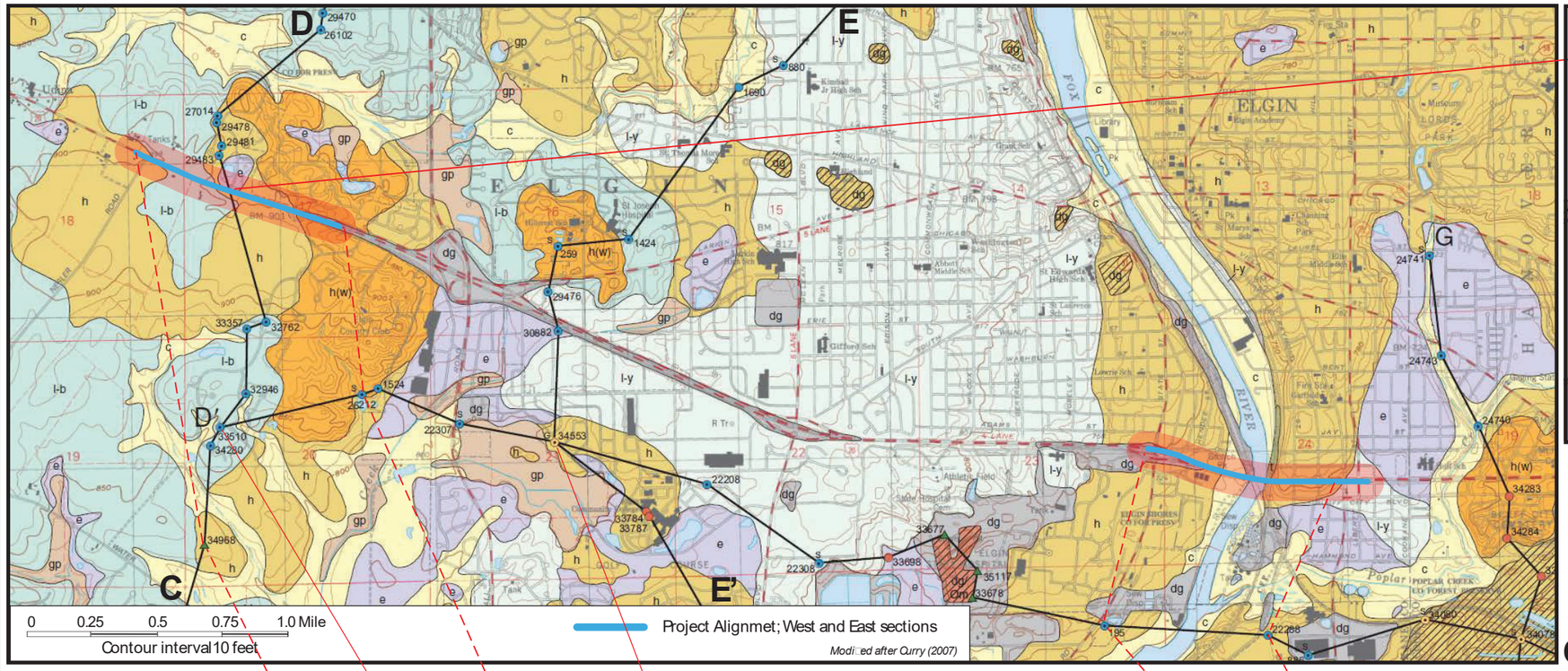
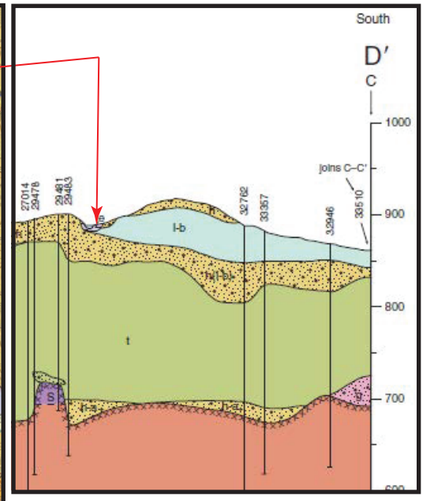
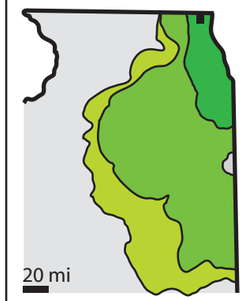
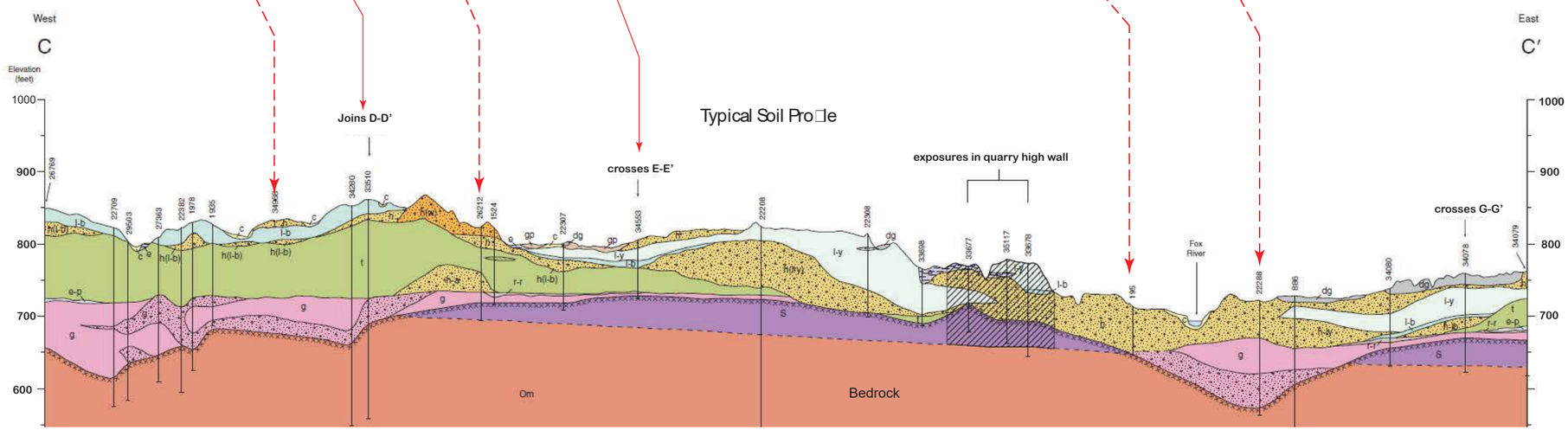
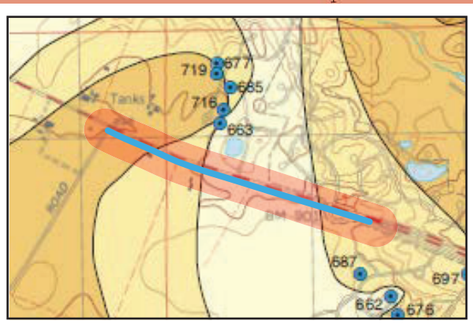
FOR GANNETT FLEMING, INC. | **121-03-01**











Bedrock Topography

0 0.25 0.5 0.75 1.0 Mile

Contour interval 25 feet

LEGEND

HUDSON EPISODE

- **dg** — **Disturbed ground:** Fill, compacted land, or other disturbed material;may contain construction and mining debris
- **gp** — **Grayslake Peat:** organic deposits; decomposing organic rich sediments; peat and muck; may be interbedded with silt, clay and some fine sand: less than 10 feet thick
- **c** — **Cahokia Formation:** Floodplain alluvium; sand and gravel, well-sorted sand, and lenses of peat grading laterally to organic-rich silt and clay with fossil wood, moss, snails, ostracodes, and rootlets in most places; as much as 30 feet thick.

WISCONSIN EPISODE

- **e** — **Equality Formation (Hudson and Wisconsin Episodes):** Postglacial and glacial, proglacial lake deposits; Silt, clay, and fine sand; massive to bedded, with fossil wood fragments, moss, gastropod shells, ostracodes; less than 20 feet thick
- **h** — **Henry Formation:** Proglacial outwash sediments; channel fill, daltas, and alluvial fans; Sand and gravel, or sand; with lenses of silt and clay, or diamicton;
- **h (w)** — **Henry Formation (Wasco facies):** Kamic (ice-contact) deposits; sand and gravel (silty to clean), and sand with some beds of silt, and loam diamicton; stratified to laminated; contorted and faulted bedding; as much as 85 feet thick
- **l-y** — **Lemont Formation, Yorkville Member:** Diamicton; silty clay, silty clay loam, and clay; gray, oxidizing to yellowish brown; includes layers of sand and gravel, silt, and silty clay; as much as 65 feet thick
- **h (l-y)** — **Henry Formation (unnamed tongue) (cross sections only):** proglacial outwash and deltaic deposits sand and gravel with interbeds of silt and clay; gray;stratified to laminated;as much as 65 feet thick
- **l-b** — **Lemont Formation, Batestown Member:** Diamicton; sandy loam to loam with abundant cobbles; friable; gray to grayish brown, oxidizing to yellowish brown to brown; includes common layers of sand and gravel, and stringers of silt and fine sand; as much as 65 feet thick
- **h (l-b)** — **Henry Formation (unnamed tongue) (cross sections only):** proglacial outwash and slackwater lake sediment sand and gravel stratified; grayish brown to gray, oxidizing yellowish brown;as much as 70 feet thick;
- **t** — **Tiskilwa Formation (cross sections only):** Diamicton; clay loam to loam matrix (roughly equal amounts of sand, silt, and clay) with lenses of sand and gravel, or sand; reddish brown; as much as 160 feet thick
- **e-p** — **Peddicord Tongue, Equality Formation (cross sections only):** FormationProglacial lake deposits; silt and clay; gray to pinkish brown; laminated; with fossils of ostracodes;as much as 50 feet thick

WISCONSIN EPISODE: Athens Subepisode

- **r-r** — **Robein Member, Roxana Silt (cross sections only):** Accretionary paleosol; A-horizon of Farmdale Geosol; silt and clay; organic-rich, black to brown; leached of carbonate minerals; contains moss and wood fragments; less than 10 feet thick;
- **g** — **Glasford Formation (cross sections only):**Diamicton and sorted sediment,primarily sand and gravel; is bouldery in places, with abundant lenses, layers, and channel fills of sand and gravel; the diamicton matrix is sandy loam to loam and reddish brown, pinkish brown, or brown. The diamicton is as much as 135 feet thick, and the sand and gravel, 80 feet thick

PALEOZOIC BEDROCK

- **S** — **Silurian Bedrock (Cross section only):** Dolomite; microcrystalline; cherty and shaly in places; white, gray, and greenish gray; as much as 70 feet thick
- **Om** — **Ordovician Bedrock (Cross section only):** shale, shaly dolomite; dolomite; brown, gray and greenish gray; the dolomite is vuggy and fossiliferous; about 100 to 210 feet thick

Modified after Curry (2007)

STE AND REGIONAL GEOLOGY: US 20, RANDALL ROAD to SHALES ROAD, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL	**EXHIBIT 3**	DRAWN BY: C. Marin CHECKED BY: M. Seyhun

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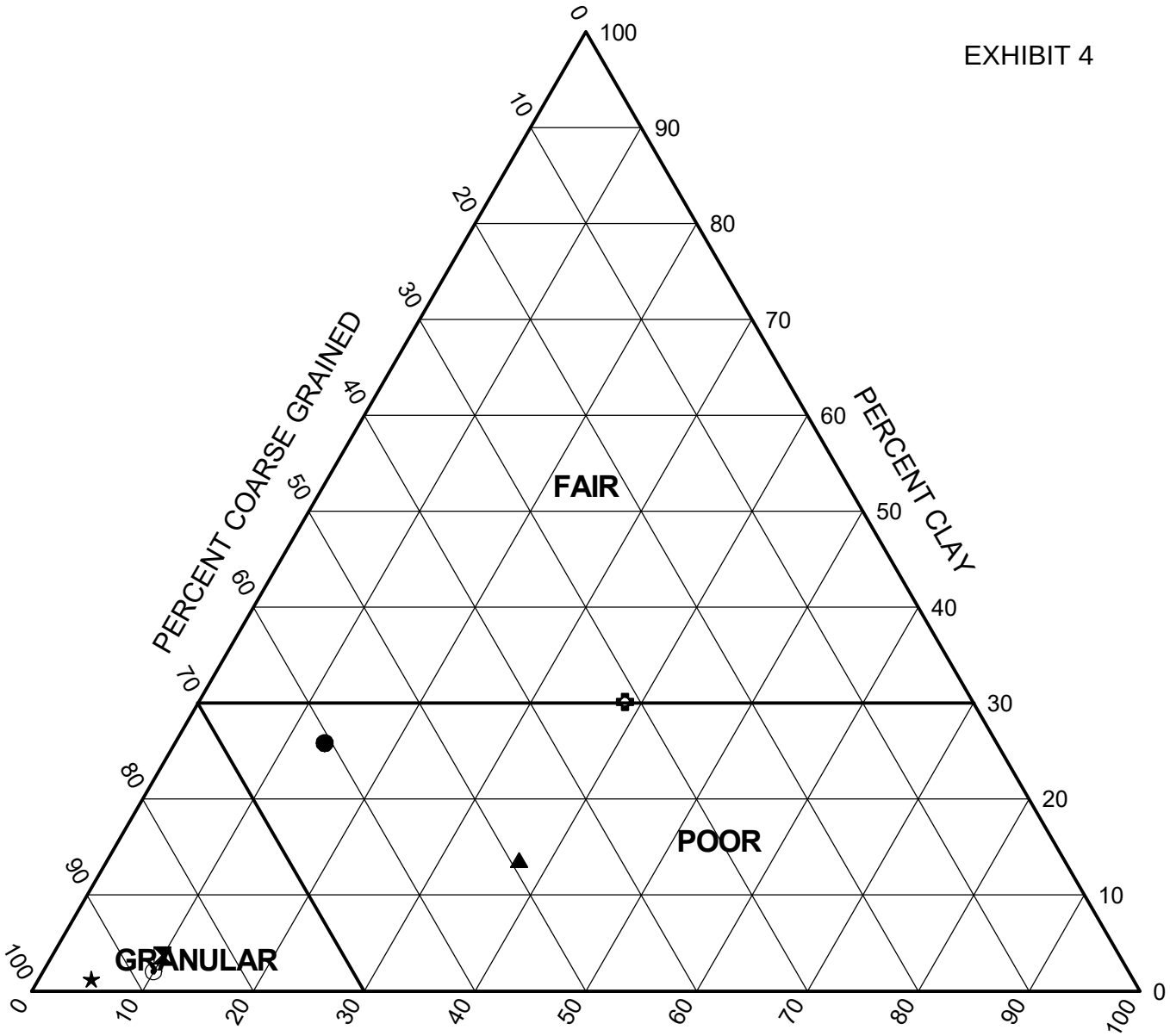
FOR GANNETT FLEMING, INC. | **121-03-01**

EXHIBIT 4



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	B11+13-NAW-01#1	1.0	60.6	13.5	25.8	Gravelly Sandy Clay	A-7-6 (7)	POOR
⧓	B11+13-NAW-01#2	3.5	86.3	10.0	3.7	Gravelly Sandy Loam	A-1-a (0)	GRANULAR
▲	RWB-1-08#1	1.5	49.2	37.1	13.7	Gravelly Loam	A-6 (8)	POOR
★	SGB-17#2	3.0	94.0	4.8	1.2	Gravelly Sandy Loam	A-1-a (0)	GRANULAR
⊙	SGB-18#2	3.0	88.0	10.0	2.0	Gravelly Sandy Loam	A-1-b (0)	GRANULAR
✿	SGB-27#2	3.0	31.4	38.4	30.2	Gravelly Clay	A-6 (10)	FAIR

WEI SINCE 1982

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Subgrade Support Rating Chart

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01

APPENDIX A

Wang Engineering
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BORING LOG 45-0004-BSB-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 749.87 ft
North: 1950045.33 ft
East: 999718.58 ft
Station: 1396+28.32
Offset: 52.76 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	749.4	6-inch thick ASPHALT --PAVEMENT--						
	748.5	11-inch thick CONCRETE with rebar --PAVEMENT--						
	747.1	Stiff, black SILTY CLAY LOAM, some gravel; damp --FILL-- --RDR 3--			1	3 6 17	1.89 B	10
					2	8 19 14	NP	7
		Medium dense to dense, brown Gravelly SANDY LOAM; damp --FILL-- --RDR 2--	5					
					3	6 9 11	NP	4
	741.9	Medium dense, brown LOAM, little gravel; moist --FILL-- --RDR 2--	10		4	4 5 7	NP	8
	739.4	Dense, brown SANDY GRAVEL; damp --FILL-- --RDR 2--			5	6 12 31	NP	4
	736.9	Stiff to hard, brown Gravelly CLAY LOAM; damp --FILL-- --RDR 2--	15		6	2 4 10	1.97 B	11
					7	2 7 10	4.51 B	16
			20		8	5 4 7	2.30 B	18
		--L_L(%)=31, P_L(%)=13-- --%Gravel=20.6-- --%Sand=24.0-- --%Silt=36.3-- --%Clay=19.0-- --A-6 (6)--			9	5 7 10	1.56 B	9
			25		10	5 4 8	2.79 B	19
					11	5 8 7	4.67 B	11
			30		12	10 9 9	2.30 B	12
			35		13	5 6 9	3.36 B	14
			40		14	6 12 13	2.25 P	10

GENERAL NOTES

Begin Drilling **10-21-2021** Complete Drilling **10-22-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **53.00 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 45-0004-BSB-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 749.87 ft
North: 1950045.33 ft
East: 999718.58 ft
Station: 1396+28.32
Offset: 52.76 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	708.1							
		Medium dense, tan GRAVEL; damp --RDR 2--	45		15	10 9 11	NP	
	703.1	Medium dense, brown, coarse SAND, trace gravel; saturated --RDR 2-3--	50		16	11 12 14	NP	11
	698.1	Medium dense, brown SANDY GRAVEL; saturated --RDR 3--	55		17	2 4 8	NP	10
	693.1	--heaving sand in augers at 58.5 feet-- Medium dense, brown, medium to coarse SAND, trace gravel; saturated --RDR 2--	60		18	6 14 15	NP	13
	689.9	Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling **10-21-2021** Complete Drilling **10-22-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **53.00 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 45-0004-BSB-05

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 750.33 ft
North: 1950000.34 ft
East: 999693.99 ft
Station: 1396+12.48
Offset: 3.96 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	750.1	3-inch thick ASPHALT --PAVEMENT--						
	749.2	11-inch thick CONCRETE --PAVEMENT--						
		Stiff, brown SILTY CLAY LOAM, trace gravel; damp --FILL--			1	4 11 13	1.31 B	15
	747.1	--RDR 2--						
		Medium dense, brown LOAM, some gravel; damp --FILL--			2	3 12 14	NP	7
	745.9	--RDR 2--	5					
		Very stiff, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-3--			3	5 11 15	2.50 P	14
	742.3	Medium dense, brown SANDY GRAVEL; damp --FILL-- --RDR 2--	10		4	5 7 5	NP	7
	739.8	Very stiff, brown SILTY CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--			5	4 8 13	3.53 B	15
			15		6	3 4 6	2.62 B	16
	733.6	Brown, medium to coarse SAND; wet --FILL--			7	3 5 11	3.28 B	17
	732.3	--RDR 2--						
		Very stiff, brown SILTY CLAY LOAM, little gravel; damp --FILL--	20		8	5 9 10	3.21 B	11
		--RDR 2--			9	10 9 12	3.00 P	14
			25		10	7 10 11	2.38 B	16
	724.8	Medium dense, brown GRAVEL, cobble fragments; damp --FILL-- --RDR 2--			11	38 12 11	NP	4
	722.3	Very stiff to hard, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-3--	30		12	12 11 11	3.00 P	14
		--rig chatter; possible cobbles--	35		13	4 7 10	6.13 B	16
	711.4							
	710.9	Brown LOAM, trace gravel; damp --FILL--	40		14	7 12 15	NP	7

GENERAL NOTES

Begin Drilling **10-26-2021** Complete Drilling **10-27-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **52.00 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 45-0004-BSB-05

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 750.33 ft
North: 1950000.34 ft
East: 999693.99 ft
Station: 1396+12.48
Offset: 3.96 LT

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 (2.25P), brown SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2--						
	708.6	Stiff, black SILTY CLAY; damp --Buried TOPSOIL-- --RDR 2--						
			45		15	6 9 10	1.50 P	19
	703.6	Medium dense, brown, medium to coarse SAND, trace gravel; saturated --RDR 2--						
			50		16	6 9 11	NP	8
	696.5	Medium dense, brown SILTY LOAM, trace gravel; saturated --RDR 2--	55		17	8 9 11	NP	11
	693.6	Medium dense, brown, medium to coarse SAND, little gravel; saturated --RDR 2--						
	690.3		60		18	11 12 10	NP	10
		Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling **10-26-2021** Complete Drilling **10-27-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **52.00 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 45-0004-BSB-09

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 707.83 ft
North: 1949896.33 ft
East: 999759.38 ft
Station: 1396+94.76
Offset: 86.60 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	706.8	12-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
	706.3	Stiff, black SILTY CLAY LOAM, trace gravel; damp			1	4 5 9	1.25 P	17
		--FILL--						
		Medium dense, brown Gravelly SAND; damp to saturated						
		--RDR 2--			2	10 10 11	NP	2
			5					
					3	2 6 12	NP	2
					4	5 9 11	NP	9
			10					
	697.3	Medium dense, brown, fine to coarse SAND, little gravel; saturated			5	6 10 10	NP	12
		--RDR 4--						
		--rig chatter; possible cobbles--						
					6	7 10 10	NP	13
			15					
	692.3	Tan and gray GRAVEL;						
	691.7	saturated						
		--RDR 4--			7	6 6 5	NP	11
		Medium dense, brown, fine to coarse SAND, little gravel; saturated						
		--RDR 4--						
	688.6	Medium dense, black GRAVEL;			8	5 5 7	NR	
			20					

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 3--						
	686.6	Medium dense, gray, fine SAND, trace gravel; saturated			9	11 8 6	NP	25
		--RDR 4--						
	684.8	--2-inch thick, medium stiff (0.50P), silty clay lens--						
	683.8	Medium stiff, gray SILTY CLAY, trace gravel			10	4 4 3	0.50 P	26
	683.3	Gray SILT, trace gravel; saturated	25					
	682.3	Medium stiff, gray SILTY CLAY, trace gravel			11	50/5"	NP	11
		Very dense, brown and black SANDY GRAVEL; saturated						
		--RDR 5--						
		--rig chatter; possible cobbles--						
					12	50/2"	NP	16
			30					
	676.1	Very stiff, brown CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp						
		--RDR 3--			13	6 8 13	3.44 B	13
			35					
		--rig chatter; possible cobbles--						
					14	3 7 13	2.38 B	14
			40					

GENERAL NOTES

Begin Drilling **12-01-2021** Complete Drilling **12-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.50 ft**
At Completion of Drilling ▼ **8' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0004-BSB-09

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 707.83 ft
North: 1949896.33 ft
East: 999759.38 ft
Station: 1396+94.76
Offset: 86.60 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	665.3							
		Strong, light grayish gray, poor quality, DOLOSTONE; closely spaced, slightly weathered, horizontal and vertical joints, with 0 inch opening, slightly rough walls, and <0.2 inch thick sand infill.	45			C O R E		
		--RUN 1: 42.5 to 52.5 feet--						
		--RECOVERY: 96%--						
		--RQD: 37%--			15			
			50					
		$--Q_u$=9,136 psi						
	655.3							
		Boring terminated at 52.50 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **12-01-2021** Complete Drilling **12-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA to 10', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.50 ft**
At Completion of Drilling ▼ **8' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0005-BSB-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.74 ft
North: 1949974.44 ft
East: 1000727.23 ft
Station: 1406+53.88
Offset: 56.39 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.0	9-inch thick ASPHALT --PAVEMENT--						
		Loose to medium dense, brown, fine to coarse SAND to SANDY LOAM, trace to little gravel; damp --FILL-- --RDR 2--			1	4 3 6	NP	6
					2	19 16 11	NP	4
			5					
					3	10 13 15	NP	4
					4	10 11 15	NP	3
			10					
	747.2	Stiff to hard, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--			5	10 19 10	4.50 P	16
					6	5 8 10	3.69 B	16
			15					
					7	6 9 12	4.43 B	16
					8	4 7 9	3.69 B	17
			20					
					9	7 9 12	4.10 B	17
					10	3 9 9	3.28 B	19
			25					
					11	7 6 8	1.35 B	17
					12	7 9 12	2.87 B	15
			30					
	727.0	Stiff to very stiff, brown SILTY CLAY, trace to little gravel, interbedded silt and sand lenses; damp to moist --RDR 2--						
					13	5 10 13	1.50 P	23
			35					
					14	8 12 21	1.64 B	23
			40					

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **53.50 ft**
At Completion of Drilling ▼ **55.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0005-BSB-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.74 ft
North: 1949974.44 ft
East: 1000727.23 ft
Station: 1406+53.88
Offset: 56.39 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	717.0	Brown SILTY LOAM, trace gravel; moist --RDR 2--						
	714.7	Dense to very dense, brown, fine to medium SAND, trace to little gravel; damp to saturated --RDR 2--	45		15	14 23 28	NP	8
			50		16	17 29 36	NP	3
			55		17	11 17 26	NP	19
	698.7	Boring terminated at 60.00 ft	60		18	13 21 40	NP	18

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **53.50 ft**
At Completion of Drilling ▼ **55.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0005-BSB-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.23 ft
North: 1949914.90 ft
East: 1000900.18 ft
Station: 1408+24.13
Offset: 12.52 RT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
753.0		2.5-inch thick ASPHALT --PAVEMENT--					
752.2							
752.0		9.5-inch thick CONCRETE with rebar --PAVEMENT--		1	5 11 10	NP	4
		Brown SILTY CLAY LOAM --FILL--					
		Medium dense, brown, medium to coarse SAND, little gravel; damp --FILL-- --RDR 2-3--		2	4 22 6	NP	6
747.7	5						
		Stiff, brown and black SILTY CLAY, trace gravel; moist --FILL-- --RDR 3--		3	2 2 2	1.50 P	26
745.2							
		Medium dense, brown SILTY LOAM, little gravel; damp --FILL-- --RDR 2--		4	6 9 8	NP	11
742.7	10						
		Hard, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		5	15 12 12	4.25 B	15
739.0							
		Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- --L_L(%)=34, P_L(%)=15-- --%Gravel=3.5-- --%Sand=6.6-- --%Silt=54.9-- --%Clay=35.0-- --A-6 (16)--		6	10 11 9	NR	
	15			7	3 6 7	2.71 B	15
				8	5 8 9	4.51 B	16
	20						

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
732.1		Dense, brown SILTY LOAM, trace gravel; saturated --RDR 2--		9	7 13 18	NP	14
730.2		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--		10	8 9 13	7.13 B	17
	25						
727.0		--hard slow drilling; possible cobbles-- --RDR 5-- --auger refusal at 28 feet--		11	50/2"	3.75 P	16
		Cored through boulder and cobbles --RUN 1: 28.0 to 31.5 feet-- --Recovery: 57%-- --RQD: 0%--		12	CORE		
	30						
		--RUN 2: 31.5 to 32.5 feet-- --Recovery: 50%-- --RQD: 33%--		13	CORE		
720.2		Stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--		14	6 5 6	1.64 B	14
	35						
716.5		Medium dense, brown SILT to SILTY LOAM, trace gravel; saturated --RDR 2--		15	6 8 10	NP	18
	40						

GENERAL NOTES

Begin Drilling **10-20-2021** Complete Drilling **10-20-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **E. Yim** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **21.25 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0005-BSB-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.23 ft
North: 1949914.90 ft
East: 1000900.18 ft
Station: 1408+24.13
Offset: 12.52 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	711.5							
		Very dense, brown, medium SAND, trace gravel; wet --RDR 2--						
			45		16	28 47 45	NP	12
	706.5							
		Stiff, brown SILTY CLAY LOAM, trace gravel; moist --RDR 2--						
	704.1							
	703.9	Reddish brown SILTY LOAM, trace gravel; saturated	50		17	10 12 22	1.15 B	13
		Dense, reddish brown SANDY LOAM, some gravel; wet --RDR 2--						
	701.5							
		Stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--						
			55		18	4 7 9	1.80 B	15
			60		19	4 5 4	2.21 B	16
	693.2	Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling **10-20-2021** Complete Drilling **10-20-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **E. Yim** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **21.25 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 45-0005-BSB-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 752.18 ft
North: 1949852.03 ft
East: 1000746.31 ft
Station: 1406+67.98
Offset: 66.69 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, black SILTY CLAY, trace organic matter; damp to moist						
		--TOPSOIL--						
		--RDR 2--			1	4 5 12	1.50 P	20
	749.7							
		--rig chatter; possible cobbles--						
		Hard, brown and gray SILTY CLAY LOAM, trace to some gravel; dry to moist			2	14 13 12	> 4.50 P	12
		--FILL--	5					
		--RDR 2-4--			3	24 13 10	9.02 B	15
					4	9 11 15	10.25 B	15
			10					
					5	8 7 9	6.31 B	17
	737.9							
		Medium dense, brown and gray, medium to coarse SAND to SANDY LOAM, little to some gravel; dry to damp	15		6	9 11 16	NP	9
		--RDR 2-4--			7	13 14 12	NP	6
		--6-inch thick, very stiff (3.50P), brown silty clay, trace gravel;	20		8	8 11 15	NP	7
		damp--						
		--rig chatter; possible cobbles--						
	730.5							
		Stiff to very stiff, brown to pinkish gray SILTY CLAY LOAM to SILTY LOAM, trace to little gravel; damp to moist			9	15 9 5	2.50 P	12
		--RDR 2-3--			10	10 10 14	NR	
			25					
					11	5 5 6	1.64 B	13
	723.1							
		Medium dense, brown SILT, trace gravel; damp to saturated			12	10 14 12	NP	20
		--RDR 2--	30					
					13	12 9 13	NP	22
			35					
	715.4							
		Very dense, brown, fine to medium SAND, trace gravel; dry to moist						
		--RDR 2--						
					14	22 41 49	NP	4
			40					

GENERAL NOTES

Begin Drilling **11-24-2021** Complete Drilling **11-24-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **50.00 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 45-0005-BSB-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 752.18 ft
North: 1949852.03 ft
East: 1000746.31 ft
Station: 1406+67.98
Offset: 66.69 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	20 22 32	NP	8
			50		16	26 27 33	NP	17
	702.5	Very dense, gray and brown SANDY GRAVEL; saturated --RDR 2--						
			55		17	50/6"	NP	9
	695.4	Very stiff, gray SILTY CLAY LOAM, trace gravel; moist --RDR 2--						
			60		18	6 8 13	2.62 B	14
	692.2	Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling **11-24-2021** Complete Drilling **11-24-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **50.00 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 45-0005-BSB-06

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.17 ft
North: 1949861.31 ft
East: 1000890.34 ft
Station: 1408+13.30
Offset: 72.41 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	752.3	10-inch thick ASPHALT --PAVEMENT--						
		Stiff, black and brown SILTY CLAY, little gravel; damp --FILL-- --RDR 2--			1	5 4 4	1.75 P	20
	750.2							
		Very stiff, black and brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	5		2	2 3 3	2.25 P	18
	747.7							
		Medium dense, brown LOAM, some gravel; damp to moist --RDR 2--			3	3 5 5	NP	14
	745.2							
		Gray GRAVEL; saturated						
	744.4							
		Very stiff to hard, gray to brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-3--	10		4	4 6 7	3.50 P	16
					5	7 10 14	NR	
			15		6	6 10 12	7.22 B	16
					7	6 12 28	8.28 B	18
			20		8	5 5 8	5.00 B	17
			25		9	6 10 9	3.36 B	15
					10	10 7 8	2.95 B	23
	727.7	--rig chatter; possible cobbles-- Medium stiff, brown and gray SILTY CLAY; damp to moist --RDR 3--			11	4 5 7	0.75 P	22
	725.2	Loose to medium dense, brown to reddish brown SILT to SILTY LOAM; moist to wet --RDR 2--	30		12	3 3 4	NP	25
	718.3	Very dense, brown, medium SAND; damp to saturated --RDR 2--	35		13	3 6 12	NP	22
			40		14	12 31 50/4"	NP	6

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **47.00 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 45-0005-BSB-06

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.17 ft
North: 1949861.31 ft
East: 1000890.34 ft
Station: 1408+13.30
Offset: 72.41 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	25 33 35	NP	7
	706.4	Stiff to very stiff, gray SILTY CLAY LOAM, trace to little gravel; damp --RDR 2--	50		16	12 29 11	1.75 P	14
			55		17	6 8 9	1.89 B	14
	693.2	Boring terminated at 60.00 ft	60		18	6 8 9	2.79 B	14

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **47.00 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 B10-NAW-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 739.01 ft
North: 1949890.37 ft
East: 1001583.37 ft
Station: 1415+06.42
Offset: 74.15 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	738.4	7-inch thick ASPHALT --PAVEMENT--						
	737.9	Brown SANDY GRAVEL; damp --AGGREGATE BASE--						
		Stiff to hard, brown CLAY to SILTY CLAY, trace to little gravel; damp --RDR 2--			1	2 3 3	1.50 P	21
			5		2	4 5 7	5.25 B	18
		--L_L(%)=32, P_L(%)=14-- --%Gravel=2.6-- --%Sand=6.4-- --%Silt=49.5-- --%Clay=41.5-- --A-6 (15)--			3	4 5 8	2.95 B	18
			10		4	4 6 21	4.84 B	16
	728.5	Very stidd, brown CLAY LOAM, trace gravel; damp --RDR 2--			5	18 18 14	3.50 P	11
			15		6	6 6 6	2.50 P	19
	722.8	Medium dense to dense, brown SANDY GRAVEL; damp --RDR 2-3--			7	8 18 12	NP	5
			20		8	7 8 11	NP	7
	719.0	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **04-22-2022** Complete Drilling **04-22-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&P** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B11+13-NAW-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.51 ft
North: 1950060.01 ft
East: 1001355.98 ft
Station: 1412+88.38
Offset: 104.38 LT

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 SILTY CLAY --TOPSOIL--						
	757.5	Very stiff, brown and black Gravelly SANDY CLAY to Gravelly CLAY; moist --RDR 2--			1	5 6 4	3.03 B	22
	755.5	--L_L(%)=57, P_L(%)=21-- --%Gravel=18.7-- --%Sand=41.9-- --%Silt=13.5-- --%Clay=25.8-- --A-7-6 (7)--	5		2	6 18 19	NP	12
	753.0	Dense, brown and gray Gravelly SANDY LOAM; moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=64.7-- --%Sand=21.7-- --%Silt=10.0-- --%Clay=3.7-- --A-1-A (0)--			3	11 15 18	NR	16
		Very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-- --possible cobble--	10		4	13 16 15	3.00 P	17
					5	6 8 10	2.62 B	17
		--L_L(%)=30, P_L(%)=13-- --%Gravel=3.9-- --%Sand=8.6-- --%Silt=50.0-- --%Clay=37.5-- --A-6 (13)--	15		6	4 7 8	2.13 B	17
					7	4 9 11	3.03 B	17
			20		8	5 7 9	2.79 B	19

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	738.0	Very stiff to hard, pinkish brown CLAY LOAM, trace gravel; damp to moist --3-inch sand; damp-- --RDR 2--			9	42 50/6"	NR	
			25		10	15 16 24	NA	14
					11	7 14 16	> 4.50 P	13
	728.5		30		12	19 19 11	2.50 P	12
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling **03-17-2022** Complete Drilling **03-17-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-28

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 761.12 ft
North: 1950789.95 ft
East: 996291.42 ft
Station: 361+12.97
Offset: 55.46 LT

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 TOPSOIL						
	760.1							
		Medium stiff, black and brown SILTY CLAY, trace gravel; moist --RDR 2--			1	2 3 6	0.66 B	26
	758.1							
		Medium dense, gray Gravelly SAND; damp --RDR 2--	5		2	8 10 14	NP	6
	755.6							
		Stiff, brown SILTY CLAY and gravel; moist --RDR 3--			3	10 17 18	1.50 P	13
	754.5							
		Dense to very dense, brown to gray fine SAND, some gravel; damp --RDR 2--	10		4	37 26 50/6"	NP	3
	749.4							
		Very stiff to hard, brown, pink to gray SILTY CLAY, trace gravel; damp to moist --RDR 2 to 3--			5	8 8 9	NR	14
			15		6	5 8 14	4.84 B	17
					7	7 11 16	4.76 B	18
					8	7 8 11	3.03 B	16
	741.1		20					
		Boring terminated at 20.00 ft						

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 **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-29

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 759.74 ft
North: 1950787.34 ft
East: 996476.78 ft
Station: 362+98.34
Offset: 56.84 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	759.3	5-inch thick TOPSOIL						
		Brown and gray SANDY LOAM; moist						
	758.4	Medium dense, brown and gray Gravelly SAND; damp			1	6 8 11	NP	8
		--RDR 2--						
		--gray--						
	755.9	Stiff to hard, gray SILTY CLAY, trace gravel; moist			2	8 5 6	4.50 P	16
		--RDR 2--	5					
	753.4	Medium dense, brown fine to coarse SAND, trace to some gravel; damp			3	5 8 10	NP	6
		--RDR 2--						
		--medium to coarse grained--			4	9 9 9	NP	5
			10					
	749.2	Dense to very dense, brown to black Gravelly SAND; damp			5	28 50/6"	NP	5
		--RDR 2--						
	745.7	Very stiff, brown SILTY CLAY, trace gravel; moist			6	10 17 13	NP	5
		--RDR 2--	15					
		--gray cobble fragments layer--			7	17 21 29	NP	
					8	11 12 15	2.38 B	11
	739.7	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-30B

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 759.14 ft
North: 1950771.38 ft
East: 996697.91 ft
Station: 365+19.76
Offset: 45.64 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.5	8-inch thick ASPHALT --PAVEMENT--						
		Medium stiff to very stiff, gray to black SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --FILL-- --RDR 2--			1	6 3 2	2.00 P	21
		--trace glass fragments--	5		2	4 4 6	2.50 P	24
					3	3 3 3	0.50 P	26
	751.1	Stiff, greenish gray CLAY to SILTY CLAY, trace gravel; damp --RDR 2--	10		4	4 3 5	1.89 B	27
	748.6	Hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--			5	4 8 13	7.38 B	16
			15		6	5 10 29	> 4.50 P	15
	743.6	Dense, white GRAVEL; damp --RDR 2--			7	12 20 25	NP	
	741.1	Brown SANDY LOAM, trace gravel; damp						
	740.2	Hard, brown CLAY LOAM, trace gravel; damp			8	5 14 31	> 4.50 P	11
	739.1		20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 2-- Boring terminated at 20.00 ft	25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling **04-19-2022** Complete Drilling **04-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **AG&CB** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 B7-NAW-31

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.43 ft
North: 1950778.35 ft
East: 996894.89 ft
Station: 367+15.13
Offset: 58.24 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	757.9	7-inch thick, black SILTY CLAY --TOPSOIL--						
	756.9	Hard, brown and gray SILTY CLAY, trace gravel; damp			1	6 6 9	> 4.50 P	14
		Medium dense to dense, brown, fine to coarse SAND, trace to little gravel; damp --RDR 2-3--	5		2	15 12 11	NP	4
					3	7 12 15	NP	4
			10		4	10 17 22	NP	3
					5	15 14 17	NP	4
	745.4	Very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2--	15		6	6 8 14	3.85 B	17
	741.8	Medium dense to dense, brown, fine to medium SAND, trace gravel; damp --RDR 2--			7	10 14 14	NP	4
					8	6 14 19	NP	8
	738.4	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-10-2022** Complete Drilling **03-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-31B

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.50 ft
North: 1950780.43 ft
East: 996882.48 ft
Station: 367+02.80
Offset: 59.75 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.1	5-inch thick, black and brown SILTY CLAY --TOPSOIL--						
		Stiff, brown SILTY CLAY, trace gravel; damp --RDR 2--			1	1 4 6	1.50 P	24
	755.5	Medium dense, brown, fine to medium SAND, trace gravel; damp --RDR 2--	5		2	6 8 13	NP	8
	753.0	Medium dense, brown Gravelly SAND; damp --RDR 2--			3	7 10 11	NP	4
	750.5	Medium dense, brown, fine to medium SAND, trace gravel; damp --RDR 2--	10		4	9 13 14	NP	4
	748.0	Dense, brown Gravelly SAND; damp --RDR 2--			5	9 18 15	NP	4
	745.5	Hard, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp	15		6	11 13 10	> 4.50 P	17
					7	10 14 17	6.91 B	19
	740.5	Medium dense, brown, fine SAND, trace gravel; damp --RDR 2--			8	7 12 15	NP	5
	738.5	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **04-19-2022** Complete Drilling **04-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **AG&CB** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 B7-NAW-32

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 755.53 ft
North: 1950766.03 ft
East: 997098.81 ft
Station: 369+16.85
Offset: 59.76 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
755.0	6-inch thick organic SILTY CLAY LOAM						
	--TOPSOIL--						
	Very stiff, brown SILTY CLAY; damp			1	2 4 5	2.05 B	26
	--RDR 2--						
752.5	Medium dense, brown SANDY GRAVEL; damp						
	--RDR 2 to 3--			2	5 6 9	NP	7
		5					
				3	9 26 25	NP	5
				4	8 9 11	NP	5
		10					
745.0	Hard, brown SILTY CLAY; damp						
	--RDR 2--			5	5 9 15	8.53 B	17
741.0				6	5 11 21	5.58 B	18
	Dense, brown Gravelly SAND; damp	15					
739.8	--RDR 2--						
	Medium dense, brown coarse SAND, trace to little gravel; damp						
	--RDR 2--			7	6 8 7	NP	4
				8	6 7 7	NP	3
735.5		20					
	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **AG&CB** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-33

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 752.94 ft
North: 1950758.97 ft
East: 997298.50 ft
Station: 371+12.65
Offset: 72.46 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	752.4	6-inch thick organic SILTY CLAY LOAM						
		--TOPSOIL--						
		Stiff, brown SILTY CLAY; damp						
		--RDR 2--			1	2 1 2	1.25 P	28
					2	3 3 4	1.80 B	27
	747.4		5					
		Medium dense to dense, brown SANDY GRAVEL; damp						
		--RDR 2 to 3--			3	3 4 8	NP	8
					4	7 8 9	NP	8
			10					
					5	6 9 16	NP	5
					6	17 17 16	NP	5
			15					
					7	12 8 14	NP	5
		--RDR 3--						
					8	9 13 19	NP	4
	732.9		20					
		Boring terminated at 20.00 ft						

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 **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **AG&CB** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-34

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 756.66 ft
North: 1950751.31 ft
East: 997636.18 ft
Station: 374+41.15
Offset: 120.69 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	756.2	6-inch thick organic SILTY CLAY LOAM						
		--TOPSOIL--						
		Very stiff, brown SILTY CLAY; damp			1	2 3 3	2.05 B	25
		--RDR 2--						
			5		2	2 2 4	2.13 B	25
	751.2	Medium dense, brown SANDY GRAVEL; dry to damp						
		--RDR 2 to 3--			3	6 7 8	NP	5
			10		4	7 7 8	NP	3
					5	4 5 6	NP	4
			15		6	8 9 11	NP	5
					7	11 15 18	NP	3
					8	10 11 12	NP	3
	736.7		20					
		Boring terminated at 20.00 ft						

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 **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **AG&CB** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B7-NAW-35

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 756.87 ft
North: 1950747.09 ft
East: 997729.82 ft
Station: 375+33.28
Offset: 137.21 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	756.5	5-inch thick organic SILTY CLAY LOAM						
	755.6	--TOPSOIL--						
		Stiff, brown SILTY CLAY LOAM, little gravel; damp			1	4 5 3	NP	8
		--RDR 2--						
	753.9	Loose, brown coarse SAND and gravel; damp						
		--RDR 2--						
		Loose, brown SANDY LOAM, some gravel; damp	5		2	3 3 2	NP	9
	751.4							
		Very loose, brown SANDY GRAVEL to Gravelly CLAY LOAM; damp			3	3 2 1	0.50 P	14
	750.4	--RDR 2--						
		--L_L(%)=37, P_L(%)=14--						
	748.9	--%Gravel=28.0--						
		--%Sand=26.8--						
		--%Silt=29.4--						
	747.9	--%Clay=15.9--			4	2 3 5	NP	5
		--A-6 (6)--	10					
		Medium stiff, brown to gray CLAY LOAM, some gravel; moist						
		--RDR 2--						
		Medium stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp to moist			5	8 9 10	NP	3
		--trace organic matter--						
		--RDR 2--						
		Loose to medium dense, brown SANDY GRAVEL; damp			6	9 10 9	NP	4
		--RDR 2--	15					
					7	6 8 9	NP	4
					8	6 7 20	NP	3
	736.9		20					
		Boring terminated at 20.00 ft						

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 **03-07-2022** Complete Drilling **03-07-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoA[96%]**
Driller **AG&CB** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-2-NAW-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 730.26 ft
North: 1950250.17 ft
East: 998959.33 ft
Station: 1388+33.54
Offset: 46.03 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	730.0	3-inch thick ASPHALT --PAVEMENT--						
	729.2	10-inch thick CONCRETE --PAVEMENT--			1	12 13 8	NP	6
	729.0	Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--						
		Medium dense, brown Gravelly SAND; damp --FILL-- --RDR 2--			2	50/2"	NR	
	725.3	Very stiff, gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	5		3	17 9 9	3.00 P	20
	722.3	Very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--	10		4	12 5 16	2.25 P	14
	719.8	Very dense, brown and gray SANDY GRAVEL; damp --concrete fragments-- --FILL-- --RDR 2--			5	6 30 50/1"	NP	6
	717.3	Very stiff, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	15		6	7 6 5	2.50 P	14
	714.8	Very dense, brown and gray SANDY GRAVEL; damp --FILL-- --RDR 2 to 3--			7	9 10 45	NP	3
	712.3	Very dense, brown and gray GRAVEL --2-in cobble in split spoon-- --RDR 2--	20		8	24 39 35	NP	
	710.3	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **03-04-2022** Complete Drilling **03-04-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-2-NAW-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 733.43 ft
North: 1950195.11 ft
East: 999135.69 ft
Station: 1390+19.06
Offset: 51.73 LT

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	3-inch thick ASPHALT --PAVEMENT--						
	732.4	10-inch thick CONCRETE --PAVEMENT--			1	13 23 17	NP	4
	732.1	Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--						
		Dense to very dense, brown SANDY GRAVEL; damp --FILL-- --RDR 2 to 3--	5		2	52/4"	NP	6
					3	52/2"	NR	
	725.9	Medium dense, brown Gravelly SAND; damp --FILL-- --RDR 2--	10		4	53 16 13	NP	6
	722.9	Very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			5	25 9 5	2.00 P	14
	720.4	Very stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	15		6	11 13 16	2.00 P	11
	717.9	Medium dense, gray and white GRAVEL --cobble in split spoon-- --FILL-- --RDR 2--			7	4 5 6	NP	
	715.4	Stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp --FILL--	20		8	3 3 11	1.50 P	13
	713.4							

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 2--						
		Boring terminated at 20.00 ft	25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling **03-04-2022** Complete Drilling **03-04-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-2-NAW-03/SGB-21

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 737.94 ft
North: 1950135.80 ft
East: 999325.90 ft
Station: 1392+20.59
Offset: 50.88 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	737.8	2-inch thick ASPHALT --PAVEMENT--						
	736.9	10-inch thick CONCRETE --PAVEMENT--						
	736.7	Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--			1	6 8 12 17	NP	8
	734.9	Medium dense, brown Gravelly SAND; damp --FILL-- --RDR 2--	5		2	11 15 20 15	NP	6
	732.9	Dense, gray and white Gravelly SAND; damp --FILL-- --RDR 2--			3	18 15 17 40	2.50 P	11
	730.9	Very stiff, brown and gray SILTY CLAY LOAM to LOAM, trace gravel; damp --FILL-- --RDR 2--			4	10 28 33 24	NP	4
		Dense to very dense, brown and gray SANDY GRAVEL; damp --FILL-- --RDR 2--	10		5	26 25 22 19	NP	3
	726.9	Dense, brown fine to medium SAND; damp --FILL-- --RDR 2--			6	10 18 12	NP	4
	724.9	Stiff to very stiff, brown and gray to black and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	15		7	10 7 6	3.50 P	23
					8	10 9 5	1.50 P	15
		--wood fragments--			9	8 17 16	2.00 P	16
	717.9	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-04-2022** Complete Drilling **03-04-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-2-NAW-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 743.46 ft
North: 1950090.47 ft
East: 999506.03 ft
Station: 1394+08.48
Offset: 52.50 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	743.2	3-inch thick ASPHALT --PAVEMENT--						
	742.4	10-inch thick CONCRETE --PAVEMENT--						
	742.2	Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--			1	5 3 5	3.50 P	10
	740.5	Very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	5		2	9 14 11	NP	10
	738.0	Medium dense, brown Gravelly SAND; damp --FILL-- --RDR 2--			3	4 8 10	1.00 P	17
	735.5	Stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--						
		Dense, brown Gravelly SAND; damp --FILL--	10		4	7 24 22	NP	4
	733.0	--RDR 2--						
		Stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			5	6 13 11	1.00 P	13
	731.7							
	730.5	Medium dense, brown Gravelly SAND; damp --FILL--						
		Dense, gray and white GRAVEL --1 to 2-in cobble fragment-- --RDR 2 to 3--	15		6	6 19 16	NP	
	728.0	Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			7	5 5 8	2.00 P	18
		--wood fragments--			8	7 10 11	1.50 P	17
	723.5	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-04-2022** Complete Drilling **03-04-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-3-NAW-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 759.07 ft
North: 1949971.16 ft
East: 1000444.74 ft
Station: 1403+67.82
Offset: 55.22 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.8	3-inch thick ASPHALT --PAVEMENT--						
	758.1							
	757.9	9-inch thick CONCRETE --PAVEMENT--						
		Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--			1	4 6 6	> 4.50 P	15
	756.1	Hard, brown SILTY CLAY LOAM to LOAM, trace gravel; damp --FILL--			2	10 16 9	NP	8
		Medium dense, brown Gravelly SAND to LOAM; damp	5					
	753.6	--FILL-- --RDR 2--						
		Medium dense, brown LOAM to SILTY CLAY LOAM; damp --FILL--			3	3 5 6	NP	19
	751.1	--RDR 2--						
		Very stiff to hard, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--	10		4	4 5 4	3.00 P	23
					5	6 7 8	4.25 P	23
			15		6	6 7 11	2.50 P	15
					7	7 11 15	> 4.50 P	16
					8	8 11 6	4.59 B	16
	739.1		20					
		Boring terminated at 20.00 ft						

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 **03-03-2022** Complete Drilling **03-03-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-3-NAW-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 758.78 ft
North: 1949976.25 ft
East: 1000639.53 ft
Station: 1405+65.13
Offset: 60.75 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.5	3-inch thick ASPHALT --PAVEMENT--						
	757.8	9-inch thick CONCRETE --PAVEMENT--						
	757.6	Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--			1	2 2 3	2.50 P	13
	755.8	Very stiff, brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp --FILL-- --RDR 2--	5		2	4 5 3	1.00 P	17
	753.3	Stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			3	6 9 8	NP	
	750.8	Medium dense, gray and white GRAVEL; damp --concrete fragments-- --RDR 2--			4	4 5 5	2.87 B	17
		Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--	10		5	5 13 10	4.00 P	16
			15		6	8 21 11	2.50 P	16
					7	13 18 16	NR	
		--gray--			8	5 8 9	3.50 P	17
	738.8	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-03-2022** Complete Drilling **03-03-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-NAW-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 760.09 ft
North: 1950708.22 ft
East: 997904.58 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	759.8	3-inch thick, medium stiff (0.50P), dark brown SILTY CLAY LOAM; moist			1	PUSH	1.75 P	19
	758.6	--TOPSOIL--						
		Stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; moist			2	PUSH	1.25 P	23
		--FILL--						
	756.1	Stiff, brown SILTY CLAY LOAM, trace gravel; moist						
		Brown, fine to coarse SAND, some gravel; moist	5		3	PUSH	NP	5
	754.3	Brown Gravelly SAND; damp			4	PUSH	NP	4
	752.2	Brown, fine to coarse SAND, some gravel; damp			5	PUSH	NP	5
			10		6	PUSH	NP	5
	748.1	Brown Gravelly SAND; damp			7	PUSH	NP	4
			15		8	PUSH	NP	4
	744.1	Boring terminated at 16.00 ft						
			20					

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 **05-12-2022** Complete Drilling **05-12-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **Geoprobe HA**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 B9-NAW-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 749.61 ft
North: 1950630.67 ft
East: 998076.82 ft
Station: 378+88.10
Offset: 114.47 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	748.6	12-inch thick, brown SANDY LOAM --TOPSOIL--						
	748.0	Medium stiff, black SILTY CLAY, trace gravel; moist			1	7 8 6	0.57 B	35
	746.6	Medium dense, brown SANDY GRAVEL; damp						
		Hard, brown and gray SILTY CLAY LOAM, some gravel; damp --RDR 2--	5		2	6 10 11	4.00 P	12
	744.1	Soft to medium stiff, brown Gravelly CLAY LOAM; moist --RDR 2-- --L_L(%)=37, P_L(%)=13-- --%Gravel=26.0-- --%Sand=31.6-- --%Silt=26.2-- --%Clay=16.2-- --A-6 (5)--			3	4 2 3	0.49 B	13
			10		4	7 3 5	0.57 B	18
					5	4 5 5	0.75 P	22
		--L_L(%)=43, P_L(%)=15-- --%Gravel=19.8-- --%Sand=25.0-- --%Silt=35.9-- --%Clay=19.3-- --A-7-6 (12)--	15		6	3 5 4	0.74 B	25
	734.1	Medium dense, brown, medium to coarse SAND, trace gravel; damp --RDR 2--			7	6 7 6	NP	4
					8	5 7 11	NP	
	729.6	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling **03-10-2022** Complete Drilling **03-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-NAW-02B

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 749.00 ft
North: 1950610.88 ft
East: 998044.45 ft
Station: 378+61.24
Offset: 88.20 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	748.8	3-inch thick ASPHALT --PAVEMENT--						
	748.0	9-inch thick CONCRETE --PAVEMENT--						
		Medium stiff, brown SILTY CLAY, trace gravel; damp			1	3 5 5	0.90 B	21
	746.0	--FILL-- --RDR 2--						
		Medium dense, brown SANDY GRAVEL to Gravelly SAND; damp			2	7 8 12	NP	4
		--RDR 2 to 3--	5		3	5 11 15	NP	4
		--some rig chatter--			4	4 6 8	NP	4
			10		5	9 13 13	NP	3
					6	11 12 17	NP	3
			15		7	6 8 8	NP	3
					8	8 10 10	NP	3
			20					
	728.5	Medium dense, brown fine SAND, trace gravel; damp --RDR 2--			9	8 9 12	NP	3
			25		10	9 7 15	NP	4
					11	14 12 10	NP	3
	721.0	Dense to very dense, brown SANDY GRAVEL to Gravelly SAND; damp --RDR 2 to 3--	30		12	20 22 19	NP	3
			35		13	50/6"	NP	3
					14	31 34 32	NP	3
	709.0	Boring terminated at 40.00 ft	40					

GENERAL NOTES

Begin Drilling **03-15-2023** Complete Drilling **03-20-2023**
Drilling Contractor **Wang Testing Services** Drill Rig **20B57T [91%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **R. KC**
Drilling Method **3.25" ID HSA; Boring backfilled upon completion**

WATER LEVEL DATA

While Drilling **DRY**
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 B9-NAW-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 741.33 ft
North: 1950562.36 ft
East: 998247.88 ft
Station: 1380+61.72
Offset: 103.50 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	740.3	12-inch thick, black SANDY LOAM --TOPSOIL--						
		Medium stiff, brown SILTY CLAY, trace gravel; moist --RDR 2--			1	6 6 8	0.57 B	24
	738.3	Medium dense to dense, brown, fine to medium SAND, trace to some gravel; damp to moist --RDR 2--	5		2	5 6 8	NP	13
					3	15 18 16	NP	3
			10		4	6 10 14	NP	3
					5	9 11 15	NP	3
			15		6	18 27 15	NP	3
					7	18 20 19	NP	3
	721.3		20		8	19 10 7	NP	3
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **03-10-2022** Complete Drilling **03-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-NAW-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 735.50 ft
North: 1950497.58 ft
East: 998425.48 ft
Station: 1382+50.00
Offset: 101.23 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	734.5	12-inch thick, black SILTY CLAY --TOPSOIL--						
	734.1	Stiff, black SILTY CLAY, trace gravel; moist			1	8 13 16	1.50 P	17
		Medium dense to dense, brown and gray, fine to coarse SAND, trace to little gravel; damp --RDR 2-3--	5		2	16 20 23	NP	4
					3	22 21 26	NP	3
			10		4	20 21 22	NP	3
					5	10 17 29	NP	4
			15		6	12 16 19	NP	4
					7	7 13 11	NP	3
	715.5		20		8	6 14 11	NP	3
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **03-10-2022** Complete Drilling **03-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-NAW-05

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 728.08 ft
North: 1950414.11 ft
East: 998603.83 ft
Station: 1384+48.55
Offset: 77.69 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	727.7	5-inch thick, black SILTY CLAY --TOPSOIL--						
	727.1	Brown SILTY CLAY Medium dense to very dense, brown, fine to medium SAND, trace to some gravel; damp --RDR 2-3--			1	17 16 16	NP	9
			5		2	24 30 25	NP	4
					3	18 19 32	NP	2
			10		4	13 15 13	NP	4
	717.6	Dense, brown, fine to medium SAND, trace gravel; damp --RDR 2--			5	6 15 20	NP	3
	715.1	Dense to very dense, brown to gray, fine to coarse SAND, little to some gravel; damp --RDR 2-3--	15		6	17 20 21	NP	3
					7	15 34 23	NP	3
	709.2	Gray SILTY CLAY; damp			8	21 26 50/6"	NP	3
	708.1	Boring terminated at 20.00 ft	20					

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 **03-10-2022** Complete Drilling **03-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 B9-NAW-06/SGB-19

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.92 ft
North: 1950321.67 ft
East: 998768.24 ft
Station: 1386+29.56
Offset: 50.33 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	727.7	3-inch thick ASPHALT --PAVEMENT--						
	727.0							
	726.7	8-inch thick CONCRETE --PAVEMENT--						
		Gray and white SANDY GRAVEL; damp --AGGREGATE BASE--			1	5 7 12 11	> 4.50 P	8
		Very stiff to hard, brown to gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp			2	16 14 8 5	3.50 P	12
	723.2	--FILL-- --RDR 2--	5					
		Very stiff, gray SILTY CLAY, trace gravel; damp			3	21 8 3 5	2.05 B	16
	721.2	--FILL-- --RDR 2--						
		Very stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--			4	8 7 5 6	2.00 P	22
			10		5	4 4 6 7	2.21 B	20
					6	7 8 9	2.13 B	31
	714.9	Medium dense to dense, brown Gravelly SAND; damp --RDR 2--			7	12 10 9	NP	8
			15		8	11 6 7	NP	5
					9	12 20 26	NP	2
	707.9		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **03-04-2022** Complete Drilling **03-04-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KG&TC** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 OSS-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.43 ft
North: 1949897.38 ft
East: 1001209.38 ft
Station: 1411+31.93
Offset: 48.88 RT

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 --TOPSOIL--						
	753.0							
		Hard, brown to gray SILTY CLAY, trace gravel; damp to moist --RDR 2-3--			1	5 5 7	> 4.50 P	15
			5		2	7 10 12	6.48 B	16
					3	7 9 13	5.82 B	17
			10		4	6 10 13	6.40 B	17
					5	7 11 13	6.64 B	17
			15		6	4 8 10	4.59 B	16
					7	4 7 9	NR	
	736.4							
		Very dense, brown, fine to coarse SAND, trace to little gravel; damp --RDR 2-3--			8	6 6 10	NR	
			20					
					9	29 36 25	NP	6
					10	19 26 25	NP	3
	729.4		25					
		--rig chatter-- Very dense, brown Gravelly SAND; damp --RDR 2-3--			11	16 23 28	NP	3
			30		12	25 29 31	NP	2
		--slow hard auger advancement--						
	722.7							
		Very stiff to hard, brown to gray CLAY LOAM, trace gravel; damp --RDR 2--			13	1 5 9	4.26 B	12
			35					
		--slow hard auger advancement--						
					14	6 9 14	3.03 B	12
			40					

GENERAL NOTES

Begin Drilling **04-06-2022** Complete Drilling **04-06-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D25A [83%]**
Driller **PH&AG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 OSS-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.43 ft
North: 1949897.38 ft
East: 1001209.38 ft
Station: 1411+31.93
Offset: 48.88 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--slow hard auger advancement--						
			45		15	2 5 8	2.05 B	11
		--slow hard auger advancement; add water to help advance augers--						
	704.4		50		16	6 9 13	> 4.50 P	11
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **04-06-2022** Complete Drilling **04-06-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D25A [83%]**
Driller **PH&AG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 OSS-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 755.53 ft
North: 1950020.85 ft
East: 1001448.25 ft
Station: 1413+75.98
Offset: 63.68 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	754.5	12-inch thick, black SANDY LOAM						
	754.1	--TOPSOIL--						
		Stiff, gray SILTY CLAY, trace to little gravel; moist			1	6 9 6	1.00 P	20
	752.5	Medium dense, brown, medium to coarse SAND, little gravel; moist						
		--RDR 2--						
		Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist	5		2	7 10 13	6.37 B	15
		--RDR 2-4--			3	9 9 13	5.66 B	16
			10		4	6 8 11	6.40 B	17
		--slow hard drilling; possible cobbles--			5	7 9 12	NR	
		--slow hard drilling; possible cobbles--	15		6	5 8 10	3.12 B	18
					7	5 8 10	2.62 B	19
			20		8	5 8 8	NR	

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	735.0	Dense, brown, fine to medium SAND, little gravel; damp						
	733.9	--RDR 3--			9	19 13 17	6.56 B	11
		Stiff to hard, pinkish brown CLAY LOAM, trace gravel; damp to moist						
		--RDR 2-4--						
			25		10	13 13 14	> 4.50 P	8
					11	8 10 12	2.79 B	11
			30		12	3 5 8	1.23 B	12
	723.8	Very dense, brown, fine to medium SAND, trace gravel; damp to wet						
		--RDR 2--						
			35		13	24 34 43	NP	4
					14	21 34 44	NP	3
			40					

GENERAL NOTES

Begin Drilling **04-05-2022** Complete Drilling **04-06-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D25A [83%]**
Driller **PH&AG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **38.00 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG OSS-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 755.53 ft
North: 1950020.85 ft
East: 1001448.25 ft
Station: 1413+75.98
Offset: 63.68 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	713.8							
		Stiff, gray CLAY LOAM, trace gravel; moist						
		--RDR 2--						
					15	4 6 9	1.56 B	13
			45					
					16	6 7 8	1.39 B	13
	705.5		50					
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **04-05-2022** Complete Drilling **04-06-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D25A [83%]**
Driller **PH&AG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **38.00 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 RWB-1-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 739.03 ft
North: 1950375.55 ft
East: 998127.64 ft
Station: 1380+08.52
Offset: 112.40 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	738.9	2-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
		Stiff to very stiff, black to brown SILTY CLAY, trace gravel; damp to moist			1	4 3 4	1.00 P	32
		--RDR 2--						
	734.8	Brown, fine to coarse SAND, trace gravel; damp	5		2	3 7 14	2.00 P	13
	733.5	--RDR 2--						
		Soft, brown SILTY CLAY, trace gravel; moist			3	17 20 14	0.41 B	15
	732.6	--RDR 2--						
		Medium dense to dense, brown, fine to coarse SAND, trace to little gravel; damp to moist						
		--RDR 2-3--			4	6 12 15	NP	3
		--rig chatter; possible cobbles--	10					
	728.5	Dense, brown Gravelly SAND; damp						
		--RDR 2--			5	13 14 18	NP	4
					6	10 15 23	NP	3
			15					
	723.5	Dense, brown, fine to medium SAND, little gravel; damp to moist						
		--RDR 2-3--			7	7 15 18	NP	3
					8	14 13 18	NP	4
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	718.5	Medium dense to very dense, brown Gravelly SAND to SANDY GRAVEL; moist			9	11 8 7	NP	3
		--RDR 2--						
			25		10	6 9 10	NP	3
					11	16 26 35	NP	2
					12	16 32 33	NP	2
	709.0	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling **11-04-2021** Complete Drilling **11-04-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **DRY**
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 RWB-1-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 735.09 ft
North: 1950366.98 ft
East: 998207.07 ft
Station: 1380+87.41
Offset: 94.61 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	734.8	3-inch thick, black SILTY CLAY --TOPSOIL--						
	734.1	Black SILTY CLAY						
		Medium dense to dense, brown and tan SANDY GRAVEL to Gravelly SAND; damp to moist --RDR 2--			1	9 10 9	NP	6
			5		2	7 10 10	NP	3
					3	13 20 20	NP	4
		--next drilling day observed borehole cave-in at 9 feet-- --dry borehole--	10		4	11 24 36	NP	3
					5	10 16 22	NP	4
	722.1							
		Medium dense, brown, fine to coarse SAND, trace to little gravel; moist --RDR 2--			6	12 16 13	NP	4
			15		7	8 9 10	NP	4
	717.1							
		Dense to very dense, brown SANDY GRAVEL; damp --RDR 2--			8	10 21 18	NP	4
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--heaving sand--			9	16 31 28	NP	2
		--rig chatter; possible cobbles--			10	16 29 29	NP	3
			25					
	709.6							
		Dense to very dense, brown, fine to coarse SAND, trace to little gravel; damp --RDR 2--			11	15 26 31	NP	3
					12	12 17 16	NP	3
	705.1		30					
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling **11-04-2021** Complete Drilling **11-04-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **DRY**
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 RWB-1-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 731.49 ft
North: 1950356.80 ft
East: 998280.15 ft
Station: 1381+59.28
Offset: 80.41 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
731.2	4-inch thick, black SILTY CLAY --TOPSOIL--						
730.2	Stiff (1.00P), brown SILTY CLAY; damp						
	Dense, brown SANDY GRAVEL; damp			1	14 17 15	NP	3
	--RDR 3--						
728.2	Medium dense to dense, brown, fine to coarse SAND, trace to little gravel; damp			2	17 15 11	NP	4
	--RDR 2-3--	5					
	--3-inch thick gravel lens--						
	--rig chatter--						
725.0	Medium dense to dense, brown Gravelly SAND to SANDY GRAVEL: moist			3	7 16 21	NP	5
	--RDR 2--						
		10		4	9 17 21	NP	4
	--next drilling day observed borehole cave-in at 11 feet--			5	7 13 18	NP	4
	--dry borehole--						
		15		6	5 11 16	NP	3
716.0	Brown, medium to coarse SAND, little gravel; moist						
714.7	--RDR 2--			7	13 17 20	NP	4
	Tan SANDY GRAVEL: damp						
	--RDR 2--						
713.5	Stiff (1.23B), reddish brown						
712.7	SILTY CLAY, trace gravel; damp						
	--RDR 2--			8	6 15 15	NP	3
	Dense, brown SANDY GRAVEL;	20					

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
711.0	damp						
	--RDR 2--						
	Dense to very dense, brown, fine to coarse SAND, trace to some gravel; moist to saturated			9	13 28 36	NP	3
	--RDR 2--						
		25		10	12 17 25	NP	3
				11	10 16 22	NP	3
		30		12	14 25 23	NP	2
	--heaving sand--						
		35		13	27 17 16	NP	5
	--heaving sand; flushed hole--						
694.7	Dense, brown SANDY GRAVEL; saturated						
	--RDR 2--						
		40		14	20 20 24	NP	6
691.5	Boring terminated at 40.00 ft						

GENERAL NOTES

Begin Drilling **11-04-2021** Complete Drilling **11-04-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **31.00 ft**
At Completion of Drilling ▼ **mud in borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-1-04HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 731.96 ft
North: 1950327.11 ft
East: 998354.42 ft
Station: 1382+37.21
Offset: 81.36 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	731.8	2-inch thick, (<0.25P) black SILTY CLAY LOAM; damp --TOPSOIL--			1	PUSH	1.75 P	14
	730.5	Stiff, brown and gray CLAY LOAM, some gravel; damp --FILL--			2	PUSH	NP	9
		Brown SANDY GRAVEL; damp to moist --FILL--	5		3	PUSH	NP	3
					4	PUSH	NP	7
	723.0				5		NP	7
		--Sampler REFUSAL-- Boring terminated at 9.00 ft	10					
			15					
			20					

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 **02-10-2022** Complete Drilling **02-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-1-05

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 726.56 ft
North: 1950336.72 ft
East: 998440.39 ft
Station: 1383+15.16
Offset: 43.86 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	726.3	3.5-inch thick ASPHALT --PAVEMENT--						
	725.8	8.5-inch thick CONCRETE --PAVEMENT--						
		Medium dense to very dense, brown SANDY GRAVEL; damp --RDR 2-3--			1	4 5 9	NP	3
			5		2	5 12 16	NP	4
					3	6 9 11	NP	3
			10		4	9 11 18	NP	4
		--crushed cobbles in sample--			5	15 23 29	NP	3
	712.6	Very stiff, brown CLAY LOAM, little gravel; damp --RDR 3--	15		6	35 24 11	2.30 B	15
	711.1	Medium dense to dense, brown SANDY GRAVEL; damp --RDR 2-3--			7	9 17 20	NP	3
			20		8	7 17 17	NP	29
					9	6 11 14	NP	4
					10	7 15 22	NP	4
	701.6	Boring terminated at 25.00 ft	25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling **03-19-2022** Complete Drilling **03-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 RWB-1-06

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 726.33 ft
North: 1950320.94 ft
East: 998501.31 ft
Station: 1383+77.88
Offset: 38.61 RT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
726.0		3.5-inch thick ASPHALT --PAVEMENT--					
725.3		8.5-inch thick CONCRETE --PAVEMENT--					
		Loose to medium dense, brown, medium to coarse SAND; damp --RDR 2--		1	4 5 5	NP	4
				2	2 2 2	NP	5
	5						
720.8		Medium dense to very dense, brown SANDY GRAVEL; damp --RDR 2-3--		3	8 6 7	NP	4
				4	4 6 8	NP	5
	10						
				5	8 15 20	NP	4
		-less than 1-inch thick CLAY LOAM--		6	10 10 12	NP	5
	15						
				7	9 15 14	NP	6
				8	11 32 33	NP	4
	20						
				9	16 29 12	NP	4
				10	14 20 13	NP	6
701.3	25	Boring terminated at 25.00 ft					
	30						
	35						
	40						

GENERAL NOTES

Begin Drilling **03-19-2022** Complete Drilling **03-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 RWB-1-07

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 729.42 ft
North: 1950293.21 ft
East: 998555.53 ft
Station: 1384+38.22
Offset: 46.86 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	729.2	3-inch thick, black SILTY CLAY --TOPSOIL--						
		Medium stiff, black SILTY CLAY, trace gravel; damp						
	727.5	--RDR 2--			1	4 8 15	0.98 B	29
		Loose to medium dense, tan GRAVEL; damp						
		--RDR 3--			2	10 6 6	NR	
			5					
	722.9	Soft to medium stiff, brown CLAY LOAM, little to some gravel; moist			3	3 5 3	0.75 P	9
		--RDR 3--						
	720.4	--rig chatter; possible cobbles--			4	5 50/2"	0.25 P	13
		Medium dense to very dense, tan to brown Gravelly SAND to SANDY GRAVEL; damp to wet	10					
		--RDR 4--			5	37 9 9	NP	4
		--next drilling day observed borehole cave-in at 12 feet--						
		--dry borehole--						
		--rig chatter; possible cobbles--			6	11 11 10	NP	5
			15					
					7	9 23 23	NP	4
		--2-inch thick, stiff (1.75P, reddish brown silty clay lens--			8	17 34 29	NP	3
	709.4		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **11-05-2021** Complete Drilling **11-05-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 RWB-1-08

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.16 ft
North: 1950268.43 ft
East: 998615.36 ft
Station: 1385+02.88
Offset: 50.46 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
726.9	3-inch thick, black SILTY CLAY --TOPSOIL--						
	Stiff to very stiff, black Gravelly LOAM, trace organic matter; damp			1	4 4 4	1.31 B	33
	--RDR 2--						
	--L_L(%)=40, P_L(%)=18--						
	--%Gravel=17.2--						
	--%Sand=32.0--						
	--%Silt=37.1--			2	7 6 7	2.25 P	20
	--%Clay=13.7--						
	--A-6 (8)--	5					
	--3-inch thick gravel lens; damp--						
	--rig chatter; possible cobbles--						
721.0	Medium dense, tan GRAVEL; damp			3	15 16 13	1.50 P	
	--RDR 3--						
718.3	Very stiff, brown SILTY CLAY LOAM, trace gravel; damp			4	6 10 9	2.75 P	15
	--next drilling day observed borehole cave-in at 9 feet--	10					
716.7	--dry borehole--						
	--rig chatter; possible cobbles--						
	Dense, tan to brown Gravelly SAND; damp			5	22 24 23	NP	4
	--RDR 3--						
714.2	Stiff, brown SILTY CLAY, trace gravel; damp						
713.2	--RDR 4--			6	12 16 28	1.50 P	18
	Dense, tan SANDY GRAVEL; damp	15					
711.7	--RDR 4--						
	--rig chatter; possible cobbles--						
	Stiff to very stiff, reddish brown SILTY CLAY LOAM to CLAY LOAM, little gravel; damp			7	8 11 17	3.61 S	14
	--RDR 2--						
				8	12 12 10	1.97 B	18
707.2		20					
	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling **11-05-2021** Complete Drilling **11-05-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 RWB-1-09

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 725.75 ft
North: 1950256.57 ft
East: 998665.30 ft
Station: 1385+55.69
Offset: 47.21 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
725.4	4-inch thick, black SILTY CLAY --TOPSOIL--						
	Stiff to hard, black SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	5 7 18	1.48 B	15
		5		2	11 14 8	4.50 P	11
720.3	Dense to very dense, brown to tan Gravelly SAND; damp --RDR 3-4--			3	12 15 20	NP	5
	--rig chatter; possible cobbles--			4	38 37 28	NP	3
	--rig chatter; possible cobbles--	10					
	--next drilling day observed borehole cave-in at 10 feet-- --dry borehole--			5	27 50/2"	NP	1
	--slow hard drilling; possible cobbles--						
711.8	Dense to very dense, brown, fine to coarse SAND, trace to some gravel; damp --RDR 2--	15		6	14 18 22	NP	3
		20		7	20 40 43	NP	3

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	--4-inch thick gravel lens; damp--			8	11 44 50/4"	NP	4
703.4	Dense, tan GRAVEL; damp --RDR 3--						
701.4	Dense, brown, fine to coarse SAND, little gravel; wet	25		9	24 22 21	NP	5
700.3	--RDR 3--						
	Medium dense to dense, brown SANDY GRAVEL; saturated --RDR 2--			10	8 21 18	NP	6
				11	10 11 12	NP	5
695.8	Boring terminated at 30.00 ft	30					
		35					
		40					

GENERAL NOTES

Begin Drilling **11-05-2021** Complete Drilling **11-05-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

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

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BORING LOG RWB-1-10

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.51 ft
North: 1950233.89 ft
East: 998763.14 ft
Station: 1386+53.76
Offset: 34.20 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
727.3	3-inch thick, black SILTY CLAY LOAM --TOPSOIL--						
725.9	Very stiff, black SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	4 10 18	2.50 P	17
724.5	Tan GRAVEL; damp --RDR 3--						
	Medium stiff to stiff, brown SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp to moist --RDR 2-3--	5		2	6 8 7	0.90 B	13
				3	4 4 7	1.00 P	12
718.7	Loose, brown, fine to coarse SAND, little gravel; moist --RDR 2--	10		4	3 4 3	0.66 B	9
717.0	Soft (0.25P) to medium stiff, brown CLAY LOAM, trace gravel; moist --RDR 2--			5	2 2 3	0.50 P	12
713.7	Medium dense to very dense, brown Gravelly SAND to SANDY GRAVEL; moist to saturated --RDR 4-- --rig chatter; possible cobbles--	15		6	3 7 7	NP	8
				7	16 22 26	NP	5
	--next drilling day observed borehole cave-in at 18.5 feet-- --dry borehole--	20		8	17 27 27	NP	4
		25		9	9 20 31	NP	4
				10	20 38 20	NP	4
				11	14 10 11	NP	7
697.5	Boring terminated at 30.00 ft	30		12	6 10 11	NP	9
		35					
		40					

GENERAL NOTES

Begin Drilling **11-08-2021** Complete Drilling **11-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **26.00 ft**
At Completion of Drilling ▼ **28.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-1-11

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 728.85 ft
North: 1950225.11 ft
East: 998809.71 ft
Station: 1387+02.40
Offset: 28.55 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
728.6	3-inch thick, black SILTY CLAY LOAM						
	--TOPSOIL--						
	Soft to very stiff, black and brown CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp to moist			1	3 3 2	0.82 B	19
	--FILL--						
	--RDR 2-3--			2	3 3 5	1.89 B	21
		5					
				3	5 5 7	2.54 B	17
				4	3 5 8	0.41 B	19
	--rig chatter; possible cobbles--	10					
	--L_L(%)=48, P_L(%)=16--						
	--%Gravel=5.5--						
	--%Sand=30.1--						
	--%Silt=39.7--			5	5 6 6	3.85 B	18
	--%Clay=24.7--						
	--A-7-6 (18)--						
	--rig chatter; possible cobbles--						
715.2	Dense, brown Gravelly SAND; damp			6	9 12 18	NP	4
	--RDR 3--	15					
	--rig chatter; possible cobbles--						
713.4	Brown SILTY LOAM, little gravel; moist						
712.5	Black and brown SAND, trace gravel; damp			7	15 45 48	NP	2
711.9	Medium dense to very dense, tan and brown Gravelly SAND to SANDY GRAVEL; damp to saturated						
	--RDR 2 to 4--			8	43 42 38	NP	3
	--heaving sand in augers--	20					
	--next drilling day observed borehole cave-in at 17 feet--						
	--dry borehole--						
	--RDR 2-4--			9	16 17 19	NP	3
	--4-inch thick, fine to coarse sand lens--	25		10	18 49 41	NP	
			▽	11	12 13 18	NP	8
			▼	12	8 8 8	NP	8
698.9	Boring terminated at 30.00 ft	30					
		35					
		40					

GENERAL NOTES

Begin Drilling **11-08-2021** Complete Drilling **11-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **26.50 ft**
At Completion of Drilling ▼ **29.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 729.48 ft
North: 1950207.24 ft
East: 998898.63 ft
Station: 1387+90.45
Offset: 14.56 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	729.2	3-inch thick ASPHALT --PAVEMENT--					
	728.5	9-inch thick CONCRETE --PAVEMENT--					
		Very stiff, gray and brown Gravelly LOAM; damp		1	4 8 9	NP	7
	726.5	--RDR 2--					
		Very stiff, gray and brown Gravelly CLAY LOAM; damp --RDR 2--		2	1 4 4	2.25 P	13
5							
	724.0	Stiff, gray SILTY CLAY LOAM, little gravel; damp --RDR 2--		3	6 3 3	1.23 B	18
	721.5	Medium dense, gray SANDY GRAVEL; damp		4	5 8 7	NP	5
10							
	719.0	Stiff, dark gray Gravelly CLAY LOAM to LOAM; damp --FILL-- --RDR 2--		5	8 11 16	1.75 P	8
	716.5	Very stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--		6	2 3 5	2.62 B	21
15							
	714.0	Medium dense to very dense, brown SANDY GRAVEL; saturated --RDR 2--		7	5 7 9	NP	6
				8	13 17 22	NP	4
20							
		--RDR 3--		9	11 14 17	NP	3
25				10	25 30 38	NP	4
				11	13 19 22	NP	5
			▽				
30				12	7 12 11	NP	12
		--cave in--		13	7 12 15	NP	7
35							
		--shale in sample--		14	7 24 28	NP	11
40							

GENERAL NOTES

Begin Drilling **03-19-2022** Complete Drilling **03-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **28.00 ft**
At Completion of Drilling ▼ **mud in borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

WANGENGINC 1210301.GPJ WANGENG.GDT 9/30/22

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BORING LOG RWB-2-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 729.48 ft
North: 1950207.24 ft
East: 998898.63 ft
Station: 1387+90.45
Offset: 14.56 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	687.5							
		Dense, gray and brown, coarse SAND, little gravel; saturated --RDR 2--			15	5 16 25	NP	15
			45					
	682.5							
		Dense to very dense, brown SANDY GRAVEL; wet to saturated --RDR 2--			16	5 22 18	NP	5
			50					
					17	9 20 35	NP	5
	674.5		55					
		Boring terminated at 55.00 ft						
			60					

GENERAL NOTES

Begin Drilling **03-19-2022** Complete Drilling **03-19-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **R&A** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **28.00 ft**
At Completion of Drilling ▼ **mud in borehole**
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 RWB-2-01HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 722.74 ft
North: 1950180.00 ft
East: 998889.28 ft
Station: 1387+95.12
Offset: 40.46 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--bare ground--						
		Stiff to very stiff, brown and black SILTY CLAY LOAM, little to some gravel; damp			1	PUSH	1.25 P	23
		--FILL--			2	PUSH	2.00 P	18
			5		3	PUSH	2.75 P	24
					4	PUSH	2.00 P	19
	714.7			▽				
	714.5	Brown SANDY GRAVEL; wet			5		NP	13
		--FILL--						
		--Sampler REFUSAL--						
		Boring terminated at 8.20 ft	10					
			15					
			20					

GENERAL NOTES

Begin Drilling **12-29-2021** Complete Drilling **12-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **NC&KG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.00 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-02HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 719.04 ft
North: 1950154.98 ft
East: 998947.65 ft
Station: 1388+51.23
Offset: 41.03 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, brown and black SILTY CLAY LOAM, trace to some gravel; damp --FILL--			1	PUSH	1.75 P	17
					2	PUSH	2.50 P	11
	715.2	Brown, medium SAND; wet to saturated	5		3	PUSH	NP	16
	713.3	Brown SANDY GRAVEL; damp --spoon refusal at 8.25 feet--			4	PUSH	NP	4
	710.8	Boring terminated at 8.25 ft			5	PUSH	NP	8
			10					
			15					
			20					

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 **12-29-2021** Complete Drilling **12-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **NC&KG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **4.00 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-03HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 718.92 ft
North: 1950130.71 ft
East: 999012.07 ft
Station: 1389+24.23
Offset: 53.57 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, brown and black SILTY CLAY LOAM, little to some gravel; damp			1	PUSH	1.25 P	16
		--FILL--			2	PUSH	2.25 P	24
	715.4	Brown Gravelly SAND; dry	5		3	PUSH	NP	4
		--spoon refusal at 8 feet--			4	PUSH	NP	4
	710.9	Boring terminated at 8.00 ft	10					
			15					
			20					

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 **12-29-2021** Complete Drilling **12-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **NC&KG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 713.30 ft
North: 1950075.50 ft
East: 999078.25 ft
Station: 1390+03.85
Offset: 85.45 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black SILTY CLAY LOAM						
	712.1	--TOPSOIL--						
		Medium stiff, black SILTY CLAY LOAM, trace gravel; damp			1	4 5 5	0.50 P	11
	711.1	--RDR 2--						
		Medium dense, brown, fine to coarse SAND, trace gravel; damp						
		--RDR 2--			2	3 5 8	NP	2
			5					
	707.8							
		Hard, brown SILTY CLAY, trace gravel; damp						
	706.7				3	5 11 15	4.00 P	20
		Medium dense to very dense, white, brown, and gray Gravelly SAND to SANDY GRAVEL; damp to saturated						
		--RDR 2-3--						
		--rig chatter; possible cobbles--						
		--RDR 4--			4	18 27 33	NP	3
			10					
					5	13 11 14	NP	5
					6	11 10 11	NP	6
			15					
		--rig chatter; possible cobbles--						
		--heaving sand in augers--						
		--RDR 3--			7	11 20 24	NP	13
		--RDR 2-3--						
					8	6 7 7	NP	6
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					9	8 12 11	NP	9
			25		10	10 28 24	NP	14
					11	9 12 13	NP	8
			30		12	14 16 19	NP	5
		--heaving sand in augers; flushed hole--						
			35		13	21 20 35	NP	3
		--rig chatter; possible cobbles--						
	676.6							
		Medium dense, gray and brown, fine to coarse SAND, trace gravel; saturated						
		--RDR 2--						
		--6-inch thick gravel lens--			14	29 16 10	NP	16
			40					

GENERAL NOTES

Begin Drilling **11-03-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **11.00 ft**
At Completion of Drilling ▼ **10' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 713.30 ft
North: 1950075.50 ft
East: 999078.25 ft
Station: 1390+03.85
Offset: 85.45 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	672.3							
		WEATHERED BEDROCK --rig chatter and slow drilling--						
	670.8							
		Strong, light bluish gray, very poor quality, DOLOSTONE; very closely spaced, slightly weathered, horizontal and vertical joints, with 0 inch opening, slightly rough walls, and no infill.	45			C O R E		
		--RUN 1: 42.5 to 52.5 feet-- --Recovery: 97%-- --RQD: 8%--			15			
			50					
	660.8							
		Boring terminated at 52.50 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 **11-03-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **11.00 ft**
At Completion of Drilling ▼ **10' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-04HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 714.30 ft
North: 1950086.96 ft
East: 999065.93 ft
Station: 1389+87.38
Offset: 72.98 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	712.8	Dark brown SILTY LOAM; damp			1	PUSH	NP	14
	711.9	Dark brown, medium SAND; damp						
	710.3	Light brown SANDY GRAVEL; dry --spoon refusal at 4 feet--			2	PUSH	NP	9
		Boring terminated at 4.00 ft	5					
			10					
			15					
			20					

GENERAL NOTES

Begin Drilling **12-29-2021** Complete Drilling **12-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **NC&KG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-05HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 723.91 ft
North: 1950100.31 ft
East: 999140.07 ft
Station: 1390+56.09
Offset: 36.50 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	723.4	6-inch thick, (<0.25P) very soft, black organic SILTY CLAY LOAM; damp --TOPSOIL--			1	PUSH	1.00 P	15
		Stiff, brown and gray to black and brown SILTY CLAY LOAM, little gravel; damp --FILL--			2	PUSH	1.25 P	17
	719.9	Brown SANDY GRAVEL; damp --FILL--	5		3	PUSH	NP	6
	718.2	Medium stiff to stiff, brown and gray to brown SILTY CLAY LOAM, little gravel; damp --FILL-- --2-in sand seam; moist-- --cobble fragments--			4	PUSH	1.75 P	21
					5	PUSH	0.75 P	17
		--gravel seams--	10		6	PU SH	1.50 P	19
	712.4	--REFUSAL at 11.5 feet-- Boring terminated at 11.50 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling **02-08-2022** Complete Drilling **02-08-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-06

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 735.40 ft
North: 1950122.36 ft
East: 999185.52 ft
Station: 1390+89.22
Offset: 2.18 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	735.2	2-inch thick ASPHALT --PAVEMENT--						
	734.2	12-inch thick CONCRETE --PAVEMENT--						
	734.0	Gray SANDY GRAVEL --AGGREGATE BASE--						
	732.4	Stiff, brown SILTY CLAY LOAM, little gravel, trace brick fragments; moist --FILL-- --RDR 3--	5		1	7 12 18	1.00 P	
					2	12 26 26	NP	6
		Medium dense to very dense, brown, fine to medium Gravelly SAND; damp --FILL-- --RDR 2-3--			3	9 13 16	NP	7
			10		4	11 25 22	NP	4
	724.9	Hard, brown SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--			5	5 6 10	4.00 P	21
	722.4	Medium dense to very dense, brown, fine to medium SAND, some gravel; damp --FILL-- --RDR 2--	15		6	7 28 32	NP	5
					7	6 27 25	NP	9
			20		8	14 17 12	NP	5
	714.9	Medium dense, black and gray ASPHALT fragments; dry --FILL-- --RDR 2-3--			9	4 9 12	NP	4
	712.4	Very stiff, brown SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2--						
	711.5	White and gray GRAVEL, cobble fragments --FILL-- --RDR 2--	25		10	15 17 12	2.00 P	12
	708.7	Very stiff, brown SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2--			11	7 9 7	NR	
	706.5	Dense to very dense, brown and gray, fine to medium SAND, some gravel; damp --FILL-- --RDR 2-3--	30		12	11 18 18	NP	7
	701.4	Very dense, grayish white SANDY GRAVEL, cobble fragments; dry --FILL-- --RDR 2-3-- --rig chatter--	35		13	41 50/6"	NP	3
	698.7	Medium dense to very dense, brown and gray, medium to coarse Gravelly SAND; saturated --RDR 2--						
			40		14	15 34 27	NP	9

GENERAL NOTES

Begin Drilling **11-02-2021** Complete Drilling **11-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **38.50 ft**
At Completion of Drilling ▼ **46.50 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-06

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 735.40 ft
North: 1950122.36 ft
East: 999185.52 ft
Station: 1390+89.22
Offset: 2.18 RT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
683.7	45	Dense, gray, medium to coarse SAND, little gravel; saturated --RDR 2--		15	14 7 10	NP	10
	50			16	10 23 29	NP	8
678.7	55	Hard, brown SILTY CLAY, trace gravel; damp --RDR 2--		17	5 10 22	NP	16
	60			18	9 16 22	6.31 B	12
673.7	65	--rig chatter; possible weathered bedrock--		19	93/0"	NR	
671.4	70	--AUGER REFUSAL-- Boring terminated at 64.00 ft					
	75						
	80						

GENERAL NOTES

Begin Drilling **11-02-2021** Complete Drilling **11-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **38.50 ft**
At Completion of Drilling ▼ **46.50 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 RWB-2-06HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.94 ft
North: 1950088.70 ft
East: 999197.85 ft
Station: 1391+13.37
Offset: 28.46 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		21-inch thick, medium stiff, black organic SILTY CLAY LOAM; damp			1	PUSH	0.50 P	24
	726.2	--TOPSOIL--						
		Soft, brown SILTY CLAY LOAM; some gravel; damp			2	PUSH	0.25 P	16
		--sand seams--						
	723.9	--FILL--						
	723.4	Brown medium SAND, little gravel; moist	5		3	PUSH	1.75 P	19
		--FILL--						
		Stiff to very stiff, dark gray and brown SILTY CLAY LOAM, trace to little gravel; damp			4	PUSH	1.75 P	19
		--FILL--						
					5	PUSH	2.00 P	19
	718.4							
		Brown SANDY GRAVEL; damp	10					
		--FILL--						
	717.4							
		Stiff, dark brown to gray CLAY LOAM, little gravel; damp			6	PUSH	1.75 P	13
		--FILL--						
	715.9							
		--Sampler REFUSAL--						
		Boring terminated at 12.00 ft						
			15					
			20					

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 **02-08-2022** Complete Drilling **02-08-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-07

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 706.96 ft
North: 1949971.59 ft
East: 999285.70 ft
Station: 1392+32.77
Offset: 108.18 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		14.5-inch thick, black SILTY CLAY LOAM						
	705.8	--TOPSOIL--						
		Medium stiff, black and brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp			1	6 7 7	0.74 B	24
		--FILL--						
	703.7	--RDR 2--						
		--L_L(%)=47, P_L(%)=22--			2	4 6 6	6.89 B	21
		--%Gravel=0.1--						
		--%Sand=15.1--						
		--%Silt=61.9--	5					
		--%Clay=22.9--						
	701.5	--A-7-6 (22)--						
		Hard, brown SILTY CLAY, trace gravel; damp			3	13 11 9	NP	10
		--RDR 2--						
		Medium dense, brown, black and gray Gravelly SAND to SANDY GRAVEL; saturated						
		--RDR 2-3--						
		--RDR 3--			4	9 11 13	NP	9
		--rig chatter; possible cobbles--	10					
					5	9 10 8	NP	6
					6	9 10 11	NP	5
			15					
	691.5							
		Medium dense, brown, medium to coarse SAND, trace to little gravel; saturated			7	10 13 15	NP	10
		--RDR 2--						
	687.9							
		Medium dense, brown Gravelly SAND to SANDY GRAVEL;			8	6 9 10	NP	6
			20					

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--			9	6 14 12	NP	12
			25		10	10 11 14	NP	6
		--heaving sand at 26.0 feet--			11	8 13 15	NP	13
			30		12	8 14 14	NP	12
		--heaving sand at 31.0 feet; flushed hole--						
	675.2							
		Stiff, brown SILTY CLAY, trace gravel; damp						
		--RDR 2--			13	8 12 50/2"	1.48 B	19
	672.5							
		Strong, light bluish gray, very poor quality, DOLOSTONE; Very closely spaced, slightly weathered, horizontal and vertical joints, with 0 inch opening, slightly rough walls, and <0.2 inch thick sand infill.	35			C O R E		
		--RUN 1: 34.5 to 44.5 feet--						
		--Recovery: 100%--						
		--RQD: 0%--			14			
			40					

GENERAL NOTES

Begin Drilling **11-02-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **NA**
Time After Drilling **24 hours**
Depth to Water ▼ **5.75 ft**

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

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BORING LOG RWB-2-07

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 706.96 ft
North: 1949971.59 ft
East: 999285.70 ft
Station: 1392+32.77
Offset: 108.18 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	662.5	Boring terminated at 44.50 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 **11-02-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **NA**
Time After Drilling **24 hours**
Depth to Water ▼ **5.75 ft**

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

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BORING LOG RWB-2-07HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 724.71 ft
North: 1950062.61 ft
East: 999261.69 ft
Station: 1391+75.54
Offset: 38.02 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	723.2	Soft, dark brown SILTY CLAY LOAM, little gravel; damp --TOPSOIL--			1	PUSH	0.25 P	34
	721.5	Brown SANDY GRAVEL; damp --FILL--			2	PUSH	NP	5
		Stiff, black and brown SILTY CLAY LOAM, little gravel; damp --FILL--	5		3	PUSH	1.50 P	22
	717.7	Brown SANDY GRAVEL; damp --FILL--			4	PUSH	1.25 P	17
	716.5	Very stiff, brown and gray SILTY CLAY, little gravel; damp --FILL--	10		5	PUSH	NP	6
	713.2	--Sampler REFUSAL-- Boring terminated at 11.50 ft			6	PUSH	2.00 P	22
			15					
			20					

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 **02-08-2022** Complete Drilling **02-08-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-08

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 741.04 ft
North: 1950067.37 ft
East: 999392.61 ft
Station: 1393+03.46
Offset: 2.46 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	740.8	3-inch thick ASPHALT --PAVEMENT--						
	740.0	9-inch thick CONCRETE --PAVEMENT--						
		Medium dense, brown SILTY LOAM, some gravel; damp			1	18 11 13	NP	11
	738.0	--FILL-- --RDR 3--						
		Stiff to very stiff, black and brown SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp	5		2	5 6 13	2.50 P	16
		--FILL-- --RDR 2--						
					3	6 6 11	1.00 P	12
	733.0							
		Dense to very dense, brown, fine to coarse SAND to SANDY LOAM, little to some gravel and cobble fragments; damp	10		4	19 30 23	NP	3
		--FILL-- --RDR 2--						
					5	7 15 27	NP	4
			15		6	9 19 20	NP	5
	725.5							
		Medium stiff to very stiff, brown SILTY CLAY, little to some gravel; damp			7	4 10 8	2.54 B	18
		--FILL-- --RDR 2--						
			20		8	10 12 18	0.98 B	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	720.5	--rig chatter; possible cobbles-- Gray Gravelly SAND; wet						
	719.8	--FILL-- --RDR 3--			9	14 12 14	4.10 B	13
		Hard, brown SILTY CLAY, trace to little gravel; damp						
	718.0	--FILL-- --RDR 2--						
		Medium dense, brown SILTY LOAM, little gravel; damp			10	13 11 14	NP	19
		--FILL-- --RDR 2--	25					
	715.5							
	714.8	Gray SANDY GRAVEL; saturated --FILL--			11	8 6 23	2.46 B	20
		Medium stiff to very stiff, brown and gray Gravelly CLAY LOAM, trace gravel; damp to moist						
		--FILL-- --RDR 2-- --L_L(%)=29, P_L(%)=13-- --%Gravel=23.9--	30		12	9 14 21	0.75 P	15
		--%Sand=29.0-- --%Silt=28.3-- --%Clay=18.8-- --A-6 (4)-- --2-inch thick, black asphalt fragments--						
			35		13	7 17 14	1.75 P	15
	704.3							
		Medium stiff, dark gray, organic SILTY LOAM, trace organic matter; moist --RDR 2--						
	701.3		40		14	3 4 5	0.82 B	29

GENERAL NOTES

Begin Drilling **10-29-2021** Complete Drilling **10-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **E. Yim** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **26.00 ft**
At Completion of Drilling ▼ **68.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-08

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 741.04 ft
North: 1950067.37 ft
East: 999392.61 ft
Station: 1393+03.46
Offset: 2.46 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff (1.25P), gray SILTY CLAY LOAM, trace gravel; moist						
		--RDR 2--						
	699.3	--rig chatter; possible cobbles--						
		Very dense, gray Gravelly LOAM; saturated						
		--RDR 3--						
			45		15	13 22 40	NP	9
	694.3							
		--heaving sand in augers--						
		Dense, brown, medium to coarse SAND, trace to little gravel; saturated						
		--RDR 2-3--						
			50		16	12 14 27	NP	12
		--rig chatter; possible cobbles--						
	689.3							
		Hard, pinkish gray CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp						
		--RDR 2-3--						
			55		17	8 12 18	4.59 B	13
		--L_L(%)=26, P_L(%)=11--						
		--%Gravel=3.8--						
		--%Sand=24.7--						
			60		18	10 13 17	4.51 B	13

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=47.5--						
		--%Clay=24.0--						
		--A-6 (8)--						
			65		19	8 11 13	4.43 B	14
	674.3							
		Very dense, gray SILTY LOAM to SILT; damp						
		--RDR 2--						
		--possible bedrock--			20	9 50/4"	NP	14
	671.0		70					
		--AUGER REFUSAL--						
		Boring terminated at 70.00 ft						
			75					
			80					

GENERAL NOTES

Begin Drilling **10-29-2021** Complete Drilling **10-29-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **E. Yim** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **26.00 ft**
At Completion of Drilling ▼ **68.00 ft**
Time After Drilling **NA**
Depth to Water ▽ **NA**

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BORING LOG RWB-2-08HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.26 ft
North: 1950045.13 ft
East: 999332.13 ft
Station: 1392+51.90
Offset: 30.81 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	726.5	9-inch thick, very soft, black organic SILTY CLAY LOAM; damp			1	PUSH	0.25 P	32
	726.0	--TOPSOIL--						
		Brown SANDY GRAVEL; damp --FILL--				PUSH		
		Very stiff, brown SILTY CLAY LOAM, little gravel --FILL--			2		3.25 P	19
	723.5	Soft, black and brown CLAY LOAM to SILTY CLAY LOAM, little gravel; damp to moist --FILL--	5		3	PUSH	0.50 P	20
	721.3	--1-in sandy gravel seam--						
	720.8	Brown SANDY GRAVEL; damp --FILL--			4	PUSH	2.00 P	17
		Stiff to very stiff, black and gray to brown and gray SILTY CLAY, trace gravel; damp to moist --petroleum odor-- --asphalt fragments-- --FILL--	10		5	PUSH	1.75 P	20
	716.8	--Sampler REFUSAL-- Boring terminated at 10.50 ft			6		2.50 P	14
			15					
			20					

GENERAL NOTES

Begin Drilling **02-09-2022** Complete Drilling **02-09-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski / LV** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-09HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 728.27 ft
North: 1950020.80 ft
East: 999418.14 ft
Station: 1393+38.91
Offset: 36.12 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	727.0	15-inch thick, soft, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL--		PUSH	1		0.25 P	37
	726.0	(<0.25P) Very soft, brown CLAY LOAM, some gravel; damp --FILL--		PUSH	2		NP	9
	725.3	Brown SANDY GRAVEL; moist --FILL--		PUSH	3		1.25 P	19
		Stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL--	5					
	722.3	Brown and gray SANDY GRAVEL; damp --FILL--		PUSH	4		2.25 P	17
	720.8	Medium stiff, black and brown SILTY CLAY LOAM, little gravel; damp --FILL--		PUSH	5		0.75 P	16
	718.8	Gray SANDY GRAVEL; damp --FILL--	10		6		NP	12
	717.3	--REFUSAL at 11 feet-- Boring terminated at 11.00 ft						
			15					
			20					

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 **02-09-2022** Complete Drilling **02-09-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski / LV** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-10

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 705.94 ft
North: 1949927.48 ft
East: 999443.38 ft
Station: 1393+86.58
Offset: 122.57 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		18-inch thick, black SILTY CLAY LOAM						
		--TOPSOIL--						
	704.4	Stiff, black to brown SILTY LOAM to SILTY CLAY LOAM, trace gravel, trace organic matter; damp to moist			1	5 8 10	1.50 P	32
		--RDR 2--						
		--L_L(%)=57, P_L(%)=29--			2	4 5 5	1.75 P	14
		--%Gravel=1.6--						
		--%Sand=9.3--	5					
		--%Silt=70.5--						
	700.4	--%Clay=18.6--						
		--A-7-6 (29)--						
		Medium dense, brown SANDY GRAVEL; saturated			3	10 10 13	NP	8
		--RDR 2--						
	697.9	Dense, brown, medium to coarse SAND, some gravel; saturated			4	12 15 20	NP	7
		--RDR 2--	10					
	695.4	Dense to very dense, brown Gravelly SAND to SANDY GRAVEL; saturated			5	18 19 17	NP	9
		--RDR 2-3--						
		--rig chatter; possible cobbles--	15		6	18 23 36	NP	9
		--RDR 3--			7	30 36 22	NP	14
			20		8	6 15 24	NP	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	685.4	Medium dense to dense, brown, fine to coarse SAND, trace to little gravel; saturated			9	10 16 22	NP	11
		--RDR 2--						
		--heaving sand in augers--			10	5 11 21	NP	9
			25					
					11	6 8 12	NP	16
	677.9	Medium dense, gray SANDY GRAVEL; saturated			12	11 12 12	NP	6
		--RDR 2--	30					
		--heaving sand in augers; flushed hole--			13	8 8 10	4.51 B	17
	674.2	Hard, brown SILTY CLAY LOAM, trace gravel; damp	35					
		--RDR 2--						
	668.9	Strong, light bluish gray, very poor quality, DOLOSTONE; very closely spaced, slightly weathered, horizontal and			14	C O R E		
	666.9	oblique joints, with <0.2 inch opening, slightly rough walls, and <0.2 inch thick sand infill.	40					

GENERAL NOTES

Begin Drilling **11-01-2021** Complete Drilling **11-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **19' wash**
Time After Drilling **24 hours**
Depth to Water ▼ **11.00 ft**

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

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BORING LOG RWB-2-10

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 705.94 ft
North: 1949927.48 ft
East: 999443.38 ft
Station: 1393+86.58
Offset: 122.57 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RUN 1: 37.0 to 39.0 feet-- --Recovery: 100%-- --RQD: 0%-- Boring terminated at 39.00 ft	45 50 55 60					

GENERAL NOTES

Begin Drilling **11-01-2021** Complete Drilling **11-02-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **19' wash**
Time After Drilling **24 hours**
Depth to Water ▼ **11.00 ft**

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

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BORING LOG RWB-2-10HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 719.39 ft
North: 1949990.62 ft
East: 999459.36 ft
Station: 1393+98.82
Offset: 45.09 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 soft, black and brown SILTY CLAY LOAM, trace gravel; damp --TOPSOIL--			1	PUSH	< 0.25 P	24
	717.6							
	717.1	Brown and gray SANDY GRAVEL; damp to moist --FILL--			2	PUSH	2.50 P	14
	716.1	Very stiff, brown SILTY CLAY LOAM, some gravel; damp --FILL--						
	714.9	Gray SANDY GRAVEL; damp	5		3	PUSH	3.50 P	15
	713.9	Very stiff, brown and gray SILTY CLAY LOAM, little gravel; damp --FILL--						
	713.1	Brown and gray SANDY GRAVEL; damp			4	PUSH	NP	6
	711.4	Stiff (1.0P), brown and gray SILTY CLAY LOAM, little gravel; damp --FILL--						
		--Sampler REFUSAL-- Boring terminated at 8.00 ft	10					
			15					
			20					

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 **02-09-2022** Complete Drilling **02-09-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski / LV** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **DRY**
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 RWB-2-11HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 733.15 ft
North: 1950001.58 ft
East: 999519.78 ft
Station: 1394+42.77
Offset: 33.07 RT

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	3-inch thick, black SILTY CLAY LOAM, trace gravel; damp						
		--TOPSOIL--			1	PUSH	NP	11
		Brown SANDY GRAVEL; damp						
		--FILL--						
	730.7	Hard, brown SILTY CLAY LOAM, little gravel; damp			2	PUSH	> 4.50 P	12
	729.7	--FILL--						
	729.2	Brown and gray SANDY GRAVEL; damp						
	728.4	(<0.25P) Very soft, brown and gray SILTY CLAY LOAM, little gravel; damp	5		3	PUSH	1.75 P	14
	727.9	--FILL--						
	727.2	Brown and gray SANDY GRAVEL; damp						
		Stiff, black and brown SILTY CLAY LOAM, little gravel; damp						
		--FILL--						
		--Sampler REFUSAL--						
		Boring terminated at 6.00 ft	10					
			15					
			20					

GENERAL NOTES

Begin Drilling **02-09-2022** Complete Drilling **02-09-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski / LV** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-12

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 705.56 ft
North: 1949898.34 ft
East: 999520.60 ft
Station: 1394+67.72
Offset: 134.19 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	704.1	17-inch thick, black LOAM --TOPSOIL--					
		Hard, brown CLAY LOAM, trace gravel; damp --RDR 2--		1	4 5 7	4.00 P	
	702.3	Medium dense, brown, medium to coarse SAND, some gravel; wet --RDR 2--		2	6 8 12	NP	10
5	700.1	Medium dense to dense, brown SANDY GRAVEL; saturated --RDR 2--		3	12 13 19	NP	12
				4	11 11 13	NP	10
10	695.1	Medium dense, brown, medium to coarse SAND, little gravel; saturated --RDR 2--		5	5 12 17	NP	8
	692.6	--heaving sand; flushed hole-- Medium dense to very dense, brown SANDY GRAVEL; saturated --RDR 2-4--		6	4 7 8	NP	11
15		--cobble fragments-- --rig chatter; possible cobbles--		7	8 44 43	NP	11
20				8	14 24 28	NP	8
	684.4	--rig chatter; possible cobbles-- Dense, brown, medium to coarse SAND, trace to little gravel; saturated --RDR 2-3--		9	13 15 21	NP	12
25				10	15 16 19	NP	13
	680.1	Dense, tan, black, and gray Gravelly SAND to SANDY GRAVEL; saturated --RDR 2-3--		11	23 26 22	NP	8
30		--rig chatter; possible cobbles--		12	7 12 29	NP	11
	673.8	--heaving sand in augers; flushed hole-- Hard, brown SILTY CLAY, trace gravel; damp --RDR 2--		13	12 14 19	8.56 B	12
35	670.6	--hard slow drilling from 35.0 to 36.5 feet-- --possible weathered bedrock--					
	669.1	Strong, light bluish gray, poor quality, DOLOSTONE; closely spaced, slightly weathered, horizontal joints, with 0 inch opening, slightly rough walls, and <0.2 inch thick sand infill. --RUN 1: 36.5 to 46.5 feet-- --Recovery: 83%--			CORE		
40							

GENERAL NOTES

Begin Drilling **10-29-2021** Complete Drilling **11-01-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **13' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-12

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 705.56 ft
North: 1949898.34 ft
East: 999520.60 ft
Station: 1394+67.72
Offset: 134.19 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RQD: 43%--			14			
	659.1	Boring terminated at 46.50 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 **10-29-2021** Complete Drilling **11-01-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **KS&AP** Logger **D. You** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **13' wash**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-12HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 725.58 ft
North: 1949978.17 ft
East: 999543.85 ft
Station: 1394+73.41
Offset: 21.11 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	725.1	6-inch thick, medium stiff, black organic SILTY CLAY LOAM; damp			1	PUSH	1.50 P	12
		--TOPSOIL--						
		Stiff to very stiff, brown and gray SILTY CLAY LOAM, trace to some gravel; damp			2	PUSH	2.25 P	14
		--FILL--						
		--trace organic matter--	5		3	PUSH	3.00 P	14
		--sandy gravel lens; moist--			4	PUSH	2.75 P	13
					5	PUSH	1.75 P	18
			10		6	PUSH	1.00 P	18
	714.6	--Sampler REFUSAL -- Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling **02-10-2022** Complete Drilling **02-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-13HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 724.12 ft
North: 1949957.98 ft
East: 999605.05 ft
Station: 1395+20.01
Offset: 63.88 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	723.1	Medium stiff, black organic SILTY CLAY LOAM; damp			1	PUSH	0.50 P	22
		--TOPSOIL--						
		Stiff to very stiff, brown to brown and dark gray SILTY CLAY LOAM, little gravel; damp			2	PUSH	2.75 P	18
		--FILL--						
	720.1							
	719.6	Brown SANDY GRAVEL; damp						
		--FILL--	5		3	PUSH	2.25 P	14
		Stiff to very stiff, brown SILTY CLAY LOAM, little gravel; damp						
		--cobble fragments--						
	717.6	--FILL--						
		Brown Gravelly SAND; dry to damp			4	PUSH	NP	7
		--FILL--						
					5	PUSH	NP	5
	714.4		10					
		Very stiff, brown and gray SILTY CLAY LOAM, little gravel; damp			6	PUSH	3.25 P	14
		--FILL--						
	712.4							
		--Sampler REFUSAL--						
		Boring terminated at 11.75 ft						
			15					
			20					

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 **02-10-2022** Complete Drilling **02-10-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-14

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 704.54 ft
North: 1949907.25 ft
East: 999619.30 ft
Station: 1395+57.92
Offset: 101.88 RT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
703.5		12-inch thick, brown and black SILTY CLAY LOAM					
		--TOPSOIL--					
		Medium dense, gray, fine to medium SAND; moist		1	4 5 11	NP	9
		--RDR 2--					
701.5		▽					
701.1		Brown LOAM, trace gravel; saturated					
		Medium dense, brown and gray GRAVEL; saturated		2	7 6 15	NP	16
	5	--RDR 2--					
				3	18 11 13	NP	5
696.5		--added mud to borehole--					
		Very dense, brown, medium to coarse SAND, trace gravel; wet					
		--RDR 2--		4	6 20 39	NP	19
	10						
694.0		Loose, brown and gray GRAVEL; damp					
		--RDR 2--		5	3 4 5	NP	4
691.5		Loose to very dense, brown and gray, fine to coarse SAND to SANDY LOAM, trace gravel; moist to wet					
		--RDR 2--		6	4 3 3	NP	25
	15						
				7	3 24 34	NP	7
				8	8 39 34	NP	11
	20						

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
				9	7 10 12	NP	22
				10	9 8 16	NP	15
	25						
679.0		Hard, gray SILTY CLAY, trace gravel; damp					
		--RDR 2--		11	40 14 13	> 4.50 P	14
				12	10 14 15	4.59 B	12
	30						
		--<1-inch thick rock fragments--		13	6 50/3"	4.92 B	13
670.0		--possible boulder--					
		--AUGER REFUSAL--					
	35	Boring terminated at 34.50 ft					
	40						

GENERAL NOTES

Begin Drilling **12-17-2021** Complete Drilling **12-17-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **JS&AP** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **3.00 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-2-14HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 739.60 ft
North: 1949977.18 ft
East: 999652.40 ft
Station: 1395+76.22
Offset: 26.77 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	738.1	Soft, black organic SILTY CLAY LOAM; damp --TOPSOIL--			1	PUSH	0.25 P	31
		Medium stiff to very stiff, brown SILTY CLAY LOAM, little gravel; damp --FILL-- --brick fragments--			2	PUSH	3.50 P	17
		--trace organic matter--	5		3	PUSH	1.75 P	17
	733.9	Brown SANDY GRAVEL; damp --FILL--						
	732.9	Stiff, brown SILTY CLAY LOAM, trace gravel; damp --trace organic matter-- --FILL--			4	PUSH	NP	6
	732.4							
	731.1	Brown SANDY GRAVEL; damp --FILL--			5	PUSH	4.00 P	15
		Very stiff to hard, gray to brown and gray SILTY CLAY LOAM, little gravel; damp --FILL--	10		6	PUSH	3.00 P	16
	727.6	Boring terminated at 12.00 ft						
			15					
			20					

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 **02-11-2022** Complete Drilling **02-11-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-2-15HA

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 724.57 ft
North: 1949967.87 ft
East: 999719.86 ft
Station: 1396+43.85
Offset: 23.15 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	723.3	15-inch thick, medium stiff, organic black SILTY CLAY LOAM; damp --TOPSOIL--		PUSH	1		0.75 P	21
	722.7	Brown SANDY GRAVEL; damp --FILL--		PUSH	2		2.50 P	17
	720.7	Very stiff to hard (>4.5P), brown SILTY CLAY, trace gravel; damp --FILL--		PUSH	3		NP	3
		Brown SANDY GRAVEL; damp --FILL--	5	PUSH	4		NP	4
	715.6	Hard, brown SILTY CLAY, little gravel; damp		PUSH	5		> 4.50 P	14
	714.6	--FILL--	10					
		Boring terminated at 10.00 ft	15					
			20					

GENERAL NOTES

Begin Drilling **02-11-2022** Complete Drilling **02-11-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **GEOPROBE**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **1" ID HSA; boring backfilled 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 RWB-3-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 748.01 ft
North: 1949858.57 ft
East: 1000422.99 ft
Station: 1403+50.34
Offset: 60.62 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	747.0	12-inch thick, dark brown SILTY CLAY LOAM						
		--TOPSOIL--						
		Very stiff, black and dark brown SILTY CLAY LOAM, trace gravel, trace organic matter; damp			1	3 3 6	3.50 P	17
		--FILL--						
		--RDR 2--						
	744.2							
		Medium dense to dense, light brown SILT, trace to little gravel; dry	5		2	7 12 9	NP	16
		--FILL--						
		--RDR 2-3--			3	9 14 19	NP	11
			10		4	39 23 16	NP	13
					5	7 13 16	NP	17
	735.0							
		Brown SILTY CLAY LOAM, trace gravel; dry			6	43 17 15	NP	15
		--RDR 2--						
	733.5							
		Medium dense to very dense, brown and gray Gravelly SAND to SANDY GRAVEL; damp to moist	15		7	3 6 11	NP	4
		--RDR 2--						
			20		8	8 14 7	NP	4
			25		9	8 7 35	NP	14
					10	46 19 19	NP	9
					11	8 11 12	NR	
			30		12	12 13 17	NP	17
					13	20 26 24	NP	2
	708.0		35					
					14	22 19 24	NP	3
			40					
		Boring terminated at 40.00 ft						

GENERAL NOTES

Begin Drilling **11-23-2021** Complete Drilling **11-23-2021**
Drilling Contractor **Wang Testing** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 RWB-3-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 751.51 ft
North: 1949862.34 ft
East: 1000503.29 ft
Station: 1404+29.78
Offset: 55.77 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		17-inch thick, black SILTY CLAY LOAM, --TOPSOIL--					
	750.1	Medium dense to dense, brown to tan SILT, trace to little gravel; dry --FILL-- --RDR 2--		1	5 8 8	NP	14
5				2	8 13 15	NP	14
				3	17 15 17	NP	7
10				4	15 11 8	NP	8
	741.0	Hard, gray and brown SILTY CLAY, trace gravel; dry --FILL-- --RDR 2--		5	5 12 14	4.51 B	19
15				6	8 9 17	10.25 B	16
				7	5 10 13	7.46 B	17
	732.5	Medium dense, brown, medium to coarse SAND, some gravel;		8	6 16 12	NP	4
20							

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	731.0	dry --RDR 2--					
	729.9	Very stiff, brown SILTY CLAY, trace gravel; dry --RDR 2--		9	4 5 15	3.28 B	16
		Medium dense to very dense, brown SANDY GRAVEL; dry --RDR 2--					
25				10	15 26 30	NP	2
	724.8	Medium dense to very dense, tan SILT, trace gravel; damp to moist --RDR 2--		11	42 45 50/6"	NR	
30				12	17 26 32	NP	18
35				13	8 11 14	NP	21
	714.8	Very dense, fine to medium SAND, trace gravel; damp --RDR 2--					
				14	15 27 49	NP	3
40	711.5	Boring terminated at 40.00 ft					

GENERAL NOTES

Begin Drilling **11-23-2021** Complete Drilling **11-23-2021**
Drilling Contractor **Wang Testing** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 RWB-3-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.05 ft
North: 1949861.57 ft
East: 1000579.77 ft
Station: 1405+05.03
Offset: 55.68 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	753.1	12-inch thick, black and brown SILTY CLAY LOAM						
		--TOPSOIL--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel						
		--FILL--						
		--RDR 2--						
					1	11 13 16	4.50 P	12
			5		2	19 15 18	> 10.25 B	13
					3	10 13 16	> 10.25 B	16
			10		4	11 11 14	9.84 B	16
					5	12 11 14	9.02 B	18
			15		6	7 10 9	6.48 B	21
		--L_L(%)=35, P_L(%)=15--			7	10 13 14	9.43 B	17
		--%Gravel=1.2-						
		--%Sand=4.8--						
		--%Silt=58.3--						
		--%Clay=35.8--						
		--A-6 (18)--						
			20		8	7 8 11	5.33 B	19
			25		9	7 8 12	6.81 B	20
					10	7 9 25	5.33 B	19
					11	11 11 13	3.75 P	18
			30		12	8 10 12	3.69 B	11
	720.1	Dense, brown SILT, trace gravel; saturated			13	10 11 21	NP	21
		--RDR 2--	35					
	715.1	Very dense, brown, fine SAND; damp to wet			14	16 32 27	NP	22
	714.1		40					

GENERAL NOTES

Begin Drilling **10-22-2021** Complete Drilling **10-22-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **JS&MG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling **34.00 ft**
At Completion of Drilling **40.00 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 RWB-3-03

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.05 ft
North: 1949861.57 ft
East: 1000579.77 ft
Station: 1405+05.03
Offset: 55.68 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 2--						
		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 **10-22-2021** Complete Drilling **10-22-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **JS&MG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **34.00 ft**
At Completion of Drilling ▼ **40.00 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 RWB-3-04

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.55 ft
North: 1949862.21 ft
East: 1000645.93 ft
Station: 1405+70.02
Offset: 56.31 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	752.6	12-inch thick, black and brown SILTY CLAY LOAM						
		--TOPSOIL--						
		Hard, brown SILTY CLAY LOAM, trace gravel			1	7 7 10	4.50 P	11
		--FILL--						
		--RDR 2--			2	5 8 10	4.50 P	12
			5					
	748.1	Medium dense, brown, medium SAND, little gravel; damp			3	3 7 8	NP	3
		--FILL--						
		--RDR 2--						
	745.6	Very stiff to hard, brown SILTY CLAY LOAM to SILTY CLAY						
		--FILL--			4	4 6 10	5.74 B	18
		--RDR 2--	10					
					5	5 11 11	5.33 B	21
					6	5 6 10	4.67 B	16
			15					
					7	9 7 9	3.28 B	17
					8	11 8 11	3.00 P	14
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	732.3	Dense, brown SANDY GRAVEL; moist			9	13 12 20	NP	4
		--FILL--						
		--RDR 2-3--						
		--rig chatter; possible cobbles			10	50/1"	NP	
			25					
	728.1	Very stiff, light brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp			11	11 9 11	3.77 B	11
		--RDR 2--						
					12	10 8 12	3.94 B	12
			30					
	721.8	Dense, brown SILT; saturated						
		--RDR 2--						
					13	9 13 17	NP	20
			35					
	716.8	Dense, brown, medium SAND, trace gravel; dry						
		--RDR 2--						
					14	12 15 23	NP	3
	713.6		40					
		Boring terminated at 40.00 ft						

GENERAL NOTES

Begin Drilling **10-22-2021** Complete Drilling **10-22-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **JS&MG** Logger **E. Greenwood** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **31.75 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 RWB-3-05

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 752.90 ft
North: 1949860.40 ft
East: 1000698.59 ft
Station: 1406+22.35
Offset: 56.69 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	751.7	15-inch thick, very stiff (2.50P), black SILTY CLAY LOAM, trace gravel; moist --TOPSOIL-- Medium dense, tan SILT; dry --RDR 2--			1	6 10 12	NP	4
	749.9	Hard, brown SILTY CLAY LOAM, trace gravel; dry --RDR 2--	5		2	8 11 12	> 4.50 P	10
	747.4	Medium dense to dense, brown SANDY LOAM, trace to some gravel; dry --RDR 2-3--			3	4 10 14	NP	7
			10		4	16 14 16	NP	10
	741.6	Very stiff to hard, gray SILTY CLAY, trace gravel; damp --RDR 2--			5	9 10 9	3.50 P	18
			15		6	5 8 10	4.92 B	18
					7	5 9 14	3.61 B	18
	734.1	Medium dense to dense, gray and brown Gravelly SAND to	20		8	12 17 21	NP	3
		SANDY GRAVEL; damp --RDR 2 to 4-- --RDR 4-- --RDR 3-4--			9	50/0"	NR	
			25		10	18 13 13	NP	6
		--rig chatter; possible cobbles--						
	726.6	Stiff to very stiff, pinkish gray SILTY CLAY, trace gravel; damp to moist --RDR 2--			11	10 7 8	2.54 B	10
			30		12	5 5 9	1.89 B	13
	719.2	Medium dense, brown SILT, trace gravel; saturated --RDR 2--	35		13	7 9 15	NP	20
	716.2	Dense, brown, fine to medium SAND, trace gravel, few silt seams; damp to moist --RDR 2--						
			40		14	16 15 24	NP	17
	712.9	Boring terminated at 40.00 ft						

GENERAL NOTES

Begin Drilling **11-23-2021** Complete Drilling **11-23-2021**
Drilling Contractor **Wang Testing** Drill Rig **21GeoA[96%]**
Driller **JS&MG** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling **33.50 ft**
At Completion of Drilling **DRY**
Time After Drilling **NA**
Depth to Water **NA**

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BORING LOG RWB-4-01

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.42 ft
North: 1949860.83 ft
East: 1000934.65 ft
Station: 1408+57.13
Offset: 71.50 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	752.6	10-inch thick ASPHALT --PAVEMENT--						
		Medium stiff to stiff, brown and gray SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2-3--			1	5 6 7	0.75 P	15
			5		2	3 2 3	1.25 P	22
	747.9	Medium dense, brown Gravelly LOAM; damp --FILL-- --RDR 2--			3	4 8 5	NP	8
	745.4	Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--	10		4	3 7 8	4.10 B	17
		--gray--			5	3 5 8	6.15 B	15
			15		6	3 5 8	5.82 B	17
		--L_L(%)=33, P_L(%)=14-- --%Gravel=1.6-- --%Sand=5.4-- --%Silt=55.3-- --%Clay=37.7-- --A-6 (17)--			7	3 5 7	2.30 B	19
			20		8	5 5 10	3.94 B	19
	732.9	Brown Gravelly SAND; saturated --RDR 2-3--			9	11 12 5	3.44 B	19
	731.7	Very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--			10	5 5 10	3.69 B	18
		--few silt seams--	25		11	3 5 7	2.62 B	24
			30		12	3 4 7	1.31 B	10
	721.7	Medium dense, brown SILT; moist to wet --RDR 2--			13	7 11 13	NP	20
	716.7	Very dense, brown, fine SAND; damp --RDR 2--	35		14	26 50/5"	NP	5
	713.4	Boring terminated at 40.00 ft	40					

GENERAL NOTES

Begin Drilling **12-12-2021** Complete Drilling **12-12-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **20.50 ft**
At Completion of Drilling ▼ **36.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG RWB-4-02

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.01 ft
North: 1949854.39 ft
East: 1001014.04 ft
Station: 1409+35.93
Offset: 82.24 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		11-inch thick ASPHALT --PAVEMENT--						
	753.1	Very stiff, black, gray and brown CLAY LOAM to SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2-3--			1	5 7 8	2.00 P	14
	750.3	Hard, brown and gray SILTY CLAY, trace gravel; damp --RDR 2--	5		2	5 8 9	6.15 B	15
					3	5 8 12	> 9.02 B	16
			10		4	5 8 12	8.53 B	16
					5	5 6 9	6.48 B	17
			15		6	5 10 11	6.56 B	18
	738.5	Hard, gray and brown CLAY; damp --RDR 2--			7	5 6 9	4.26 B	19
	736.0	Very stiff, gray and brown SILTY CLAY; damp --RDR 2--			8	9 9 11	2.50 P	18
			20					
	733.5	Very stiff, gray CLAY, trace gravel; damp --RDR 2--			9	4 7 9	2.95 B	24
	730.3	Medium dense, brown Gravelly SAND; damp --RDR 2--	25		10	4 13 16	NP	13
	728.5	Medium dense to dense, brown SILTY LOAM, little gravel; damp --RDR 2-3--			11	11 18 16	NP	9
			30		12	8 12 11	NP	9
	722.3	Very dense, brown Gravelly SAND; damp --RDR 3--			13	16 26 47	NP	6
	717.3	Very stiff, gray and brown SILTY CLAY LOAM, trace gravel; damp --RDR 3--	35					
					14	5 7 9	3.28 B	11
	714.0	Boring terminated at 40.00 ft	40					

GENERAL NOTES

Begin Drilling **12-12-2021** Complete Drilling **12-12-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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 SGB-14

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 742.49 ft
North: 1950660.21 ft
East: 997574.21 ft
Station: 373+98.38
Offset: 22.21 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	742.24	4-inch thick ASPHALT --PAVEMENT--						
	741.5	8-inch thick CONCRETE --PAVEMENT--						
	741.28							
	740.8	Brown and gray SANDY GRAVEL; damp --AGGREGATE BASE--			1	6 6 15 33	NP	4
		Hard (>4.50P), brown SILTY CLAY, some gravel; damp			2	18 17 16 13	NP	4
		Dense to very dense, brown SANDY GRAVEL; damp --RDR 2-3--	5		3	11 21 20 19	NP	4
					4	18 20 18 15	NP	4
			10		5	22 30 39 28	NP	3
					6	12 23 25	NP	4
	727.5		15		7	11 16 23	NP	4
		Boring terminated at 15.00 ft						
			20					

GENERAL NOTES

Begin Drilling **04-18-2022** Complete Drilling **04-18-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-15

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 733.73 ft
North: 1950544.51 ft
East: 997863.19 ft
Station: 377+06.17
Offset: 25.34 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	733.3	5-inch thick ASPHALT --PAVEMENT--						
	732.5	10-inch thick CONCRETE --PAVEMENT--						
		Medium dense to very dense, brown and gray SANDY GRAVEL; damp to moist --RDR 2-4--			1	10 10 16	NP	4
					2	15 50/4"	NP	7
			5		3	6 7 7 4	NP	5
					4	10 16 14 9	NP	3
		--hard drilling; possible cobbles--	10		5	6 8 7 7	NP	3
	722.7	Boring terminated at 11.00 ft						
			15					
			20					

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 **04-13-2022** Complete Drilling **04-13-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-16

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 729.00 ft
North: 1950499.35 ft
East: 998165.43 ft
Station: 1380+02.10
Offset: 18.96 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	728.7	4-inch thick ASPHALT --PAVEMENT--						
	727.8	10-inch thick CONCRETE --PAVEMENT--						
	727.5							
	727.0	4-inch thick, brown SANDY GRAVEL --AGGREGATE BASE--			1	5 18 24	NP	4
		Very stiff (2.25P), brown and gray SILTY CLAY, some gravel; damp --FILL--			2	8 10 15 15	NP	3
		Medium dense to dense, brown SANDY GRAVEL; damp --RDR 2-3--	5		3	15 15 16 14	NP	4
					4	8 16 12 14	NP	4
			10		5	8 14 16 10	NP	4
					6	8 17 15	NP	4
					7	6 9 13	NP	4
	714.0		15					
		Boring terminated at 15.00 ft						
			20					

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 **04-18-2022** Complete Drilling **04-18-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21D50A [84%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-17

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 731.67 ft
North: 1950487.61 ft
East: 998370.27 ft
Station: 1381+99.10
Offset: 75.36 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	731.4	3.25-inch thick ASPHALT --PAVEMENT--						
	730.7	9-inch thick CONCRETE --PAVEMENT--						
	729.9	4-inch thick, gray SANDY GRAVEL --AGGREGATE BASE--			1	14 21 26	NP	5
		Medium stiff (0.50P), brown CLAY LOAM, some gravel; damp			2	13 17 18 21	NP	4
		Medium dense to dense, brown Gravelly SANDY LOAM; damp	5					
		--RDR 2-3--						
		--L_L(%)=NP, P_L(%)=NP--			3	12 13 15 18	NP	4
		--%Gravel=70.2--						
		--%Sand=23.8--						
		--%Silt=4.8--						
		--%Clay=1.2--						
		--A-1-a (0)--			4	12 13 30 20	NP	4
			10		5	10 14 13 12	NP	4
					6	8 12 12	NP	4
					7	12 14 17	NP	4
	716.7		15					
		Boring terminated at 15.00 ft						
			20					

GENERAL NOTES

Begin Drilling **04-21-2022** Complete Drilling **04-21-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **R&P** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-18

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 727.00 ft
North: 1950380.15 ft
East: 998451.19 ft
Station: 1383+11.00
Offset: 0.69 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	726.8	3-inch thick ASPHALT --PAVEMENT--						
	725.8	11-inch thick CONCRETE --PAVEMENT--						
		Medium dense to dense, brown Gravelly SAND to Gravelly SANDY LOAM; dry to damp			1	14 20 22	NP	4
		--RDR 2-3--			2	9 18 19 17	NP	3
		--L_L(%)=NP, P_L(%)=NP--						
		--%Gravel=49.2--						
		--%Sand=38.8--						
		--%Silt=10.0--	5		3	8 14 16 15	NP	4
		--%Clay=2.0--						
		--A-1-b (0)--			4	18 25 19 15	NP	3
			10		5	5 11 18 22	NP	4
					6	11 15 14	NP	4
					7	11 18 24	NP	4
	712.0	Boring terminated at 15.00 ft	15					
			20					

GENERAL NOTES

Begin Drilling **04-14-2022** Complete Drilling **04-14-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-20

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 732.09 ft
North: 1950166.88 ft
East: 999001.99 ft
Station: 1389+01.33
Offset: 18.47 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	731.9	2-inch thick ASPHALT --PAVEMENT--						
	731.1	10-inch thick CONCRETE --PAVEMENT--						
		Dense, brown, fine to medium SAND, some gravel; damp --FILL-- --RDR 2-3-- --trace wood fragments--			1	11 23 13 13	NP	4
					2	9 18 13 12	NP	7
	727.0		5					
		Stiff to very stiff, gray, black and brown SILTY CLAY LOAM, little to some gravel; damp --FILL-- --RDR 2--			3	11 7 8 7	NP	7
					4	5 10 12 9	3.00 P	14
	723.3							
		Dense, brown, fine to medium SAND, little to some gravel; damp --FILL-- --RDR 2--	10		5	5 20 14 8	NP	
	721.3							
		Very stiff, brown SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2--			6	5 12 9	2.50 P	6
		--trace brick and glass fragments--	15		7	5 13 17	3.00 P	14
	715.3							
		Dense to very dense, brown and white Gravelly SAND; damp --RDR 2-3--			8	21 33 50/5"	NP	4
			20					

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	18 52/6"	NP	3
		--rig chatter; possible cobbles--						
			30		10	50 42 24/3"	NP	4
		--rig chatter; possible cobbles--						
			35		11	7 17 24	NP	8
		--rig chatter; possible cobbles--						
	695.3							
		Dense to very dense, brown, medium to coarse SAND, little to some gravel; saturated --RDR 2-3--						
			40		12	9 23 24	NP	14

GENERAL NOTES

Begin Drilling **11-03-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **33.50 ft**
At Completion of Drilling ▼ **42.50 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 SGB-20

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 732.09 ft
North: 1950166.88 ft
East: 999001.99 ft
Station: 1389+01.33
Offset: 18.47 RT

Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
45		13	13 21 21	NP	19
	--rig chatter; possible cobbles--				
50		14	20 13 28	NP	11
55		15	17 37 64	NP	7
675.3	Very dense, brown Gravelly SAND; saturated --RDR 2-3--				
		16	50/4"	NP	10
672.1 60	Boring terminated at 60.00 ft				

GENERAL NOTES

Begin Drilling **11-03-2021** Complete Drilling **11-03-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **33.50 ft**
At Completion of Drilling ▼ **42.50 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 SGB-22

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 741.11 ft
North: 1950081.58 ft
East: 999410.99 ft
Station: 1393+17.67
Offset: 20.86 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	740.8	4-inch thick ASPHALT						
	740.4	--PAVEMENT--						
		5-inch thick CONCRETE with rebar						
		--PAVEMENT--			1	4 6 7 7	NP	7
		Medium dense to dense, gray SANDY GRAVEL; damp to moist						
		--FILL--						
		--RDR 2--			2	4 13 20 20	NP	7
	736.4		5					
		Stiff to very stiff, gray and brown SILTY CLAY LOAM, trace gravel; damp						
		--FILL--						
		--RDR 2--			3	10 11 15 15	1.50 P	16
	733.9	--Qu: 2.75P--						
		Medium dense to dense, brown and gray SANDY GRAVEL; damp						
		--FILL--						
		--RDR 2--			4	3 10 9 17	NP	4
			10					
					5	15 22 37 18	NP	5
					6	23 28 16	NP	5
	728.1							
		Very stiff, black, gray and brown SILTY CLAY, little gravel; damp						
		--FILL--						
		--RDR 2--			7	8 21 17	3.00 P	19
	726.1		15					
		Boring terminated at 15.00 ft						
			20					

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 **04-13-2022** Complete Drilling **04-13-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-23

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 746.82 ft
North: 1950024.68 ft
East: 999579.08 ft
Station: 1394+94.91
Offset: 4.67 LT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
746.5		3.5-inch thick ASPHALT --PAVEMENT--					
745.7		9.5-inch thick CONCRETE --PAVEMENT--					
745.0		Brown Gravelly LOAM; damp --AGGREGATE BASE--					
		Very stiff, brown CLAY LOAM, trace gravel; damp to moist --FILL-- --RDR 2--					
	5			1	7 9 6 6	NP	8
				2	4 7 14 16	2.50 P	17
741.3							
740.8		Brown LOAM, little gravel; damp --FILL--		3	5 13 10 22	1.39 B	15
740.1		Stiff, brown SILTY CLAY, some gravel; moist --FILL--					
739.3		Medium dense, white GRAVEL; damp --FILL--		4	14 18 7 11	2.71 B	12
	10	Stiff to very stiff, brown, black, and gray Gravelly SILTY LOAM to CLAY LOAM; damp --FILL-- --2-inch thick sand gravel lens; damp-- --L_L(%)=37, P_L(%)=14-- --%Gravel=19.1-- --%Sand=24.1-- --%Silt=42.1-- --%Clay=14.8-- --A-6 (10)--		5	9 10 12 8	2.50 P	12
				6	3 5 11	2.54 B	17
	15			7	5 15 12	1.07 B	12
	20			8	7 6 8	2.87 B	20

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
726.3		--rig chatter from 20.5 to 23.5 feet-- --possible cobbles--					
		Dense, brown, fine to coarse SAND, little gravel; damp --FILL-- --RDR 3--					
	25			9	21 28 15	NP	
717.6		Hard, brown SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--		10	16 10 13	NR	
	30			11	5 7 10	4.50 P	12
713.8		Medium dense, brown SANDY GRAVEL; damp --FILL-- --RDR 2--		12	11 10 12	NP	6
	35						
710.1		Very stiff, brown SILTY CLAY LOAM, some gravel; damp --FILL-- --RDR 2--					
707.7		Medium dense to very dense Gravelly SAND to SANDY		13	8 19 18	2.13 B	12
	40						

GENERAL NOTES

Begin Drilling **10-27-2021** Complete Drilling **10-28-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA to 73.5', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **50.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG SGB-23

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 746.82 ft
North: 1950024.68 ft
East: 999579.08 ft
Station: 1394+94.91
Offset: 4.67 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		GRAVEL; damp to saturated --RDR 2--						
			45		14	9 14 18	NP	5
		--next drilling day continued from 50.0 feet; measured ground water at 47.0 feet--						
		--3-inch thick silty loam lens; saturated--	50		15	6 16 24	NP	9
			55		16	6 15 19	NP	6
			60		17	3 10 50/5"	NP	7
			65		18	9 24 42	NP	14
			70		19	8 22 20	NP	11
		--heaving sand in augers--	75		20	50/0"	NR	
			80					

GENERAL NOTES

Begin Drilling **10-27-2021** Complete Drilling **10-28-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA to 73.5', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **50.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG SGB-23

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 746.82 ft
North: 1950024.68 ft
East: 999579.08 ft
Station: 1394+94.91
Offset: 4.67 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	666.3							
		Strong, light bluish gray, poor quality, DOLOSTONE; closely spaced, slightly weathered, horizontal and vertical joints, with 0 inch opening, slightly rough walls, and no infill.				CORE		
		--RUN 1: 80.5 to 90.5 feet--						
		--Recovery: 100%--						
		--RQD: 35%--						
			85		21			
		--Q_u=6,801 psi						
			90					
	656.3							
		Boring terminated at 90.00 ft						
			95					
			100					

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 **10-27-2021** Complete Drilling **10-28-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **RH&JD** Logger **D. You** Checked by **C. Marin**
Drilling Method **2.25" ID HSA to 73.5', mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.50 ft**
At Completion of Drilling ▼ **50.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG SGB-24

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 759.16 ft
North: 1949966.69 ft
East: 1000439.16 ft
Station: 1403+62.29
Offset: 50.61 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	758.8	4-inch thick ASPHALT --PAVEMENT--						
	757.8	12-inch thick CONCRETE --PAVEMENT--						
		Very stiff, gray SILTY CLAY, some gravel; damp			1	3 4 7	2.71 B	7
	756.3	--FILL-- --RDR 2--						
		Loose, brown, Gravelly SANDY LOAM; wet			2	6 6 3 3	NP	9
	754.4	--FILL-- --RDR 2--	5					
		Medium dense, brown Gravelly LOAM; moist			3	2 4 6 6	NP	16
	752.7	--FILL-- --%Gravel=23.1-- --%Sand=34.5-- --%Silt=28.2-- --%Clay=14.3--			4	2 4 5 6	1.72 B	12
	750.4	Stiff, brown, Gravelly CLAY LOAM; moist						
		--FILL-- --RDR 2--	10		5	9 8 7 6	NP	7
		Medium dense, brown Gravelly						
	748.2	SANDY LOAM; damp --RDR 2--						
		Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **3.50 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG SGB-25

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 759.41 ft
North: 1949938.77 ft
East: 1000570.87 ft
Station: 1404+95.38
Offset: 24.08 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	759.1	4-inch thick ASPHALT --PAVEMENT--						
	758.3	9-inch thick CONCRETE with rebar --PAVEMENT--						
		Hard, gray SILTY CLAY LOAM to CLAY LOAM, some gravel; damp --FILL-- --RDR 2--			1	5 7 7	> 4.50 P	11
					2	7 8 7 4	> 4.50 P	16
			5		3	4 4 7 10	3.77 B	17
	752.4	Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--			4	8 12 15 19	8.28 B	17
			10		5	8 10 16 19	6.97 B	17
					6	8 12 17	8.58 B	20
	744.4		15		7	8 10 14	5.99 B	17
		Boring terminated at 15.00 ft						
			20					

GENERAL NOTES

Begin Drilling **04-14-2022** Complete Drilling **04-14-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-26

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 757.43 ft
North: 1949999.17 ft
East: 1001009.92 ft
Station: 1409+38.85
Offset: 64.84 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	756.5	Medium dense, black SANDY LOAM, little gravel; damp			1	14 10 4 4	NP	7
		--Qu: 2.00P--						
		Stiff to very stiff, gray SILTY CLAY, trace to some gravel; moist			2	3 5 9 7	1.64 B	22
	753.1							
		Medium dense, brown, medium to coarse SAND, little gravel; damp	5		3	9 9 10 8	NP	5
	751.7							
		Hard, brown to gray SILTY CLAY LOAM, trace gravel; damp to moist			4	7 11 12 11	7.29 B	14
		--1-inch thick sand lens; wet--			5	5 6 8 10	4.43 B	17
	747.4		10					
		Boring terminated at 10.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling **12-08-2021** Complete Drilling **12-08-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&AP** Logger **A. Scifers** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.00 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG SGB-27

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 754.86 ft
North: 1949920.74 ft
East: 1001278.59 ft
Station: 1412+02.53
Offset: 29.22 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	754.1	9-inch thick ASPHALT --PAVEMENT--						
		Very stiff, black, brown and gray CLAY to SILTY CLAY, little gravel; damp --FILL--			1	4 4 4 7	2.25 P	29
	752.1	--RDR 2--						
		Stiff to hard, brown and gray SILTY CLAY, trace to little gravel; damp --RDR 2-3-- --%Gravel=16.0-- --%Sand=15.4-- --%Silt=38.4-- --%Clay=30.2--	5		2	3 4 9 13	1.75 P	18
					3	9 11 18 12	2.25 P	17
					4	10 12 16 22	4.00 P	17
			10		5	11 15 20 23	7.13 B	17
					6	8 14 17	7.22 B	16
					7	11 13 12	7.22 B	17
	739.9		15					
		Boring terminated at 15.00 ft						
			20					

GENERAL NOTES

Begin Drilling **04-13-2022** Complete Drilling **04-13-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **20CME55T[81%]**
Driller **RR&JD** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" ID HSA; boring backfilled 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 SGB-28

WEI Job No.: 121-03-01

Client **Gannett Fleming**
Project **US Route 20 From Randall Rd to Shales Parkway**
Location **Elgin, Illinois**

Datum: NAVD 88
Elevation: 753.73 ft
North: 1949992.50 ft
East: 1001579.46 ft
Station: 1415+05.77
Offset: 31.61 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	753.5	3-inch thick ASPHALT						
	753.2	--PAVEMENT--						
	752.7	4-inch thick, red BRICK PAVERS						
		--PAVEMENT--						
		5-inch thick CONCRETE						
		--PAVEMENT--						
	750.5	Medium dense, brown Gravelly SAND; damp to moist						
		--FILL--						
	749.5	--RDR 2--						
		Gray, fine SAND, trace gravel; damp	5					
		--FILL--						
		Very stiff, dark brown SILTY CLAY, trace gravel, concrete and brick fragments; damp						
	747.0	--FILL--						
		--RDR 2--						
	745.2	Dark brown SILTY CLAY LOAM to LOAM, trace brick and concrete fragments; damp						
		--FILL--						
		--RDR 2--	10					
		Medium dense, gray SANDY GRAVEL; damp						
	742.7	--RDR 2--						
		Boring terminated at 11.00 ft						
			15					
			20					

Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
1	3, 8, 7, 6	NP	7
2	11, 7, 9, 15	NP	7
3	4, 5, 7, 22	2.05 B	21
4	2, 3, 5, 10	NA	17
5	2, 4, 8, 10	NP	

GENERAL NOTES

Begin Drilling **04-12-2022** Complete Drilling **04-12-2022**
Drilling Contractor **Wang Testing Services** Drill Rig **21GeoT[92%]**
Driller **AG&CB** Logger **M. Rojo** Checked by **C. Marin**
Drilling Method **3.25" ID HSA; boring backfilled 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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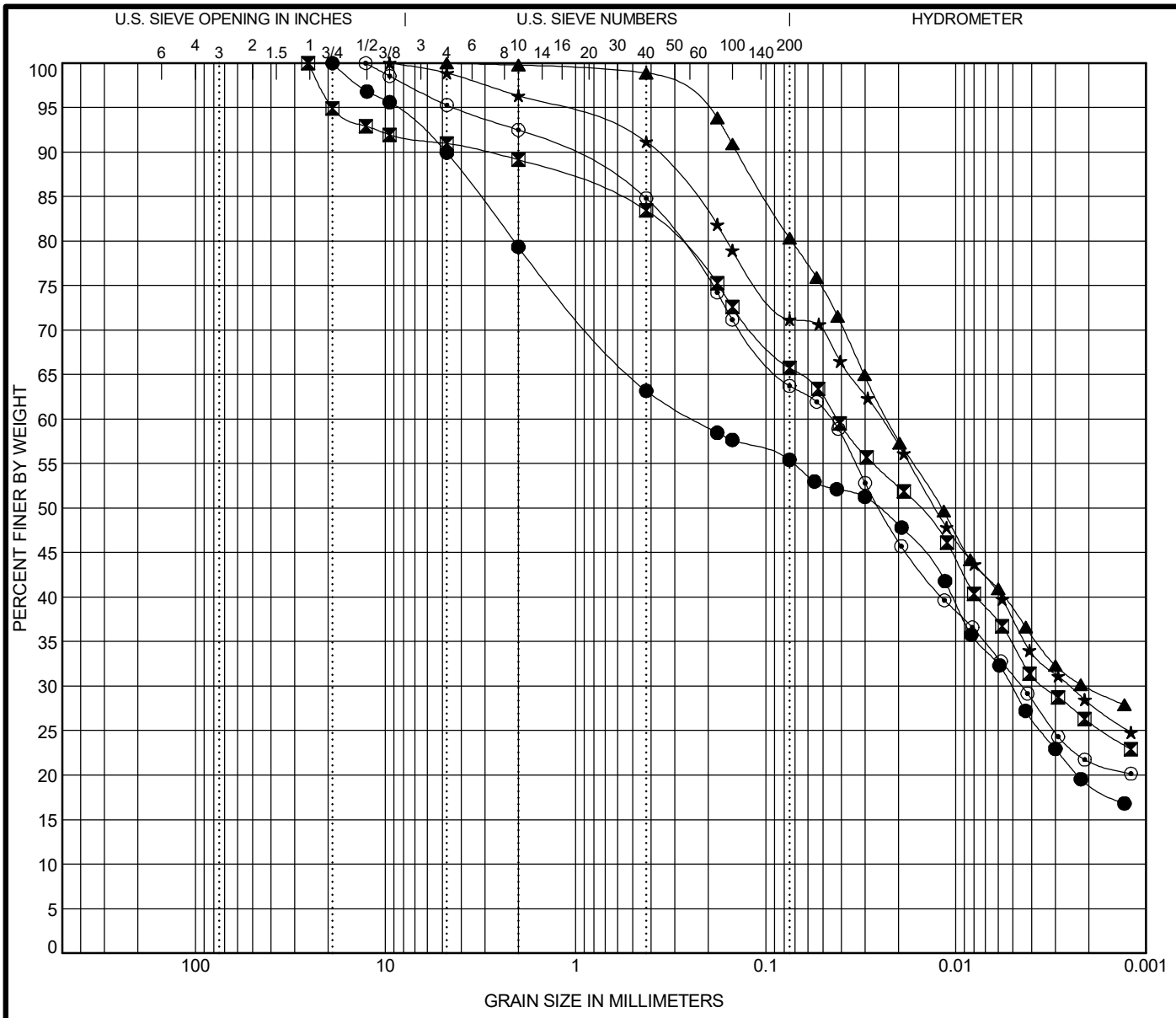
APPENDIX B



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification	IDH Classification	LL	PL	PI	Cc	Cu
● 45-0004-BSB-01#9 21.0 ft	**Gravelly Clay Loam**	**31**	**13**	**18**		
⊠ 45-0004-BSB-02#9 23.5 ft	**Clay Loam**	**24**	**11**	**13**		
▲ 45-0004-BSB-03#3 6.0 ft	**Silty Clay Loam**	**56**	**19**	**37**		
★ 45-0004-BSB-06#1026.0 ft	**Clay Loam**	**24**	**11**	**13**		
⊙ 45-0004-BSB-10#1133.5 ft	**Clay Loam**	**22**	**11**	**11**		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 45-0004-BSB-01#9 21.0 ft	**19**	**0.238**	**0.005**		**20.6**	**24.0**	**36.3**	**19.0**
⊠ 45-0004-BSB-02#9 23.5 ft	**25.4**	**0.042**	**0.003**		**10.9**	**23.5**	**39.7**	**26.0**
▲ 45-0004-BSB-03#3 6.0 ft	**4.75**	**0.023**	**0.002**		**0.2**	**19.6**	**50.4**	**29.8**
★ 45-0004-BSB-06#1026.0 ft	**9.5**	**0.025**	**0.003**		**3.7**	**25.2**	**43.0**	**28.1**
⊙ 45-0004-BSB-10#1133.5 ft	**12.7**	**0.046**	**0.005**		**7.5**	**28.8**	**42.1**	**21.6**

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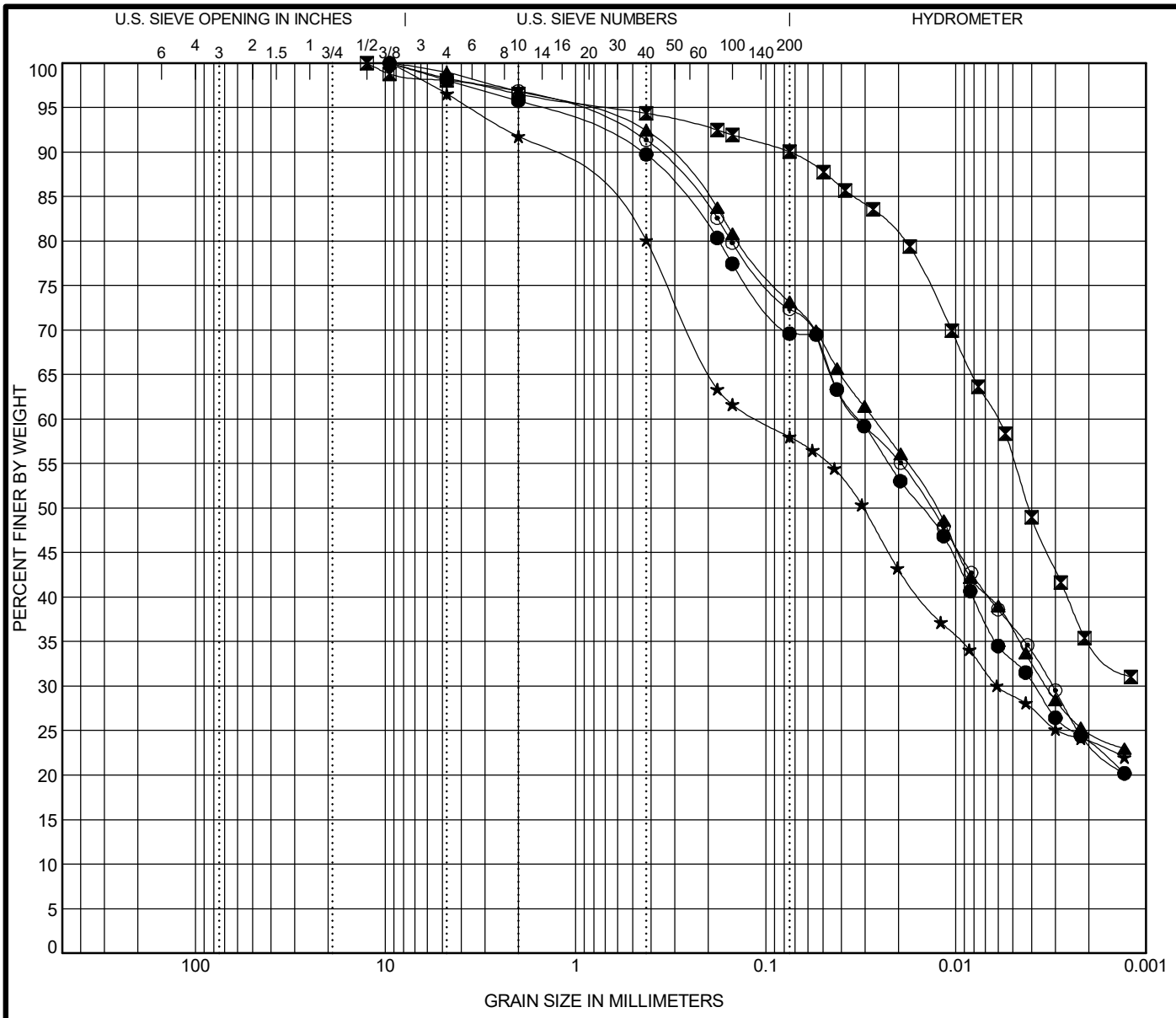

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification	IDH Classification	LL	PL	PI	Cc	Cu
● 45-0004-BSB-12#1548.5 ft	**Clay Loam**	**25**	**10**	**15**		
⊠ 45-0005-BSB-02#7 16.0 ft	**Silty Clay**	**34**	**15**	**19**		
▲ 45-0005-BSB-04#1648.5 ft	**Clay Loam**	**25**	**11**	**14**		
★ 45-0006-BSB-01#9 21.0 ft	**Clay Loam**	**44**	**14**	**30**		
⊙ 45-0006-BSB-05#1543.5 ft	**Silty Clay Loam**	**27**	**11**	**16**		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● 45-0004-BSB-12#1548.5 ft	**9.5**	**0.032**	**0.004**		**4.2**	**26.2**	**46.0**	**23.6**
⊠ 45-0005-BSB-02#7 16.0 ft	**12.5**	**0.006**			**3.5**	**6.6**	**54.9**	**35.0**
▲ 45-0005-BSB-04#1648.5 ft	**9.5**	**0.027**	**0.003**		**3.2**	**23.8**	**48.2**	**24.9**
★ 45-0006-BSB-01#9 21.0 ft	**9.5**	**0.11**	**0.006**		**8.2**	**33.8**	**34.2**	**23.7**
⊙ 45-0006-BSB-05#1543.5 ft	**9.5**	**0.032**	**0.003**		**3.1**	**24.6**	**48.6**	**23.6**

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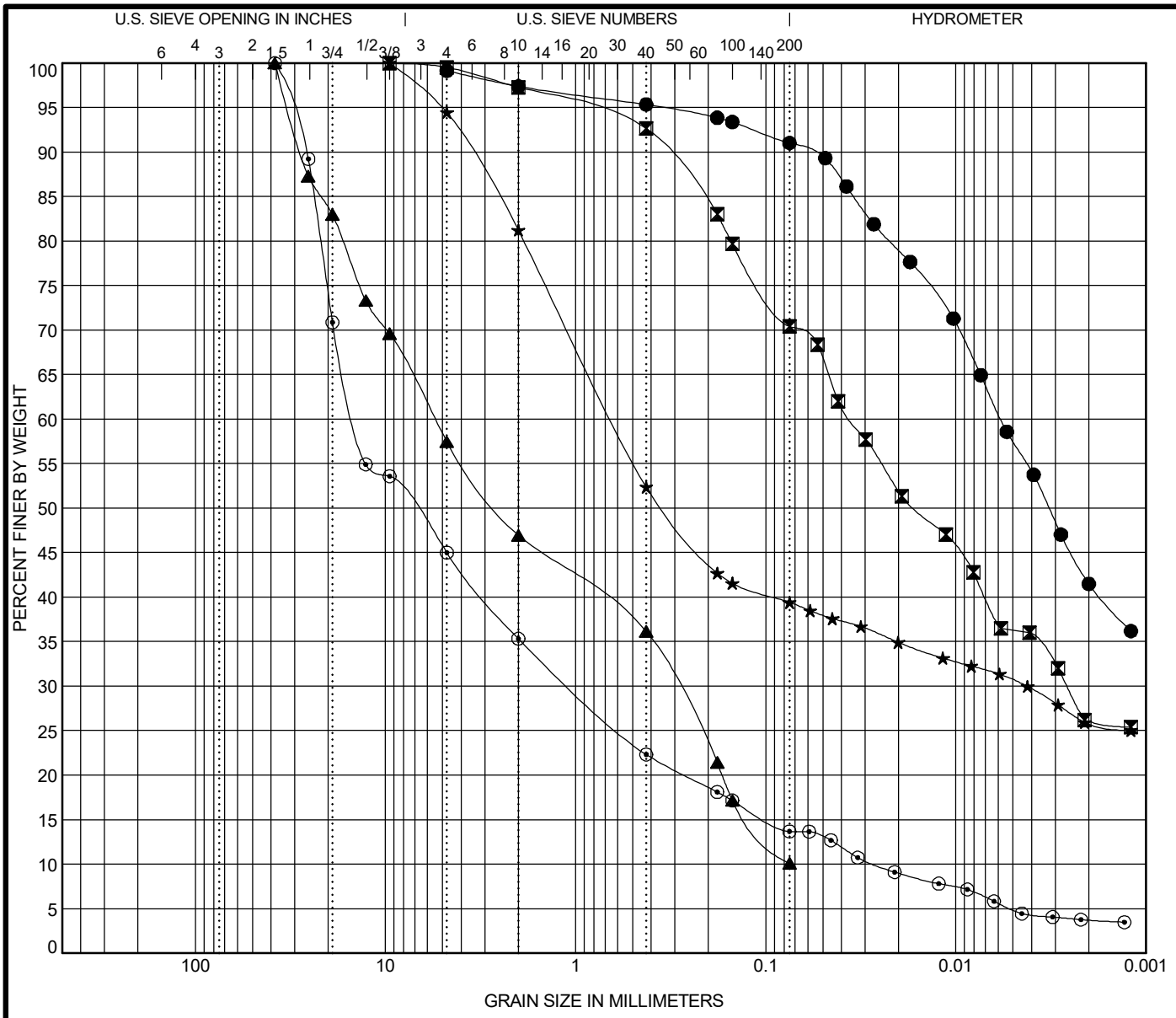

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B10-NAW-01#3	6.0 ft	**Silty Clay**	**32**	**14**	**18**		
⊠ B10-NAW-02#10	23.5 ft	**Clay Loam**	**24**	**12**	**12**		
▲ B10-NAW-04#7	16.0 ft	**Gravelly Loam**	**NP**	**NP**	**NP**	**0.22**	**73.79**
★ B11+13-NAW-01#1	1.0 ft	**Gravelly Sandy Clay**	**57**	**21**	**36**		
⊙ B11+13-NAW-01#2	3.5 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**2.90**	**536.96**

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B10-NAW-01#3	6.0 ft	**4.75**	**0.006**			**2.6**	**6.4**	**49.5**	**41.5**
⊠ B10-NAW-02#10	23.5 ft	**9.5**	**0.036**	**0.003**		**2.7**	**27.0**	**44.2**	**26.1**
▲ B10-NAW-04#7	16.0 ft	**38.1**	**5.492**	**0.297**		**53.1**		**10.1**	
★ B11+13-NAW-01#1	1.0 ft	**9.5**	**0.64**	**0.004**		**18.7**	**41.9**	**13.5**	**25.8**
⊙ B11+13-NAW-01#2	3.5 ft	**38.1**	**14.439**	**1.061**	**0.027**	**64.7**	**21.7**	**10.0**	**3.7**

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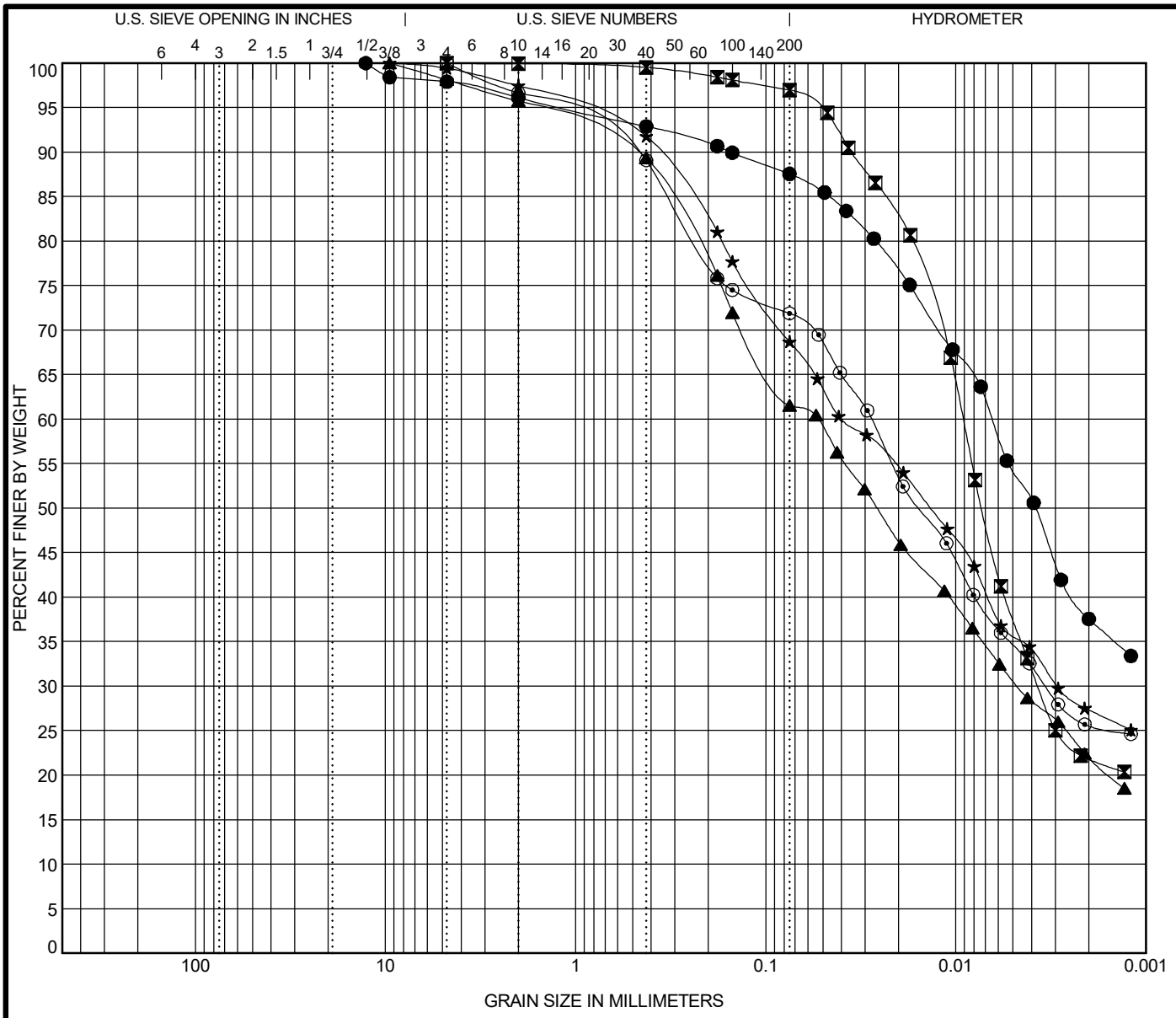

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification	IDH Classification	LL	PL	PI	Cc	Cu
● B11+13-NAW-01#6 13.5 ft	**Silty Clay**	**30**	**13**	**17**		
⊠ B11+13-NAW-02#11 26.0 ft	**Silty Clay Loam**	**29**	**15**	**14**		
▲ B12-NAW-02#6 13.5 ft	**Clay Loam**	**21**	**10**	**11**		
★ B12-NAW-02#9 21.0 ft	**Clay Loam**	**24**	**9**	**15**		
⊙ B14-NAW-01#2 3.5 ft	**Clay Loam**	**46**	**21**	**25**		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B11+13-NAW-01#6 13.5 ft	**12.7**	**0.006**			**3.9**	**8.6**	**50.0**	**37.5**
⊠ B11+13-NAW-02#11 26.0 ft	**4.75**	**0.009**	**0.004**		**0.1**	**3.0**	**75.1**	**21.9**
▲ B12-NAW-02#6 13.5 ft	**9.5**	**0.053**	**0.005**		**4.2**	**34.3**	**39.5**	**22.0**
★ B12-NAW-02#9 21.0 ft	**9.5**	**0.039**	**0.003**		**2.5**	**28.9**	**41.2**	**27.3**
⊙ B14-NAW-01#2 3.5 ft	**4.75**	**0.028**	**0.003**		**3.3**	**24.9**	**46.2**	**25.6**

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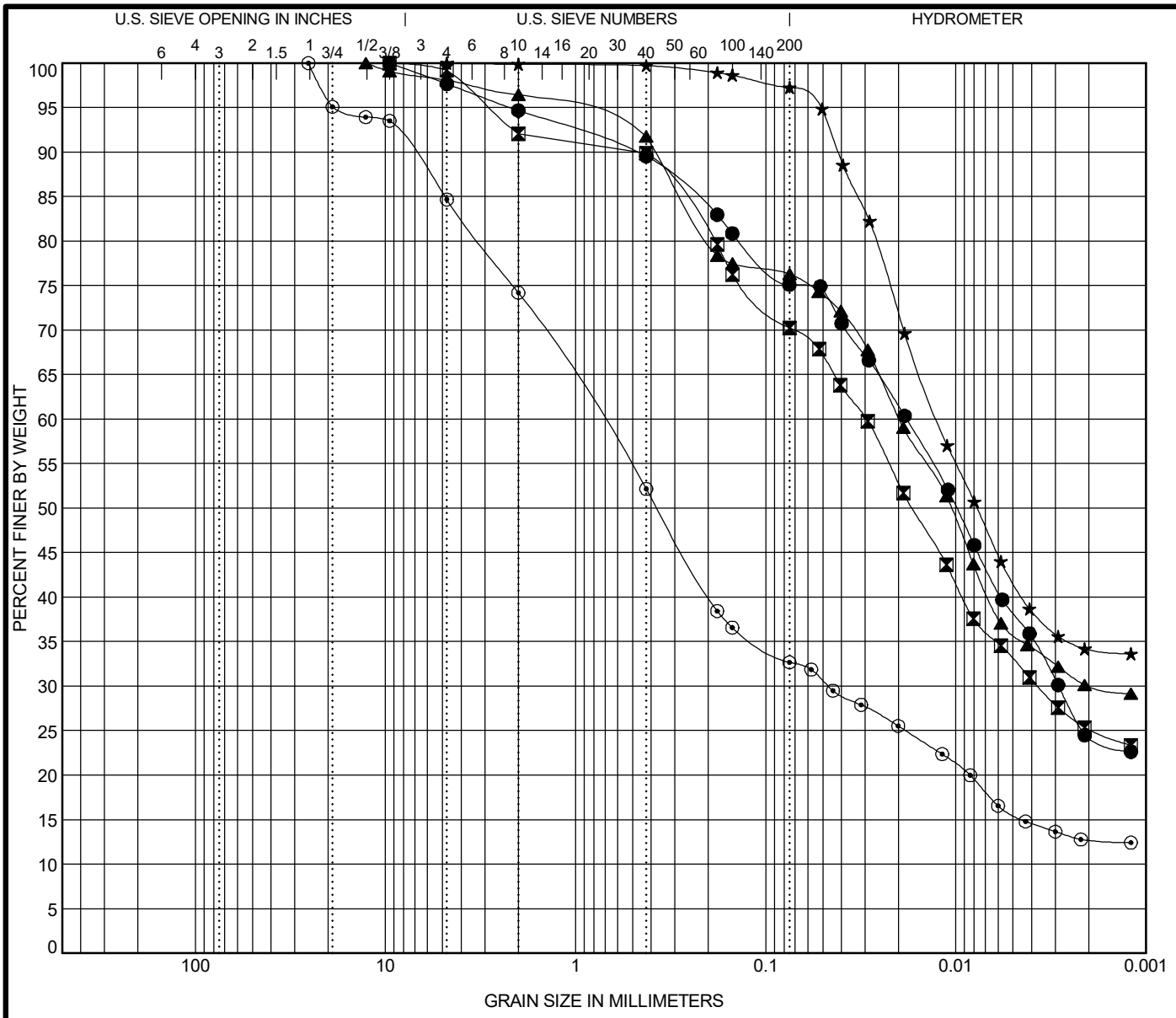

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B14-NAW-02#7	16.0 ft	**Silty Clay Loam**	**23**	**13**	**10**		
⊠ B14-NAW-08#1	1.0 ft	**Clay Loam**	**32**	**14**	**18**		
▲ B15-NAW-06#3	6.0 ft	**Clay**	**42**	**14**	**28**		
★ B16-NAW-01#2	3.5 ft	**Silty Clay**	**48**	**16**	**32**		
⊙ B17-NAW-01#1	1.0 ft	**Gravelly Sandy Loam**	**33**	**19**	**14**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B14-NAW-02#7	16.0 ft	**9.5**	**0.018**	**0.003**		**5.3**	**19.6**	**50.8**	**24.3**
⊠ B14-NAW-08#1	1.0 ft	**9.5**	**0.03**	**0.004**		**7.9**	**21.9**	**45.0**	**25.2**
▲ B15-NAW-06#3	6.0 ft	**12.7**	**0.02**	**0.002**		**3.5**	**20.2**	**46.2**	**30.0**
★ B16-NAW-01#2	3.5 ft	**4.75**	**0.013**			**0.1**	**2.7**	**63.0**	**34.1**
⊙ B17-NAW-01#1	1.0 ft	**25.4**	**0.737**	**0.047**		**25.8**	**41.6**	**19.9**	**12.7**

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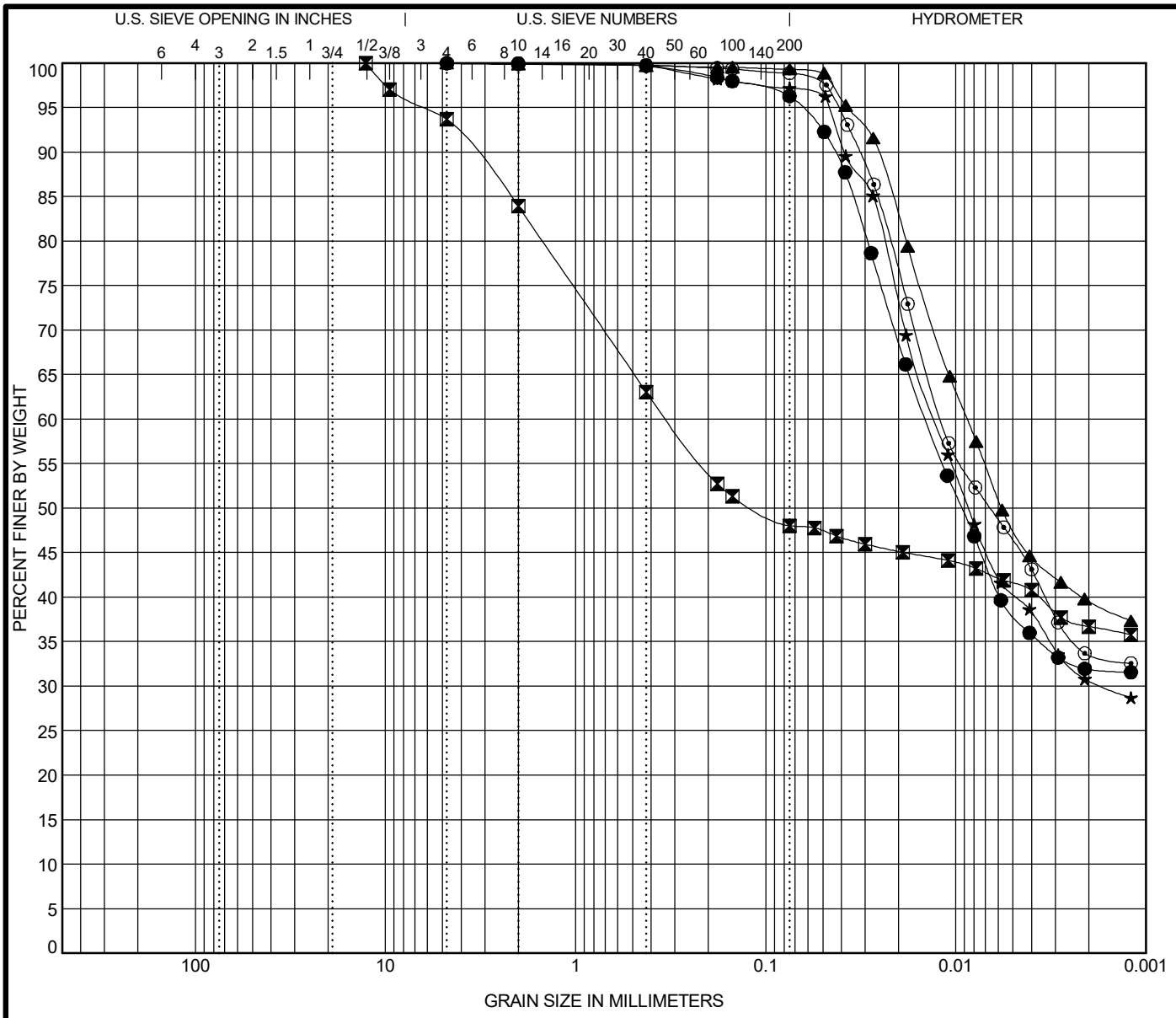

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	B17-NAW-08#2	3.5 ft	**Silty Clay**	**41**	**15**	**26**		
⊠	B17-NAW-10#4	8.5 ft	**Gravelly Clay**	**59**	**21**	**38**		
▲	B18-NAW-03#2	3.5 ft	**Silty Clay**	**53**	**14**	**39**		
★	B18-NAW-03#3	6.0 ft	**Silty Clay**	**43**	**13**	**30**		
⊙	B20-NAW-03#1	1.0 ft	**Silty Clay**	**48**	**16**	**32**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B17-NAW-08#2	3.5 ft	**4.75**	**0.014**			**0.0**	**3.8**	**64.3**	**31.9**
⊠	B17-NAW-10#4	8.5 ft	**12.7**	**0.33**			**16.1**	**35.9**	**11.3**	**36.7**
▲	B18-NAW-03#2	3.5 ft	**4.75**	**0.009**			**0.1**	**0.6**	**59.8**	**39.6**
★	B18-NAW-03#3	6.0 ft	**4.75**	**0.013**	**0.002**		**0.0**	**2.8**	**66.6**	**30.6**
⊙	B20-NAW-03#1	1.0 ft	**4.75**	**0.012**			**0.1**	**1.0**	**65.3**	**33.6**

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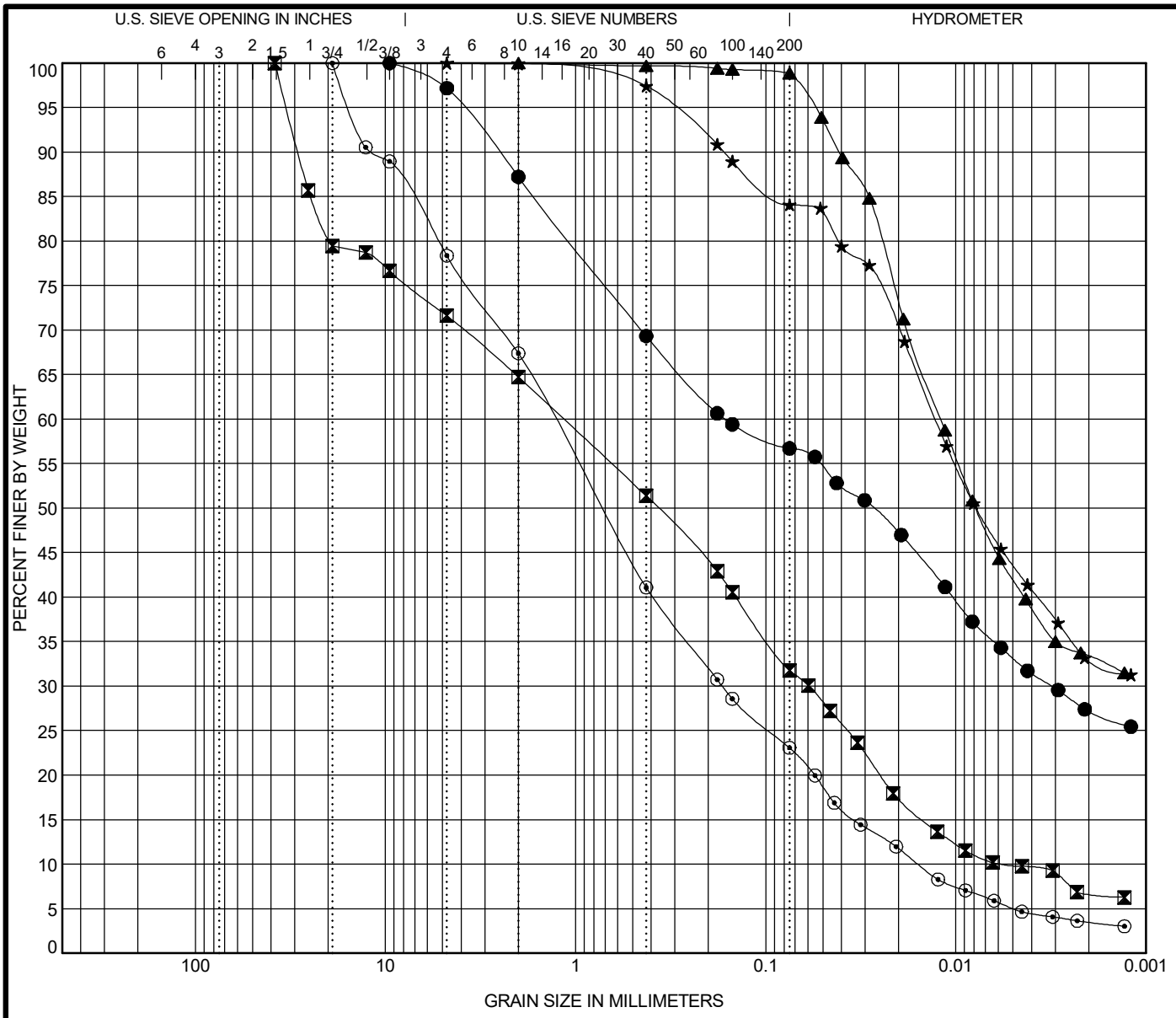

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B20-NAW-04#4	8.5 ft	**Clay**	**49**	**19**	**30**		
⊠ B20-NAW-04#7	16.0 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**0.54**	**207.53**
▲ B4-NAW-01#2	3.5 ft	**Silty Clay**	**NP**	**NP**	**NP**		
★ B4-NAW-04#3	6.0 ft	**Silty Clay**	**45**	**17**	**28**		
⊙ B5-NAW-03#2	3.5 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**1.41**	**82.26**

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B20-NAW-04#4	8.5 ft	**9.5**	**0.164**	**0.003**		**12.8**	**30.6**	**29.5**	**27.2**
⊠ B20-NAW-04#7	16.0 ft	**38.1**	**1.154**	**0.059**	**0.006**	**35.3**	**33.1**	**25.0**	**6.7**
▲ B4-NAW-01#2	3.5 ft	**2**	**0.012**			**0.0**	**1.3**	**65.4**	**33.3**
★ B4-NAW-04#3	6.0 ft	**4.75**	**0.013**			**0.1**	**15.9**	**51.1**	**33.0**
⊙ B5-NAW-03#2	3.5 ft	**19**	**1.294**	**0.169**	**0.016**	**32.6**	**44.5**	**19.5**	**3.5**

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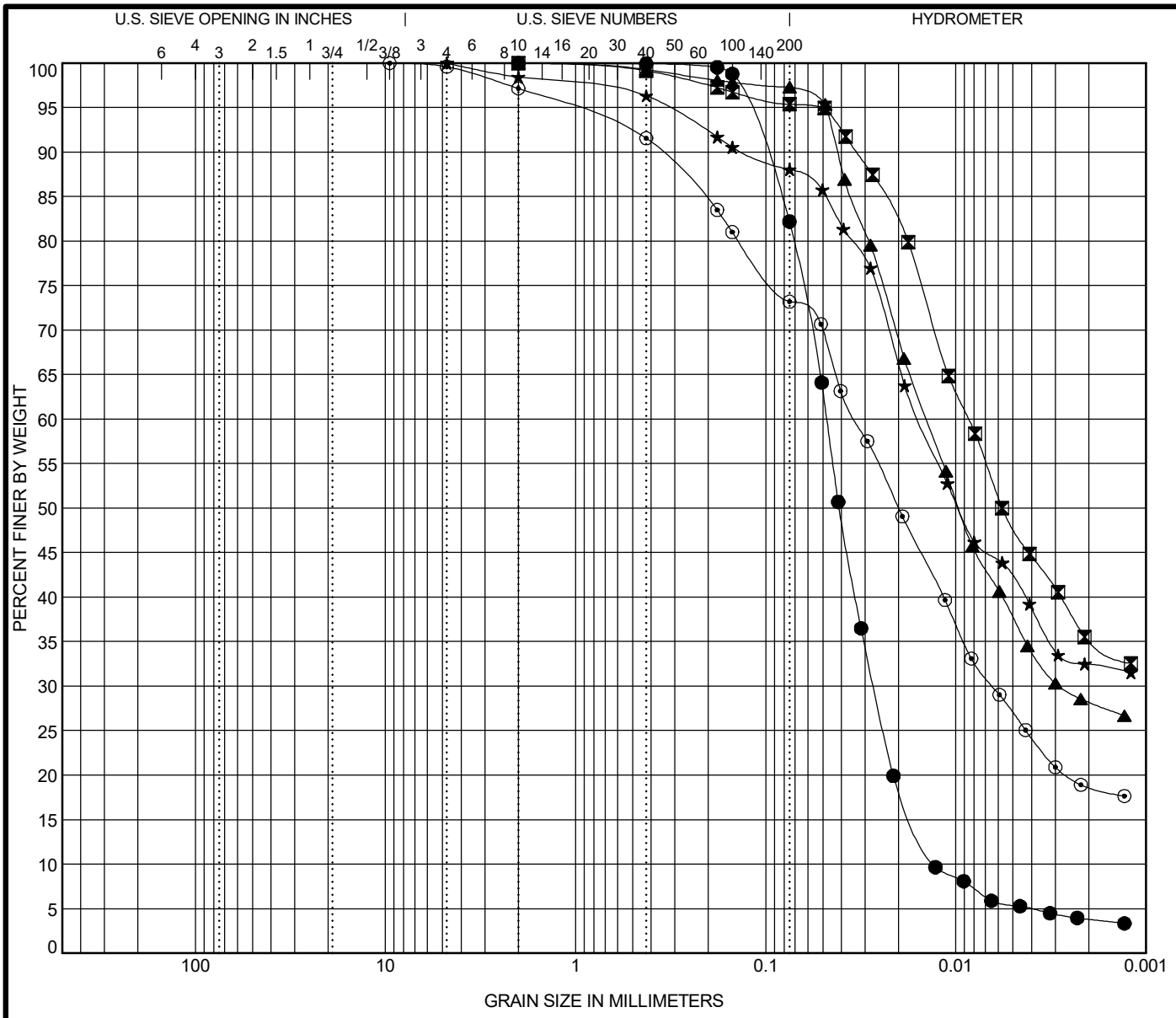

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	B5-NAW-07#4	8.5 ft	**Silty Loam**	**NP**	**NP**	**NP**	**1.17**	**3.67**
⊠	B5-NAW-10#2	3.5 ft	**Silty Clay**	**51**	**18**	**33**		
▲	B5-NAW-13#3	6.0 ft	**Silty Clay Loam**	**NP**	**NP**	**NP**		
★	B6-NAW-01#1	1.0 ft	**Silty Clay**	**46**	**14**	**32**		
⊙	B6-NAW-01#2	3.5 ft	**Silty Loam**	**23**	**10**	**13**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B5-NAW-07#4	8.5 ft	**2**	**0.048**	**0.027**	**0.013**	**0.0**	**18.4**	**77.8**	**3.8**
⊠	B5-NAW-10#2	3.5 ft	**2**	**0.009**			**0.0**	**4.6**	**60.1**	**35.3**
▲	B5-NAW-13#3	6.0 ft	**2**	**0.014**	**0.003**		**0.0**	**2.7**	**69.1**	**28.2**
★	B6-NAW-01#1	1.0 ft	**4.75**	**0.016**			**1.6**	**10.5**	**55.6**	**32.4**
⊙	B6-NAW-01#2	3.5 ft	**9.5**	**0.034**	**0.006**		**2.8**	**24.1**	**54.4**	**18.7**

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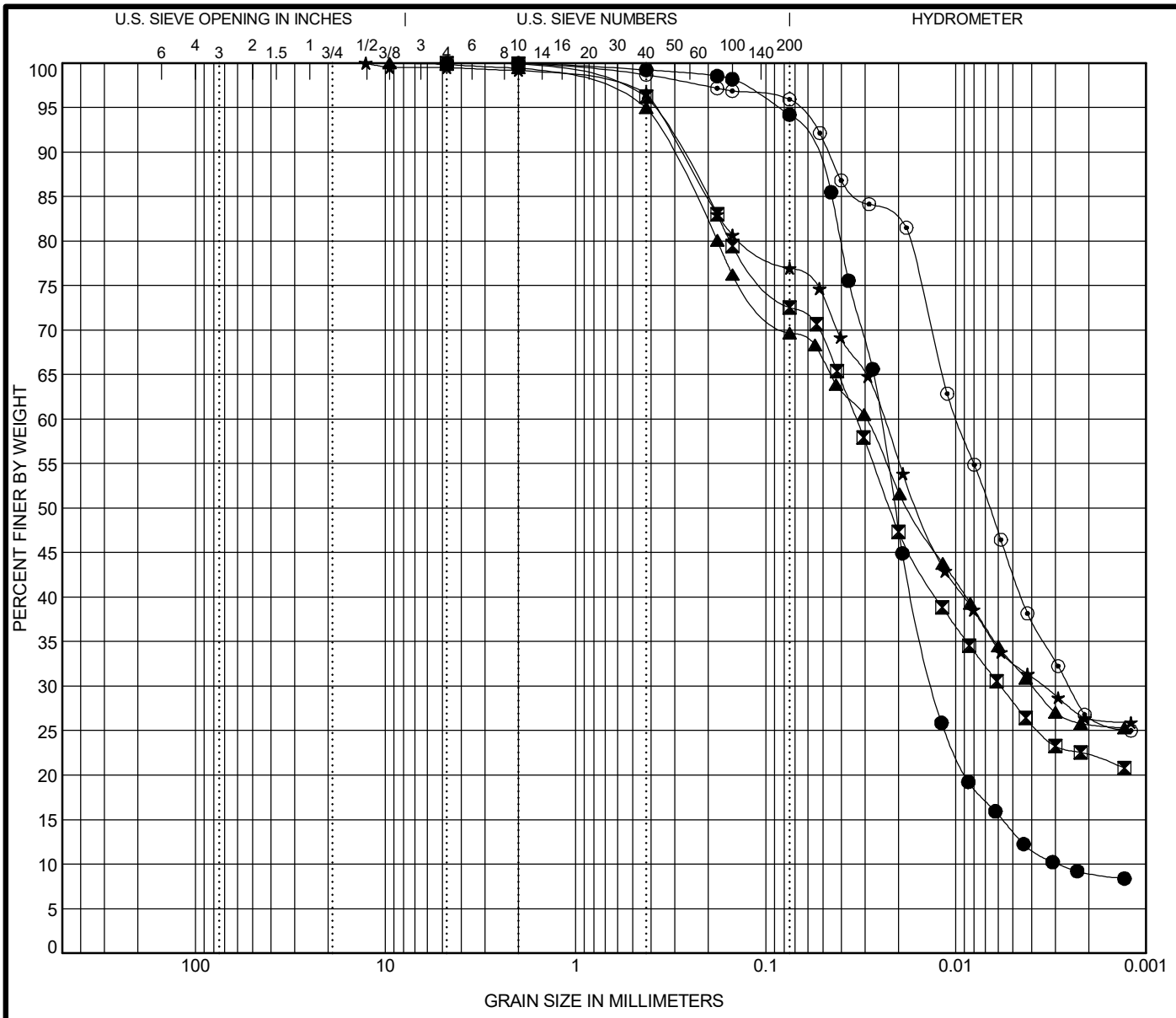

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	B6-NAW-01#4	8.5 ft	**Silt**	**NP**	**NP**	**NP**	**2.41**	**8.54**
⊠	B6-NAW-03#2	3.5 ft	**Silty Clay Loam**	**39**	**16**	**23**		
▲	B6-NAW-03#3	6.0 ft	**Clay Loam**	**NP**	**NP**	**NP**		
★	B6-NAW-04#2	3.5 ft	**Silty Clay Loam**	**40**	**13**	**27**		
⊙	B6-NAW-05#1	1.0 ft	**Silty Clay Loam**	**68**	**32**	**36**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B6-NAW-01#4	8.5 ft	**4.75**	**0.025**	**0.013**	**0.003**	**0.0**	**6.0**	**85.0**	**9.0**
⊠	B6-NAW-03#2	3.5 ft	**4.75**	**0.033**	**0.006**		**0.0**	**27.5**	**50.2**	**22.2**
▲	B6-NAW-03#3	6.0 ft	**9.5**	**0.03**	**0.004**		**0.5**	**29.9**	**43.9**	**25.7**
★	B6-NAW-04#2	3.5 ft	**12.7**	**0.024**	**0.003**		**0.8**	**22.3**	**50.5**	**26.3**
⊙	B6-NAW-05#1	1.0 ft	**2**	**0.01**	**0.003**		**0.0**	**4.2**	**69.2**	**26.6**

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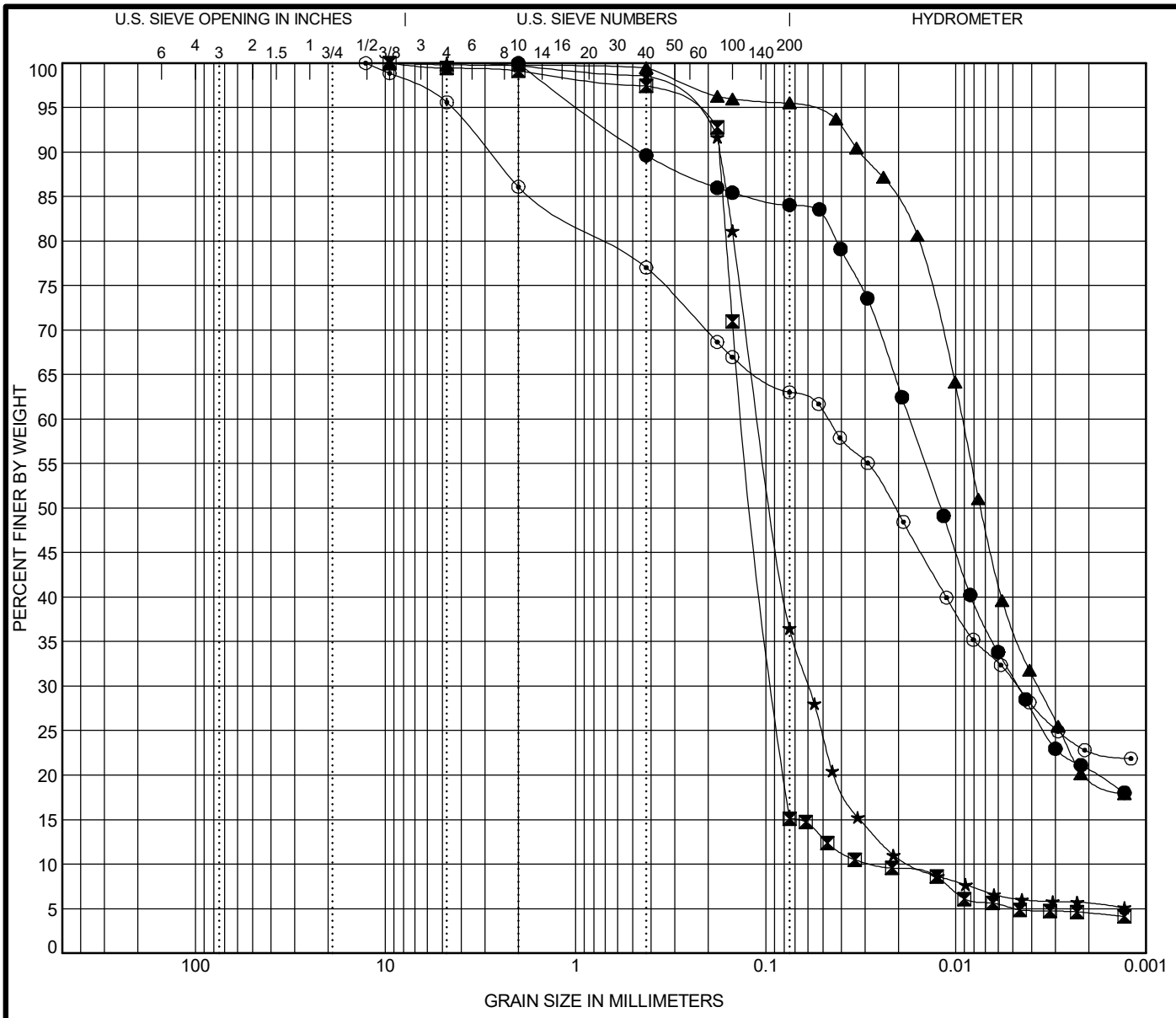

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B6-NAW-05#2	3.5 ft	**Silty Clay Loam**	**39**	**24**	**15**		
⊠ B6-NAW-05#6	13.5 ft	**Sand**	**NP**	**NP**	**NP**	**2.32**	**4.88**
▲ B6-NAW-08#8	18.5 ft	**Silty Loam**	**24**	**15**	**9**		
★ B6-NAW-09#5	11.0 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**1.93**	**6.34**
⊙ B6-NAW-10#2	3.5 ft	**Clay Loam**	**46**	**16**	**30**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B6-NAW-05#2	3.5 ft	**2**	**0.017**	**0.005**		**0.0**	**16.0**	**63.5**	**20.5**
⊠ B6-NAW-05#6	13.5 ft	**9.5**	**0.131**	**0.09**	**0.027**	**0.9**	**84.0**	**10.6**	**4.5**
▲ B6-NAW-08#8	18.5 ft	**9.5**	**0.009**	**0.004**		**0.2**	**4.3**	**75.7**	**19.8**
★ B6-NAW-09#5	11.0 ft	**4.75**	**0.108**	**0.06**	**0.017**	**0.3**	**63.6**	**30.5**	**5.6**
⊙ B6-NAW-10#2	3.5 ft	**12.7**	**0.047**	**0.005**		**13.9**	**23.2**	**40.2**	**22.7**

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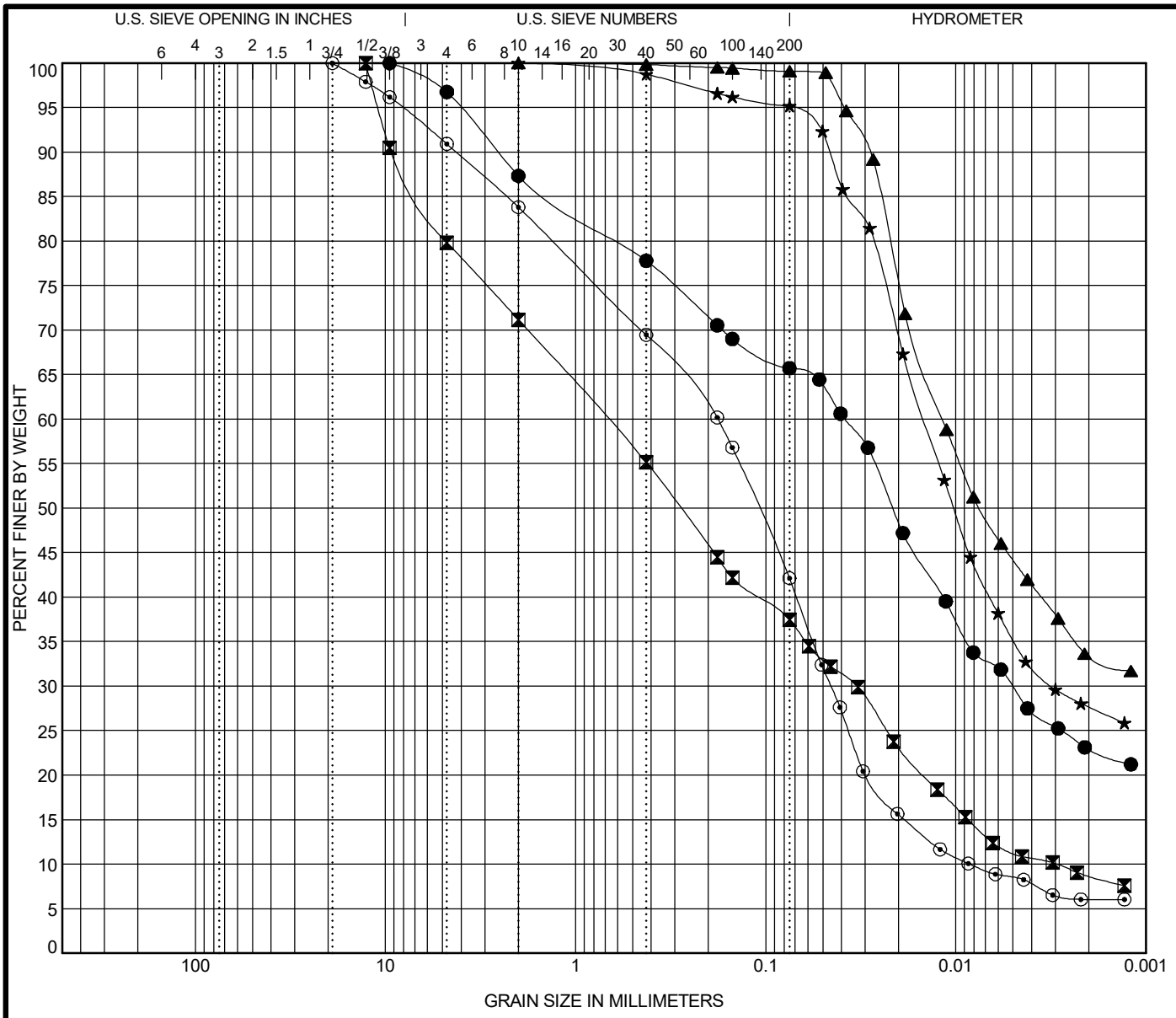

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	B6-NAW-11#2	3.5 ft	**Clay Loam**	**39**	**16**	**23**		
⊠	B6-NAW-11#3	6.0 ft	**Gravelly Loam**				**0.54**	**229.02**
▲	B6-NAW-19#2	3.5 ft	**Silty Clay**	**NP**	**NP**	**NP**		
★	B6-NAW-22#2	3.5 ft	**Silty Clay Loam**	**47**	**17**	**30**		
⊙	B6-NAW-22#6	13.5 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**1.37**	**21.07**

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B6-NAW-11#2	3.5 ft	**9.5**	**0.038**	**0.005**		**12.7**	**21.7**	**42.7**	**23.0**
⊠	B6-NAW-11#3	6.0 ft	**12.7**	**0.679**	**0.033**	**0.003**	**28.8**	**33.9**	**28.6**	**8.7**
▲	B6-NAW-19#2	3.5 ft	**2**	**0.012**			**0.0**	**0.9**	**65.6**	**33.5**
★	B6-NAW-22#2	3.5 ft	**2**	**0.015**	**0.003**		**0.0**	**4.9**	**67.5**	**27.7**
⊙	B6-NAW-22#6	13.5 ft	**19**	**0.178**	**0.045**	**0.008**	**16.2**	**42.0**	**35.8**	**6.0**

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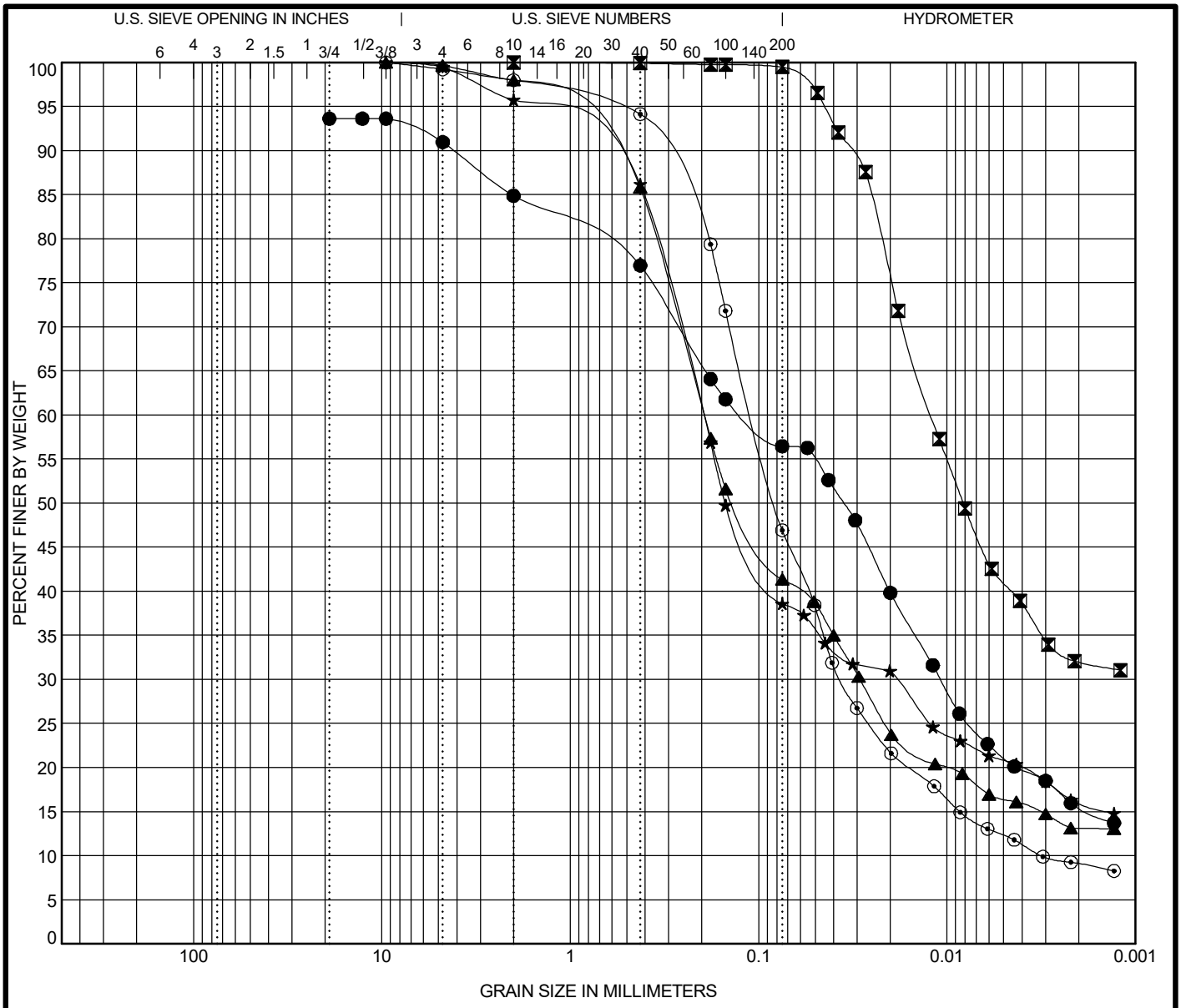
GRAIN SIZE DISTRIBUTION

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B6-NAW-29#3	6.0 ft	**Gravelly Loam**	**NP**	**NP**	**NP**		
⊠ B7-NAW-05#5	11.0 ft	**Silty Clay**	**44**	**14**	**30**		
▲ B7-NAW-05#6	13.5 ft	**Sandy Loam**	**NP**	**NP**	**NP**		
★ B7-NAW-09#3	6.0 ft	**Sandy Loam**	**25**	**11**	**14**		
⊙ B7-NAW-09#6	13.5 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**3.89**	**33.98**

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B6-NAW-29#3	6.0 ft	**19**	**0.119**	**0.011**		**15.1**	**28.4**	**40.9**	**15.5**
⊠ B7-NAW-05#5	11.0 ft	**2**	**0.012**			**0.0**	**0.6**	**67.4**	**32.0**
▲ B7-NAW-05#6	13.5 ft	**9.5**	**0.195**	**0.029**		**2.0**	**56.7**	**28.2**	**13.1**
★ B7-NAW-09#3	6.0 ft	**9.5**	**0.197**	**0.019**		**4.2**	**57.2**	**22.5**	**16.0**
⊙ B7-NAW-09#6	13.5 ft	**9.5**	**0.108**	**0.036**	**0.003**	**2.0**	**51.4**	**37.6**	**9.1**

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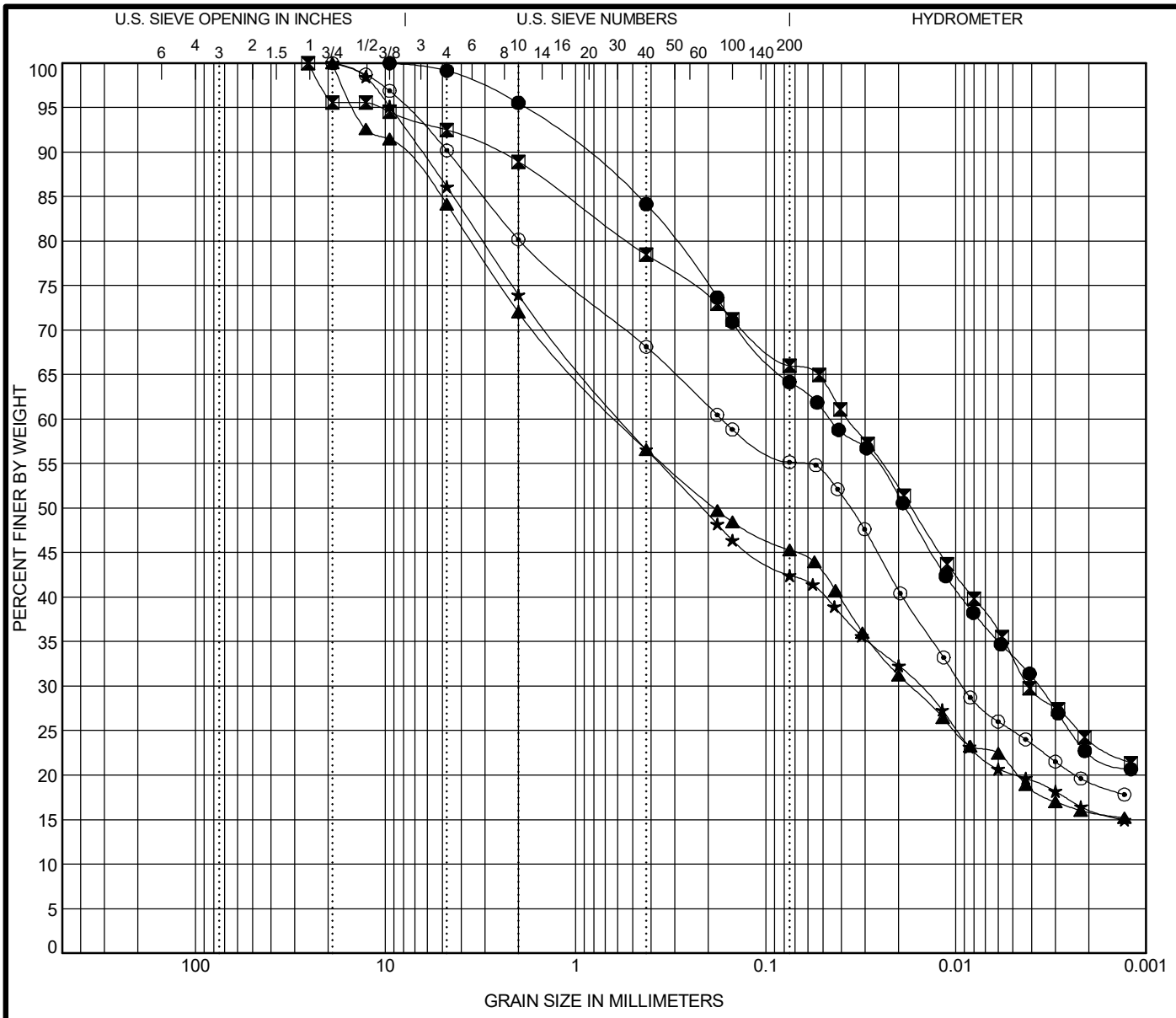

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● B7-NAW-10#6	13.5 ft	**Clay Loam**	**21**	**12**	**9**		
⊠ B7-NAW-15#2	3.5 ft	**Clay Loam**	**25**	**13**	**12**		
▲ B7-NAW-35#3	6.0 ft	**Gravelly Clay Loam**	**37**	**14**	**23**		
★ B9-NAW-02#3	6.0 ft	**Gravelly Clay Loam**	**37**	**13**	**24**		
⊙ B9-NAW-02#6	13.5 ft	**Gravelly Clay Loam**	**43**	**15**	**28**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B7-NAW-10#6	13.5 ft	**9.5**	**0.046**	**0.004**		**4.5**	**31.5**	**41.5**	**22.5**
⊠ B7-NAW-15#2	3.5 ft	**25.4**	**0.037**	**0.004**		**11.1**	**23.0**	**41.9**	**24.0**
▲ B7-NAW-35#3	6.0 ft	**19**	**0.599**	**0.017**		**28.0**	**26.8**	**29.4**	**15.9**
★ B9-NAW-02#3	6.0 ft	**19**	**0.577**	**0.016**		**26.0**	**31.6**	**26.2**	**16.2**
⊙ B9-NAW-02#6	13.5 ft	**19**	**0.171**	**0.009**		**19.8**	**25.0**	**35.9**	**19.3**

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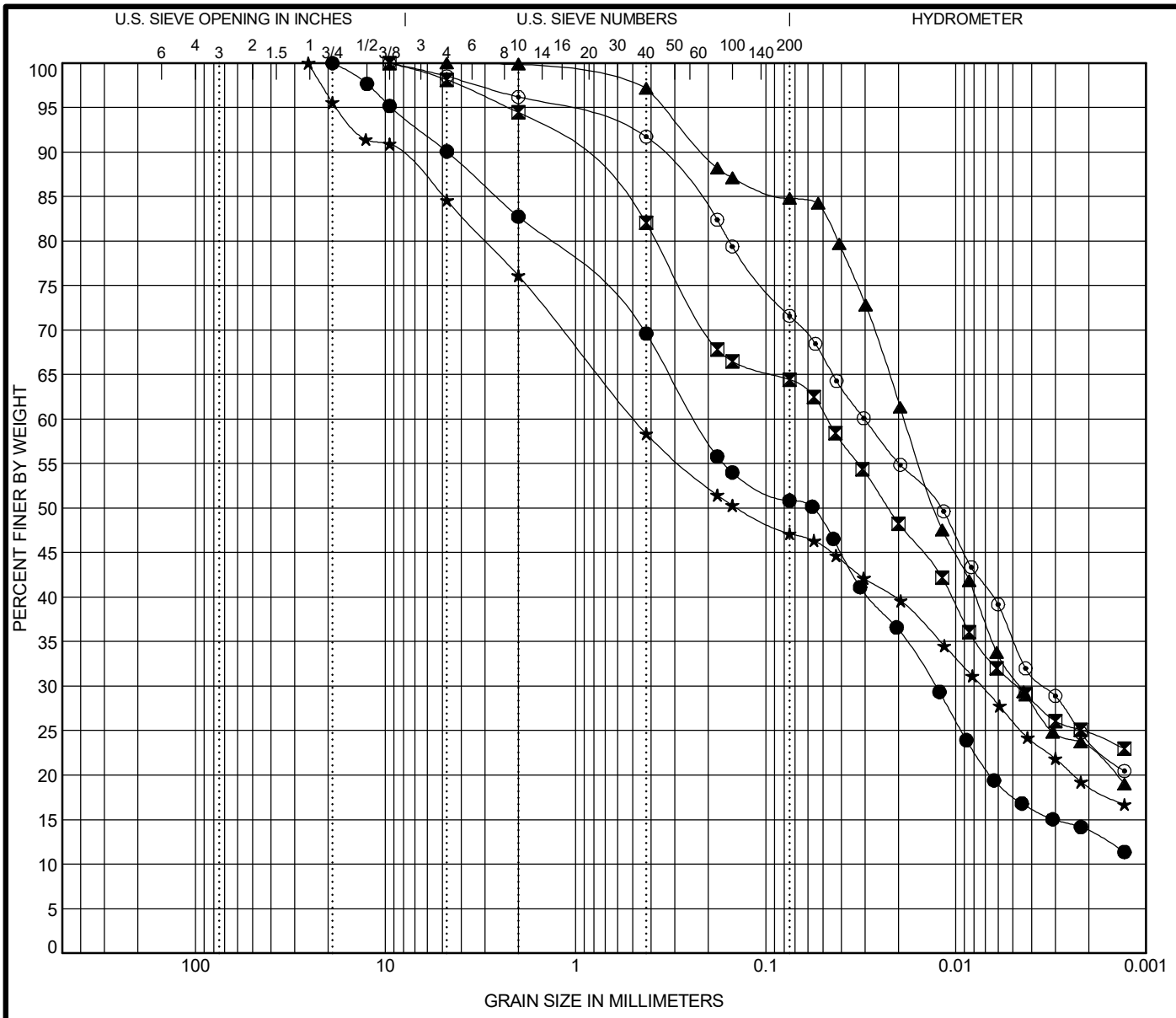
Location: Elgin, Illinois

Number: 121-03-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● RWB-1-08#1	1.5 ft	**Gravelly Loam**	**40**	**18**	**22**		
⊠ RWB-1-11#5	11.0 ft	**Clay Loam**	**48**	**16**	**32**		
▲ RWB-2-07#1	1.5 ft	**Silty Clay Loam**	**47**	**22**	**25**		
★ RWB-2-08#12	28.5 ft	**Gravelly Clay Loam**	**29**	**13**	**16**		
⊙ RWB-2-08#18	58.5 ft	**Clay Loam**	**26**	**11**	**15**		

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● RWB-1-08#1	1.5 ft	**19**	**0.234**	**0.013**		**17.2**	**32.0**	**37.1**	**13.7**
⊠ RWB-1-11#5	11.0 ft	**9.5**	**0.048**	**0.005**		**5.5**	**30.1**	**39.7**	**24.7**
▲ RWB-2-07#1	1.5 ft	**4.75**	**0.019**	**0.005**		**0.1**	**15.1**	**61.9**	**22.9**
★ RWB-2-08#12	28.5 ft	**25.4**	**0.491**	**0.007**		**23.9**	**29.0**	**28.3**	**18.8**
⊙ RWB-2-08#18	58.5 ft	**9.5**	**0.03**	**0.003**		**3.8**	**24.7**	**47.5**	**24.0**

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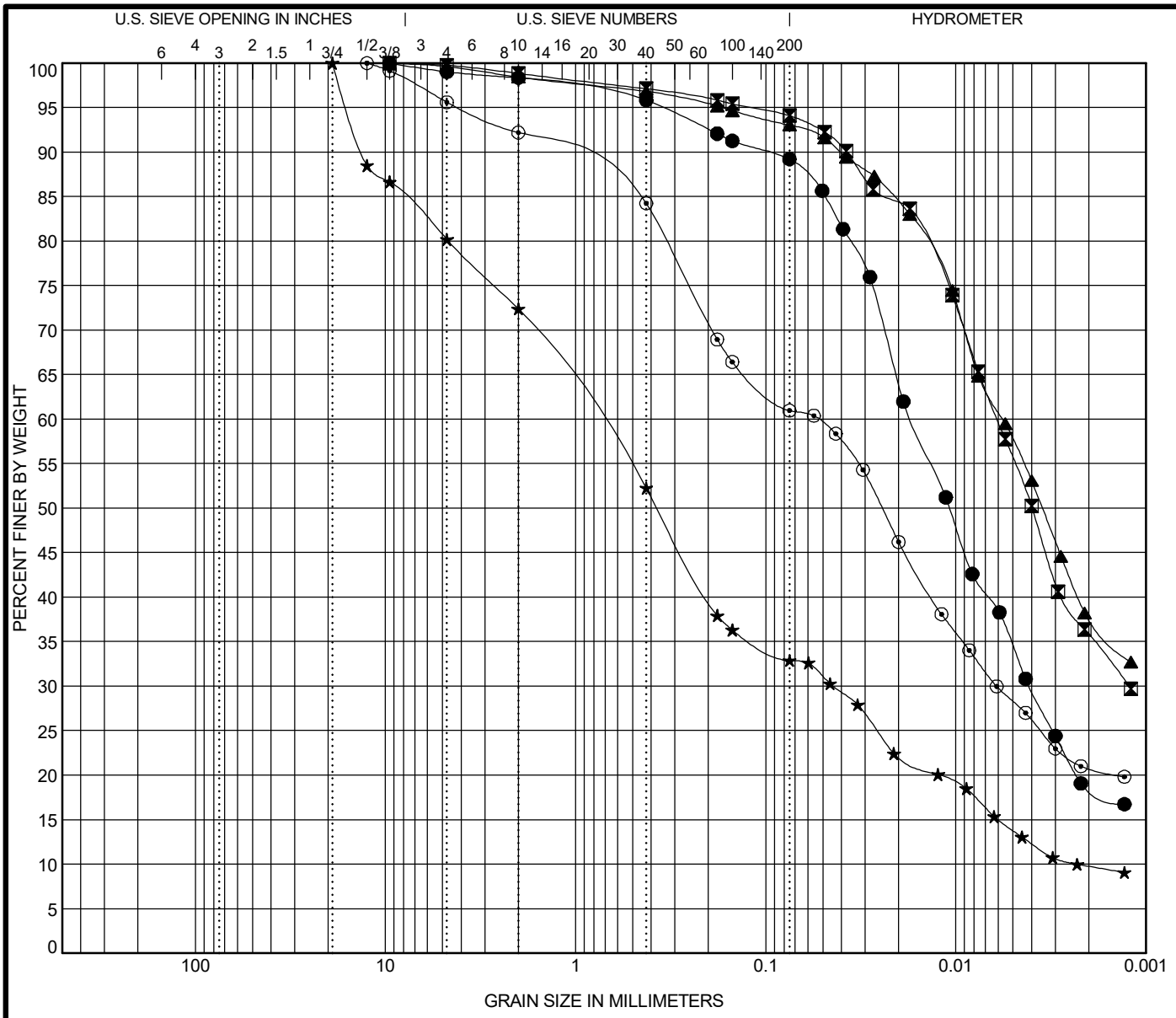
Location: Elgin, Illinois

Number: 121-03-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	RWB-2-10#1	1.5 ft	**Silty Loam**	**57**	**29**	**28**		
⊠	RWB-3-03#7	16.0 ft	**Silty Clay**	**35**	**15**	**20**		
▲	RWB-4-01#7	16.0 ft	**Silty Clay**	**33**	**14**	**19**		
★	RWB-5-01#3	6.0 ft	**Gravelly Sandy Loam**	**27**	**13**	**14**	**1.09**	**331.50**
⊙	RWB-5-04#3	6.0 ft	**Clay Loam**	**41**	**14**	**27**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RWB-2-10#1	1.5 ft	**9.5**	**0.017**	**0.004**		**1.6**	**9.3**	**70.5**	**18.6**
⊠	RWB-3-03#7	16.0 ft	**9.5**	**0.006**	**0.001**		**1.2**	**4.8**	**58.3**	**35.8**
▲	RWB-4-01#7	16.0 ft	**9.5**	**0.006**			**1.6**	**5.4**	**55.3**	**37.7**
★	RWB-5-01#3	6.0 ft	**19**	**0.771**	**0.044**	**0.002**	**27.6**	**39.5**	**23.1**	**9.7**
⊙	RWB-5-04#3	6.0 ft	**12.5**	**0.053**	**0.006**		**7.8**	**31.3**	**40.2**	**20.8**

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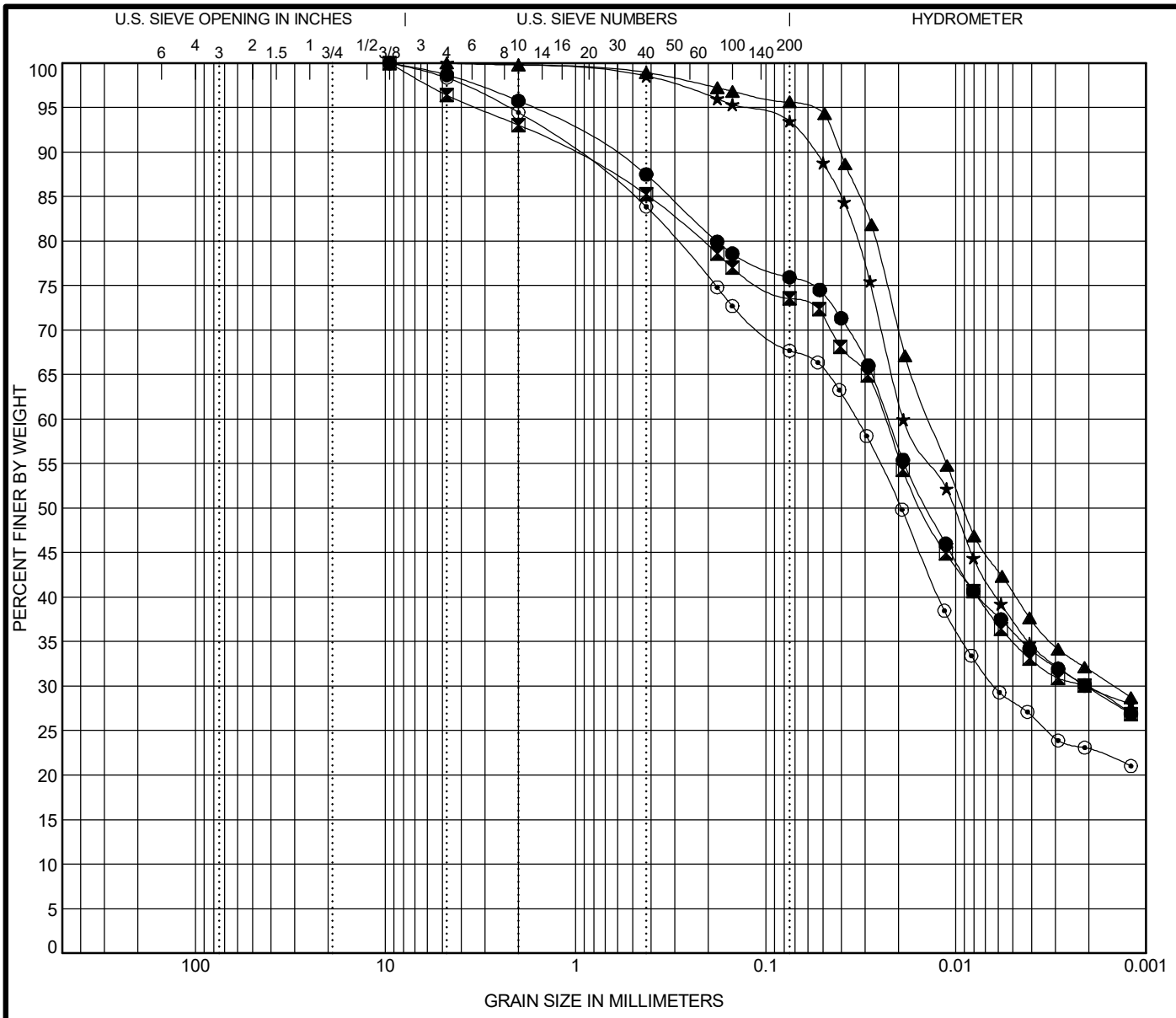
GRAIN SIZE DISTRIBUTION

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-01#2	2.0 ft	**Clay**	**45**	**15**	**30**		
⊠	SGB-03#2	2.0 ft	**Clay**	**48**	**15**	**33**		
▲	SGB-06#2	2.0 ft	**Silty Clay**	**48**	**16**	**32**		
★	SGB-07#4	6.0 ft	**Silty Clay Loam**					
⊙	SGB-12#2	2.0 ft	**Clay Loam**					

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-01#2	2.0 ft	**9.5**	**0.023**	**0.002**		**4.2**	**19.9**	**46.1**	**29.8**
⊠	SGB-03#2	2.0 ft	**9.5**	**0.024**	**0.002**		**6.9**	**19.5**	**43.8**	**29.8**
▲	SGB-06#2	2.0 ft	**4.75**	**0.014**	**0.001**		**0.2**	**4.2**	**63.8**	**31.8**
★	SGB-07#4	6.0 ft	**4.75**	**0.019**	**0.002**		**0.1**	**6.5**	**63.4**	**29.9**
⊙	SGB-12#2	2.0 ft	**9.5**	**0.033**	**0.006**		**5.5**	**26.8**	**44.7**	**22.9**

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GRAIN SIZE DISTRIBUTION

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

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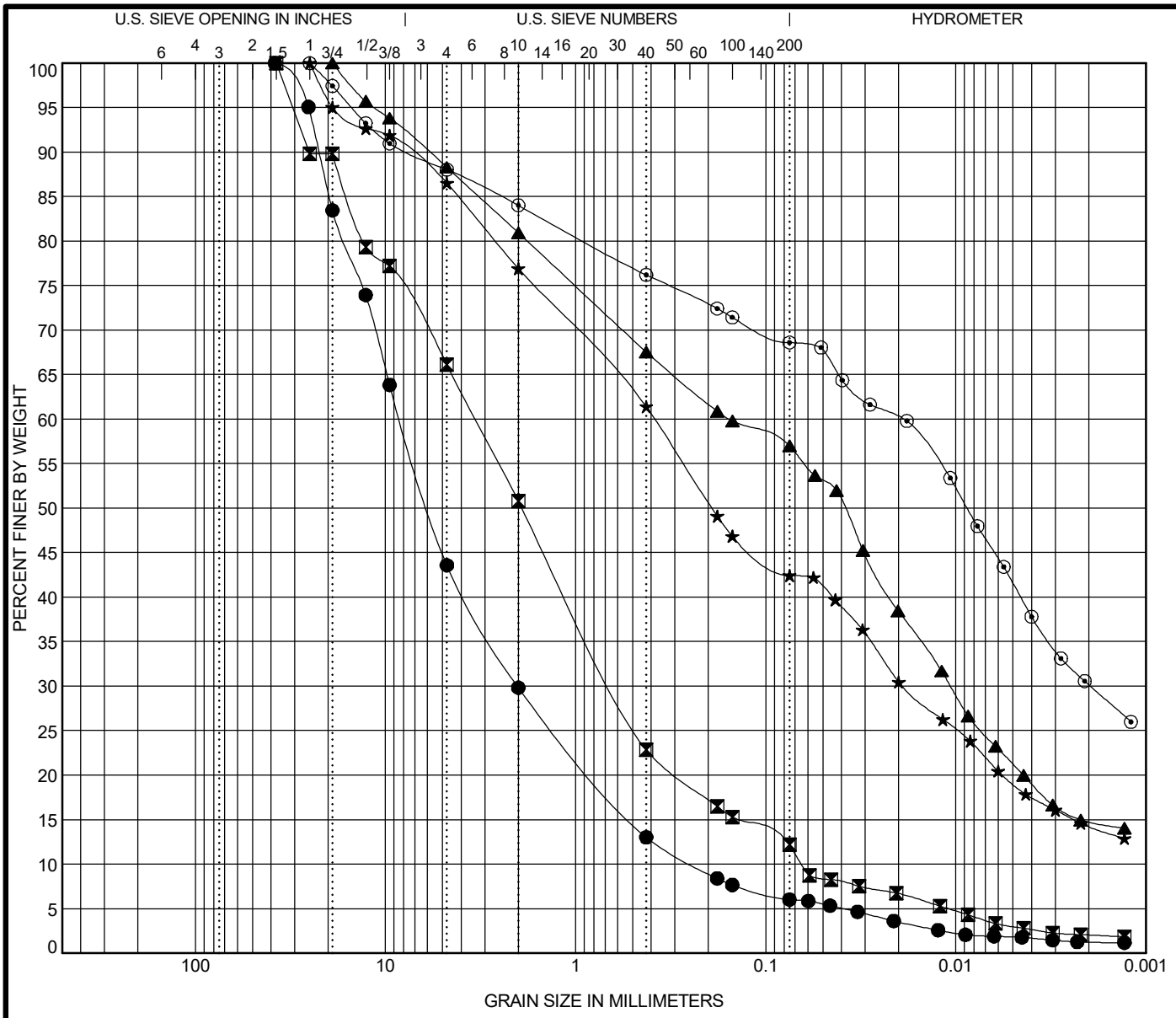

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-17#2	3.0 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**2.02**	**34.29**
⊠	SGB-18#2	3.0 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**1.84**	**52.26**
▲	SGB-23#6	11.0 ft	**Gravelly Silty Loam**	**37**	**14**	**23**		
★	SGB-24#3	5.0 ft	**Gravelly Loam**	**23**	**11**	**12**		
⊙	SGB-27#2	3.0 ft	**Gravelly Clay**	**32**	**13**	**19**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-17#2	3.0 ft	**38.1**	**8.33**	**2.022**	**0.243**	**70.2**	**23.8**	**4.8**	**1.2**
⊠	SGB-18#2	3.0 ft	**37.5**	**3.363**	**0.632**	**0.064**	**49.2**	**38.8**	**10.0**	**2.0**
▲	SGB-23#6	11.0 ft	**19**	**0.156**	**0.011**		**19.1**	**24.1**	**42.1**	**14.8**
★	SGB-24#3	5.0 ft	**25**	**0.385**	**0.019**		**23.1**	**34.5**	**28.2**	**14.3**
⊙	SGB-27#2	3.0 ft	**25**	**0.019**	**0.002**		**16.0**	**15.4**	**38.4**	**30.2**

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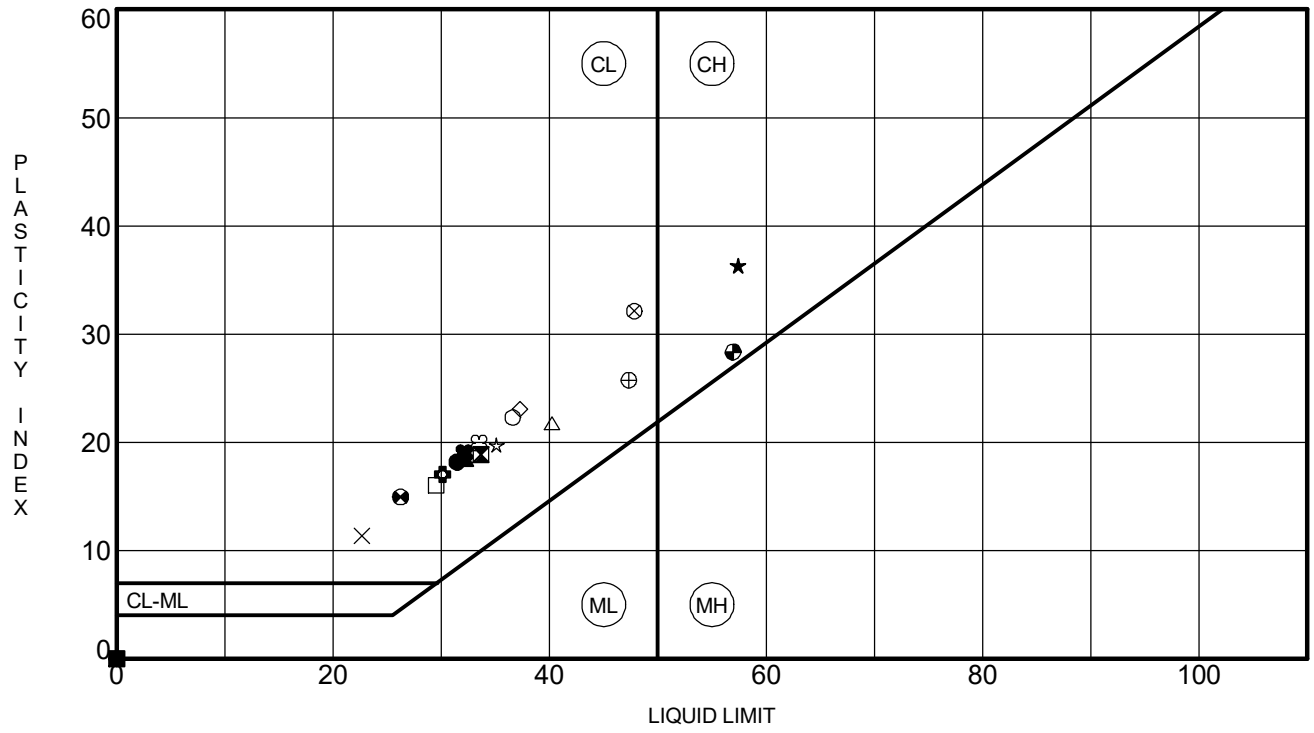
GRAIN SIZE DISTRIBUTION

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01



Specimen Identification			LL	PL	PI	Fines	IDH Classification
●	45-0004-BSB-01#9	21.0 ft	31	13	18	55	Gravelly Clay Loam
⊠	45-0005-BSB-02#7	16.0 ft	34	15	19	90	Silty Clay
▲	B10-NAW-01#3	6.0 ft	32	14	18	91	Silty Clay
★	B11+13-NAW-01#1	1.0 ft	57	21	36	39	Gravelly Sandy Clay
⊙	B11+13-NAW-01#2	3.5 ft	NP	NP	NP	14	Gravelly Sandy Loam
✿	B11+13-NAW-01#6	13.5 ft	30	13	17	88	Silty Clay
○	B7-NAW-35#3	6.0 ft	37	14	23	45	Gravelly Clay Loam
△	RWB-1-08#1	1.5 ft	40	18	22	51	Gravelly Loam
⊗	RWB-1-11#5	11.0 ft	48	16	32	64	Clay Loam
⊕	RWB-2-07#1	1.5 ft	47	22	25	85	Silty Clay Loam
□	RWB-2-08#12	28.5 ft	29	13	16	47	Gravelly Clay Loam
⊛	RWB-2-08#18	58.5 ft	26	11	15	72	Clay Loam
◕	RWB-2-10#1	1.5 ft	57	29	28	89	Silty Loam
☆	RWB-3-03#7	16.0 ft	35	15	20	94	Silty Clay
⊠	RWB-4-01#7	16.0 ft	33	14	19	93	Silty Clay
■	SGB-17#2	3.0 ft	NP	NP	NP	6	Gravelly Sandy Loam
◆	SGB-18#2	3.0 ft	NP	NP	NP	12	Gravelly Sandy Loam
◇	SGB-23#6	11.0 ft	37	14	23	57	Gravelly Silty Loam
×	SGB-24#3	5.0 ft	23	11	12	42	Gravelly Loam
⊠	SGB-27#2	3.0 ft	32	13	19	69	Gravelly Clay

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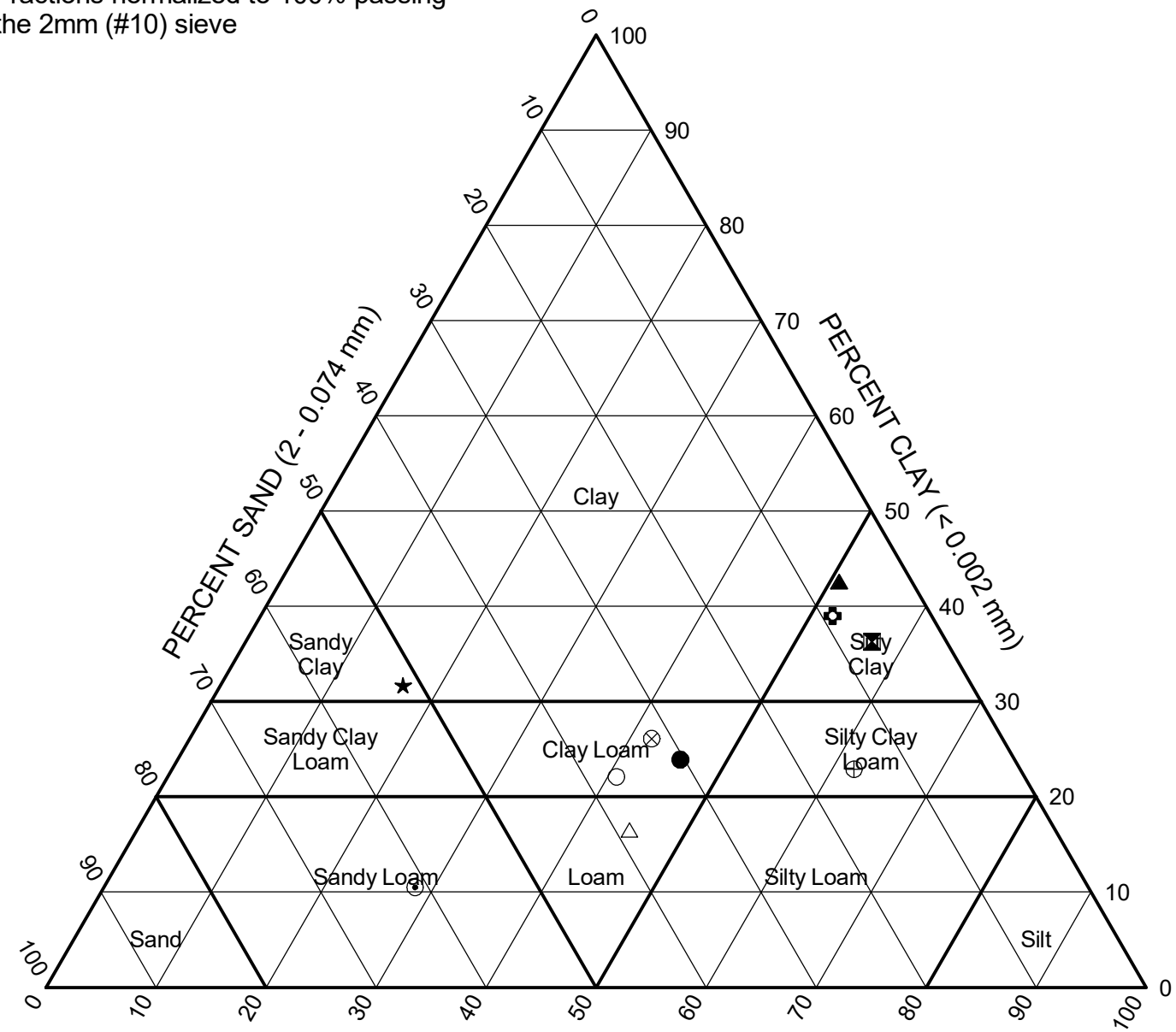
ATTERBERG LIMITS' RESULTS

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	B-0004-BSB-01#9	21.0	**30.2**	**45.7**	**23.9**	**Gravelly Clay Loam**	**A-6 (6)**	**CL**
■	B-0005-BSB-02#7	16.0	**6.8**	**56.9**	**36.3**	**Silty Clay**	**A-6 (16)**	**CL**
▲	B10-NAW-01#3	6.0	**6.6**	**50.8**	**42.6**	**Silty Clay**	**A-6 (15)**	**CL**
⊠	B1+13-NAW-01#1	1.0	**51.5**	**16.6**	**31.7**	**Gravelly Sandy Clay**	**A-7-6 (7)**	**SC**
⊡	B1+13-NAW-01#2	3.5	**61.5**	**28.3**	**10.5**	**Gravelly Sandy Loam**	**A-1-a (0)**	**GM**
✿	B1+13-NAW-01#6	13.5	**8.9**	**52.0**	**39.0**	**Silty Clay**	**A-6 (13)**	**CL**
○	B7-NAW-35#3	6.0	**37.2**	**40.8**	**22.1**	**Gravelly Clay Loam**	**A-6 (6)**	**SC**
△	RWB-1-08#1	1.5	**38.6**	**44.8**	**16.5**	**Gravelly Loam**	**A-6 (8)**	**CL**
⊗	RWB-1-11#5	11.0	**31.9**	**42.0**	**26.1**	**Clay Loam**	**A-7-6 (18)**	**CL**
⊕	RWB-2-07#1	1.5	**15.1**	**62.0**	**22.9**	**Silty Clay Loam**	**A-7-6 (22)**	**CL**

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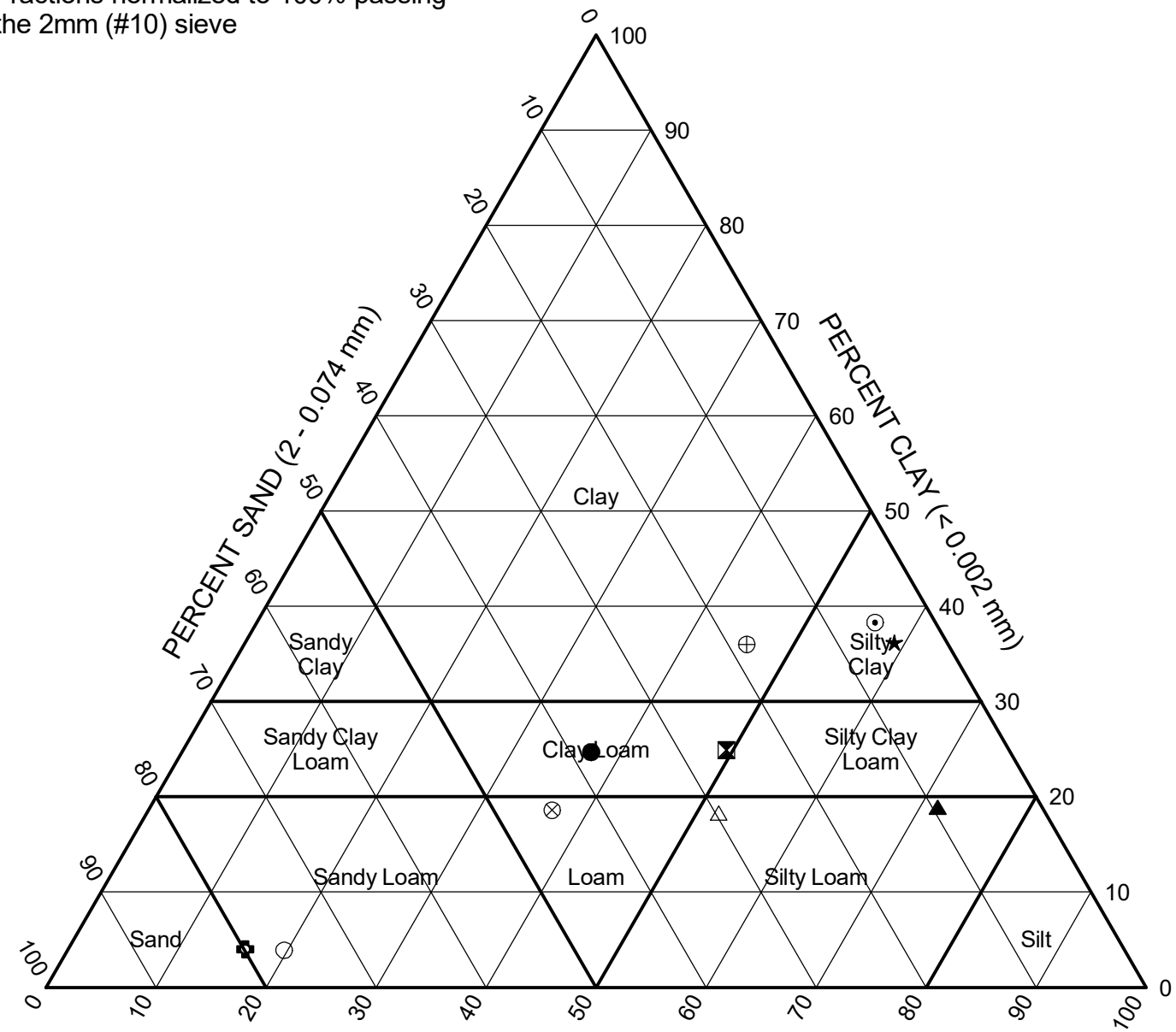
IDH Textural Classification Chart

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	RWB-2-08#12	28.5	38.1	37.2	24.7	Gravelly Clay Loam	A-6 (4)	SC
⧓	RWB-2-08#18	58.5	25.7	49.4	24.9	Clay Loam	A-6 (8)	CL
▲	RWB-2-10#1	1.5	9.5	71.6	18.9	Silty Loam	A-7-6 (29)	CH
★	RWB-3-03#7	16.0	4.9	59.0	36.2	Silty Clay	A-6 (18)	CL
⊙	RWB-4-01#7	16.0	5.5	56.2	38.3	Silty Clay	A-6 (17)	CL
✿	SGB-17#2	3.0	79.9	16.1	4.0	Gravelly Sandy Loam	A-1-a (0)	GW-GM
○	SGB-18#2	3.0	76.4	19.7	3.9	Gravelly Sandy Loam	A-1-b (0)	SM
△	SGB-23#6	11.0	29.8	52.0	18.3	Gravelly Silty Loam	A-6 (10)	CL
⊗	SGB-24#3	5.0	44.9	36.7	18.6	Gravelly Loam	A-6 (1)	SC
⊕	SGB-27#2	3.0	18.3	45.7	36.0	Gravelly Clay	A-6 (10)	CL

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IDH Textural Classification Chart

Project: US Route 20 From Randall Rd to Shales Parkway

Location: Elgin, Illinois

Number: 121-03-01

APPENDIX C

Illinois Department of Transportation

Summary Report on Pavement, Base and Subbase Design

State Job Number: 121-03-01 Project: US 20 Reconstruction Route: US 20

Section: _____ City or County: Kane and Cook Date: 09/14/2022

ADT: _____ Year: _____ Design Period: _____ Class Highway: _____

Passenger Cars Per Day: _____ Trucks S.U. Per Day: _____ Trucks M.U. Per Day: _____

Pavement Structure: _____

Type Surface Course: _____ Thickness: _____

Type Base Course: _____ Thickness: _____

Type Subbase Material: _____ Thickness: _____

Sta. to Sta.	332+80 to 443+31	+ to +	+ to +	+ to +
*Sta. of Test	1412+02.53			
*Drainage Class	Poor			
*Ave. Frost Penetration	45 to 60 in.			
Illinois Textural Classification	Gravelly Clay			
Classification and Group Index (AASHTO M 145)	A-6 (10)			
*Percent Silt (AASHTO T 88)	38.4			
*Illinois Bearing Ratio (%)				
Std. Dry Density (IL Mod. AASHTO T 99)				
Optimum Moisture (IL Mod AASHTO T 99)				

* Indicates worst condition within the above station limits.

Remarks: _____

SOIL TEST DATA

ROUTE
US 20 Reconstruction

PROJECT
121-03-01 (KE225009)

SECTION
US 20 (Sta. 332+80 to Sta. 443+31)

COUNTY
Kane and Cook Counties

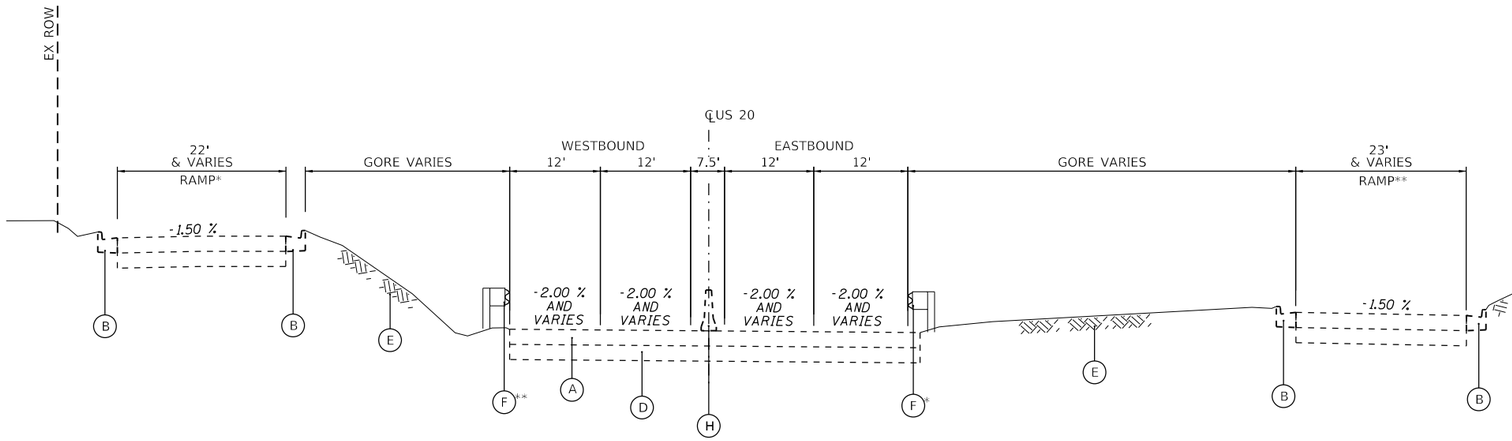
Lab. No.	B11+13-NAW-01 No.1	B11+13-NAW-01 No.2	RWB-1-08 No.1	SGB-17 No.2
Station ft)	1412+88.38	1412+88.38	1385+02.88	1381+99.10
Offset (ft)	104.38 LT	104.38 LT	50.46 RT	75.36 LT
Depth (ft)	1	3.5	1.5	3
AASHTO M 145 Classification and Group Index	A-7-6 (7)	A-1-a (0)	A-6 (8)	A-1-a (0)
Illinois Textural Classification (Illinois Method)	Gravelly Sandy Clay	Gravelly Sandy Loam	Gravelly Loam	Gravelly Sandy Loam
Gradation--Passing 1" Sieve %		88.2		94.4
--"-- 3/4" Sieve %		70.9	100	83.5
--"-- 1/2" Sieve %	100.0	54.9	97.8	73.9
--"-- No.4 Sieve %	94.5	45.0	90.1	43.6
--"-- No.10 Sieve %	81.3	35.3	82.8	29.8
--"-- No.40 Sieve %	52.4	22.3	69.6	13.0
--"-- No.100 Sieve %	41.6	17.1	54.0	7.7
--"-- No.200 Sieve %	39.4	13.7	50.8	6.0
Sand % (AASHTO T 88)	41.9	21.7	32.0	23.8
Silt % (AASHTO T 88)	13.5	10.0	37.1	4.8
Clay % (AASHTO T 88)	25.8	3.7	13.7	1.2
Liquid limit % (AASHTO T 89)	57.0	0.0	40.0	0.0
Plasticity index % (AASHTO T 90)	36.0	0.0	22.0	0.0
IBR % (Illinois Method)				
Standard Dry Density % (AASHTO T 99)				
Optimum Moisture % (AASHTO T 99)				
Subgrade Support Rating	POOR	GRANULAR	POOR	GRANULAR
Insitu Moisture % (AASHTO T 99)	22	12	33	4

SOIL TEST DATA

SECTION
US 20 (Sta. 332+80 to Sta. 443+31)

Lab. No.	SGB-18 No.2	SGB-27 No.2
Station ft)	1383+11.00	1412+02.53
Offset (ft)	0.69 LT	29.22 RT
Depth (ft)	3	3
AASHTO M 145 Classification and Group Index	A-1-b (0)	A-6 (10)
Illinois Textural Classification (Illinois Method)	Gravelly Sandy Loam	Gravelly Clay
Gradation--Passing 1" Sieve %	89.8	100
--"-- 3/4" Sieve %	89.8	97.4
--"-- 1/2" Sieve %	79.3	93.3
--"-- No.4 Sieve %	66.1	88.0
--"-- No.10 Sieve %	50.8	84.0
--"-- No.40 Sieve %	22.9	76.2
--"-- No.100 Sieve %	15.3	71.4
--"-- No.200 Sieve %	12.0	68.6
Sand % (AASHTO T 88)	38.8	15.4
Silt % (AASHTO T 88)	10.0	38.4
Clay % (AASHTO T 88)	2.0	30.2
Liquid limit % (AASHTO T 89)	0.0	32.0
Plasticity index % (AASHTO T 90)	0.0	19.0
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	GRANULAR	FAIR
Insitu Moisture % (AASHTO T 99)	3	18

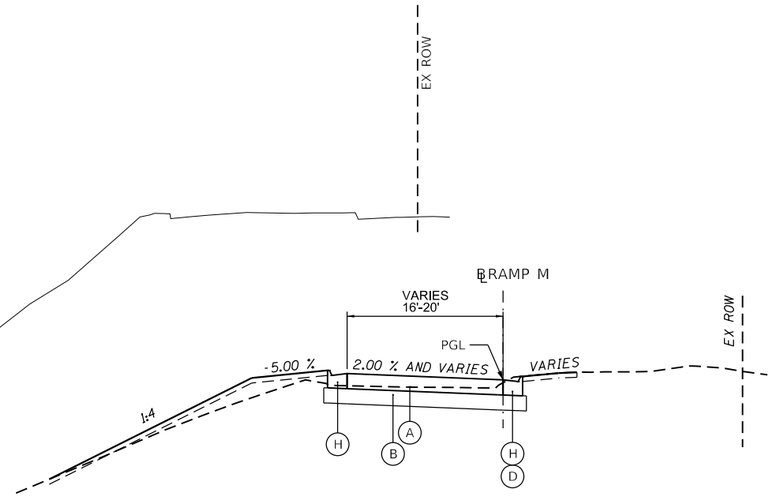
APPENDIX D



EXISTING TYPICAL SECTION

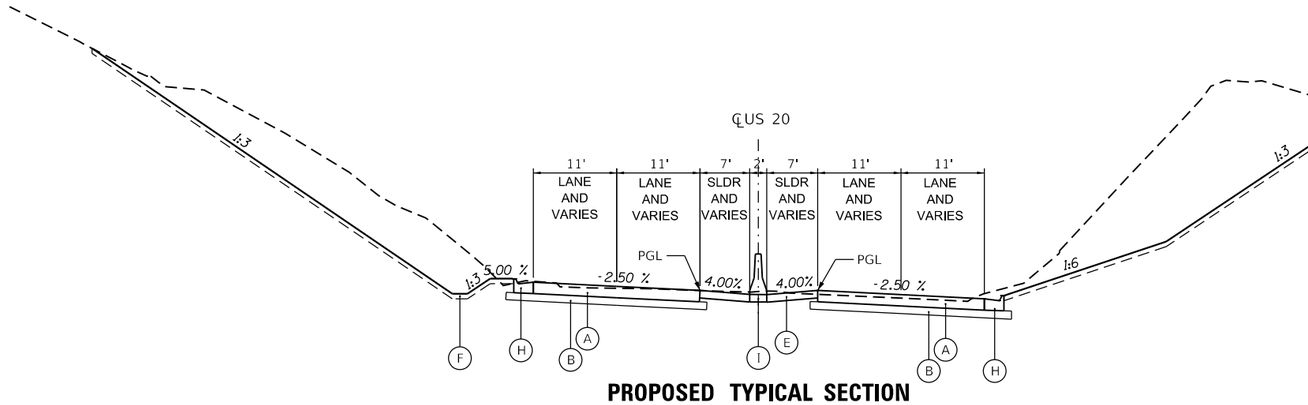
STATION: 370+00 TO 384+00
US 20, AT IL 31
*STATION 373+00 TO 377+00 (WB RAMPS)
**STATION 374+50 TO 380+00 (EB RAMPS)

*GUARDRAIL: STA. 403+27 TO 408+94, STA. 418+54 TO 423+93
**NO GUARDRAIL: STA. 384+00 TO 386+19, STA. 408+32 TO 413+99
BRIDGE OMISSIONS: STA. 416+99 TO 419+57, STA. 420+35 TO 421+81, STA. 406+57 TO 407+94



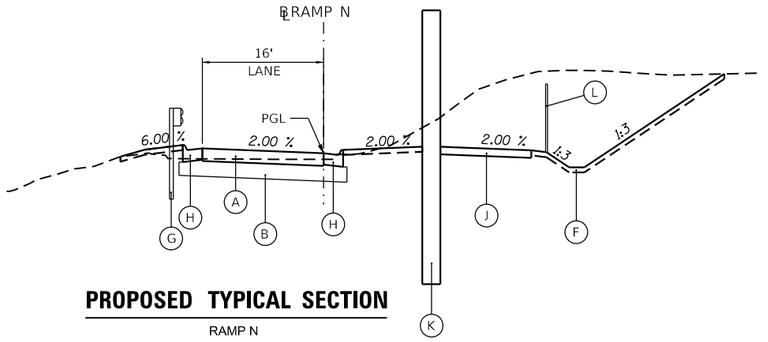
PROPOSED TYPICAL SECTION

RAMP M
IL 31 TO US 20 EB



PROPOSED TYPICAL SECTION

STATION: 376+90 TO 1380+00
(STA EQN: 379+18.01 AH = 1379+11.30 AH)
US 20 AT IL 31



PROPOSED TYPICAL SECTION

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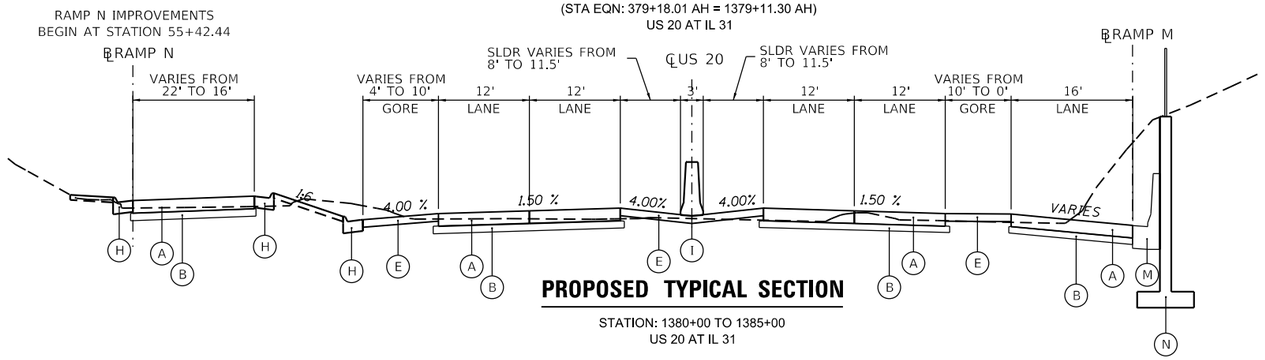
US 20 WB TO IL 31



PROPOSED TYPICAL SECTION

STATION: 1380+00 TO 1385+00
US 20 AT IL 31

EXISTING LEGEND:

- (a) EXISTING PAVEMENT
- (b) EXISTING CURB AND GUTTER
- (c) EXISTING SIDEWALK
- (d) EXISTING SUB-BASE GRANULAR MATERIAL
- (e) LANDSCAPING
- (f) EXISTING GUARDRAIL
- (g) DITCH
- (h) EXISTING CONCRETE BARRIER

PROPOSED LEGEND:

- (A) PROPOSED PAVEMENT
- (B) PROPOSED SUBBASE
- (C) PROPOSED SHOULDER
- (D) AGGREGATE SHOULDER
- (E) MEDIAN SURFACE
- (F) PROPOSED DITCH/SWALE
- (G) PROPOSED GUARDRAIL
- (H) PROPOSED CURB AND GUTTER
- (I) PROPOSED MEDIAN BARRIER
- (J) PROPOSED BIKE PATH
- (K) PROPOSED CRASHWORTHY NAW
- (L) PROPOSED BIKE RAILING
- (M) PROPOSED CONCRETE BARRIER
- (N) PROPOSED RETAINING WALL

MODEL: $MODELNAME$
FILE NAME: P:_2017\C93X98800\700 CADD\Alternatives\Concept Geometry\D1-US20-alt-strtyp01.dgn

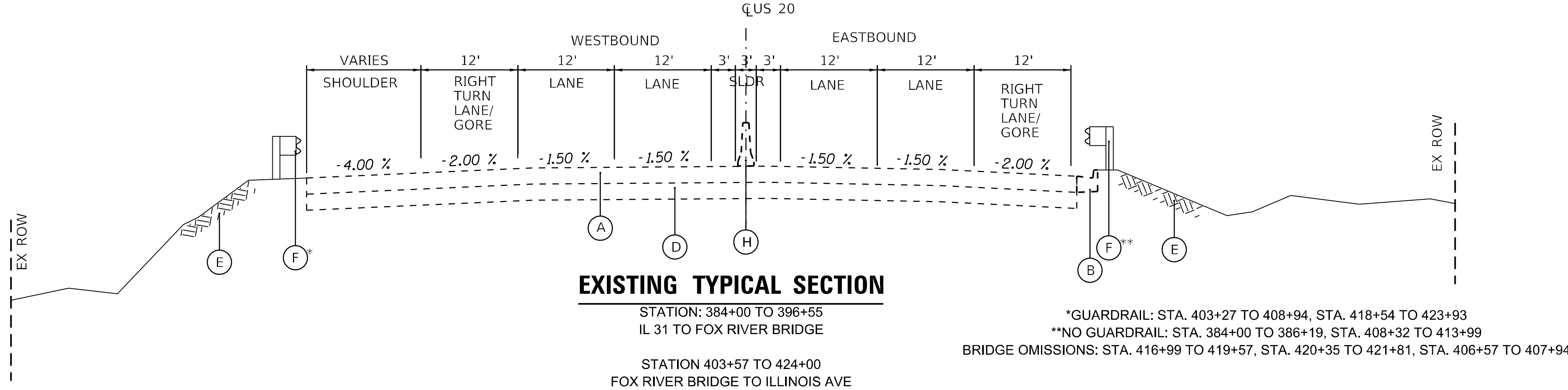
USER NAME = jwirtz	DESIGNED - RCH	REVISED -	
	DRAWN - MJP	REVISED -	
PLOT SCALE =	CHECKED - RCH	REVISED -	
PLOT DATE = 3/5/2020	DATE - 03/14/2018	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

US 20 – EXISTING / PROPOSED TYPICAL SECTION
PHASE I STUDY

SCALE: N.T.S. | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		KANE & COOK	103	43
		CONTRACT NO.		
		ILLINOIS	FED. AID PROJECT	

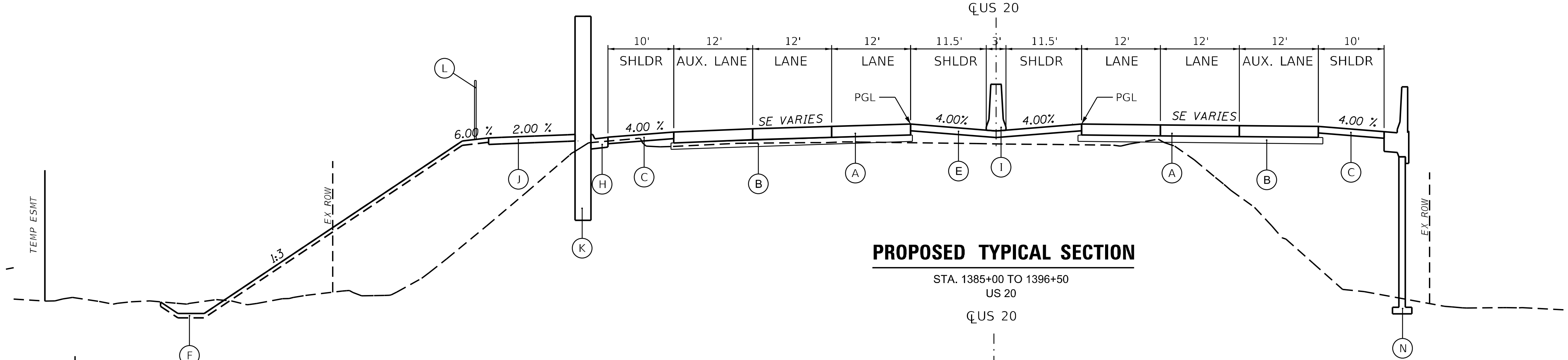


EXISTING TYPICAL SECTION

STATION: 384+00 TO 396+55
IL 31 TO FOX RIVER BRIDGE

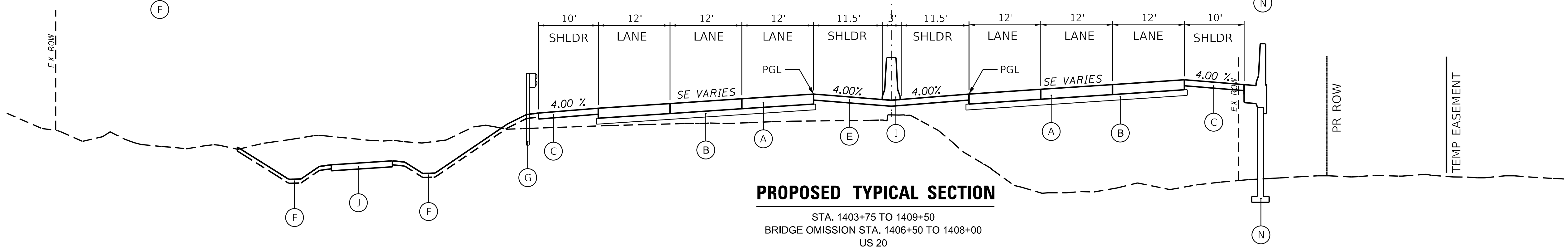
STATION 403+57 TO 424+00
FOX RIVER BRIDGE TO ILLINOIS AVE

*GUARDRAIL: STA. 403+27 TO 408+94, STA. 418+54 TO 423+93
**NO GUARDRAIL: STA. 384+00 TO 386+19, STA. 408+32 TO 413+99
BRIDGE OMISSIONS: STA. 416+99 TO 419+57, STA. 420+35 TO 421+81, STA. 406+57 TO 407+94



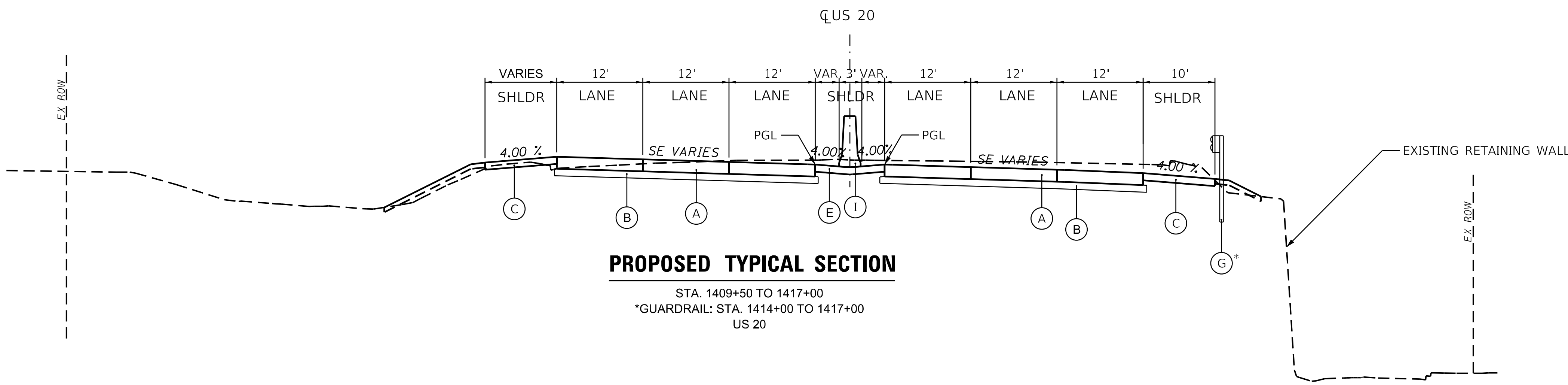
PROPOSED TYPICAL SECTION

STA. 1385+00 TO 1396+50
US 20



PROPOSED TYPICAL SECTION

STA. 1403+75 TO 1409+50
BRIDGE OMISSION STA. 1406+50 TO 1408+00
US 20



PROPOSED TYPICAL SECTION

STA. 1409+50 TO 1417+00
*GUARDRAIL: STA. 1414+00 TO 1417+00
US 20

EXISTING LEGEND:

- (a) EXISTING PAVEMENT
- (b) EXISTING CURB AND GUTTER
- (c) EXISTING SIDEWALK
- (d) EXISTING SUB-BASE GRANULAR MATERIAL
- (e) LANDSCAPING
- (f) EXISTING GUARDRAIL
- (g) DITCH
- (h) EXISTING CONCRETE BARRIER

PROPOSED LEGEND:

- (A) PROPOSED PAVEMENT
- (B) PROPOSED SUBBASE
- (C) PROPOSED SHOULDER
- (D) AGGREGATE SHOULDER
- (E) MEDIAN SURFACE
- (F) PROPOSED DITCH/SWALE
- (G) PROPOSED GUARDRAIL
- (H) PROPOSED CURB AND GUTTER
- (I) PROPOSED MEDIAN BARRIER
- (J) PROPOSED BIKE PATH
- (K) PROPOSED CRASHWORTHY NAW
- (L) PROPOSED BIKE RAILING
- (M) PROPOSED CONCRETE BARRIER
- (N) PROPOSED RETAINING WALL

MODEL: $MODELNAME$
FILE NAME: P_2011\C9X9680\700 CADD\Alternatives\Concept Geometry\D1-US20-ehrtyp02.dgn

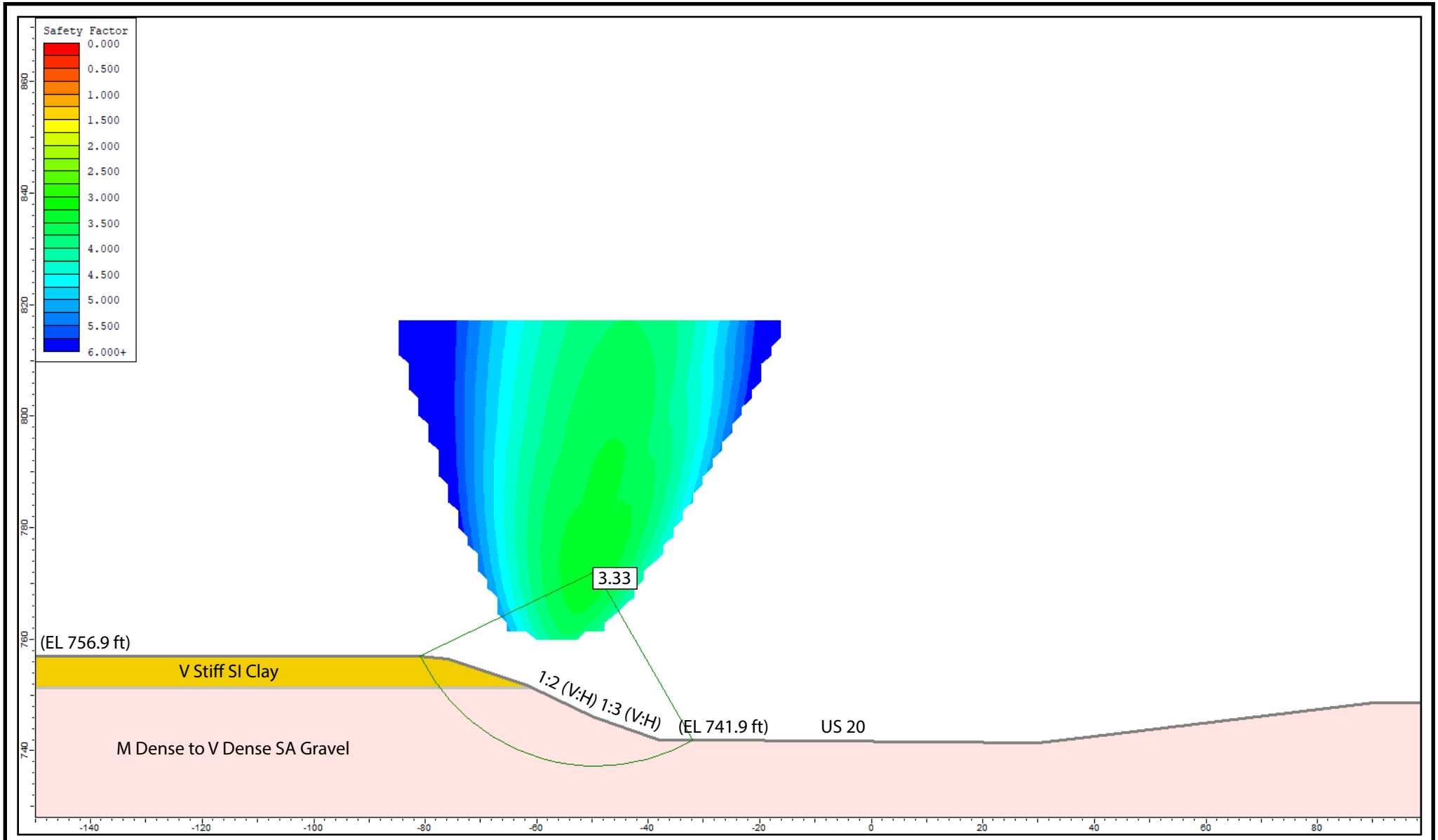
USER NAME = jwirtz	DESIGNED - RCH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - MJP	REVISED -	
PLOT SCALE =	CHECKED - RCH	REVISED -	
PLOT DATE = 3/5/2020	DATE - 03/14/2018	REVISED -	

US 20 – EXISTING / PROPOSED TYPICAL SECTION
PHASE I STUDY

SCALE: N.T.S. | SHEET OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		KANE & COOK	103	44
CONTRACT NO.				
ILLINOIS	FED. AID PROJECT			

APPENDIX E



Undrained Analysis, Station 374+00.00, Ref Boring: SGB-14 and B7-NAW-34

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	V Stiff SI Clay	120	2090	0
2	M Dense to V Dense SA Gravel	120	0	32

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-1 | DRAWN BY: D You, CHECKED BY: R. KC

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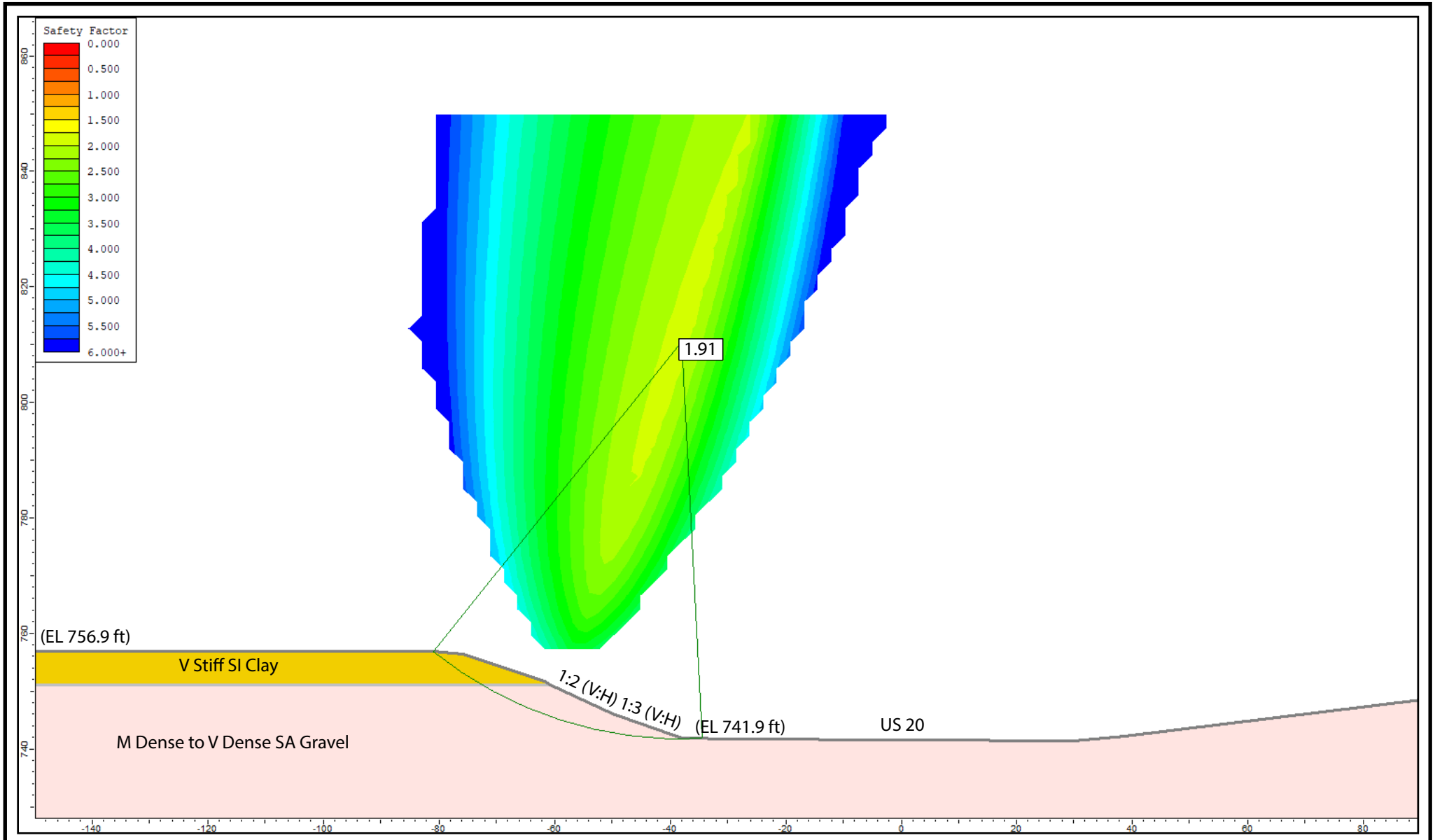
FOR GANNETT FLEMING | 121-03-01 KE225009



Drained Analysis, Station 374+00.00, Ref Boring: SGB-14 and B7-NAW-34

Layer ID	Description	Total Unit Weight (pcf)	D rained Cohesion (psf)	Drained Friction Angle (degrees)
1	V Stiff SI Clay	120	100	31
2	M Dense to V Dense SA Gravel	120	0	32

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-2 | DRAWN BY: D You CHECKED BY: R. KC

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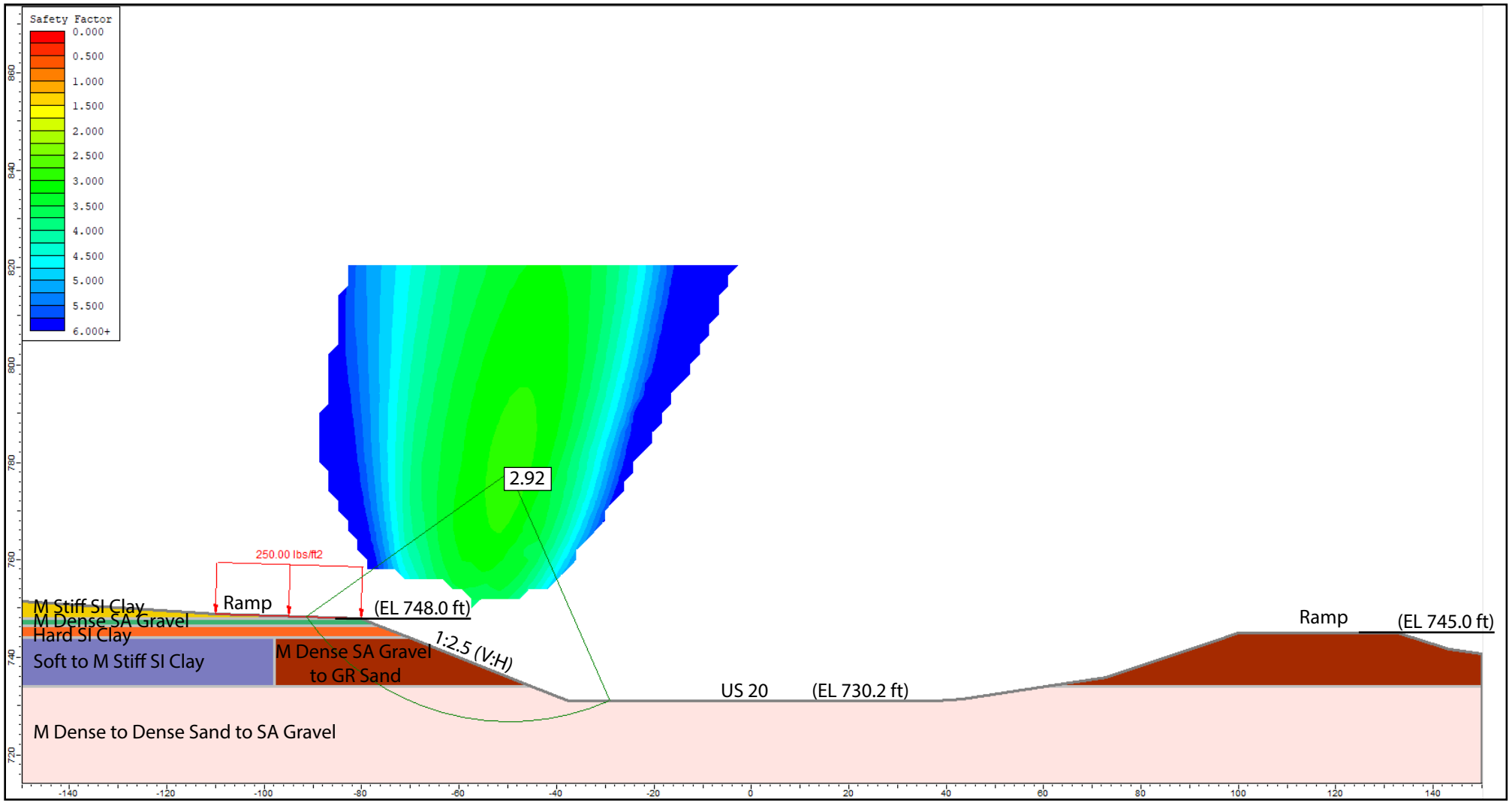
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 379+00.00, Ref Boring: SGB-16, B9-NAW-02, B9-NAW-02B and B9-NAW-03

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	M Stiff SI Clay	115	600	0
2	M Dense SA Gravel	115	0	31
3	Hard SI Clay	125	4000	0
4	Soft to M Stiff SI Clay	115	650	0
5	M Dense to Dense Sand to SA Gravel	120	0	34
6	M Dense SA Gravel to GR Sand	115	0	33

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-3 | DRAWN BY: D You, CHECKED BY: R. KC

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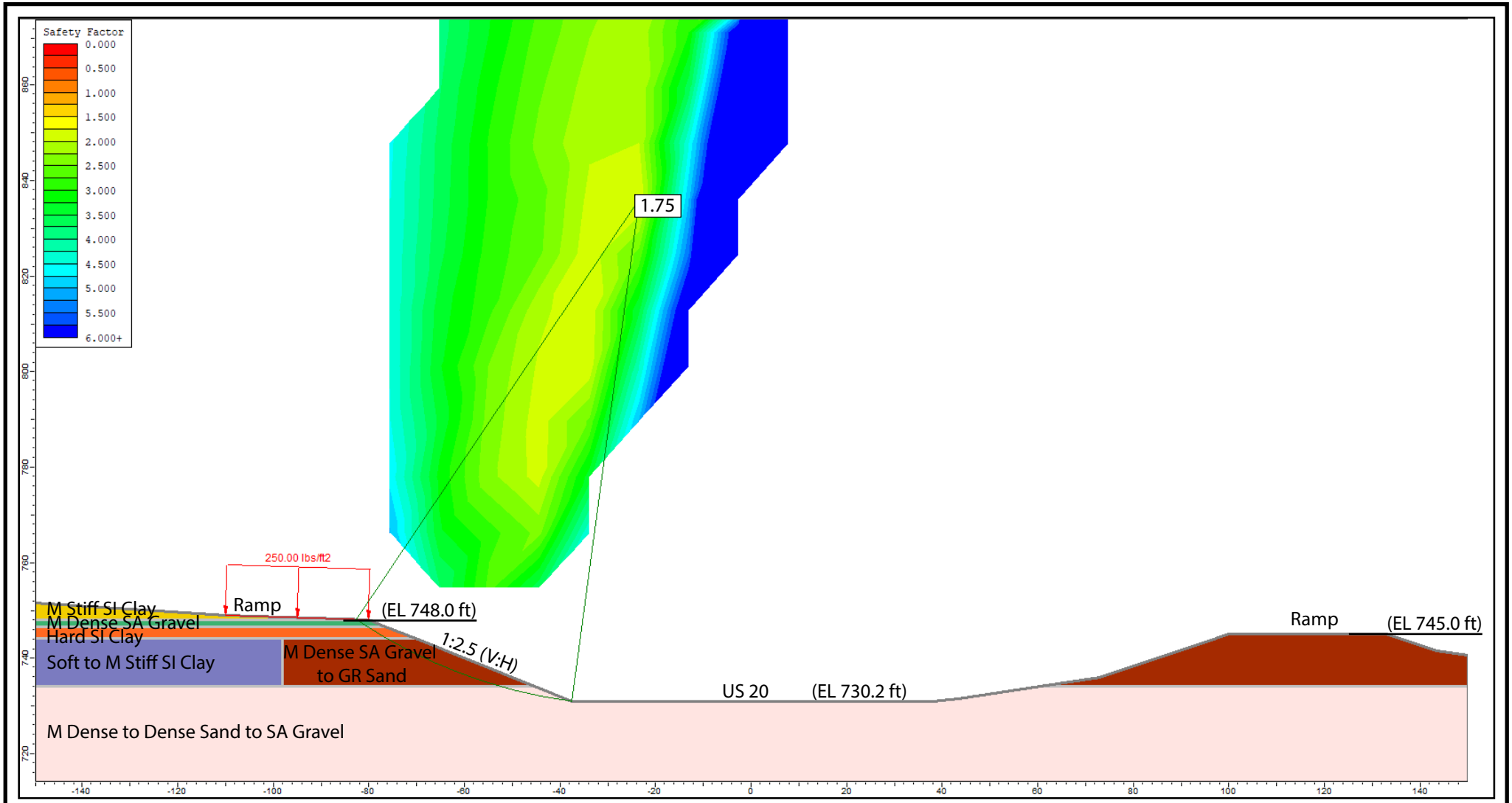

Drained Analysis, Station 379+00.00, Ref Boring: SGB-16, B9-NAW-02, B9-NAW-02B and B9-NAW-03

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	M Stiff SI Clay	115	0	30
2	M Dense SA Gravel	115	0	31
3	Hard SI Clay	125	100	31
4	Soft to M Stiff SI Clay	115	0	28
5	M Dense to Dense Sand to SA Gravel	120	0	34
6	M Dense SA Gravel to GR Sand	115	0	33

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-4 | DRAWN BY: D You CHECKED BY: R. KC

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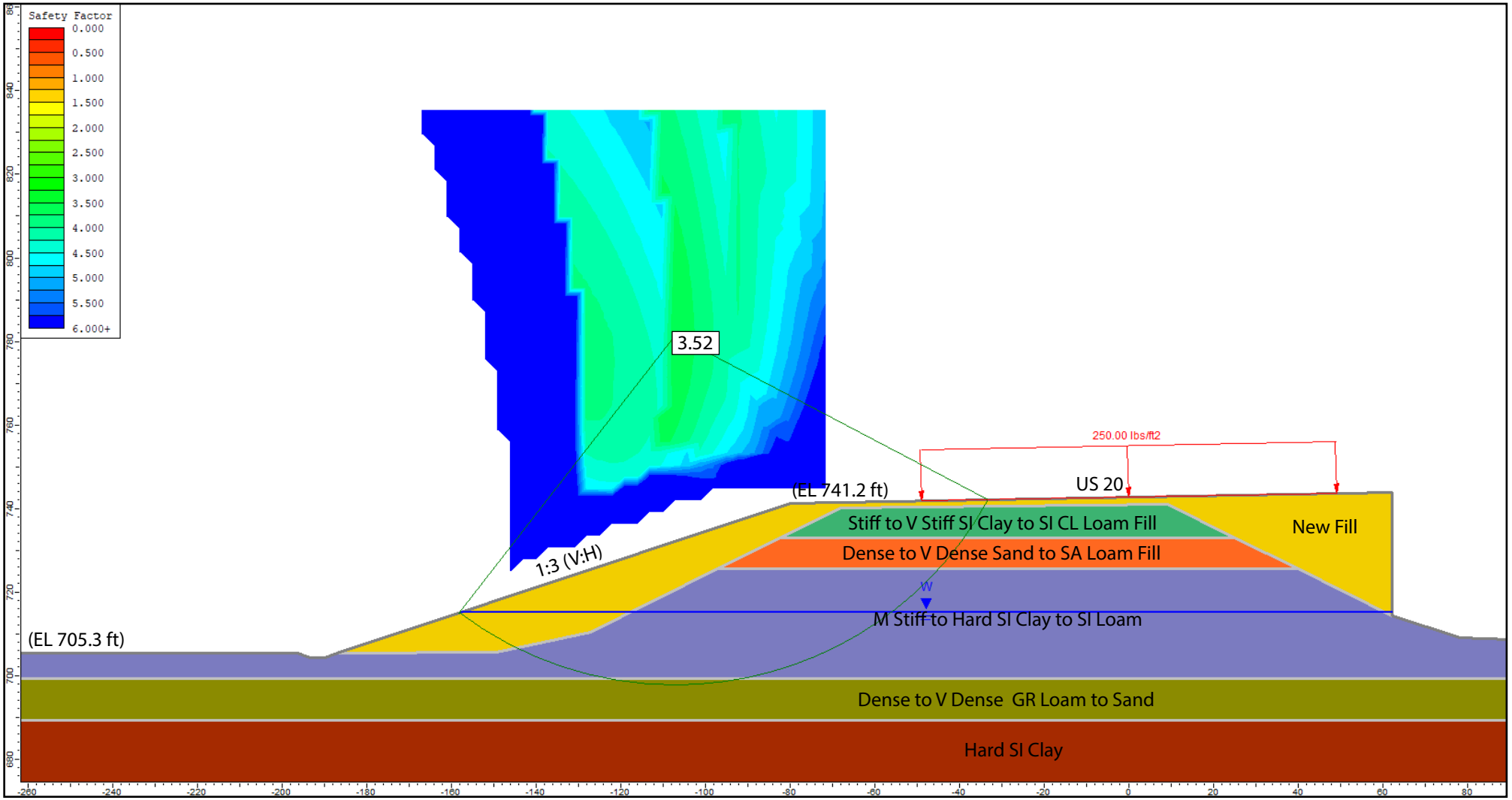
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 1393+00.00, Ref Boring: SGB-22, RWB-2-08 and RWB-2-09HA

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	Stiff to V Stiff SI Clay to SI CL Loam Fill	120	1700	0
3	Dense to V Dense Sand to SA Loam Fill	125	0	32
4	M Stiff to Hard SI Clay to SI Loam	120	1900	0
5	Dense to V Dense GR Loam to Sand	125	0	31
6	Hard SI Clay	125	4500	0

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-5 | DRAWN BY: D You, CHECKED BY: R. KC

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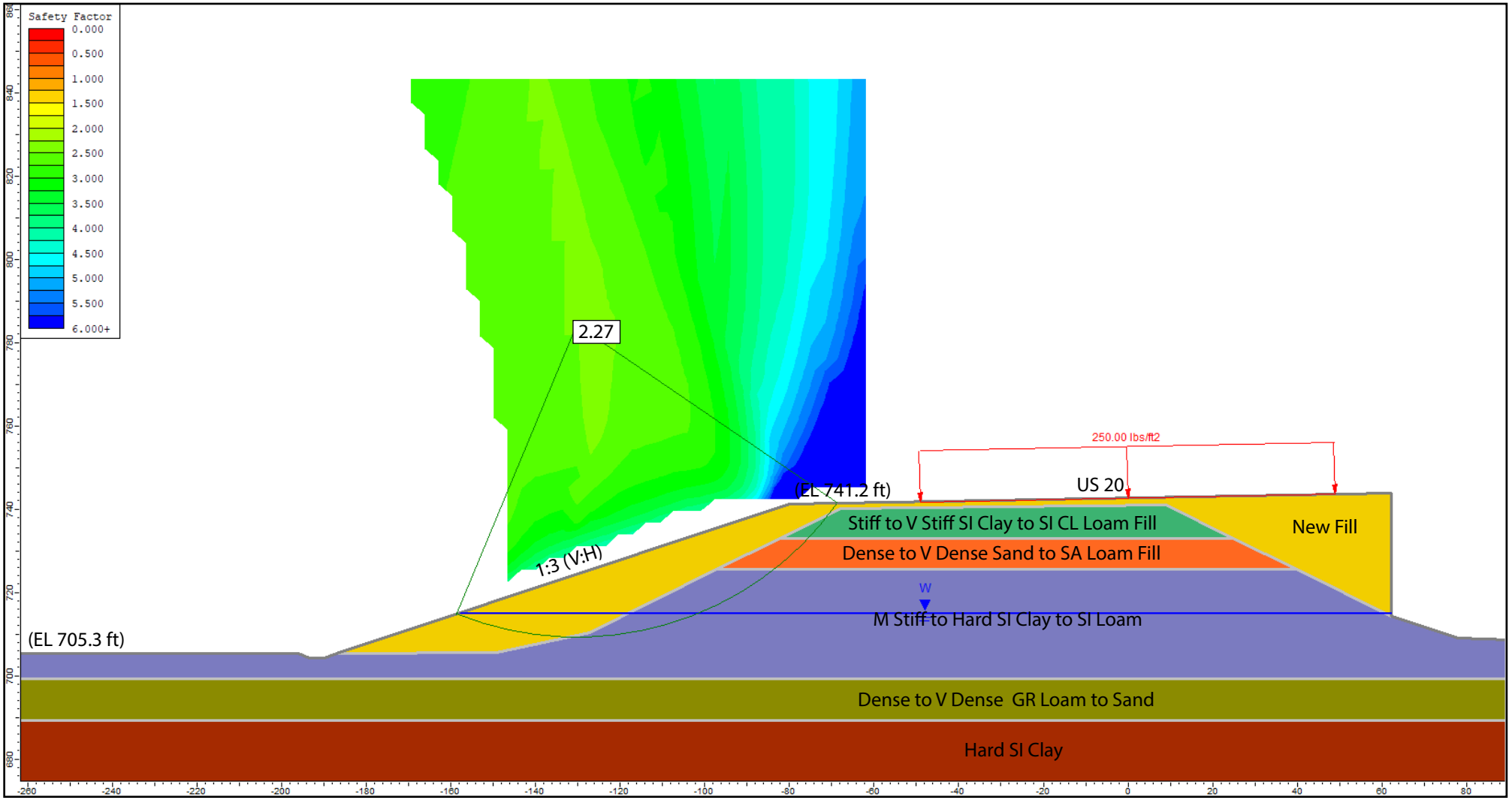
FOR GANNETT FLEMING | 121-03-01 KE225009



Drained Analysis, Station 1393+00.00, Ref Boring: SGB-22, RWB-2-08 and RWB-2-09HA

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	Stiff to V Stiff SI Clay to SI CL Loam Fill	120	100	30
3	Dense to V Dense Sand to SA Loam Fill	125	0	32
4	M Stiff to Hard SI Clay to SI Loam	120	100	30
5	Dense to V Dense GR Loam to Sand	125	0	31
6	Hard SI Clay	125	100	31

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-6 | DRAWN BY: D You, CHECKED BY: R. KC

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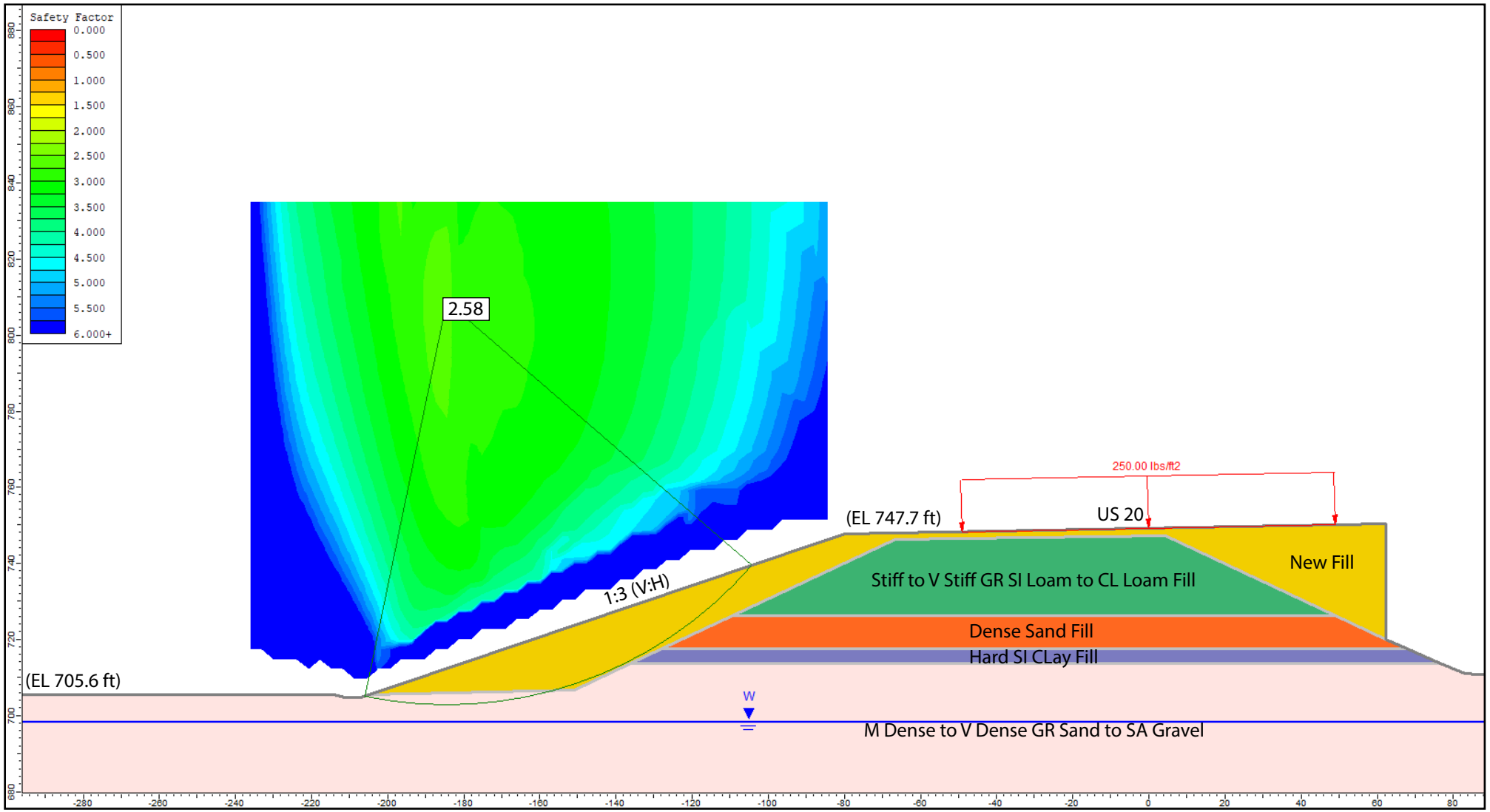
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 1395+00.00, Ref Boring: SGB-23, RWB-2-12HA and RWB-2-13HA

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	Stiff to V Stiff GR SI Loam to CL Loam Fill	120	2200	0
3	Dense Sand Fill	120	0	32
4	Hard SI CLay Fill	125	4500	0
5	M Dense to V Dense GR Sand to SA Gravel	125	0	33

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-7 | DRAWN BY: D You, CHECKED BY: R. KC

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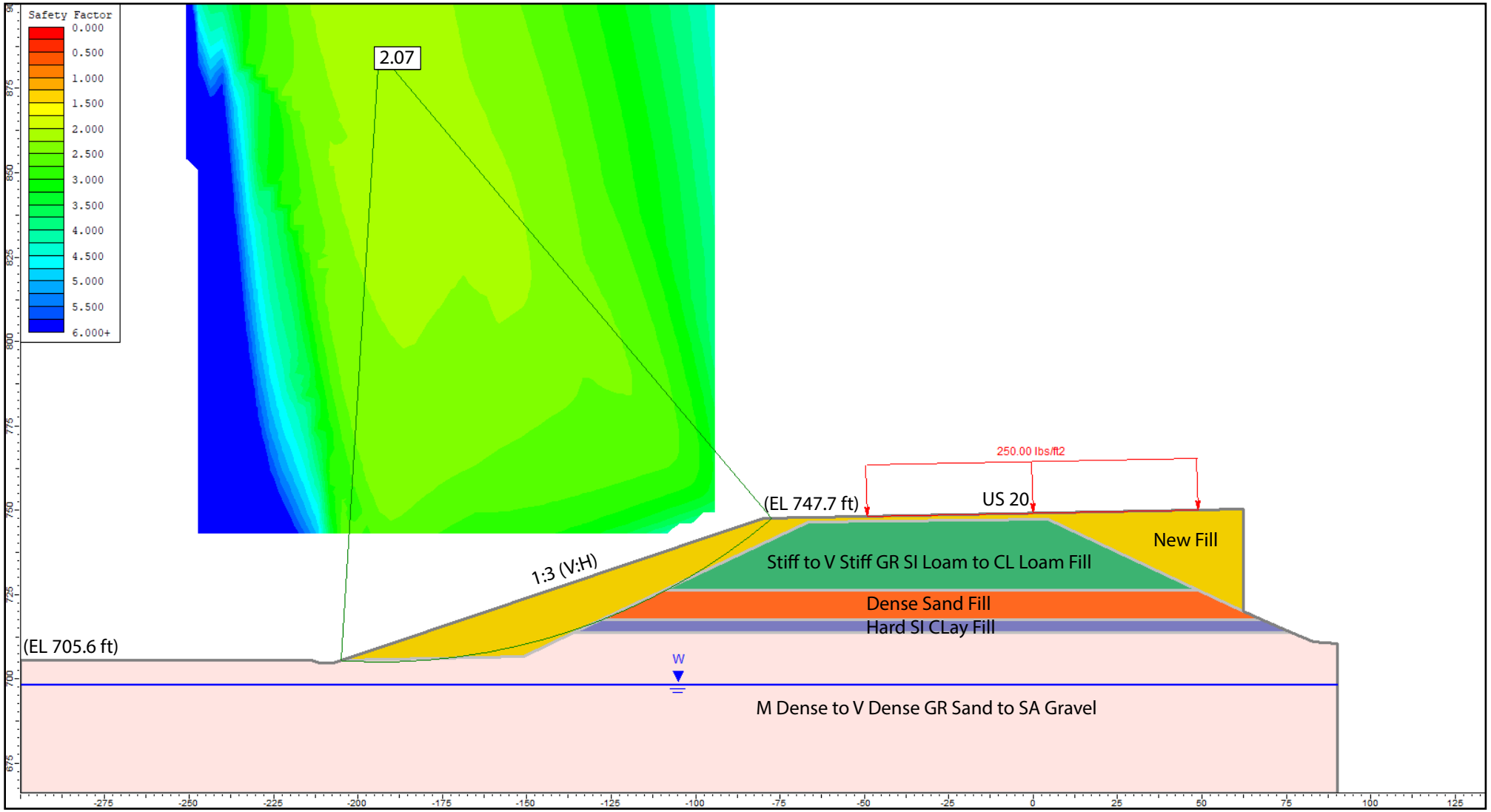
FOR GANNETT FLEMING | 121-03-01 KE225009



Drained Analysis, Station 1395+00.00, Ref Boring: SGB-23, RWB-2-12HA and RWB-2-13HA

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	Stiff to V Stiff GR SI Loam to CL Loam Fill	120	100	30
3	Dense Sand Fill	120	0	32
4	Hard SI CLay Fill	125	100	31
5	M Dense to V Dense GR Sand to SA Gravel	125	0	33

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-8 | DRAWN BY: D You, CHECKED BY: R. KC

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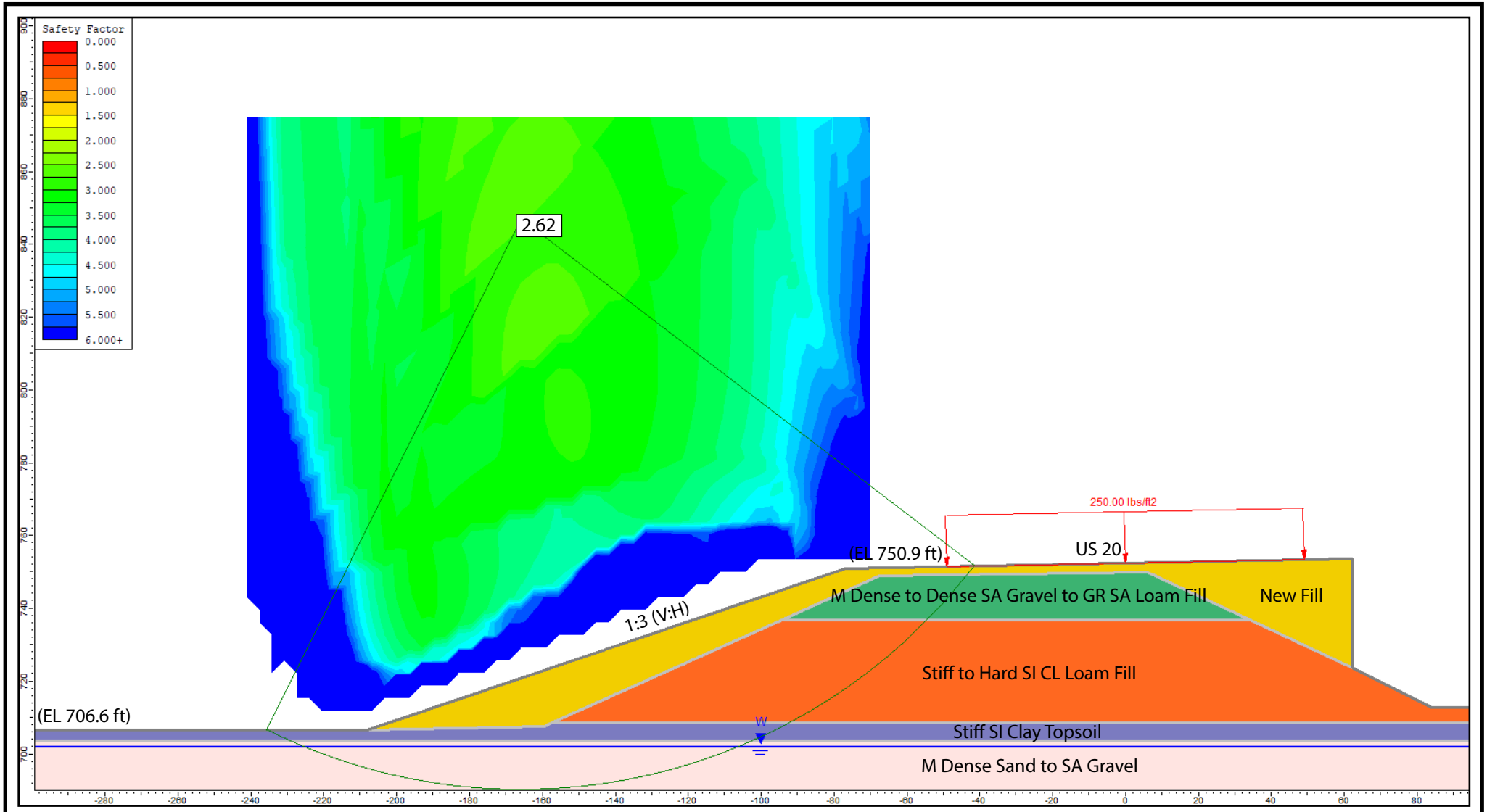
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 1396+00.00, Ref Boring: 45-0004-BSB-01, 45-0004-BSB-05, RWB-2-14 and RWB-2-14HA

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	M Dense to Dense SA Gravel to GR SA Loam Fill	120	0	31
3	Stiff to Hard SI CL Loam Fill	120	3000	0
4	Stiff SI Clay Topsoil	120	1500	0
5	M Dense Sand to SA Gravel	115	0	30

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-9 | DRAWN BY: D You, CHECKED BY: R. KC

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Lombard, IL 60148
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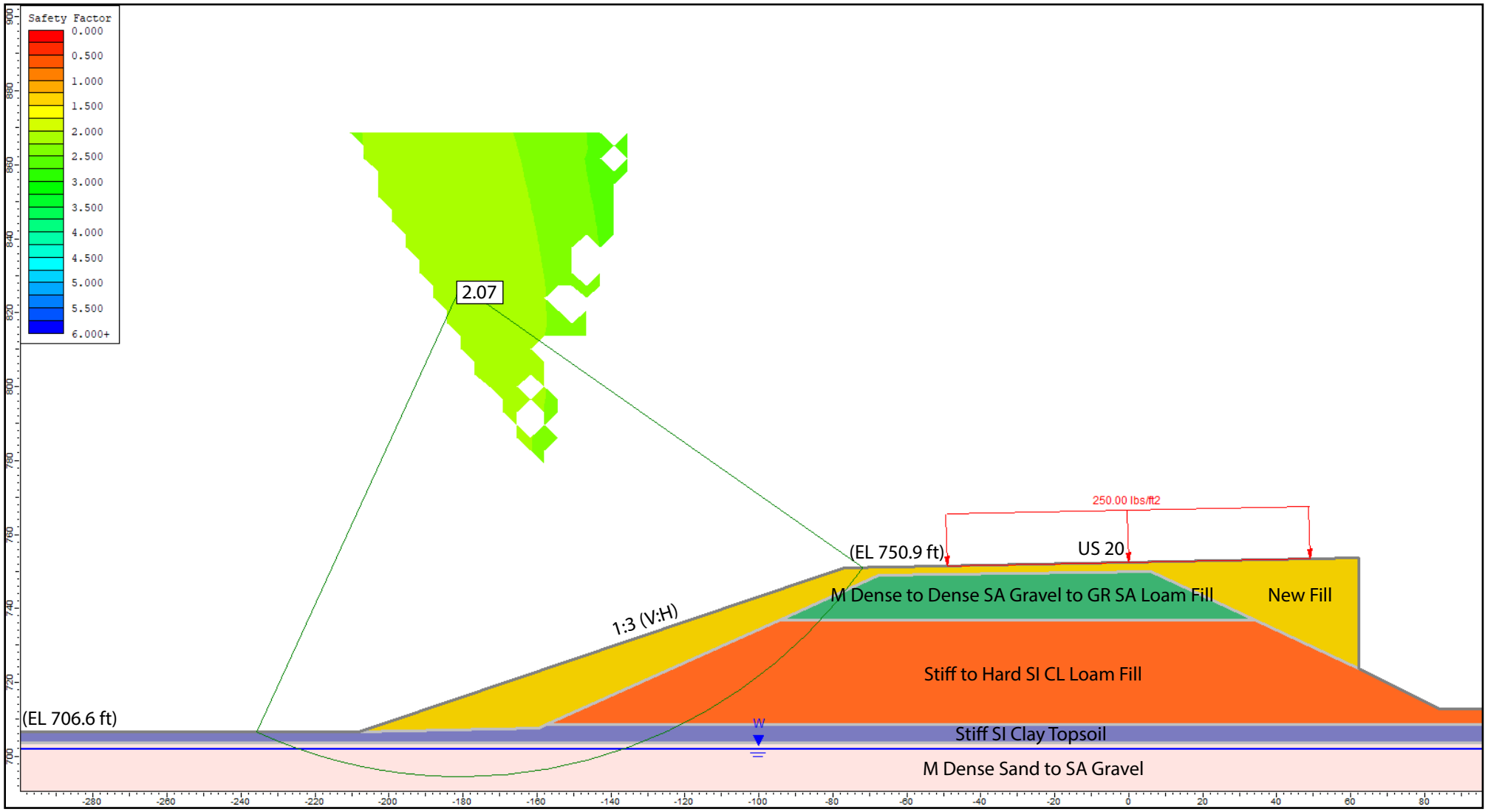
FOR GANNETT FLEMING | 121-03-01 KE225009



Drained Analysis, Station 1396+00.00, Ref Boring: 45-0004-BSB-01, 45-0004-BSB-05, RWB-2-14 and RWB-2-14HA

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	M Dense to Dense SA Gravel to GR SA Loam Fill	120	0	31
3	Stiff to Hard SI CL Loam Fill	120	100	31
4	Stiff SI Clay Topsoil	120	100	28
5	M Dense Sand to SA Gravel	115	0	30

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-10 | DRAWN BY: D You, CHECKED BY: R. KC

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Lombard, IL 60148
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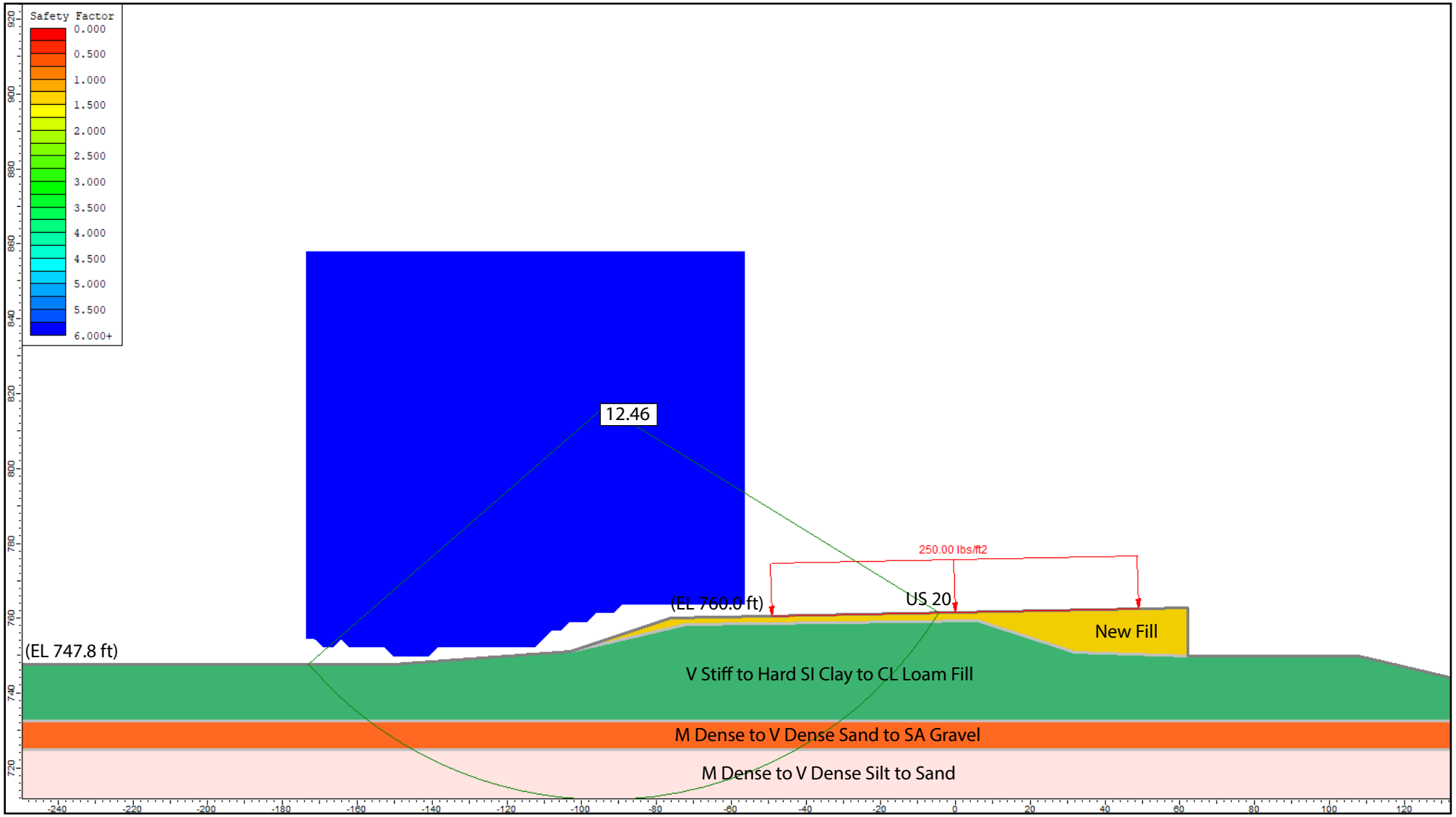
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 1404+00.00, Ref Boring: SGB-25 and RWB-3-02

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	V Stiff to Hard SI Clay to CL Loam Fill	125	6000	0
3	M Dense to V Dense Sand to SA Gravel	125	0	33
4	M Dense to V Dense Silt to Sand	125	0	32

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-11 | DRAWN BY: D You, CHECKED BY: R. KC

Wang Engineering
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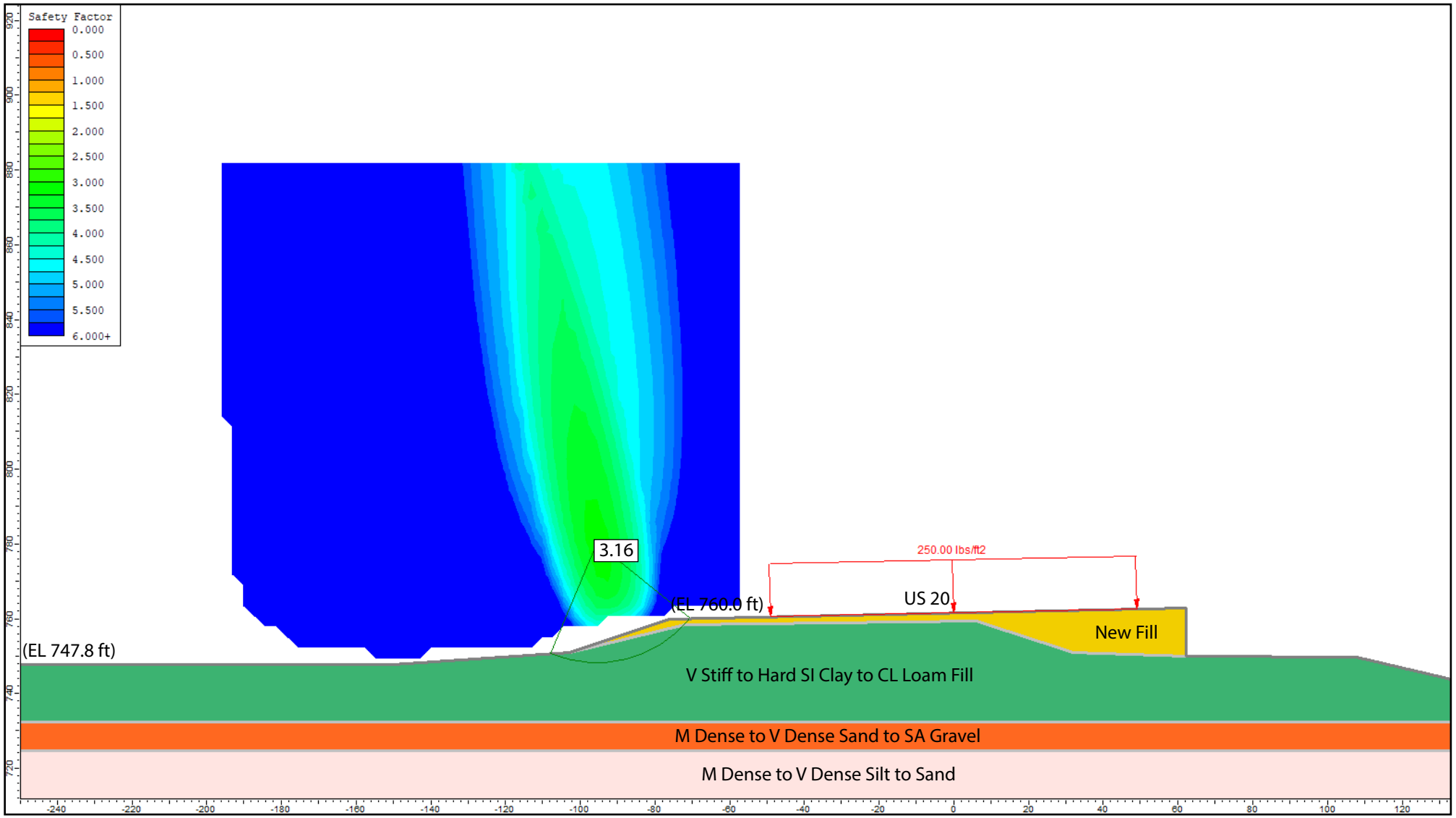
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR GANNETT FLEMING | 121-03-01 KE225009



Drained Analysis, Station 1404+00.00, Ref Boring: SGB-25 and RWB-3-02

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	V Stiff to Hard SI Clay to CL Loam Fill	125	100	31
3	M Dense to V Dense Sand to SA Gravel	125	0	33
4	M Dense to V Dense Silt to Sand	125	0	32

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-12 | DRAWN BY: D You, CHECKED BY: R. KC

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A Terracon Company
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Lombard, IL 60148
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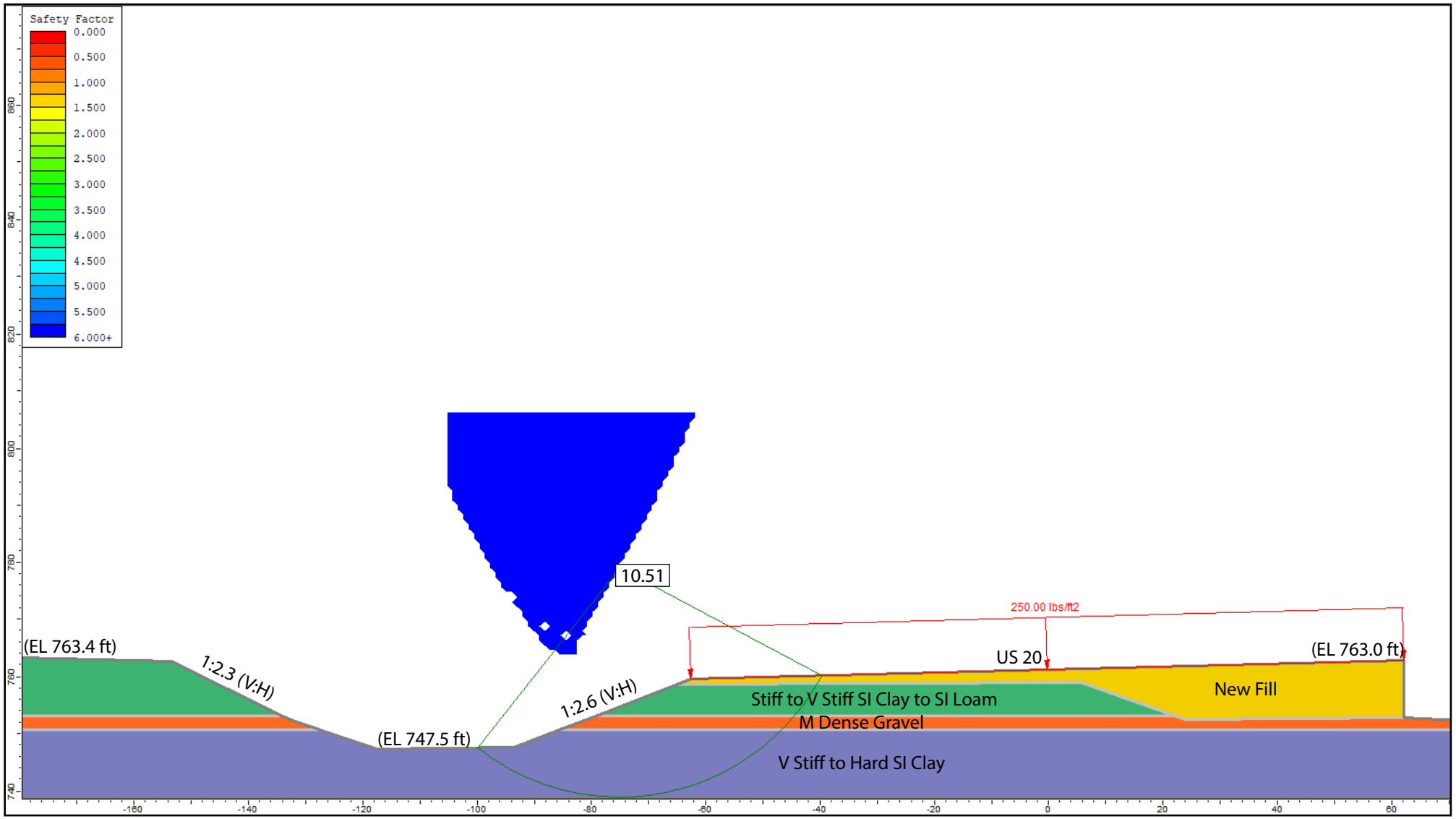
FOR GANNETT FLEMING | 121-03-01 KE225009



Undrained Analysis, Station 1406+00.00, Ref Boring: B9-3-NAW-03

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	Stiff to V Stiff SI Clay to SI Loam	120	1700	0
3	M Dense Gravel	115	0	29
4	V Stiff to Hard SI Clay	120	3200	0

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL

APPENDIX E-13

DRAWN BY: D You
CHECKED BY: R. KC

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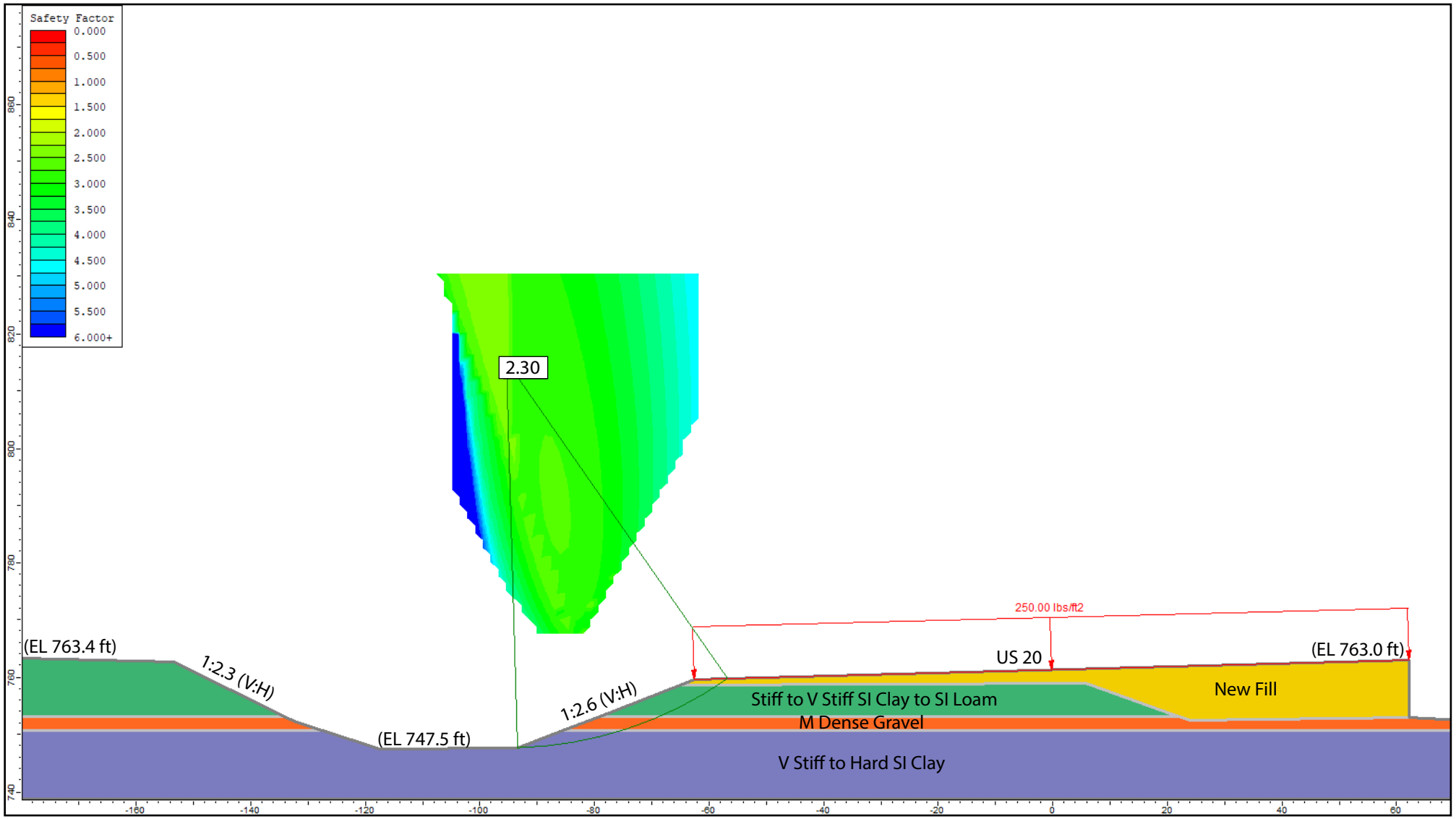
121-03-01
KE225009



Drained Analysis, Station 1406+00.00, Ref Boring: B9-3-NAW-03

Layer ID	Description	Total Unit Weight (pcf)	Dained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	Stiff to V Stiff SI Clay to SI Loam	120	100	30
3	M Dense Gravel	115	0	29
4	V Stiff to Hard SI Clay	120	100	31

GLOBAL STABILITY: US 20 FROM IL 31 TO GRACE STREET, ELGIN, KANE COUNTY, IL

SCALE: GRAPHICAL | APPENDIX E-14 | DRAWN BY: D You, CHECKED BY: R. KC

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Lombard, IL 60148
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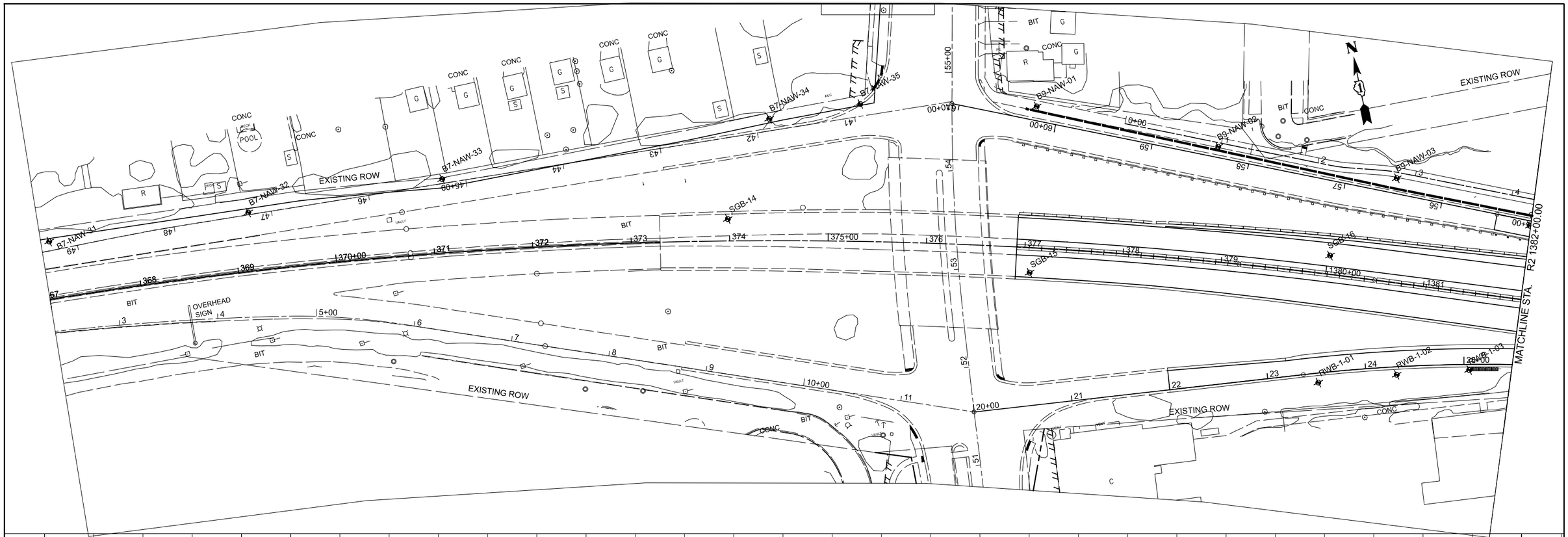
FOR GANNETT FLEMING | 121-03-01 KE225009

APPENDIX F



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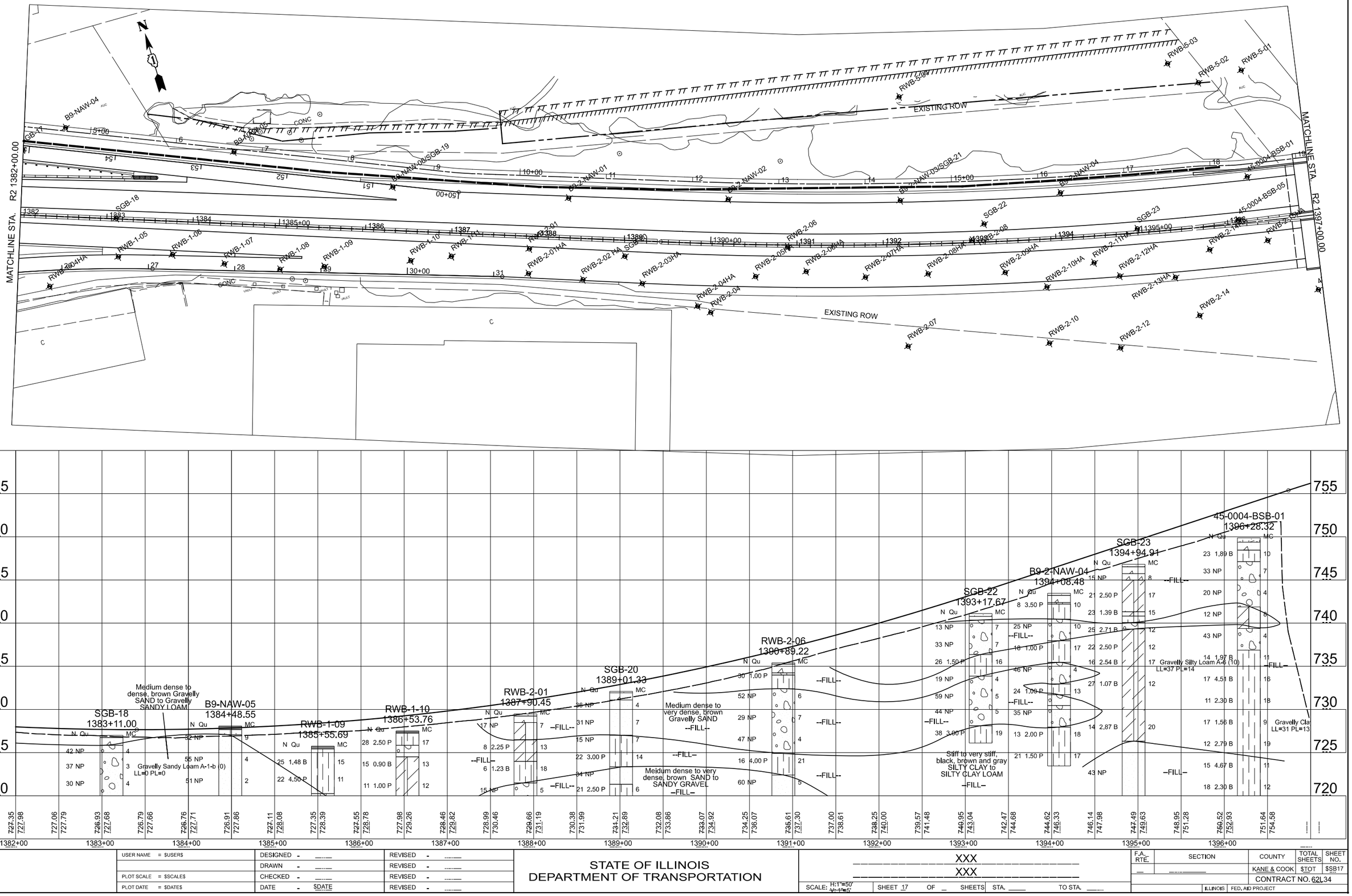
	DRAWN - ____	REVISED - ____	XXX XXX
PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____	SCALE: H:1"=50' V:1"=5' | SHEET 16 OF __ SHEETS | STA. ____ TO STA. ____
PLOT DATE = $DATE$	DATE - $DATE	REVISED - ____	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	____	KANE & COOK	$TOT	$SB16
		CONTRACT NO. 62L34		
		ILLINOIS | FED. AID PROJECT		



MODEL: $MODELNAME$
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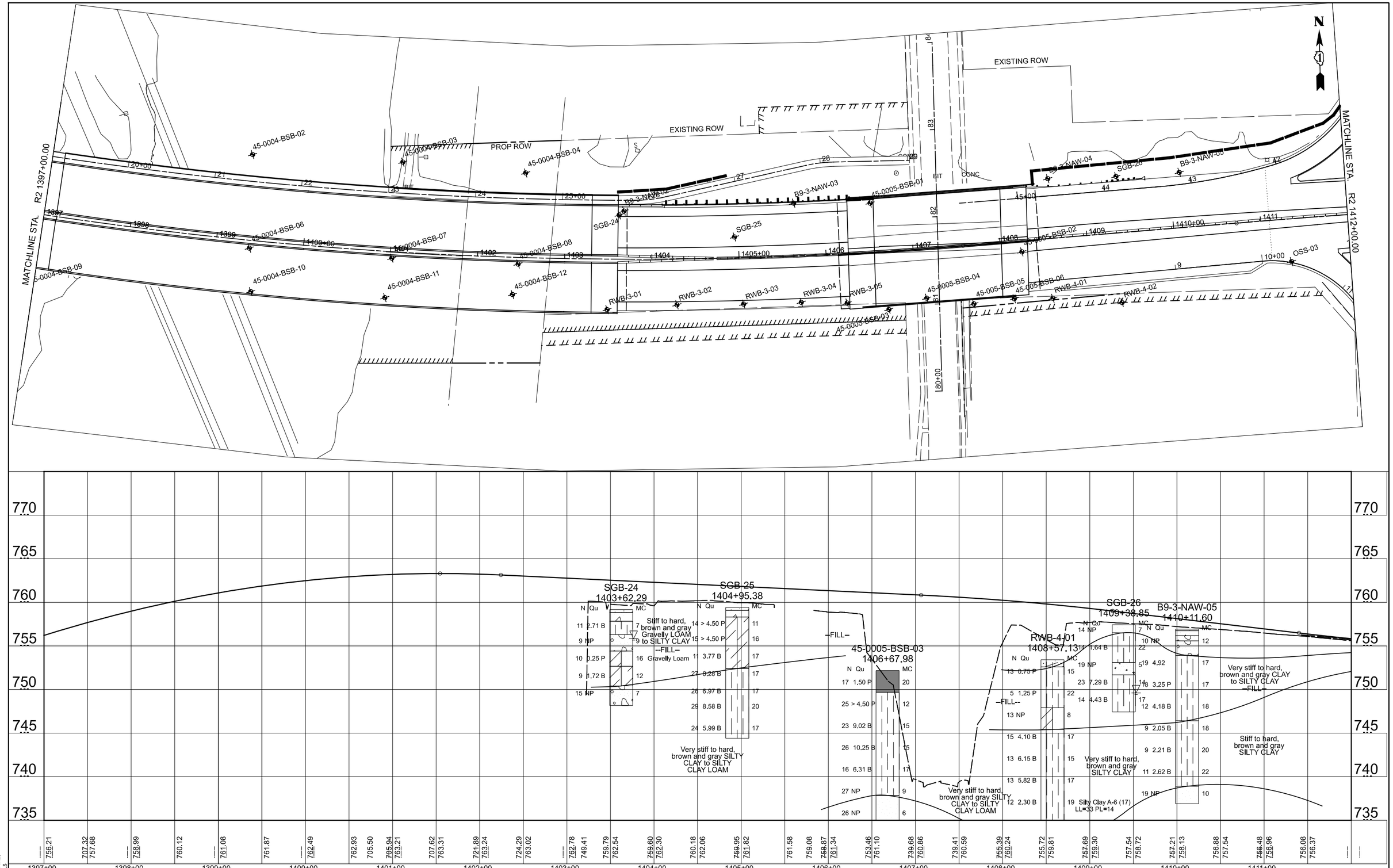
	DRAWN - ____	REVISED - ____	XXX XXX
PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____	SCALE: H:1"=50' V:1"=5' SHEET 17 OF __ SHEETS STA. ____ TO STA. ____
PLOT DATE = $DATE$	DATE - $DATE	REVISED - ____	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	____	KANE & COOK	$TOT	$SB17
		CONTRACT NO. 62L34		
		ILLINOIS FED. AID PROJECT		



MODEL: $MODELNAME$
FILE NAME: $FILE$

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

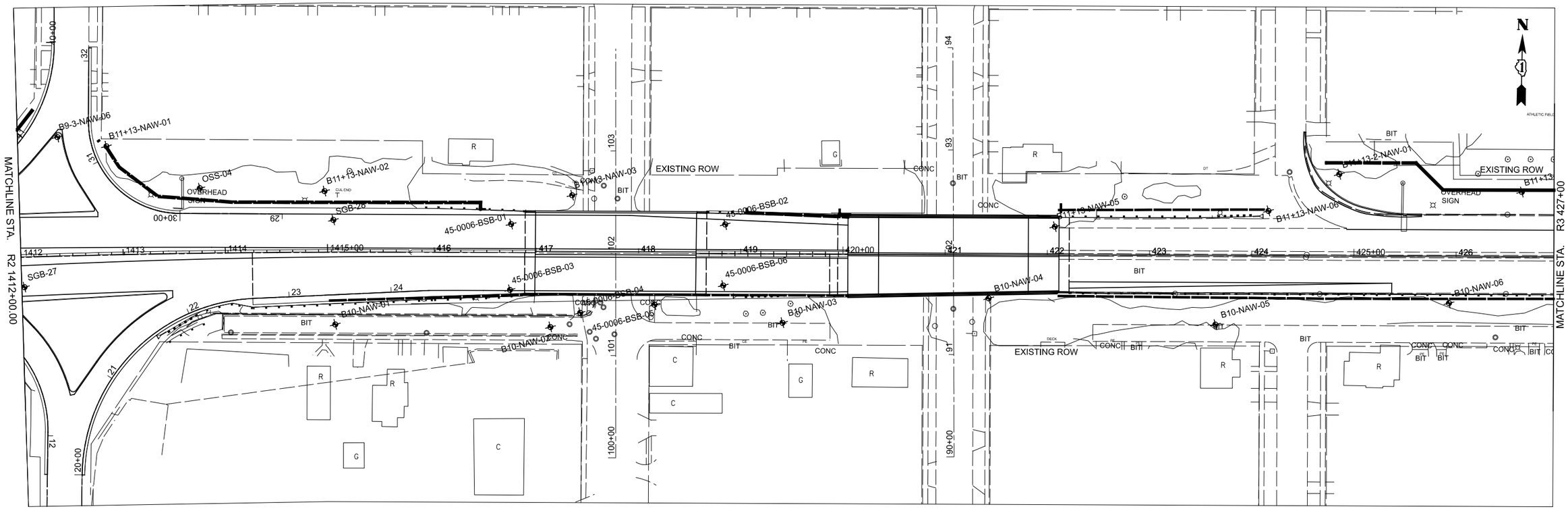
US 20 FROM RANDALL ROAD TO SHALES PARKWAY
ROADWAY PLAN AND PROFILE

SCALE: H:1"=50' V: 1"=5' | SHEET 18 OF _ SHEETS | STA. _____ | TO STA. _____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
_	_____	KANE & COOK	$TOT	$SB18

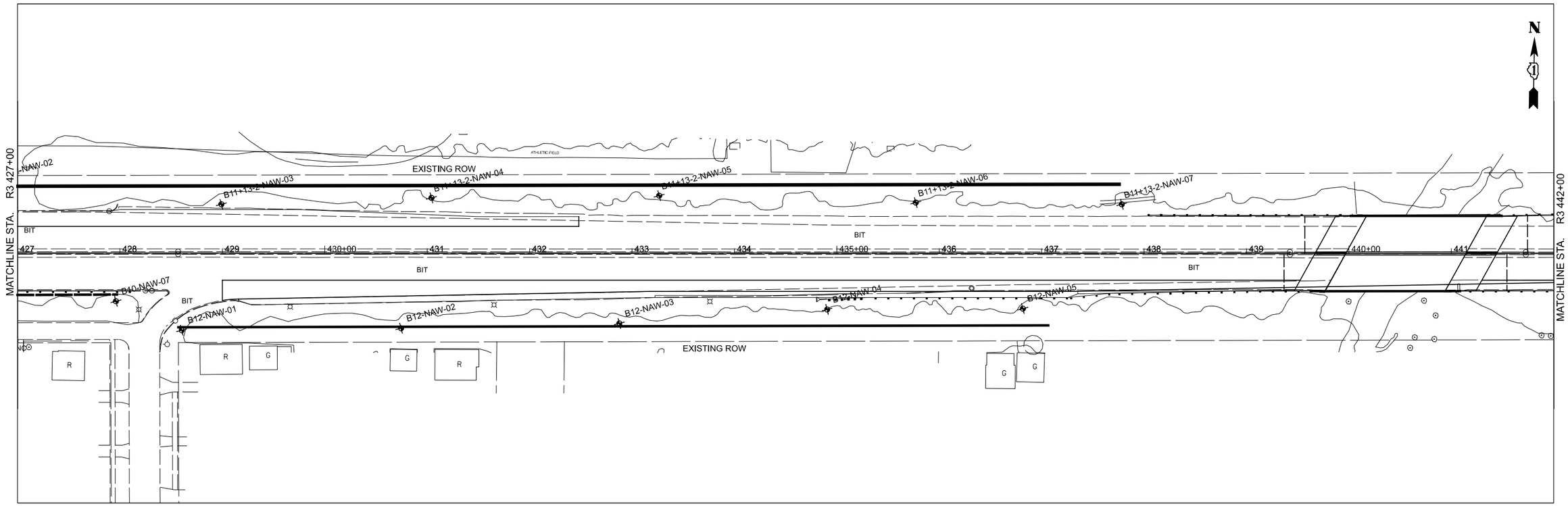
CONTRACT NO. 62L34

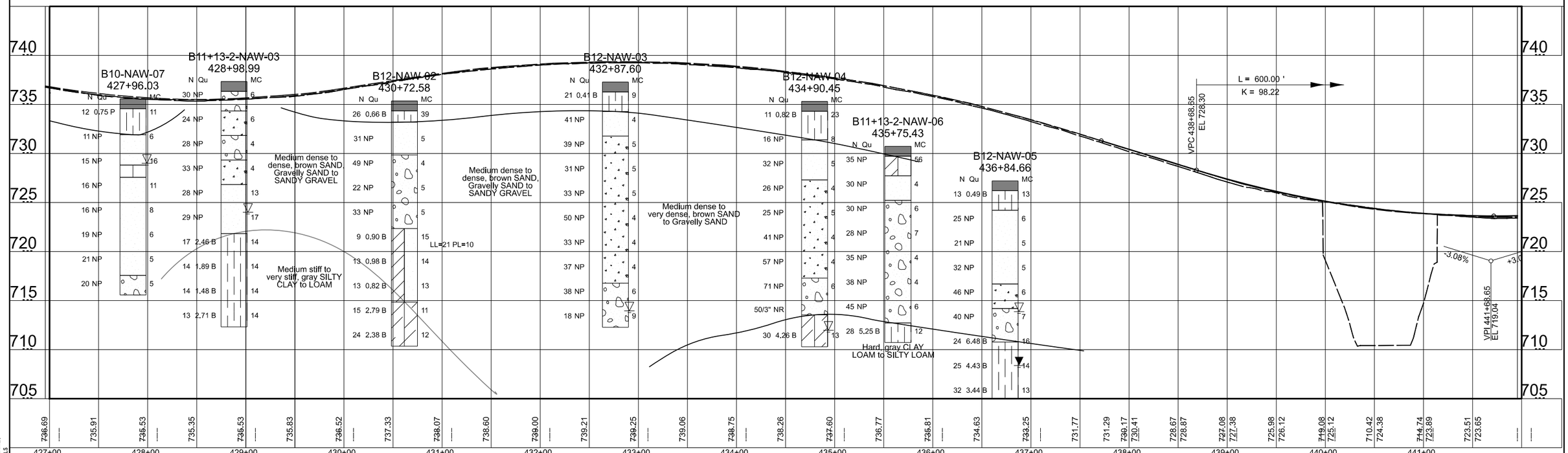
ILLINOIS | FED. AID PROJECT



USER NAME = $USER$	DESIGNED - ____	REVISED - ____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	US 20 FROM RANDALL ROAD TO SHALES PARKWAY ROADWAY PLAN AND PROFILE	F.A. RTE. —	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN - ____	REVISED - ____			—	____	KANE & COOK	$TOT	$SB19
PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____						CONTRACT NO. 62L34	
PLOT DATE = $DATE$	DATE - $DATE	REVISED - ____		SCALE: H:1"=50' V: 1"=5'	SHEET 19 OF __ SHEETS	STA. ____	TO STA. ____	ILLINOIS	FED. AID PROJECT

MODEL: $MODELNAME$
FILE NAME: $FILE$





MODEL: $MODELNAMES
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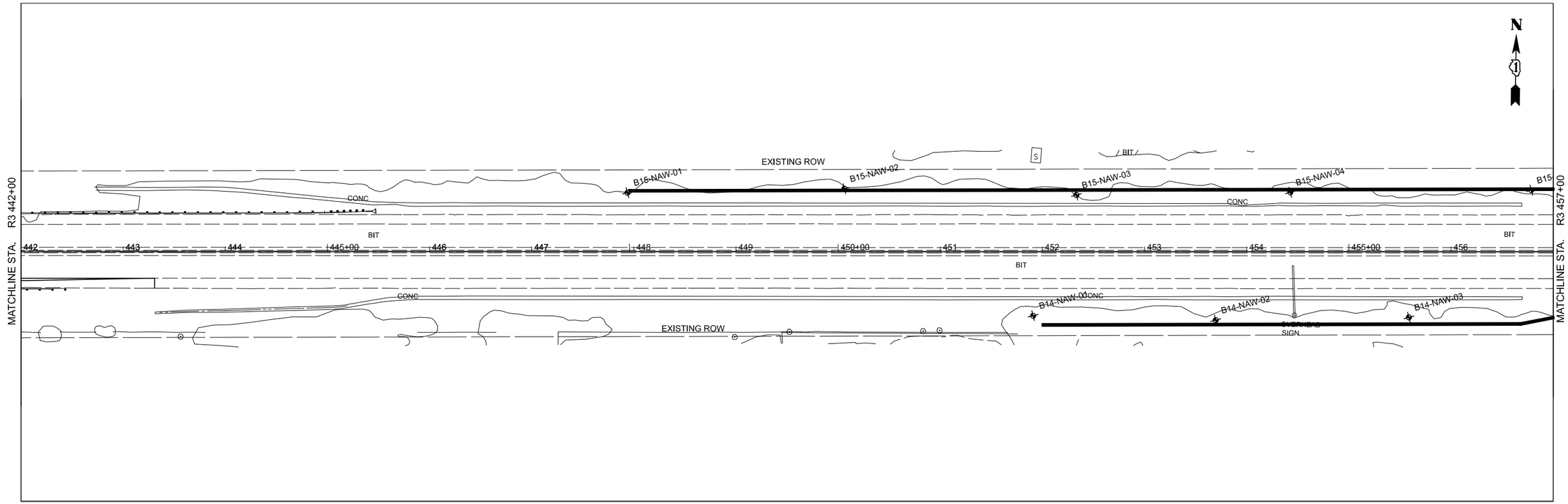
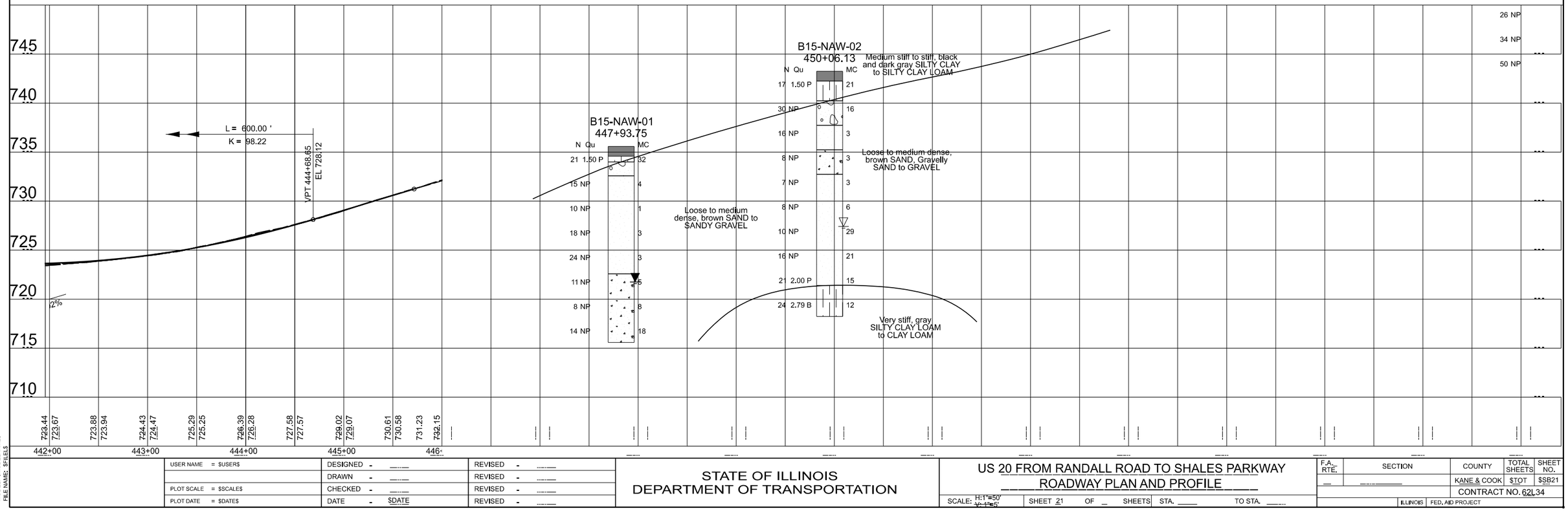
USER NAME = $USER$	DESIGNED - ____	REVISED - ____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - ____	REVISED - ____	US 20 FROM RANDALL ROAD TO SHALES PARKWAY ROADWAY PLAN AND PROFILE
PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____	SCALE: H:1"=50' V: 1"=5'
PLOT DATE = $DATE$	DATE - $DATE	REVISED - ____	SHEET 20 OF __ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	____	KANE & COOK	$TOT	$SB20
		CONTRACT NO. 62L34		
	ILLINOIS	FED. AID PROJECT		





MODEL: $MODELNAMES
FILE NAMES: $FILELS

USER NAME = $USER$	DESIGNED - ____	REVISED - ____	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN - ____	REVISED - ____	US 20 FROM RANDALL ROAD TO SHALES PARKWAY
PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____	ROADWAY PLAN AND PROFILE
PLOT DATE = $DATE$	DATE - $DATE	REVISED - ____	SCALE: H:1"=50' V: 1"=5' SHEET 21 OF __ SHEETS STA. ____ TO STA. ____

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
__	____	KANE & COOK	$TOT	$SB21
		CONTRACT NO. 62L34		
	ILLINOIS	FED. AID PROJECT		