

**ROADWAY GEOTECHNICAL REPORT
FAP 336A (IL 31)
FROM CHARLES J MILLER ROAD (BULL VALLEY ROAD) TO IL 120
CONTRACT 62U72
SECTION: FAP 336 23 RECON NORTH
McHENRY COUNTY, ILLINOIS**

02/02/2026

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1.0 INTRODUCTION

Interra, Inc. (INTERRA) was tasked by Patrick Engineering, Inc. based in Lisle, Illinois to conduct subsurface soil investigation and prepare the Roadway Geotechnical Report (RGR) for improvements at IL 31 between Charles J Miller Road (Bull Valley Road) and IL 120 in McHenry County, Illinois.

This roadway geotechnical report presents the results of INTERRA's subsurface investigation, laboratory testing, groundwater conditions and geotechnical evaluations performed, recommendations and construction considerations.

Project Description

The proposed project site is on IL 31 between Charles J Miller Road and IL 120 in McHenry County, Illinois. The project area is within the City of McHenry. City of McHenry is a community of about 27,100. The project area is located to the north-west side of Chicago.

The proposed improvements include widening and reconstruction of the roadway to provide two lanes in each direction separated by a median, intersection and drainage improvements, and pedestrian and bicyclist accommodation. The project area station limits extend approximately between Station 392+00 and 478+00 on IL 31 and between 294+00 and 313+00 on IL-120. The project location map is presented in Appendix A.

2.0 PROJECT SCOPE

INTERRA's scope of work included drilling soil borings for the proposed roadway widening, reconstruction, traffic signal improvements and detention ponds. The spacing



and depth of borings was planned to be in general accordance with the IDOT geotechnical manual guidelines. 71 borings were performed for roadway widening and reconstruction. These include traffic signal borings, retaining wall borings, detention pond borings and culvert borings. The roadway borings were drilled on:

- IL 31 between Charles Miller Road and IL 120
- IL 120 between Borden Street and Freund Avenue and
- West Lillian Street
- Grove Avenue

3.0 SITE DESCRIPTION

The project site is located between Charles J Miller Road and IL 120 in City of McHenry, McHenry County, IL. The site is within Nunda Township, defined as T44N R8E of the Third Principal Meridian. The approximate coordinates at the north end of the project are 42.3445N and 88.2734W and the south end are 42.3210N and 88.2745W. The ground surface elevation varies approximately from 754 feet to 880 feet. Approximate elevation at the north end of the project (IL 31 & IL 120) is 754 feet and at the south end of the project (IL 31 Charles J Miller Road) is 830 feet.

4.0 FIELD INVESTIGATION

The locations of the borings are presented in the Borehole Location Plan in Appendix A. The boreholes are marked in the field by INTERRA and surveying subcontractor ORION Engineers, Inc. The location of the borings was adjusted as needed due to utility conflicts or accessibility issues. Any offset from marked location is given in parenthesis of location in the boring logs.

Prior to drilling, the drilling sub-contractor Geocon Professional Services (GEOCON) contacted the local one-call utility clearance service (JULIE) to clear underground utilities. The borings were drilled with a truck mounted and ATV mounted drill rigs. In addition to drilling, soils samples were also collected using hand sampling equipment. INTERRA's personnel were present during the drilling to collect and log the soil samples. The borings were drilled, and samples were collected in general accordance



with the guidelines in the IDOT Geotechnical Manual. Soil sampling was performed per AASHTO T-206, "Penetration Test and Split Barrel Sampling of Soils". Soil sampling was performed at 2.5-foot intervals up to a depth of 30 feet, followed by 5-foot intervals. The soil samples were taken in conjunction with the Standard Penetration Test where a driving resistance to a standard 2" split-spoon samples indicate relative density of granular materials and consistency of cohesive soils. Soil specimens from the borings were visually identified in accordance with the AASHTO and IDOT textural classification systems. Also, unconfined compressive strength tests were performed on cohesive samples using an Illinois modified RIMAC tester. Cohesive samples that could not be tested with a RIMAC tester were tested with a pocket penetrometer to estimate the unconfined compressive strength. Shelby tube samples and bulk samples were also collected at selected boring locations for performing laboratory tests. Water level readings were taken during drilling and immediately after completion of drilling. Delayed water level readings were also taken in selected borings when feasible.

Field borehole logs as required are edited and presented in Appendix C. All split-spoon soil samples were placed in glass jars, labelled, and transported to INTERRA's laboratory for further testing.

5.0 LABORATORY TESTING

Laboratory testing included Moisture Content tests (AASHTO T 265) on all recovered split-spoon soil samples. Organic content tests (AASHTO T 267) were performed on selected soil samples based on moisture content and visual observations. Atterberg Limits (AASHTO T 89, 90), Grainsize Analysis (AASHTO T 88), Moisture Content (AASHTO T 265) and Standard Proctor (AASHTO T 99) tests were performed on the bulk soil samples. Selected Shelby Tube samples were tested for Unconfined Compressive Strength (ASTM D 2166), Grainsize Analysis (AASHTO T 88) and Atterberg Limits (AASHTO T 89, 90). Summary of laboratory testing and laboratory test reports are presented in Appendix D.



6.0 SUMMARY OF CLIMATIC CONDITIONS

Table 1 indicates the total precipitation in the preceding months of drilling along with historical average (normal) for the month for last 25 years. The observations were obtained from the National Weather Service website for Chicago O'Hare International Airport, IL.

Table 1: Precipitation Data

Month	Actual Precipitation (in.)	Normal Precipitation (in.)	Departure from Normal (+/-in.)
August, 2021	4.51	4.23	0.28
September, 2021	1.23	3.19	-1.96
October, 2021	5.77	3.39	2.38
November, 2021	0.71	2.05	-1.34
December, 2021	2.30	2.29	0.01
January, 2022	0.84	1.99	-1.15
February, 2022	2.59	2.17	0.42
March, 2022	3.69	2.56	1.13
April, 2022	5.31	3.67	1.64
May, 2022	3.47	4.50	-1.03
June, 2022	2.66	4.10	-1.44
July, 2022	4.50	3.97	0.53
January, 2024	3.50	1.99	1.51
February, 2024	0.65	2.17	-1.52
March, 2024	3.59	2.56	1.03
April, 2024	3.47	3.67	-0.20

Actual monthly precipitation is observed to be close to the historical average during the preceding months of drilling. This shows that the moisture of the surface soils and the ground water levels noted during drilling are similar to the normal levels.



7.0 SUBSURFACE CONDITIONS

The boring depth, groundwater depth and information of the type of soil encountered while drilling are summarized in a table and are provided as Appendix B. Detailed description of soil stratification is provided in the boring logs (Appendix C).

Groundwater levels were recorded during drilling, and immediately after completion of drilling. Delayed ground water levels were also recorded at selected locations. These details are presented in the boring logs.

It should be noted that fluctuations in groundwater levels may occur due to seasonal variations, rainfall, or other climatic conditions. Hence, the water levels reported may not represent the long-term groundwater levels. Typical long term groundwater levels are identified by the changes in the color of the soils from brown to gray.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Roadway

8.1.1 Subgrade Preparation - General

Subgrade preparation should be performed in accordance with Article 301 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). All new pavements should be supported on 12 inches of improved subgrade, per the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022).

Topsoil

Approximately hundred topsoil thicknesses were measured for the boreholes drilled outside of the pavement areas with an average value of 6.2 inches and a median value of 6.0 inches. We recommend topsoil removal thickness of six (6) inches for estimating purposes. Topsoil should be completely stripped and removed from the proposed pavement areas. The actual need for topsoil removal should be determined in the field.



We recommend that all the topsoil that is stripped be stockpiled, sorted, and reused for the proposed landscaping improvements. We recommend that a plan note containing the stockpiling information be included in the contract documents.

8.1.2 Removal and Replacement/ Remedial Measures for Unstable/Unsuitable Soils

The proposed improvements at the project site involve widening and reconstructing the existing roadway. This widening entails expanding the embankment up to approximately 60 feet in certain areas. Within the project vicinity, some sections necessitate excavation while others require fill heights of up to 13 feet. The project has very soft clayey soils and peat in numerous locations, posing potential issues with bearing resistance and settlement. Factors influencing the recommended remedial actions include high moisture levels, stability concerns, frost susceptibility at the subgrade level, and considerations for settlement where high embankments are planned. Table 2 outlines the recommended remedial measures, taking into account the aforementioned considerations and the soil conditions observed at the borehole locations. Actual extents of treatment should be determined during construction by embankment/subgrade inspection and testing. Prior to placing embankment materials, any unsuitable or unstable areas at the ground surface shall be removed or treated.

Table 2: Subgrade Undercut Recommendations

Boring Location	Station	Offset	Recommended Treatment
SGB-83	412+00 to 416+00	45'L to 45'R	Undercut to elevation 766.0 Approx. 12 inches below proposed agg. sub. on existing embankment.
SGB-84	416+00 to 421+00	Proposed embankment width	Contractor Designed Ground Improvement (see note 1)
SGB-85	421+00 to 423+00	Proposed embankment width	Undercut to elevation 759.5 - approx. 42 inches below proposed agg. sub. on existing embankment. - approx. 30 inches below existing ground surface in widening areas.



SGB-86 CUL14-01 CUL 14-02	423+00 to 425+00	Proposed embankment width	Undercut to elevation 761.0 - approx. 42 inches below proposed agg. sub. on existing embankment. - approx. 30 inches below existing ground surface in widening areas.
TSB-LL-01 TSB-LL-02	444+67 to 449+00	Proposed embankment widening 20'L to 50'L 20'R to 50'R	- geogrid below proposed agg. sub. on existing embankment. - undercut to elevation 749.0 (approx. 48 to 60 inches below existing ground surface) in widening areas.
BCSB-03 BCSB-04	449+00 to 453+50	Proposed embankment widening 20'L to 40'L 20'R to 40'R	- geogrid below proposed agg. sub. on existing embankment. - undercut to elevation 748.5 (approx. 54 inches below existing ground surface) in widening areas.
SGB-93 BCSB-06 BCSB-07 BCSB-08	453+50 to 459+00	Proposed embankment widening 20'L to 40'L 20'R to 40'R	- geogrid below proposed agg. sub. on existing embankment. - undercut to elevation 749.0 (approx. 66 inches below existing ground surface) in widening areas.
BCSB-12	464+00 to 467+00	Proposed roadway width	Undercut to elevation 753.0 approx. 12 inches below proposed agg. sub. on existing embankment.
BCSB-13	467+00 to 468+50	Proposed roadway width	Undercut to elevation 751.0 - place geogrid at base of undercut - approx. 36 inches below proposed agg. sub. on existing embankment.

Note 1: The boring did not encounter suitable material prior to termination at a depth of 10 feet. A ground improvement system is recommended at this location based on the depth of the required undercut to reach suitable soil.

The recommended remediation areas should be further evaluated in the field during construction to determine the exact limits and depths of the undercuts. All undercuts should be backfilled in accordance with the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022). We also recommend placing geotextile fabric at the base of all undercuts.



In addition to the undercuts recommended in Table 2, it is recommended 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. Proof rolling should be performed in accordance with section 3.3 of IDOT Subgrade Stability Manual to identify unstable/unsuitable subgrade soils. 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.

Both of these pay items reference the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022).

The top eight (8) inches of the subgrade should be disked, air dried, and recompact to achieve the required density and stability. After compaction, the subgrade should have a minimum dry density of 95 percent of standard laboratory dry density and a



minimum IBV 3.0 as it is assumed that plans include 12 inches of improved subgrade. A minimum IBV of 8.0 should be achieved if the plans do not include 12 inches of improved subgrade.

It is also recommended to include 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 area listed in the undercut table. It is recommended to place 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.

8.1.3 Pavement Design

In the Pavement design, both Illinois Bearing Ratio (IBR) and Subgrade Support Rating (SSR) values should be taken into consideration. Based on the soil classifications, and IDOT Geotechnical Manual guidelines, we recommend using an IBR of 3.0 or an SSR of POOR.

Underdrains

To provide drainage for the proposed pavement in areas where the roadway will be completely reconstructed, it is recommended to install both longitudinal and transverse pipe underdrains below the pavement. It is recommended to install the transverse drains using a spacing of 300 feet as well as in low areas and at the base of any undercuts. The underdrains should tie into the storm water drainage system and should be installed per Article 601 in the IDOT Standard Specifications (Adopted January 1, 2022) and consist of Type 2 underdrains. For interstate routes, it is recommended that 6 inch ID underdrains be used.



8.1.4 Stability Analysis

No embankments greater than 15 feet are proposed to be constructed. Hence, slope stability analyses were not performed.

8.1.5 Earthwork Quantity Calculations

A shrinkage factor of 15% should be used in calculating borrowed and furnished quantities.

8.1.6 Recommended Ground Improvement Methods

Boring SGB-84 did not encounter suitable material prior to termination of the boring at 10.0 feet. It is anticipated that ground improvement will be needed between station 416+00 and 421+00 for the proposed embankment width. The considered ground improvement methods were Aggregate Columns (AC) and Controlled Stiffness Columns (CSC). Ground improvement using aggregate columns is not considered viable in the very soft or organic soils with high moisture contents encountered at the project site. Under these conditions, the aggregate columns are susceptible to excessive bulging and lateral displacement, resulting in the loss of stone into the surrounding soils. As a result, the columns would be unable to develop the stiffness necessary to perform as intended. Controlled Stiffness Columns (CSCs), also referred to as Controlled Modulus Columns or Rigid Inclusions, are considered suitable for these conditions and are expected to perform effectively in such soils. CSCs consists of stiff vertical columns that are designed to transfer the load of the embankment through the soft compressible soil layer to a firm foundation. Cement based columns use Portland cement binder with aggregate for column construction and are more rigid than an aggregate column. CSC is a category of cement-based columns that are traditionally used for ground improvement in transportation projects. CSCs require a Load Transfer Platform (LTP) to distribute embankment loads to the columns. The embankment loads are transferred through the LTP, which consists of select granular structural fill and may be constructed with one or more layers of geosynthetic reinforcement or without reinforcement. This prevents unacceptable differential deformations between columns that may appear at the embankment surface. LTPs are typically on the order of two feet thick; however, the



required thickness depends on factors such as the applied load, column spacing, and underlying soil strength, and is optimized by the contractor during the design phase. When time constraints are critical to the success of the project, CSCs present an innovative solution. In the last 30 years, this technology has been used successfully by over a dozen state DOTs including IDOT.

CSCs provide a technical and potentially economical alternative to more conventional construction techniques (i.e., surcharge loading and PVDs, staged construction with or without geosynthetic reinforcement). The key advantage to CSCs is that construction may proceed rapidly in one stage. There is no waiting time for dissipation of pore water pressure in the soft foundation soil. CSCs are also more economical than the removal and replacement of deep deposits of soft soils, particularly on larger sites where the groundwater is close to the surface.

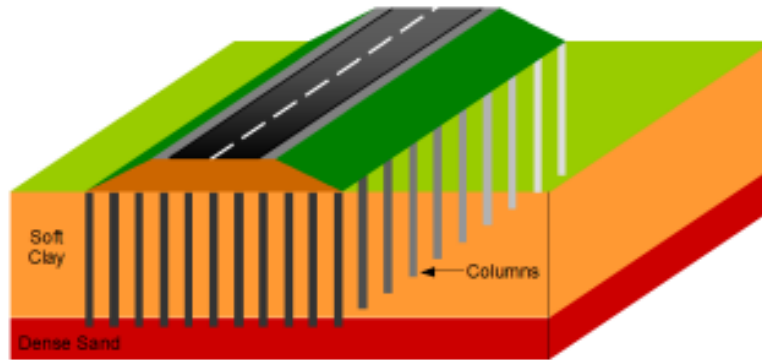


Figure: Typical Layout of a Column Supported Embankment (FHWA)

8.2 Traffic Signal Foundations

The proposed project will include new traffic signals where IL 31 crosses Lillian Steet and IL 120. The boreholes performed at the intersection of IL 31 and Lillian Street are TSB-LL-01 & TSB-LL-02 and the borings performed at the intersection of IL-31 and IL-120 are TSB-IL-120-01 and TSB-IL-120-02.

Typically, the foundations for traffic signals may be designed based on the District One Standard Traffic Signal Design Details (TS-05) or Standard 878001-10, provided the soil requirements listed in the detail are met. These requirements state that the soils along the foundation shaft must be cohesive in nature, with an unconfined compressive strength of at least 1 ton per square foot. Low strength cohesive soils and granular deposits do not meet the requirements to use the design tables. The borings encountered granular soils, low strength cohesive soils, and organic peat soils within the foundation shaft depth, which do not meet the requirements to use the standard details. Since the soils encountered do not meet these requirements, the foundation dimensions in the standard detail cannot be used and a custom foundation design must be completed.

The IDOT District One Geotechnical Unit completed an analysis based on the soil information provided in the report and the traffic signal design information provided in the plans. Based on the results of the analysis, IDOT District One Geotechnical Unit recommends that the foundations be designed using the dimensions in the table below.

Table 3: Traffic Signal Mast Arm Foundation Design Recommendations

Location	Mast Arm Length (feet)	Recommended Shaft Diameter (inches)	Recommended Foundation Shaft Depth B* (feet)
IL 31 at Lillian Street			
NW Corner	Dual 18/34	36	15
SW Corner	42	36	15
SE Corner	Dual 22/36	36	15
NE Corner	42	36	15
IL 31 at IL 120			
NW Corner	38	36	14
SW Corner	52	36	15
SE Corner	58	42	21
NE Corner	40	36	14

* The foundation shaft depth is given as the depth below the ground surface elevation.



8.3 Detention Pond

Soil boring DPB-BC-01 was performed for the detention pond to the south of IL-120, near Fox River. The bottom of the detention pond is expected to be at an elevation of 741.25 feet. The borehole encountered loose to very loose sandy loam fill at that elevation. Since the soil type found at the proposed bottom of the detention pond is sandy loam, an estimated design infiltration rate of 0.5 inch per hour can be used for design purposes based on the City of Chicago Storm Water Ordinance Manual.

Soil boring DPB-IL31-04-01 was performed for detention pond to the west of IL-31, near Station 424+00. The bottom of the detention pond is expected to at an elevation of 758 feet. The borehole encountered stiff organic clay at that elevation. For clay, an estimated design infiltration rate of 0.07 inch per hour can be used for design purposes based on the City of Chicago Storm Water Ordinance Manual.

9.0 CONSTRUCTION CONSIDERATIONS

- Temporary excavations should be sloped no greater than 1V:2H. Excavations steeper or deeper than 4 feet should be analyzed individually. Potential for ground movements due to excavation on open roadways and utilities should be considered. All excavations should be performed in accordance with local, state and federal regulations.
- Excavated materials free from debris can be reused upon approval by Engineer.
- If any water is accumulated during construction, it can be removed using sump pump method. To facilitate dewatering, surface runoff and ditches should be directed away from excavations.
- Ground improvement contractor equipment and operations need sufficient width for working bench. Any overhead power lines in the work zone need to be relocated.
- If the project will need to apply for a NPDES storm water permit for construction site activities, Soil erosion factors (K factors) and erosion hazard ratings for each of the soil types within the project limits were obtained from NRCS website and presented in Appendix E.



- For traffic signal foundations, the drilled shaft construction should be completed in accordance with Section 516, Drilled Shafts, in the IDOT Standard Specifications for Road and Bridge Construction (adopted January 1, 2022). It should be noted the layers of soft cohesive soils, or granular soils have the potential to squeeze or slough into the shaft excavation. Wet method (516.06b), temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation. The contractor should review the geotechnical report and associated boring logs, evaluate the soil conditions and depths, and determine the means and methods necessary for construction.

10.0 CONSTRUCTION MONITORING

Construction monitoring shall be in accordance with IDOT Standard Specifications, Special Provisions and Contract Plans. Construction monitoring shall be performed by an experienced geotechnical engineer or soils technician to monitor earthwork operations, soils compaction, and suitability of subgrade soils, location and depths of undercuts and to advise Engineer of actual soil conditions that differ from those in the geotechnical investigation report. The analysis and recommendations submitted in this report are based upon the data for soil boreholes performed at the locations indicated on the location plan. This report does not reflect any variations that may occur between these boreholes.

11.0 CLOSURE

The analysis and recommendations submitted in this report are based upon the data obtained from the boreholes performed at the locations indicated on the location plan. This report does not reflect any variations that may occur between these boreholes. In performing subsurface explorations, specific information is obtained at specific locations at specific times. It is a well-known fact that variations in soil and rock conditions exist on most sites between borehole locations. Also, groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of



construction. If variations then appear evident, it will be necessary for a re-evaluation of the recommendations of this report after performing on-site observations during construction period and noting the characteristics of any variations.

We appreciate the opportunity to be of service to you. Should you need additional information or clarifications, please call us at (630) 754-8700.

Yours truly,

INTERRA, INC.



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REFERENCES

IDOT 2020. Geotechnical Manual, Illinois Department of Transportation.

IDOT 2022. Standard Specifications for Road and Bridge Construction. Illinois Department of Transportation.

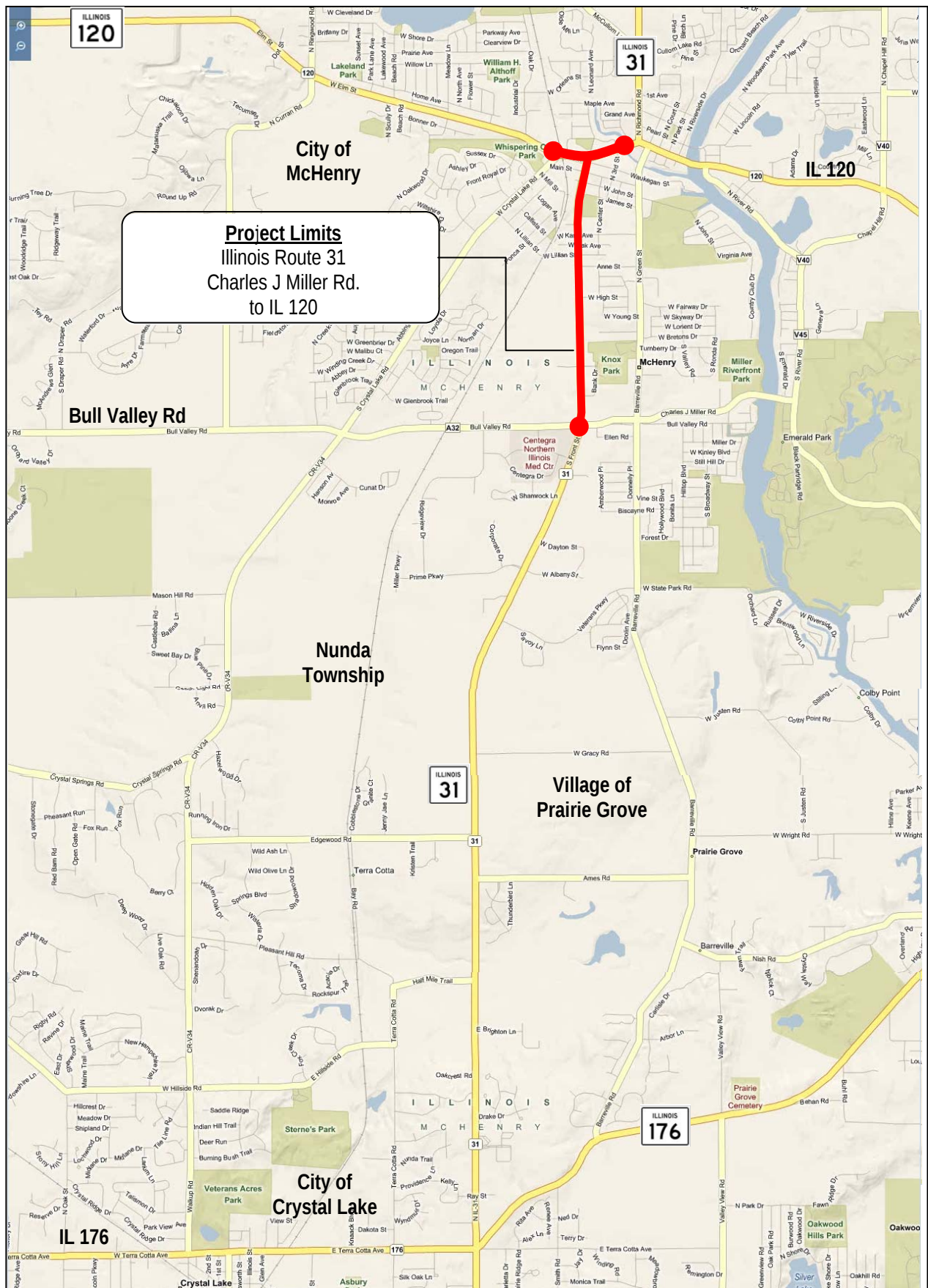
City of Chicago Storm Water Ordinance Manual, January 2016.



Appendix A

Site Location Map

Borehole Location Plan & Profiles



Legend

 Project Limits

SITE LOCATION MAP

Illinois Route 31 Phase II Study
Illinois Route 176 to Illinois Route 120
McHenry County



BORING LOCATION PLANS AND SOIL PROFILES

IL 31
FROM IL 176 TO IL 120
MCHENRY COUNTY, ILLINOIS

PREPARED FOR:

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BOLINGBROOK, IL 60440

MAY 10, 2024
INTERRA PROJECT 9012

LEGEND:



Soil Boring



Approximate Area
of Ground Improvement

Borehole Data

SGB-01 Borehole Number
886.95 ft Elevation
124+58, 43ft RT Station, Offset

N Qu MC



— Borehole Lithology

N - N Value, (blw/12 in)
Qu - UC Strength, (tsf)
MC - Moisture Content, (%)



Groundwater Elevation
at First Encounter



Groundwater Elevation
Upon Completion



Groundwater Elevation
After ___ Hours

Lithology Graphics



Topsoil



Organic silt or clay



Pavement



Clay



Concrete



Silty Clay,
Silty Clay Loam



Fill (made ground)



Clay Loam



Crushed stone



Loam



Sand, Sandy Loam



Silt, Silty Loam



Coarse Sand



Peat



Gravelly Sand,
Sandy Gravel



No Recovery



Gravel,
Rock Aggregate

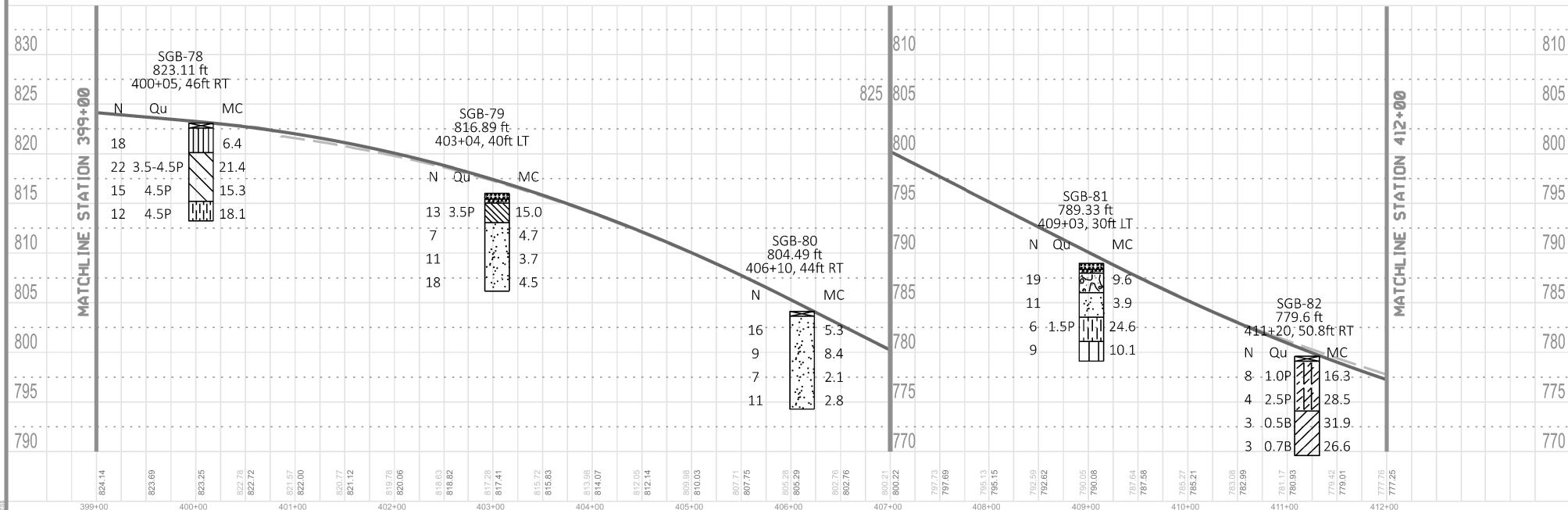
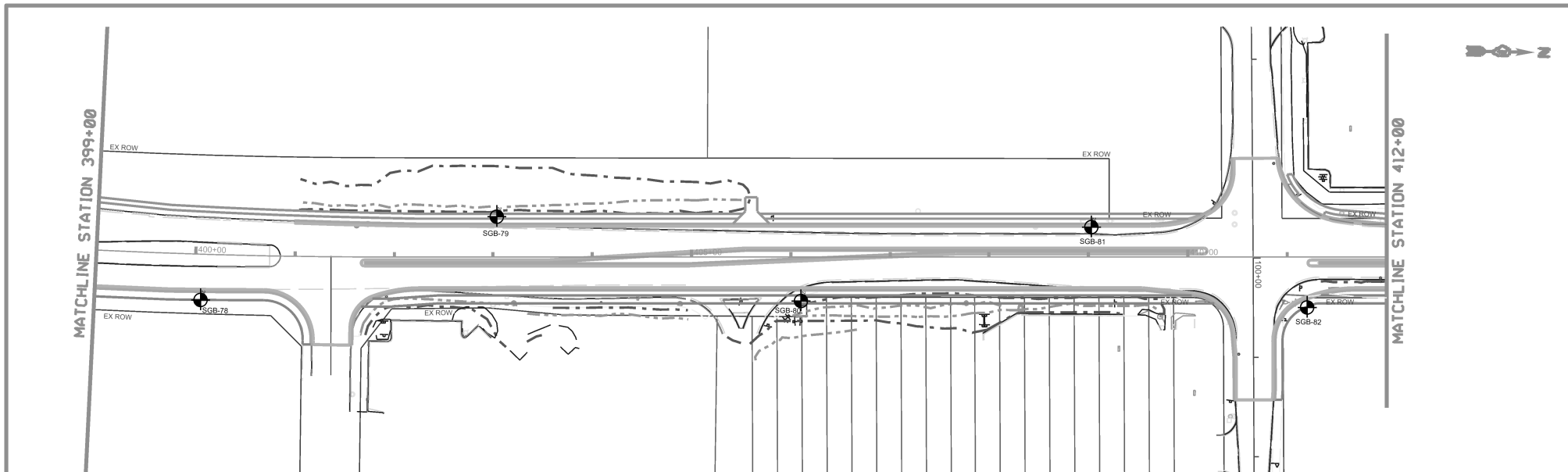


Rock Core

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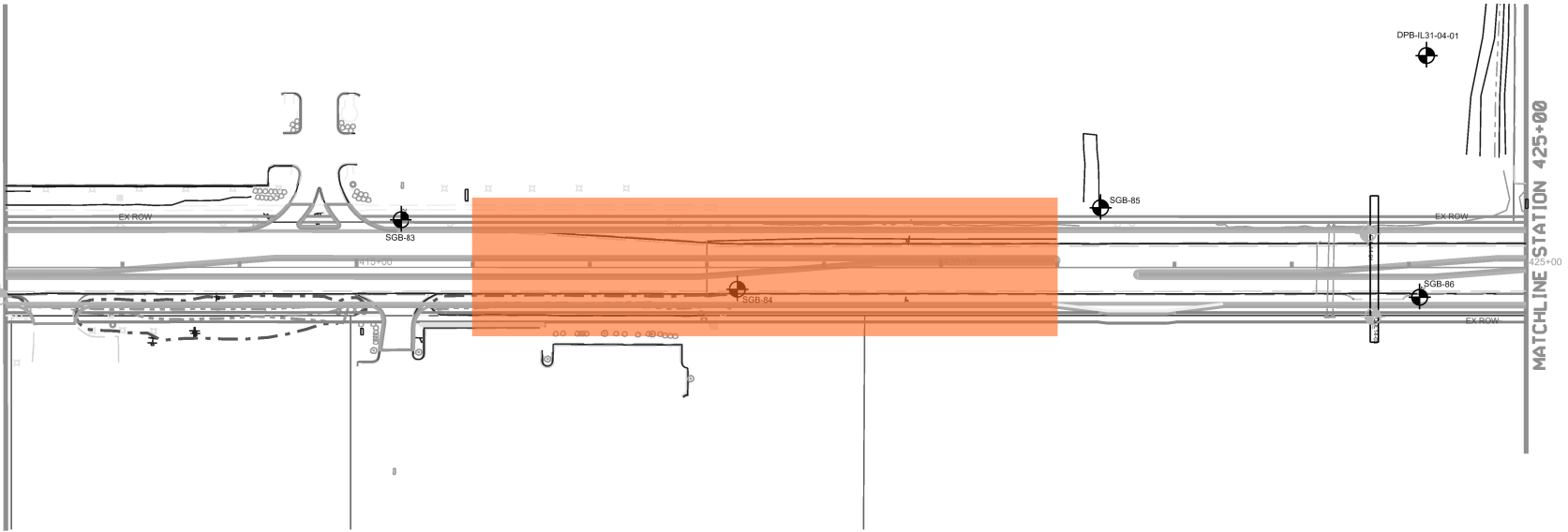
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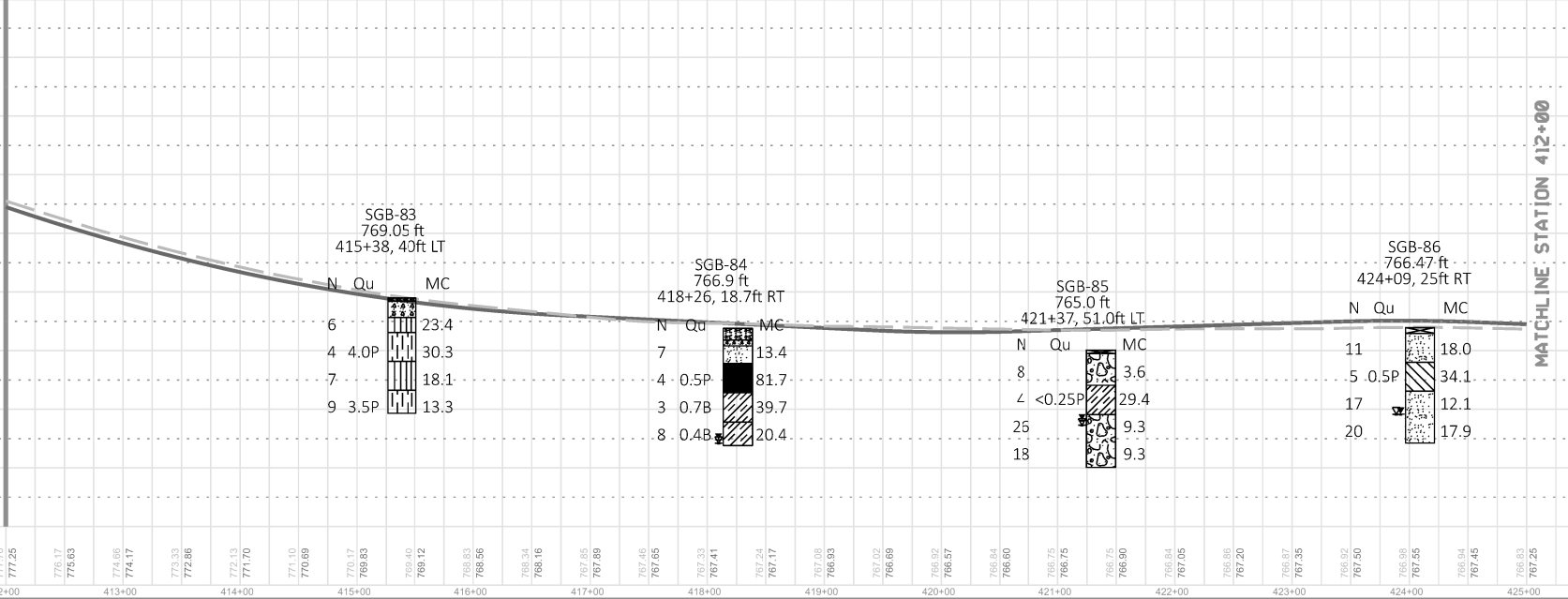
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NOTED: BORING NAMES
FILE NAME: 31B308

MATCHLINE STATION 412+00



MATCHLINE STATION 412+00



MATCHLINE STATION 425+00

MATCHLINE STATION 412+00

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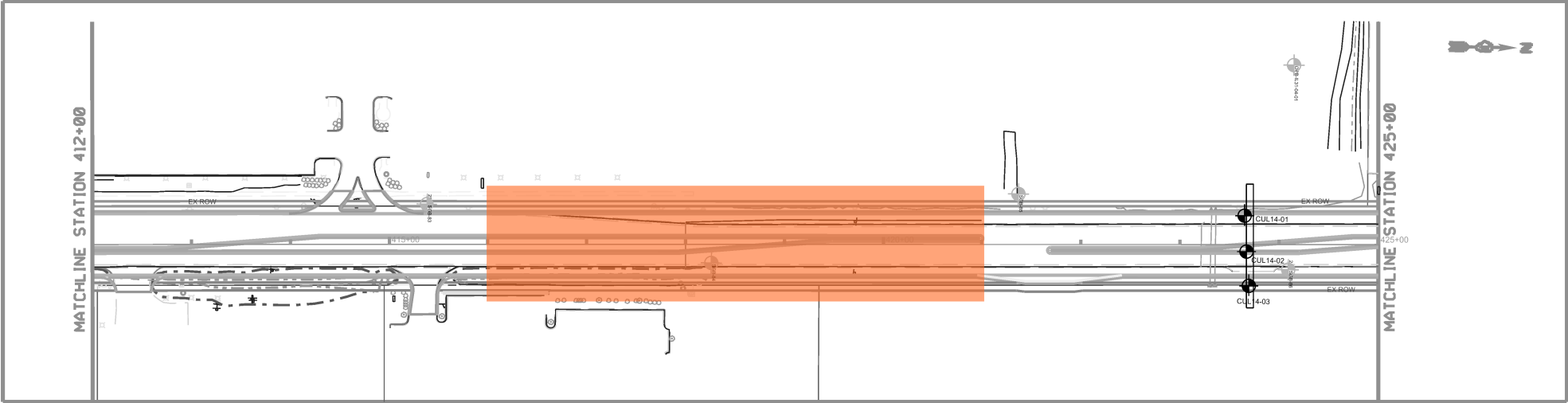
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING PLAN AND PROFILE

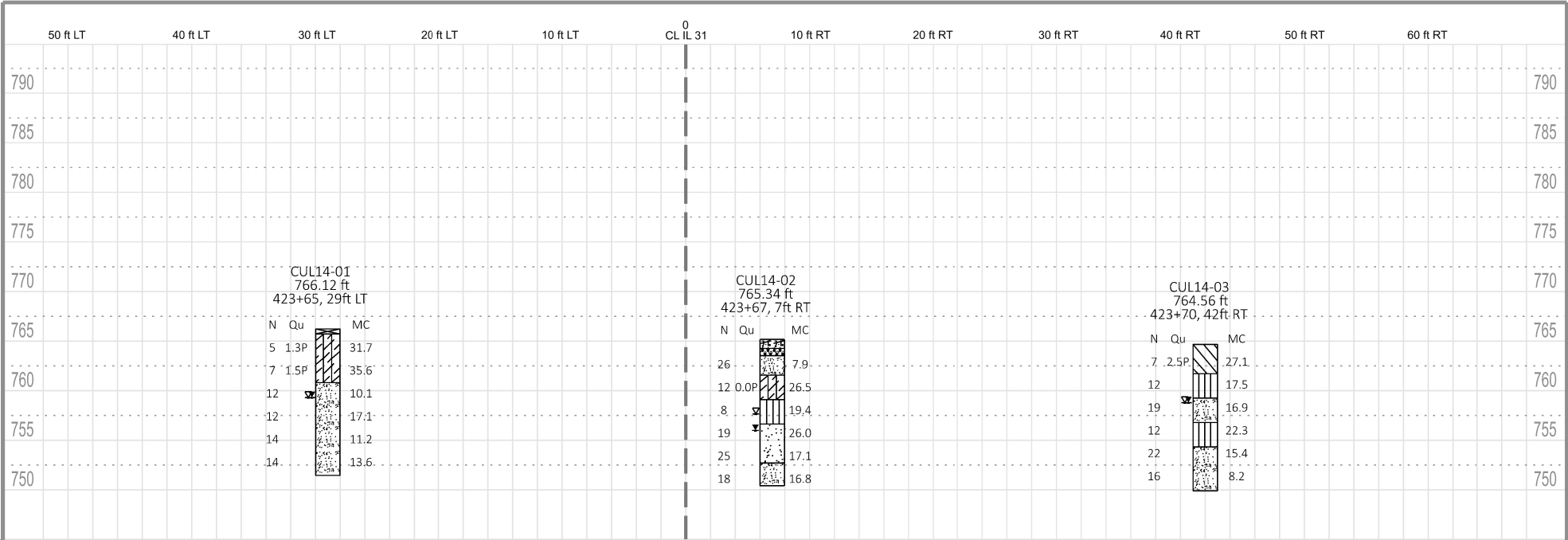
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		CONTRACT NO.		
ILLINOIS FED AID PROJECT				

PLAN	DESIGNED	DATE
	DRAWN	
	CHECKED	
	NOTED	
BY		



PROFILE	DESIGNED	DATE
	DRAWN	
	CHECKED	
	NOTED	
BY		



MODEL: BOROGLNAME
FILE: BOROGLNAME

USER NAME	* SUSERS	DESIGNED	-	REVISED	-
FLY SCALE	* SS CALES	DRAWN	-	REVISED	-
PLOT DATE	* SDATES	CHECKED	-	REVISED	-
		DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING PLAN AND PROFILE

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTL	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

PLAN

PROJECT: _____

NOTED: _____

NO. _____

BY: _____

DATE: _____

NOTE BOOK: _____

NO. _____

BY: _____

DATE: _____

PROJECT: _____

NOTED: _____

NO. _____

BY: _____

DATE: _____

PROFILE

PROJECT: _____

NOTED: _____

NO. _____

BY: _____

DATE: _____

NOTE BOOK: _____

NO. _____

BY: _____

DATE: _____

PROJECT: _____

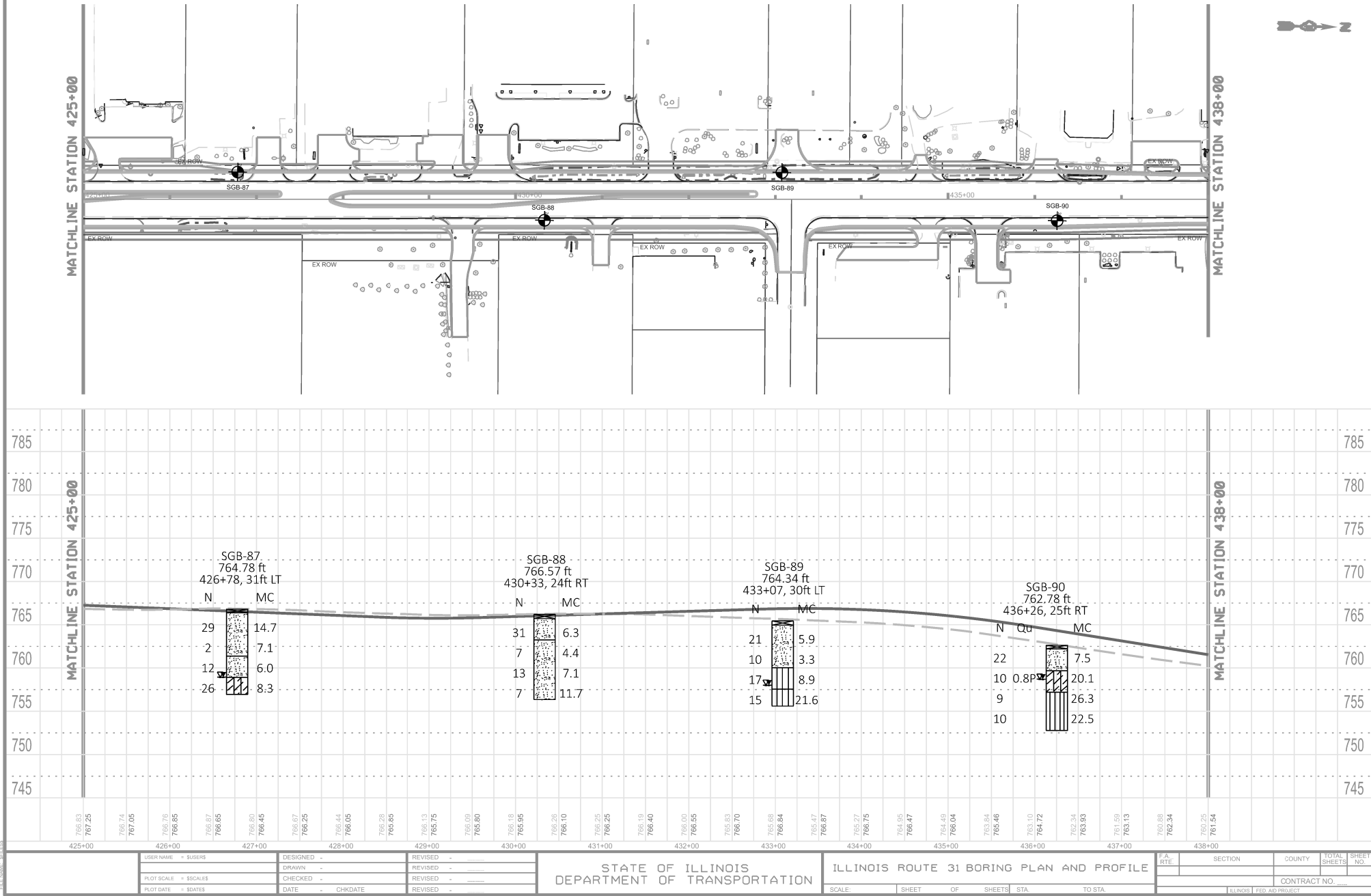
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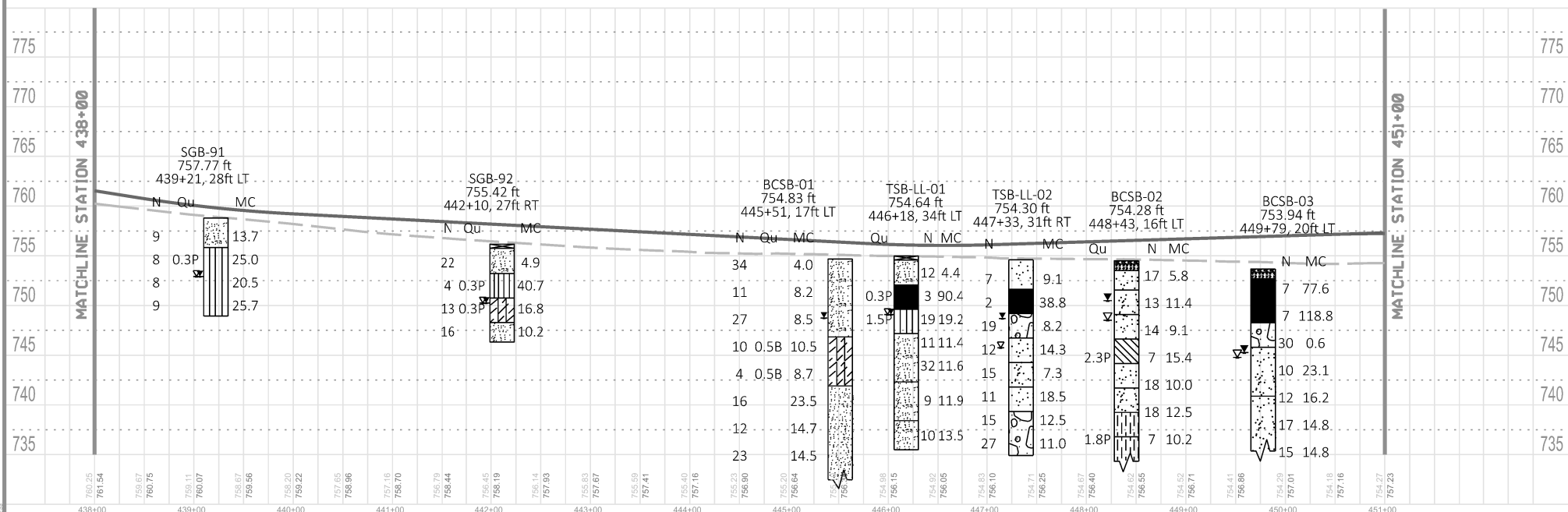
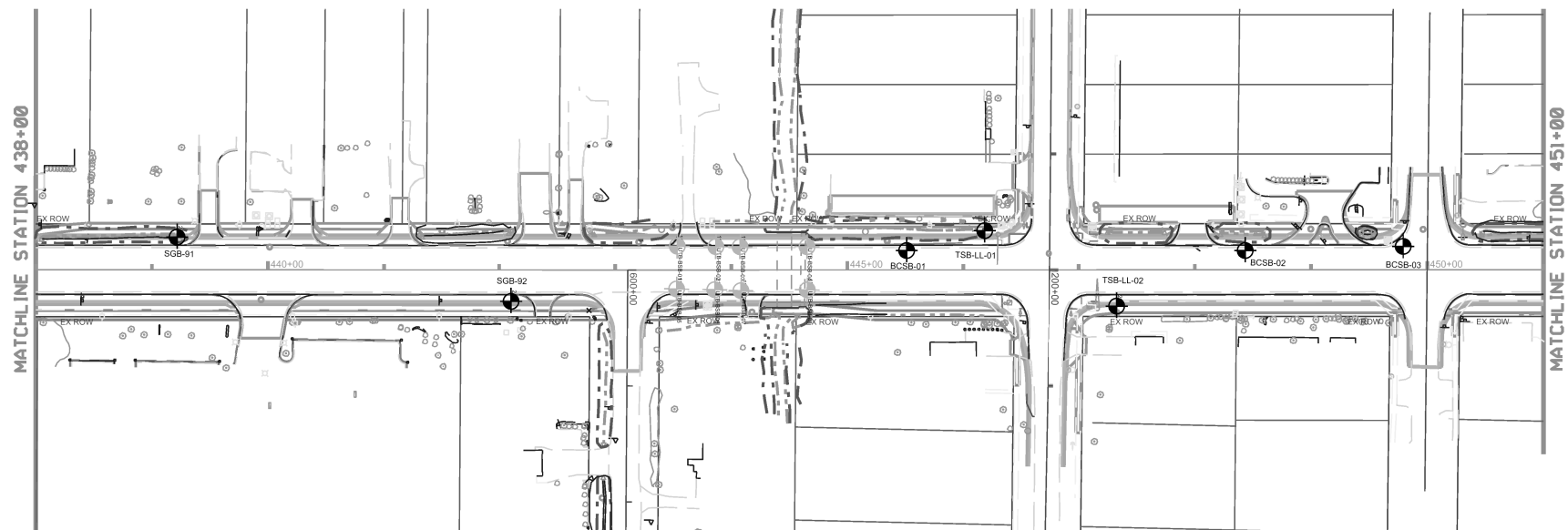
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BY: _____

DATE: _____

MODEL: ILLINOIS
SHEET: 15-103





STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

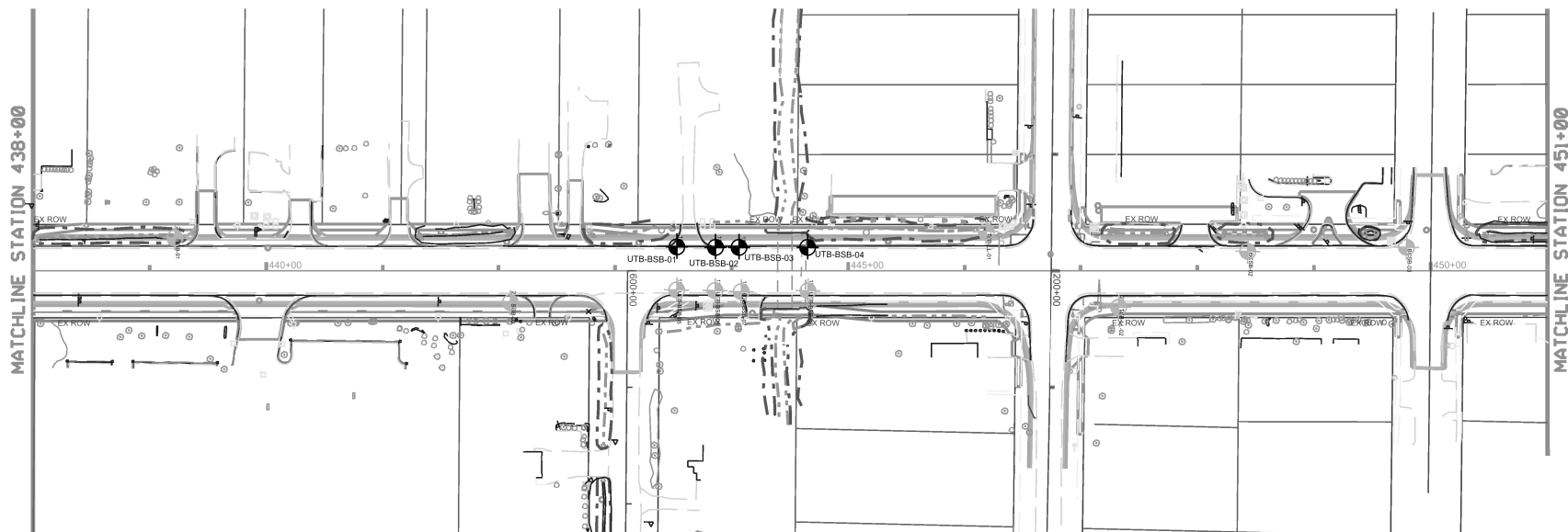
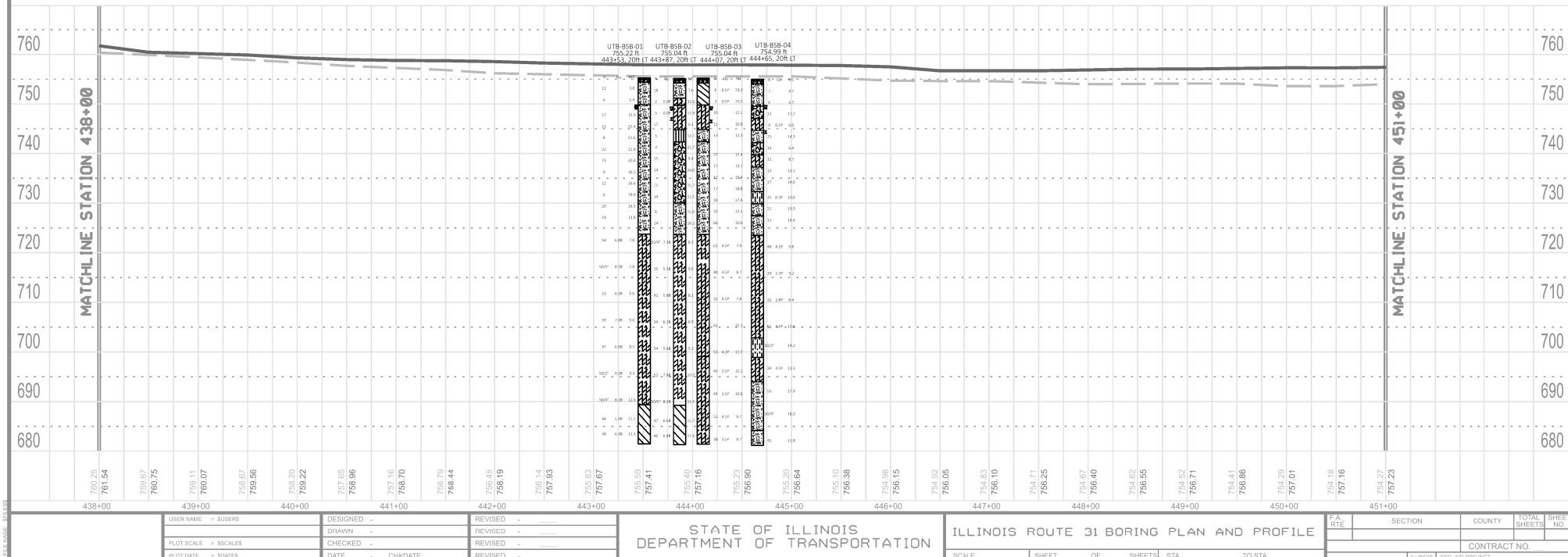
ILLINOIS ROUTE 31 BORING PLAN AND PROFILE

SCALE:	SHEET	OF	SHEETS	STA	TO STA
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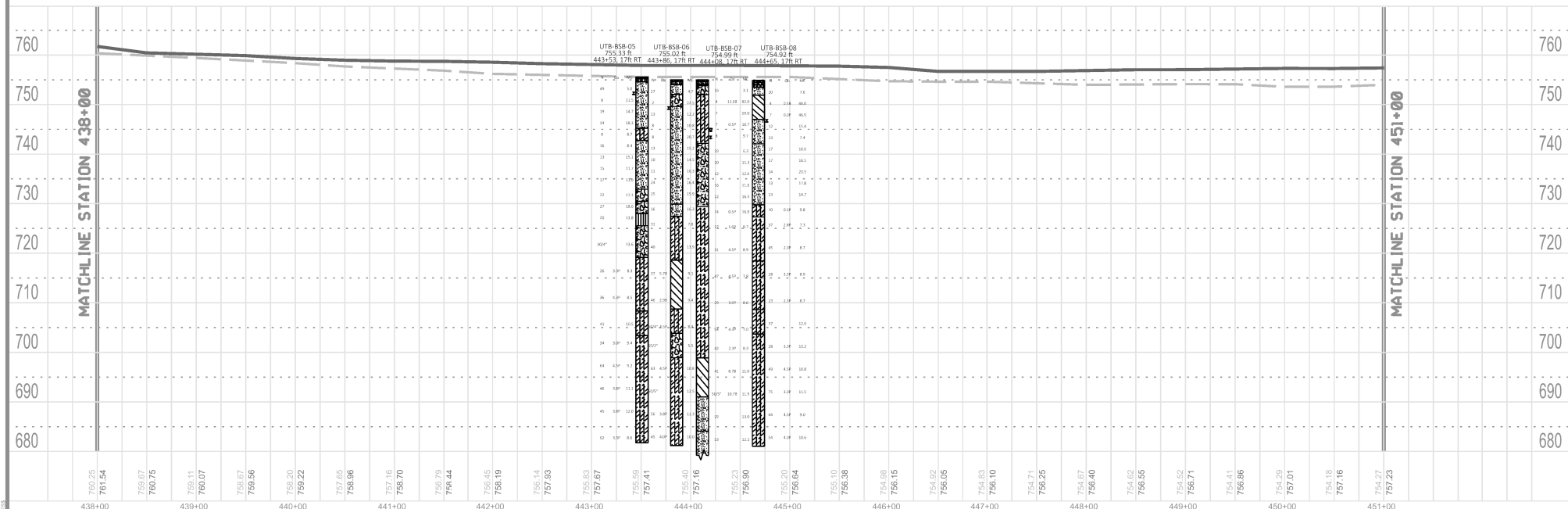
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		CONTRACT NO.		
ILLINOIS		FED. AID PROJECT		



MODEL: \$MODELNAME\$



PROFILE	SURVEYED _____	BY _____	DATE _____
	PLOTTED _____		
NOTE BOOK	GRADES CHECKED _____		
	B.M. NOTED _____		
NO. _____	STRUCTURE NOTATIONS CHKD _____		



USER NAME : * USER PLOT SCALE : * SCALES PLOT DATE : * DATES	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ILLINOIS ROUTE 31 BORING PLAN AND PROFILE			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -									
	CHECKED -	REVISED -									
	DATE - CHKDATE	REVISED -									
SCALE: _____ SHEET _____ OF _____ SHEETS STA. _____ TO STA. _____											
_____ ILLINOIS / FED. AID PROJECT _____ CONTRACT NO. _____											

PLAN

DATE: 05/20/2024

PROJECT: ILLINOIS ROUTE 31

DESIGNED BY: J. J. JONES

DRAWN BY: J. J. JONES

CHECKED BY: J. J. JONES

IN CHARGE: J. J. JONES

NO. 001

PROFILE

DATE: 05/20/2024

PROJECT: ILLINOIS ROUTE 31

DESIGNED BY: J. J. JONES

DRAWN BY: J. J. JONES

CHECKED BY: J. J. JONES

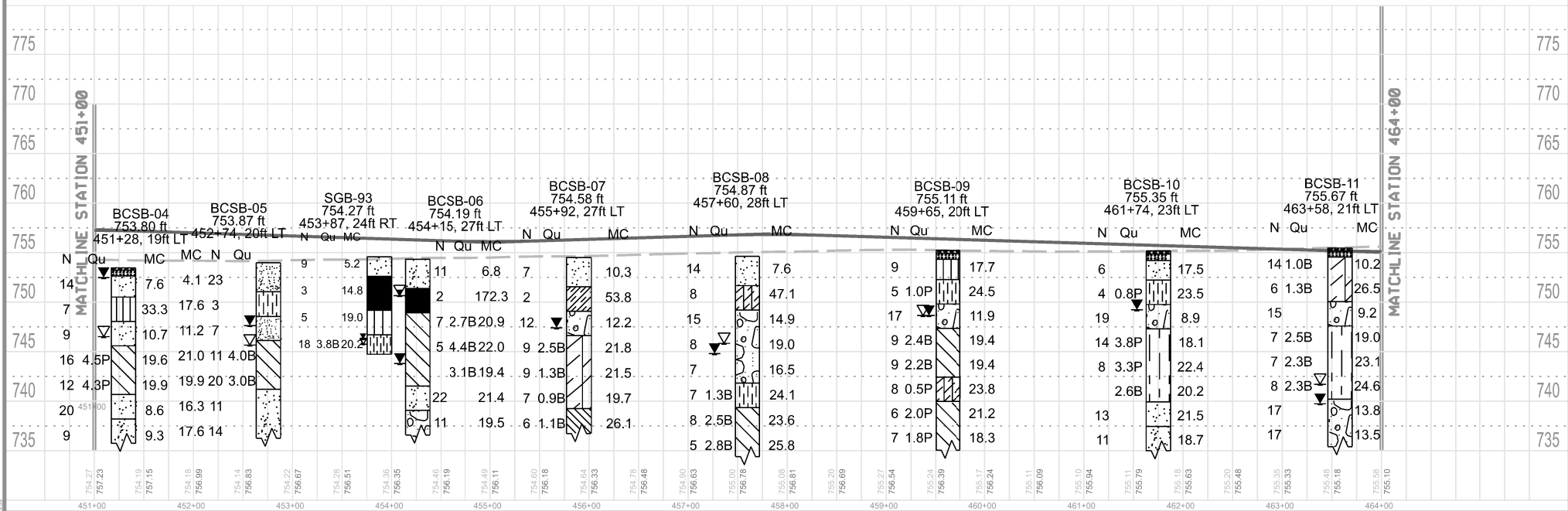
IN CHARGE: J. J. JONES

NO. 001

NOTES: 1. BORE LOGS
2. SEE DRAWING

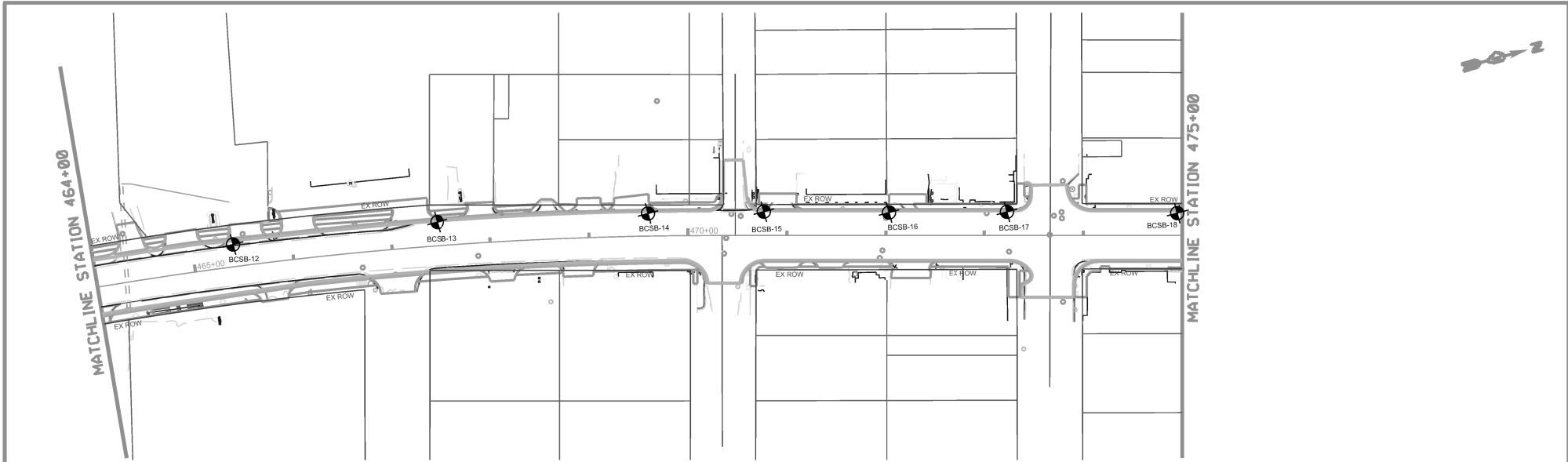
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MATCHLINE STATION 464+00

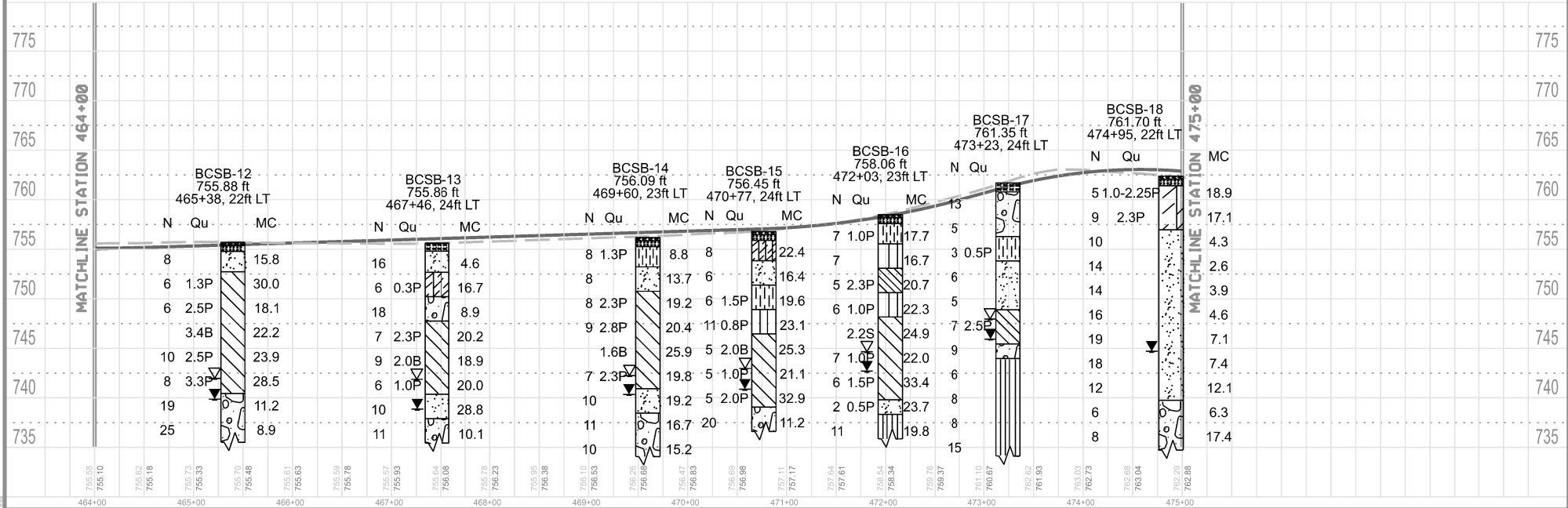


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PLOT DATE: 05/20/2024	DATE: 05/20/2024	REVISIONS: 1								ILLINOIS FED. AID PROJECT	

PLAN	DATE	BY
	REVIEWED	NOTED
	NOTED	NOTED
	NO.	NO.



PROFILE	DATE	BY
	REVIEWED	NOTED
	NOTED	NOTED
	NO.	NO.



USERS: BCSB-12, BCSB-13, BCSB-14, BCSB-15, BCSB-16, BCSB-17, BCSB-18

USER NAME - SUSERS	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		ILLINOIS ROUTE 31 BORING PLAN AND PROFILE		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE - 3/8"=1'	DRAWN -	REVISED -	7.3				SCALE	SHEET	OF	SHEETS	STA.	TO STA.
PLOT DATE - 5/24/25	CHECKED -	REVISED -					CONTRACT NO.					
PLOT DATE - 5/24/25	DATE -	CHKDATE -					ILLINOIS FED AID PROJECT					

PLAN	PROJECTED	BY	DATE
	DESIGNED		
	NOTED		
	NOTED		
NOTE BOOK			
NO. _____			
AND FILE NAME			

PROFILE	PROJECTED	BY	DATE
	DESIGNED		
	NOTED		
	NOTED		
NOTE BOOK			
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STRUCTURE IDENTIFIED			

MODEL INSTRUCTIONS
FILE NAME: 11-11-11

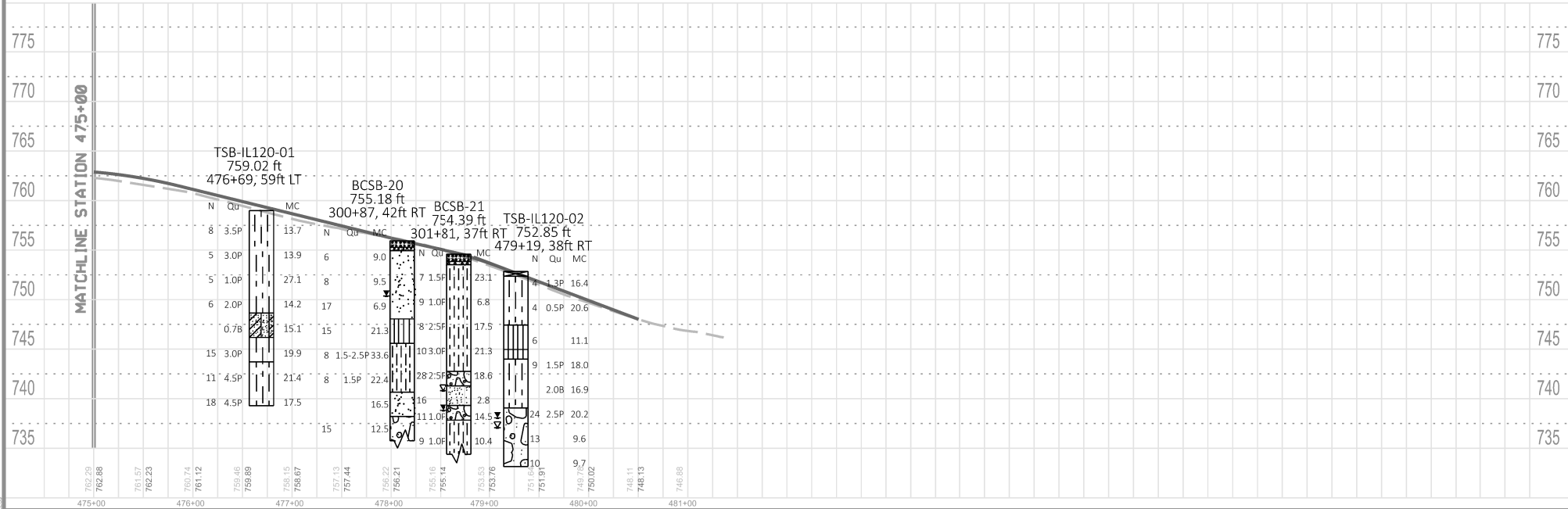
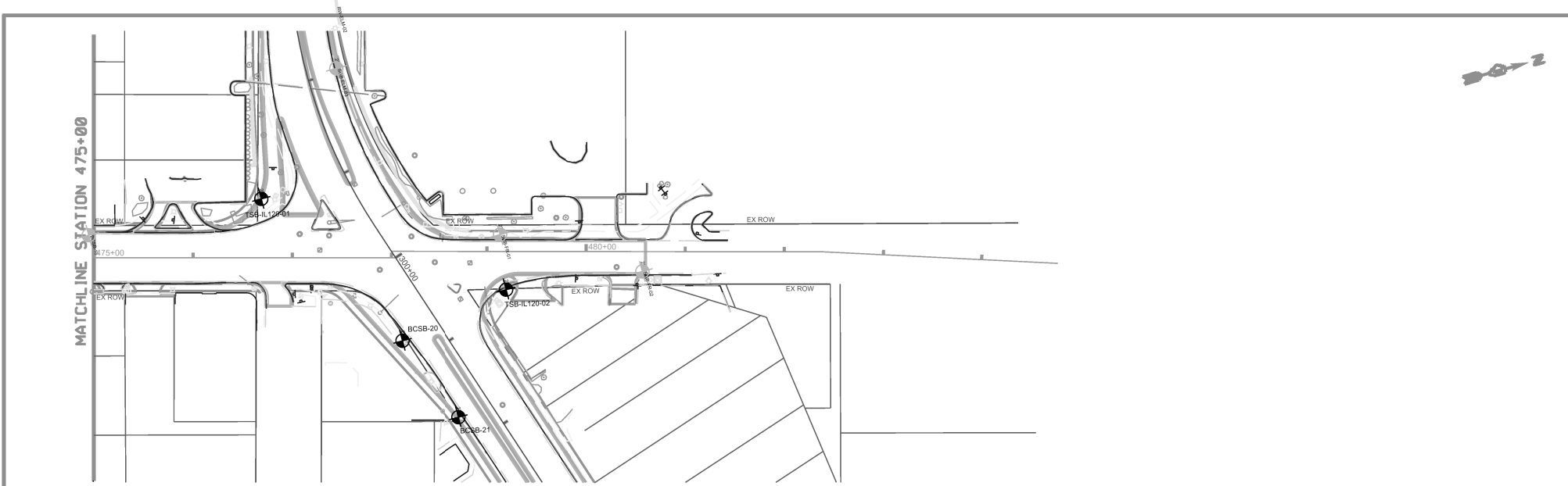
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BY	DRAWN	REVISOR
BY	CHECKED	REVISOR
BY	DATE	REVISOR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING PLAN AND PROFILE

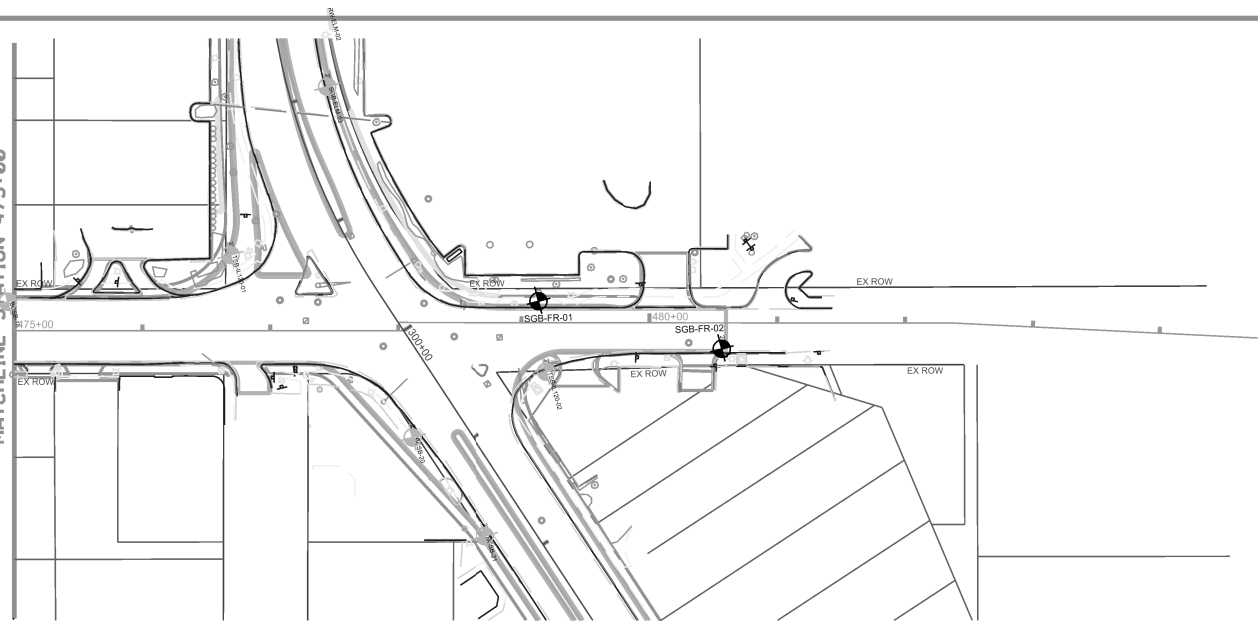
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO. _____				
ILLINOIS FED. AID PROJECT				

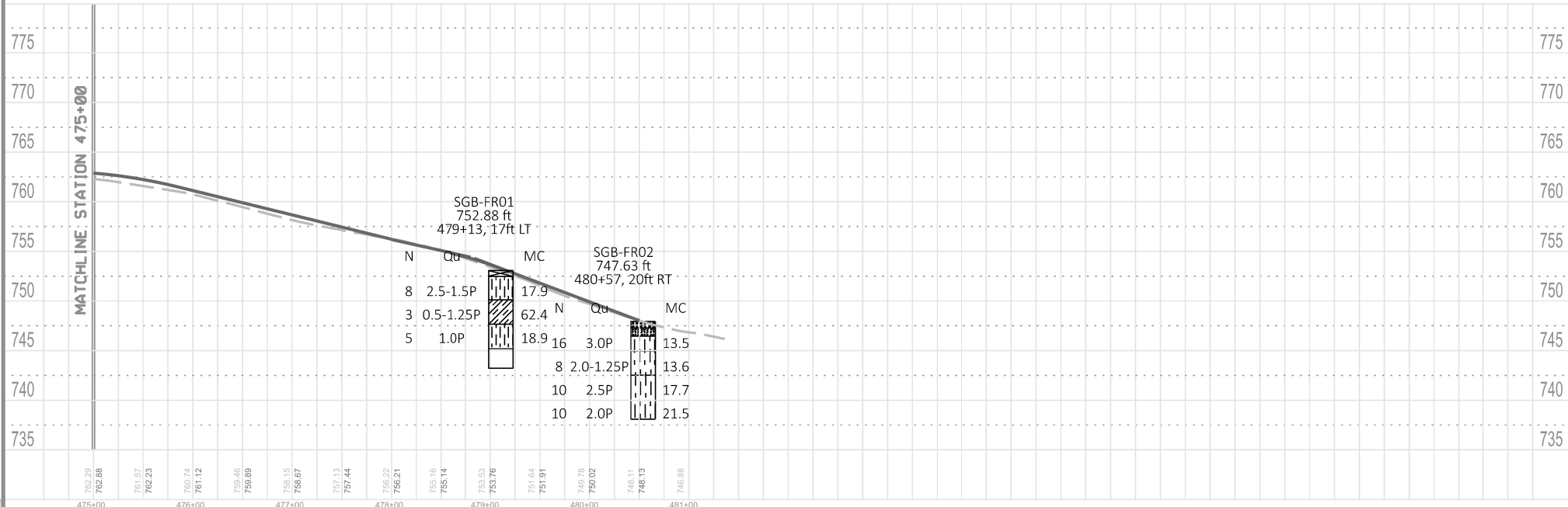




MATCHLINE STATION 475+00



MATCHLINE STATION 475+00



MODEL: ILLINOIS
FILE NAME: ILLINOIS

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SUBSERS	DRAWN	REVISION
	-	-
PLOT SCALE	CHECKED	REVISION
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PLOT DATE		
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING PLAN AND PROFILE

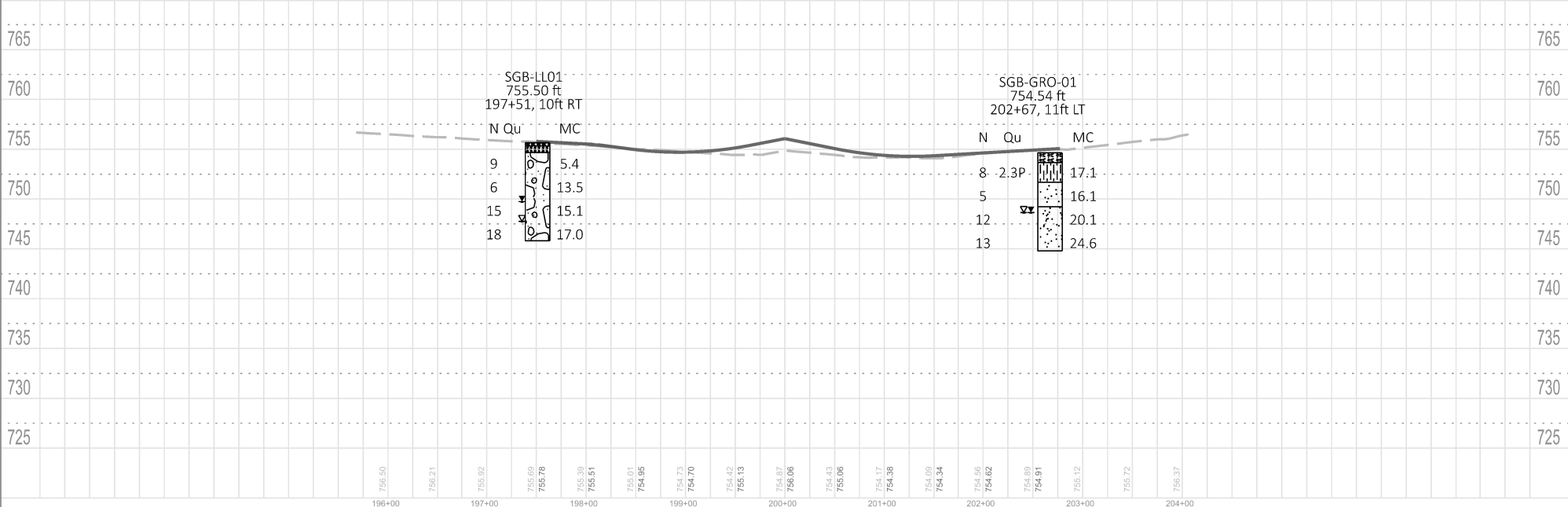
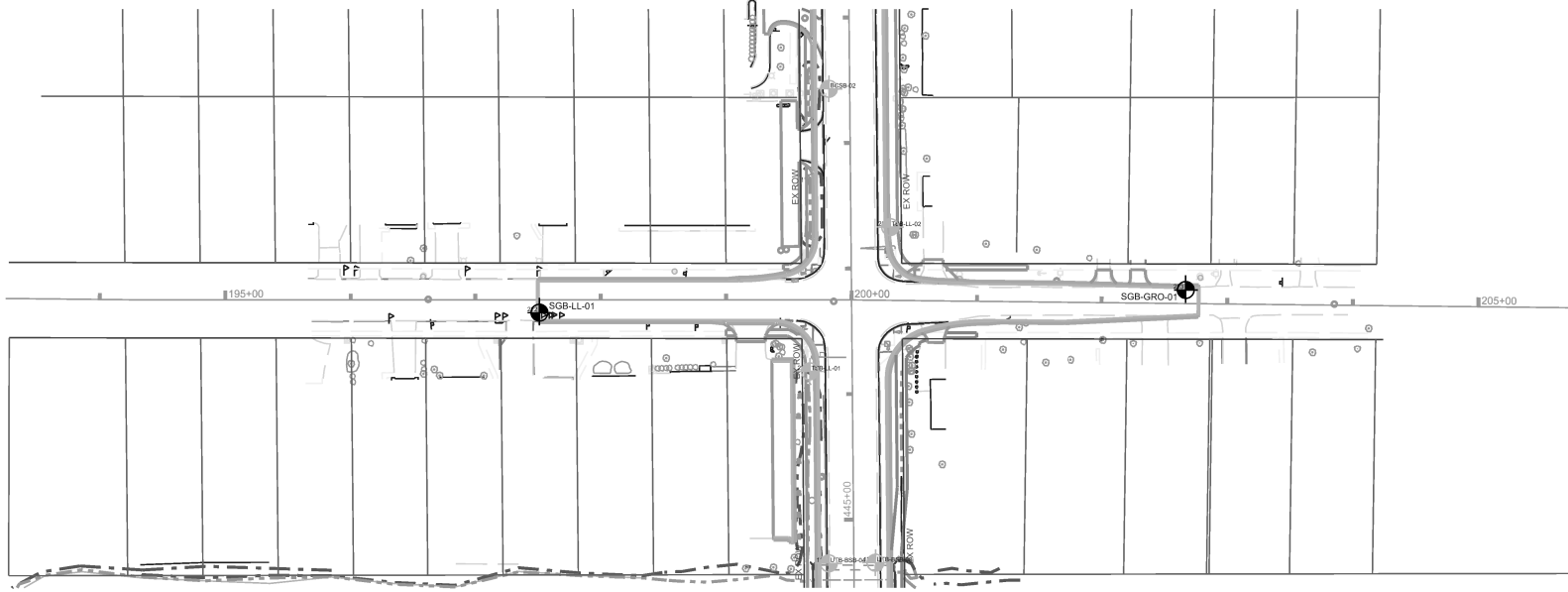
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CONTRACT NO.				
ILLINOIS FED. AID PROJECT				

SCALE: SHEET OF SHEETS STA. TO STA.

PLAN	PROJECT NO.	BY	DATE
	NOTED BOOK	DATE CHECKED	
	NOTED BOOK	DATE CHECKED	
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PROFILE	PROJECT NO.	BY	DATE
	NOTED BOOK	DATE CHECKED	
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NOEL BACULAMAS
FILE NAME: 111113



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PLOT DATE	* \$DATES	CHECKED	REVIS
		DATE	CHKDATE

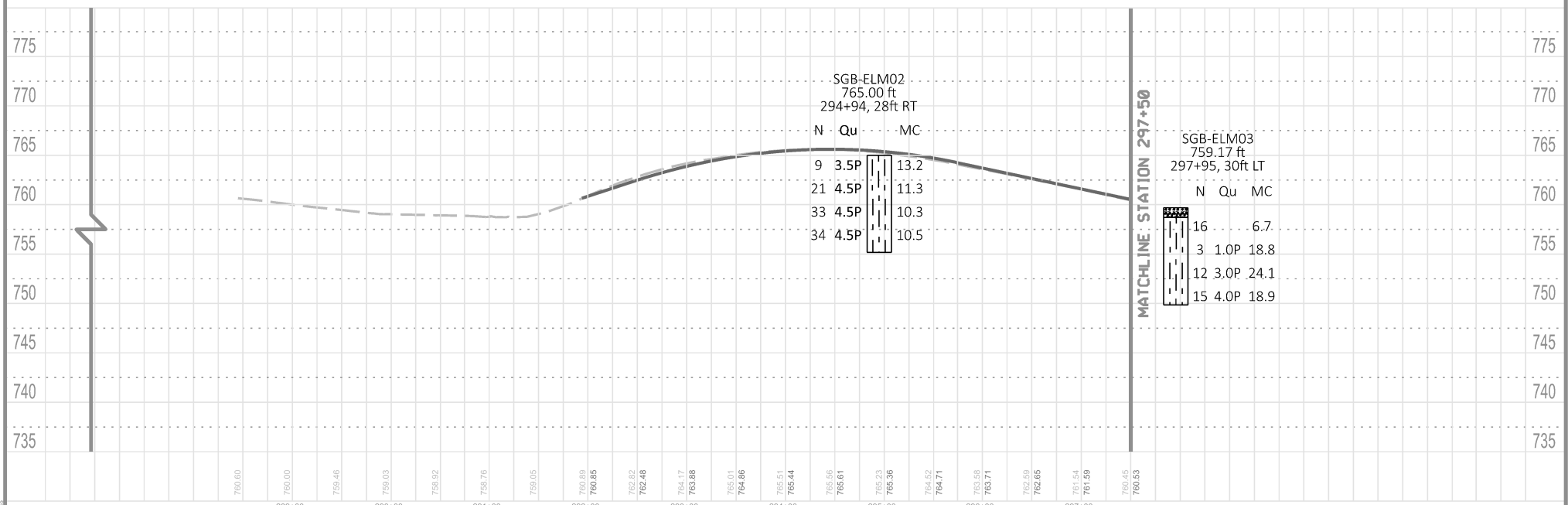
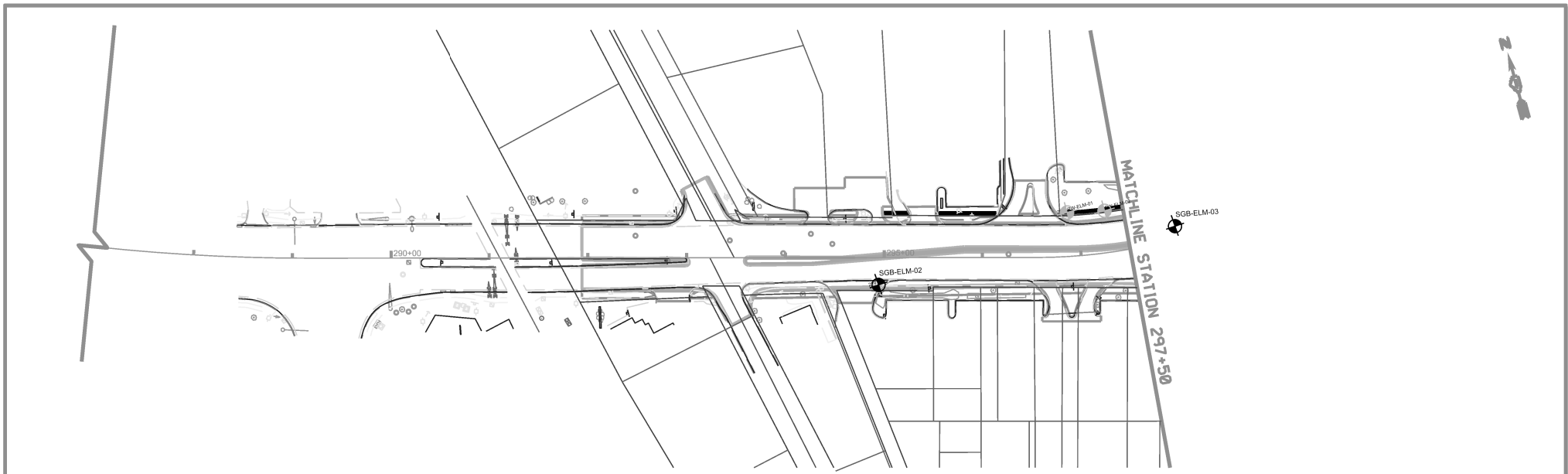
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING PLAN AND PROFILE
SCALE: SHEET OF SHEETS STA TO STA

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

PLAN	DESIGNED	BY	DATE
	CHECKED		
	NOTED		
	NO.		

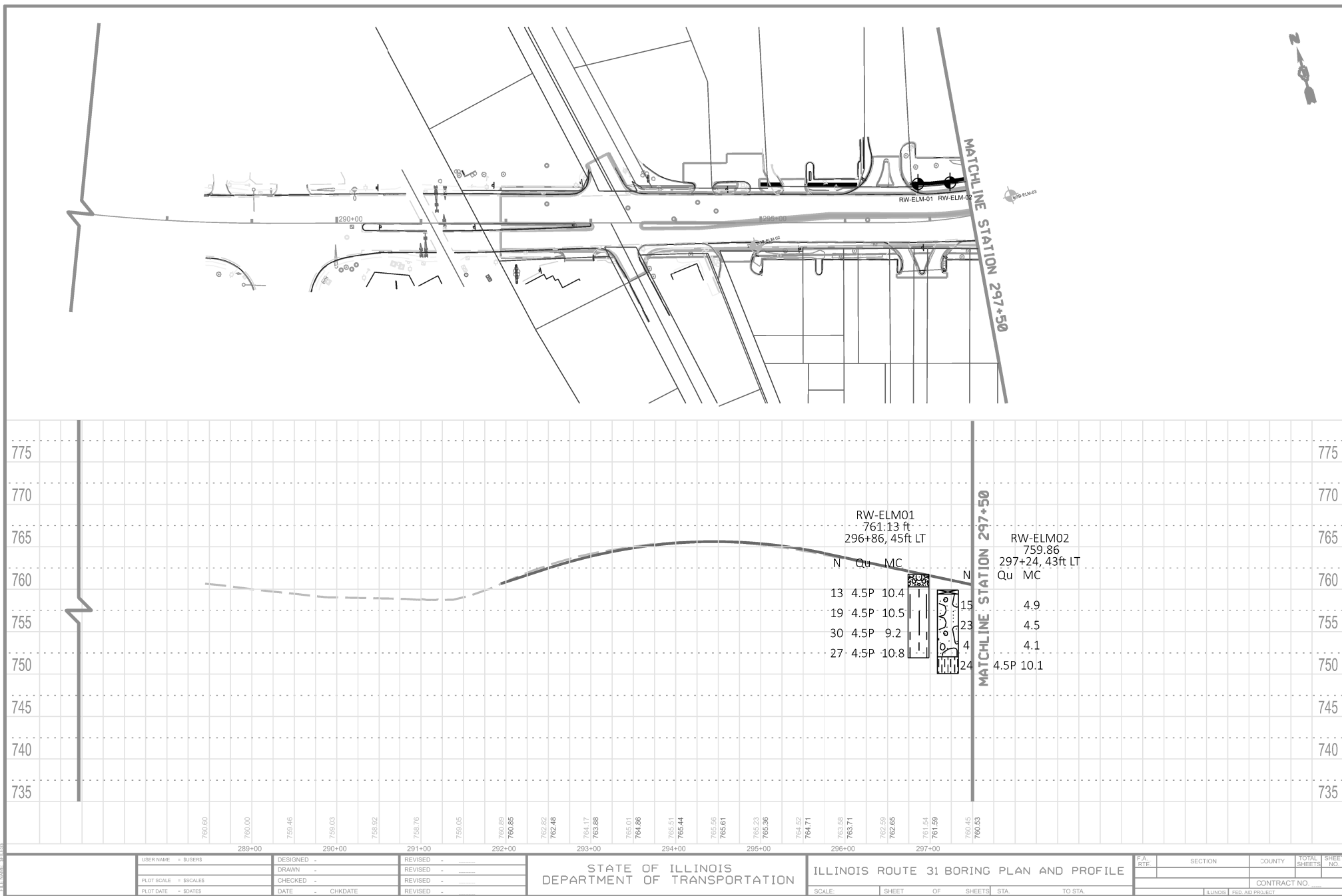
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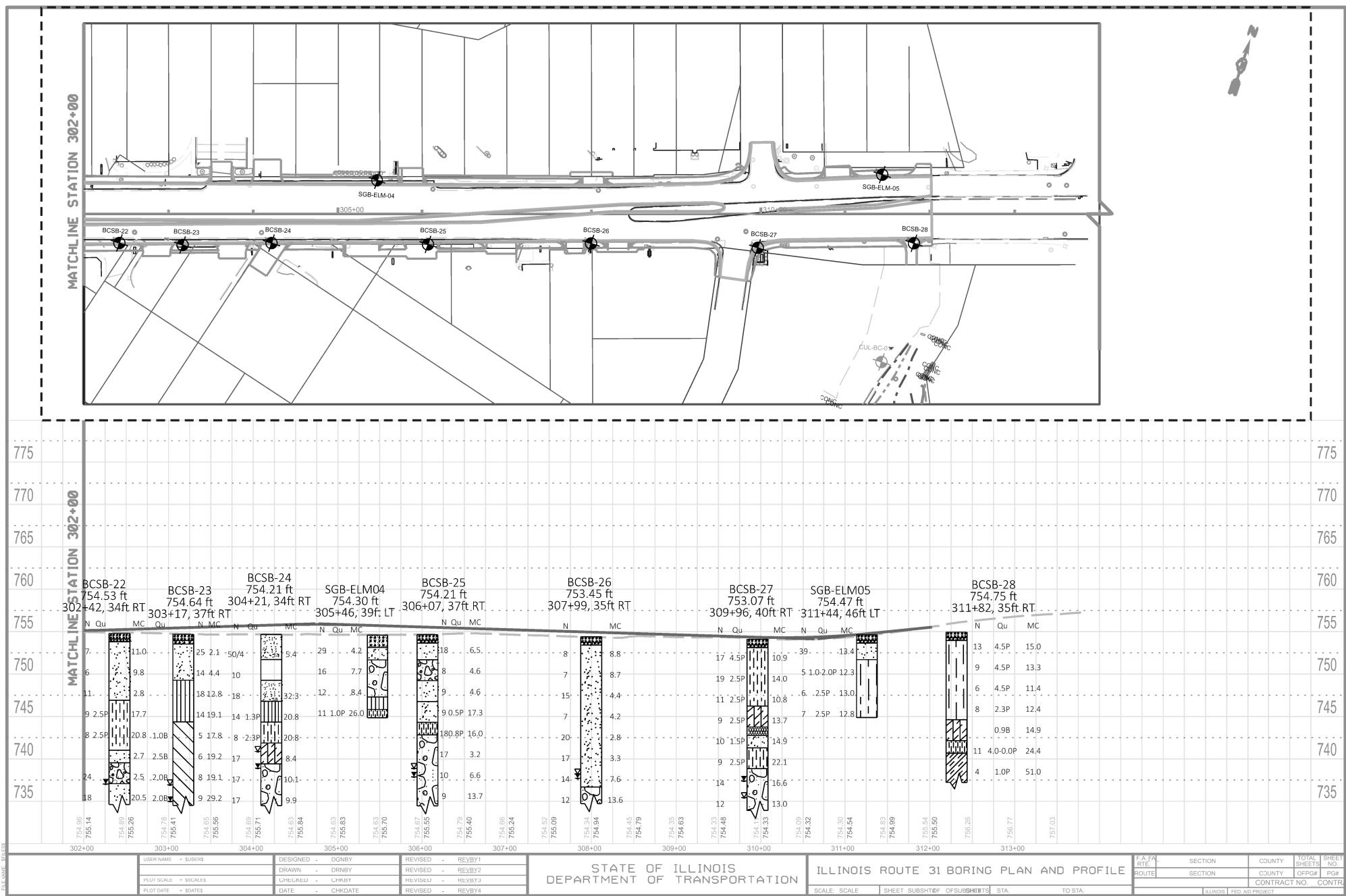


NOTES: 1. DATE: 11/11/2011
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PLOT SCALE: SCALES	DRAWN: -	REVISED: -													
PLOT DATE: SDATES	CHECKED: -	REVISED: -													
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												ILLINOIS		FED. AID PROJECT	

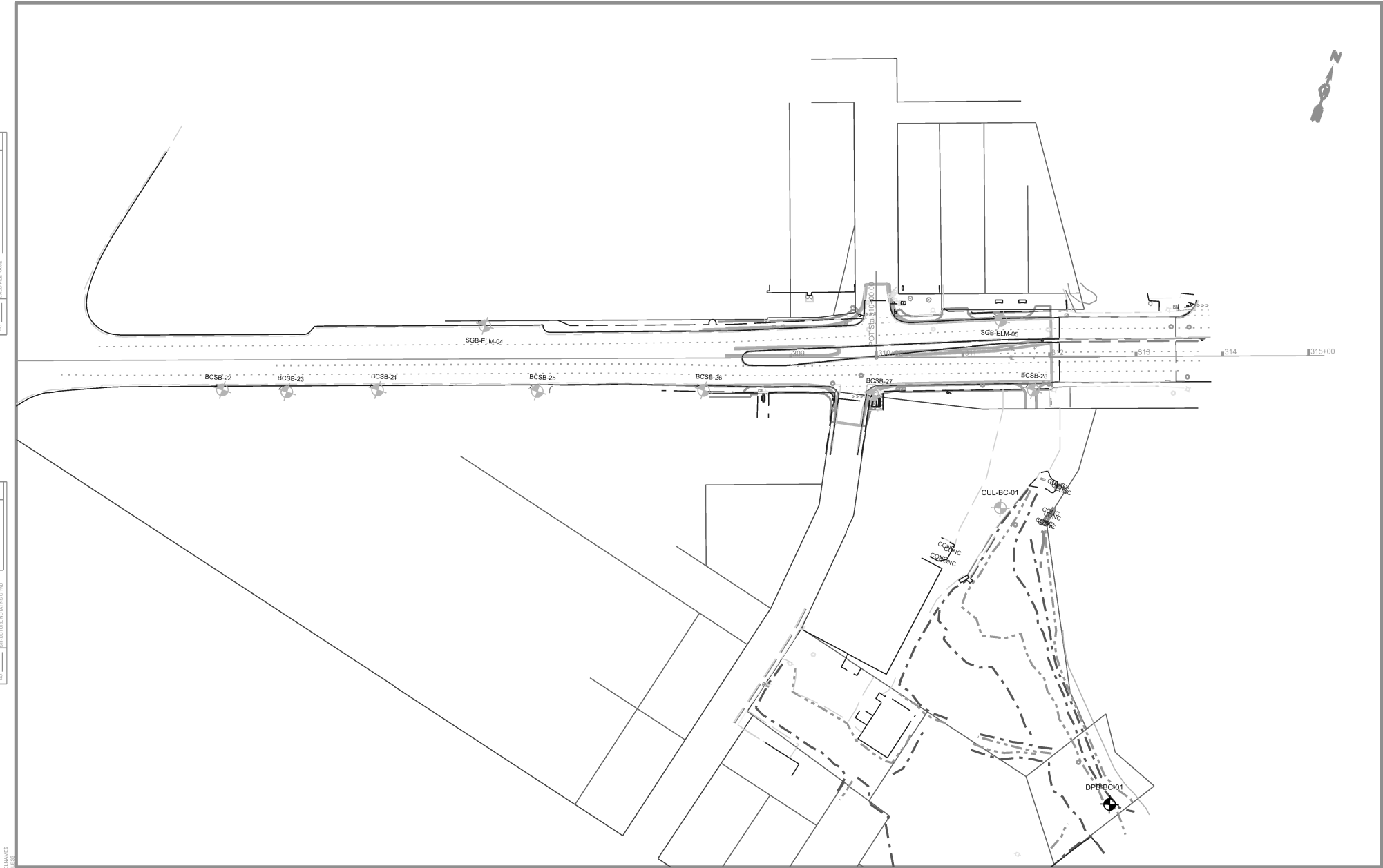
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	PLOTTED _____		
NOTE BOOK _____	GRACES CHECKED _____		
NO _____	S.M. NOTED _____		
	STRUCTURE NOTATION CHKD _____		





PLAN	STATIONING	DATE
	ROUTE BOOK	BY
	PROJECT NO.	
	PROJECT NAME	

PROFILE	STATIONING	DATE
	ROUTE BOOK	BY
	PROJECT NO.	
	PROJECT NAME	



MODEL: BOREHOLE NAMES
FILE NAME: BOREHOLE

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		DRAWN	= DRNBY	REVISED	= REVBY2
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PLOT DATE	= \$DATE	DATE	= CHKDATE	REVISED	= REVBY4

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILLINOIS ROUTE 31 BORING LOCATION PLAN

SCALE: SCALE SHEET SUBSHEET# OF SUBSHEETS STA. TO STA.

F.A. PA	SECTION	COUNTY	TOTAL SHEET
ROUTE	SECTION	COUNTY	SHEETS NO.
			CONTRACT NO. CONTRACT

LONGSECTO ILLINOIS FED. AID PROJECT MULTCONAMES

Appendix B

Summary of Subsurface Conditions

Boring No.	Purpose	Station	Offset	Surface Elevation (feet)	Depth (feet)	Groundwater During Drilling (feet)	Major Stratum Encountered from Top to Bottom
SGB-77	Subgrade	IL 31 396+99	58' LT	823.849	10	8.5	Concrete, stones, medium dense sand, medium dense gravel, stiff silty clay, loose sand, medium dense silty loam
SGB-78	Subgrade	IL 31 400+05	46' RT	823.112	10	Dry	Topsoil, medium dense silt, very stiff to hard clay, hard silty clay
SGB-79	Subgrade	IL 31 403+04	40' LT	816.891	10	Dry	Concrete, stones, very stiff clay, loose to medium dense sand
SGB-80	Subgrade	IL 31 406+10	44' RT	804.490	10	Dry	Topsoil, medium dense to loose sand, medium dense sand
SGB-81	Subgrade	IL 31 409+03	30' LT	789.331	10	Dry	Concrete, stones, medium dense sand and gravel, medium dense sand, stiff silty clay, loose silty loam
SGB-82	Subgrade	IL 31 411+20	50.8' RT	779.6	10	Dry	Topsoil, stiff clay loam, soft to medium stiff clay
SGB-83	Subgrade	IL 31 415+38	40' LT	769.048	10	Dry	Asphalt, concrete, loose silt, hard silty clay, loose silt, very stiff silty clay
SGB-84	Subgrade	IL 31 418+26	18.7' RT	766.9	10	9.5	Asphalt, crushed aggregate, loose sand, medium stiff peat, medium stiff to very soft organic clay
SGB-85	Subgrade	IL 31 421+37	51.0' LT	765.0	10	6.0	Topsoil, loose sandy loam and gravel, very soft organic clay, medium dense sandy loam and gravel
CUL14-01	Culvert	IL 31 423+65	29.0' LT	766.1	15	7.0	Topsoil, stiff clay loam fill, stiff clay loam, medium dense sandy loam
CUL14-02	Culvert	IL 31 423+67	7' RT	765.3	15	8.5	Asphalt, Stones, medium dense sandy loam, very soft clay loam fill, loose silty loam, medium dense sandy loam, medium dense sand
CUL14-03	Culvert	IL 31 423+70	42' RT	764.6	15	6.0	Very stiff clay, medium dense silty loam, medium dense sandy loam, medium dense silt, medium dense sandy loam
SGB-86	Subgrade	IL 31 424+09	25' RT	766.467	10	7.5	Topsoil, medium dense sandy loam, medium stiff clay, medium dense sand
DPB-IL31-04-01	Detention Pond	IL 31 424+15	181.2' LT	764.5	15	8.5	Topsoil, loose silty loam, stiff organic clay, loose silt, medium dense sand, medium dense sand and gravel
SGB-87	Subgrade	IL 31 426+78	31' LT	764.778	10	8.0	Topsoil, medium dense sandy loam fill, very loose sandy loam, medium dense sand, medium dense sandy clay loam
SGB-88	Subgrade	IL 31 430+33	24' RT	766.568	10	Dry	Topsoil, medium dense sandy loam fill, loose to medium dense sand, loose sand
SGB-89	Subgrade	IL 31 433+07	30' LT	764.344	10	7.5	Topsoil, medium dense sand fill, medium dense sand, medium dense silty loam, medium dense silt
SGB-90	Subgrade	IL 31	25' RT	762.776	10	4.0	Topsoil, medium dense sandy loam fill, medium stiff clay loam,

		436+26					loose to medium dense silt
SGB-91	Subgrade	IL 31 439+21	28' LT	757.767	10	6.0	Loose sandy loam fill, loose silt
SGB-92	Subgrade	IL 31 442+10	27' RT	755.415	10	6.0	Topsoil, medium dense sand fill, soft clay loam, soft sandy clay loam, medium dense sandy loam
UTB-BSB-01	Bridge	IL 31 443+53	20' LT	755.2	75	6.0	Asphalt, concrete, loose to medium dense sand, very dense to loose sand, hard clay loam, hard clay
UTB-BSB-02	Bridge	IL 31 443+87	20' LT	755.0	75	8.5	Asphalt, concrete, medium dense sand, very soft clay loam, very soft sandy clay loam, medium dense sandy clay loam, loose silty loam, very loose to medium dense sand and gravel, loose to medium dense sand, hard clay loam, hard clay
UTB-BSB-03	Bridge	IL 31 447+07	20' LT	755.0	75	9.0	Asphalt, concrete, medium stiff organic clay, medium dense sandy clay loam, medium dense sandy loam, medium dense sand, hard sandy clay loam, very dense sandy clay loam, hard to very stiff clay loam
UTB-BSB-04	Bridge	IL 31 444+65	20' LT	755.0	75	11.0	Asphalt, concrete, loose sand, medium dense sand and gravel, medium stiff clay loam, medium dense sandy loam, medium dense sand and gravel, medium stiff clay loam, medium dense sand, medium dense silty clay loam, medium dense sandy loam, hard to very stiff clay loam, dense silty clay loam, hard clay loam, very dense sand, dense sandy loam
UTB-BSB-05	Bridge	IL 31 443+53	17' RT	755.3	75	3.5	Asphalt, concrete, dense to loose sand, loose sandy clay loam, medium dense sand, medium dense gravel, medium dense silty loam, very dense sand and gravel, very stiff to hard clay loam, dense sandy clay loam, very stiff to hard clay loam
UTB-BSB-06	Bridge	IL 31 443+86	17' RT	755.0	75	6.0	Asphalt, concrete, medium dense sand, very loose rock aggregate, medium dense to loose sand, medium dense sandy loam, dense sandy clay loam, hard to very stiff clay, very stiff sandy clay loam, very dense gravel and cobbles, hard clay loam, very dense sandy clay loam, very stiff to hard clay loam
UTB-BSB-07	Bridge	IL 31 444+08	17' RT	755.0	100	12.0	Asphalt, concrete, stones, medium dense sand and gravel, medium stiff to stiff clay loam, medium dense sand and gravel, medium stiff to hard sandy clay loam, hard clay, medium dense sand, very dense sandy loam, very dense silt, hard clay, very dense sand
UTB-BSB-08	Bridge	IL 31 444+65	17' RT	754.9	75	8.5	Asphalt, concrete, stone, medium dense sand, soft to very soft clay, medium dense sandy loam, medium dense sand, medium stiff clay loam, medium dense to dense sandy clay loam, very stiff clay loam, dense sandy clay loam, very stiff to hard clay loam
BCSB-01	Box Culvert Sewer	IL 31 445+51	17' LT	754.825	35	6.0	Dense to medium dense sandy loam fill, soft clay loam, medium dense to very dense sandy loam, very stiff clay loam, medium dense sandy clay loam
TSB-LL-	Traffic	IL 31	34' LT	754.637	20	6.0	Topsoil, medium dense sandy loam, very loose peat, medium

01	Signal	446+18					dense silty loam, medium dense sandy loam, loose sand, medium dense sandy loam
SGB-LL-01	Subgrade	W Lillian St. 197+51	10' RT	755.497	10	6.0	Asphalt, concrete, medium dense to loose sand and gravel, medium dense sand and gravel
SGB-GRO-01	Subgrade	Grove Ave. W 202+67	11' LT	754.545	10	6.0	Asphalt, very stiff silty clay, loose sand, medium dense sandy loam
TSB-LL-02	Traffic Signal	IL 31 447+33	31' RT	754.296	20	6.0	Sand, very loose peat, medium dense sand and crushed rock aggregates, medium dense sand, medium dense sandy loam, medium dense sand, medium dense sand and gravel
BCSB-02	Box Culvert Sewer	IL 31 448+43	16' LT	754.277	33.8	5.0	Asphalt, concrete, medium dense sand fill, medium dense sandy loam, medium dense sand, very stiff clay, medium dense sandy loam, medium dense sand, stiff silty clay, very stiff silty clay loam, medium dense sandy loam, very stiff silty clay loam, hard clay, stiff clay loam, very dense silty loam
BCSB-03	Box Culvert Sewer	IL 31 449+79	20' LT	753.939	35	8.5	Asphalt, concrete, loose peat, dense gravel, medium dense sandy loam, medium dense sand, very loose sandy clay loam, medium dense sand, hard clay
BCSB-04	Box Culvert Sewer	IL 31 451+28	19' LT	753.804	35	1.0	Asphalt, concrete, medium dense sand, loose silty loam, loose sand, hard clay, medium dense sand, loose sandy loam, medium dense silt, medium dense silty loam, loose to very loose sandy loam, hard clay
BCSB-05	Box Culvert Sewer	IL 31 452+74	20' LT	753.872	35	6.5	Medium dense sand fill, very loose silty clay loam, loose sand, very stiff clay, medium dense sand, medium dense to very loose sandy loam, medium dense sandy loam
SGB-93	Subgrade	IL 31 453+87	24' RT	754.273	10	8.5	Medium dense sand, very loose peat, loose silty loam, very stiff silty clay
BCSB-06	Box Culvert Sewer	IL 31 454+15	27' LT	754.189	35	11.0	Medium dense sand fill, very loose peat, very stiff to hard clay, very stiff clay, medium dense sand, medium dense sand and gravel, loose to medium dense sandy loam, medium dense loam, hard clay
BCSB-07	Box Culvert Sewer	IL 31 455+92	27' LT	754.580	35	7.0	Loose sand, very loose peat, medium dense sand and gravel, very stiff to stiff clay loam, medium stiff clay loam, stiff clay, medium stiff silty clay, loose sandy loam, medium dense sand and gravel, loose sand, medium dense sandy loam
BCSB-08	Box Culvert Sewer	IL 31 457+60	28' LT	754.869	35	7.0	Medium dense sand, loose clay loam, medium dense sand and gravel, stiff silty clay, very stiff clay, loose sandy loam, medium dense sand, medium dense silty loam and gravel, loose sand
BCSB-09	Box Culvert Sewer	IL 31 459+65	20' LT	755.111	35	7.0	Asphalt, concrete, loose silty loam, stiff silty clay, medium dense sand and gravel, very stiff clay, medium stiff clay loam, very stiff to stiff clay, medium dense to very dense sand
BCSB-10	Box Culvert Sewer	IL 31 467+74	23' LT	755.345	35	6.0	Asphalt, concrete, loose sandy loam, medium stiff silty clay, medium dense sand and gravel, very stiff silty clay, medium dense sand, medium dense sandy loam, medium dense sand, medium

							dense sand and gravel, dense sand, hard silty clay loam
BCSB-11	Box Culvert Sewer	IL 31 463+58	21' LT	755.673	33.8	16.0	Asphalt, concrete, stiff sandy clay loam, medium dense sand and gravel, stiff silty clay, medium dense sand and gravel, dense sandy loam
BCSB-12	Box Culvert Sewer	IL 31 465+38	22' LT	755.879	35	16.0	Asphalt, concrete, loose sandy loam, stiff to very stiff clay, medium dense sand and gravel, stiff sandy clay loam, medium dense silty loam, very stiff to hard clay loam
BCSB-13	Box Culvert Sewer	IL 31 467+46	24' LT	755.856	35	17.0	Asphalt, medium dense sand, soft sandy clay loam, medium dense sand and gravel, very stiff to stiff clay, loose sandy loam, medium dense sand and gravel, medium dense sand, medium dense silty loam, medium dense sand and gravel, hard silty clay
BCSB-14	Box Culvert Sewer	IL 31 469+60	23' LT	756.086	35	16.0	Asphalt, concrete, stiff silty clay loam, loose sand, loose silt, very stiff to stiff clay, very stiff clay, medium dense sand, medium dense to loose sand and gravel, medium dense sand, loose sand and gravel, medium dense sand, very dense sand and gravel, very stiff silty clay
BCSB-15	Box Culvert Sewer	IL 31 470+77	24' LT	756.448	35	16.0	Asphalt, concrete, stiff clay loam, loose sandy clay loam, stiff to very stiff silty clay, medium stiff silty loam, very stiff to stiff clay, very stiff clay, medium dense sand and gravel, loose to medium dense sand, very dense sand and gravel, hard silty clay loam
BCSB-16	Box Culvert Sewer	IL 31 472+03	23' LT	758.061	35	16.0	Asphalt, concrete, stiff silty clay loam, loose silty loam, very stiff clay, loose silty loam, very stiff to stiff clay, very loose sand, medium dense silty loam, medium dense sandy loam and gravel, hard silty clay loam
BCSB-17	Box Culvert Sewer	IL 31 473+23	24' LT	761.352	35	16.0	Asphalt, medium dense sand and gravel, soft silty clay loam, loose sandy loam, very stiff clay, loose sand and gravel, loose to medium dense silty loam, medium dense sand and gravel, medium dense silt
BCSB-18	Box Culvert Sewer	IL 31 474+95	22' LT	761.701	35	18.0	Asphalt, concrete, stiff to very stiff sandy clay loam, medium dense sand, loose to medium dense sand and gravel
TSB-IL120-01	Traffic Signal	IL 31 476+69	59' LT	759.020	20	Dry	Very stiff to stiff silty clay loam, very stiff silty clay loam, medium stiff loam, very stiff silty clay loam, hard silty clay
SGB-ELM-03	Subgrade	IL 120 297+95	30' LT	759.173	10	Dry	Concrete, stones, stiff to hard silty clay
SGB-ELM-02	Subgrade	IL 120 294+94	28' RT	765.005	10	Dry	Very stiff to hard silty clay
BCSB-20	Box Culvert Sewer	IL 120 300+87	42' RT	755.184	35	17.0	Concrete, stones, loose sand, medium dense silty loam, stiff silty clay, sandy loam, medium dense sand and gravel, medium dense to dense silty loam, hard silty clay loam
BCSB-21	Box Culvert Sewer	IL 120 301+81	37' RT	754.389	35	16.0	Concrete, stones, medium stiff to very stiff silty clay loam, medium dense sand and gravel, medium dense sand, medium dense sand and gravel, stiff silty clay loam, medium dense to dense gravel,

							hard silty clay loam
BCSB-22	Box Culvert Sewer	IL 120. 302+42	34' RT	754.528	35	18.0	Concrete, stone, loose to medium dense sand, very stiff silty clay, sand, medium dense sand and gravel, medium dense sand, medium dense sand and gravel, very stiff to hard clay loam
BCSB-23	Box Culvert Sewer	IL 120 303+17	37' RT	754.640	35	20.0	Concrete, stones, medium dense sand, medium dense silty loam, stiff to very stiff clay, medium dense sand and gravel, stiff silty clay loam, dense silty loam, hard silty clay loam
TSB-IL120-02	Traffic Signal	IL 31 479+19	38' RT	752.848	20	15.0	Topsoil, stiff to medium stiff silty clay loam, loose silty loam, loose silt, stiff to very stiff silty clay, medium dense sand and gravel
SGB-FR-01	Subgrade	IL 31 479+13	17' LT	752.882	10	Dry	Topsoil, very stiff to stiff silty clay, soft peat, stiff silty clay loam
BCSB-24	Box Culvert Sewer	IL 120 304+21	34' RT	754.206	35	16.0	Very dense sandy loam, medium dense sand, medium dense silty loam, very stiff silty clay, medium dense sandy clay loam and gravel, medium dense sand and gravel, medium dense sand, medium dense silty loam and gravel, hard silty clay, dense sand and gravel
BCSB-25	Box Culvert Sewer	IL 120 306+07	37' RT	754.206	35	17.0	Concrete, stones, medium dense sand, loose sand and gravel, loose sand, medium stiff sandy loam, medium stiff silty clay, medium dense sand and gravel, loose to medium dense sand, dense sand and gravel
SGB-ELM-04	Subgrade	IL 120 305+46	39' LT	754.305	10	Dry	Stones, medium dense sand, medium dense sand and gravel, medium dense silt, stiff silty clay
BCSB-26	Box Culvert Sewer	IL 120 307+99	35' RT	753.452	35	17.0	Concrete, stones, layers of loose and medium dense sand, medium dense to loose sand and gravel, medium dense sand and gravel, very stiff silty clay loam, very dense sand and gravel
SGB-FR-02	Subgrade	IL 31 480+57	20' RT	747.628	10	Dry	Concrete, stones, very stiff silty clay, very stiff to stiff silty clay loam, very stiff silty clay
BCSB-27	Box Culvert Sewer	IL 120 309+96	40' RT	753.072	35	17.0	Concrete, stones, hard to very stiff silty clay, very stiff clay loam, stiff silty clay, medium dense sand, very stiff silty clay, medium dense sand and gravel, sand, hard sandy clay loam
BCSB-28	Box Culvert Sewer	IL 120 311+82	35' RT	754.753	35	18.0	Concrete, stones, hard to very stiff silty clay loam, medium stiff clay loam, hard silty clay loam, very soft to stiff peat, loose gravel, medium dense sand and gravel, medium dense sand, dense sand and gravel
DPB-BC-01	Detention Pond	IL 120 312+59	519.2'RT	744.2	25	8.5	Topsoil, loose to very loose sandy loam, loose to very dense silty loam, very dense silt, medium dense sand
SGB-ELM-05	Subgrade	IL 120 311+44	46' LT	754.467	10	Dry	Concrete, stones, dense sand, stiff to very stiff silty clay loam
RW-ELM-01	Retaining Wall	IL 120 286+86	45' LT	761.13	10	Dry	Medium dense sand, hard silty clay
RW-ELM-02	Retaining Wall	IL 120 297+24	43' LT	759.86	10	Dry	Topsoil, medium dense to loose sand and gravel, hard silty clay

Appendix C
Soil Boring Logs



SOIL BORING LOG

Date 11/17/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064966.346,1000131.35

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-01	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	445+51	H	S	Qu	T	First Encounter	748.8 ft ▼	H	S	Qu	T
Offset	17.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Not taken ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	754.83 ft					After	Hrs. Filled ft				
Dense, brown SANDY LOAM FILL, trace gravel. Moist.			14			Medium dense, gray SANDY LOAM, little gravel. Wet. (continued)			5		
			16		4.0				9		12.1
			18						13		
751.83											
Medium dense, brown SANDY LOAM FILL, trace gravel. Moist.			10						7		
			7		8.2				13		15.1
		-5	4					-25	14		
749.33							729.33				
Medium dense, brown SANDY LOAM FILL, trace gravel. Wet. ▼			13			Very dense, gray SANDY LOAM, little gravel. Wet.			20		
			16		8.5				50/4		15.9
			11								
746.83							726.83				
Soft, gray CLAY LOAM, trace gravel. Wet.			6			Very stiff, gray CLAY LOAM, trace gravel. Moist.			7		
			6		10.5				9		8.3
		-10	4	0.5 B				-30	13		
			2								
			2		8.7						
			2	0.5 B							
741.83							721.33		15		
Medium dense, gray SANDY LOAM, trace gravel. Wet.			6			Medium dense, gray SANDY CLAY LOAM, trace gravel. Wet.			13		19.0
			7		23.5				16		
		-15	9				719.83	-35			
			3			End of Boring @ 35'.					
			5		14.7						
			7								
736.83											
Medium dense, gray SANDY LOAM, little gravel. Wet.			13								
			13		14.5						
		-20	10					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/10/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065253.405,1000127.942 (offset 4' S)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-02	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	448+43	H	S	Qu	S	First Encounter	749.3 ft	(ft)	(/6")	(tsf)	(%)
Offset	16.00ft LT					Upon Completion	747.3 ft				
Ground Surface Elev.	754.28 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	753.95						733.78			P	
CONCRETE (8")	753.28					Medium dense, gray SANDY LOAM, some gravel. Wet.		5			10.3
Medium dense, brown SAND FILL, some gravel. Moist.		7			5.8			7			
		8						7			
	751.28						731.28				
Medium dense, gray SANDY LOAM, some gravel. Wet.		5				Very stiff, gray SILTY CLAY LOAM, some gravel. Moist.		5			9.9
		6			11.4			7			
	748.78	▼ -5					728.78	-25	10	3.2	
Medium dense, gray SAND and gravel. Wet.						Hard, gray CLAY, some gravel. Moist.				B	
		5						9			
		7			9.1			15			10.6
		7						18		4.1	
	746.28						726.28			B	
Very stiff, gray CLAY, trace gravel. Moist.		3				Stiff, gray CLAY LOAM, some gravel. Moist.		50/4"			
		3			15.4						12.2
		4		2.3						1.8	
	743.78	-10		P						P	
Medium dense, gray SANDY LOAM, some gravel. Wet.											
		7									
		9			10.0		722.28				
		9				Very dense gray SILTY LOAM, some gravel. Wet.					
	741.28										
Medium dense, gray SAND, some gravel. Wet.		6					720.48		50/2"		
		8			12.5	End of boring at 33.8'. Refusal at 33.8'.					22.8
		10						-35			
	738.78										
Stiff, gray SILTY CLAY, some gravel. Wet.											
		3									
		2			10.2						
		5		1.8							
	736.28			P							
Very stiff, gray SILTY CLAY LOAM, some gravel. Wet.		5									
		5			8.6						
		5		2.3							
		-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/10/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065389.261,1000121.801

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-03	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	449+79	H	S	Qu	T	First Encounter	745.4 ft	(ft)	(/6")	(tsf)	(%)
Offset	20.00ft LT					Upon Completion	744.9 ft				
Ground Surface Elev.	753.94	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	753.61						733.44				
CONCRETE (8")	752.94					Medium dense, gray SAND, trace gravel. Wet.		11			
Loose, black PEAT with trace roots and gravel. Moist. Organic content=23.2%		8			77.6			17			19.7
		5						12			
		2					730.94				
Organic content=14.7%						Very loose, gray SANDY CLAY LOAM, some gravel. Wet.		3			
		1						1			8.7
		2		118.8				2	1.0		
		-5	5				728.44	-25	P		
Dense, GRAVEL. Low recovery. Dry.	748.44					Medium dense, gray SAND, some gravel. Wet.		8			
		9						9			20.7
		14		0.6				6			
		16					725.94				
Medium dense, gray SANDY LOAM. Wet.	745.94					Medium dense, gray SAND, some gravel. Wet.		8			
		5						11			10.4
		4		23.1				16			
		-10	6					-30			
Medium dense, light gray SANDY LOAM, trace gravel. Wet.	743.44										
		6					721.94				
		4		16.2		Hard, gray CLAY, some gravel. Moist					
		8									
Medium dense, brown SAND, some gravel. Wet.	740.94							8			
		5						11			10.5
		8		14.8				12			
		-15	9				718.94	-35			
Medium dense, gray SAND, some gravel. Wet.	738.44					End of boring @ 35'.					
		3									
		9		14.8							
		6									
		8									
		7		12.2							
		-20	5					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/10/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065538.261,1000119.716

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	P	L	S	I
BORING NO.	BCSB-04	T	W	S	I	Groundwater Elev.:		H	S	Qu	T
Station	451+28	H	S	Qu	T	First Encounter	752.8 ft	(ft)	(/6")	(tsf)	(%)
Offset	19.00ft LT					Upon Completion	746.8 ft				
Ground Surface Elev.	753.80	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (3")	753.55						733.30				
CONCRETE (7")	752.97					Medium dense, gray SILTY LOAM. Wet.		5			
Medium dense, brown SAND, some crushed rock aggregate and gravel. Wet.		6			7.6			8		20.5	
		8						8			
	750.80						730.80				
Loose, gray SILTY LOAM, trace of organic material and gravel. Moist.		5				Loose, gray SANDY LOAM, some rock aggregates. Wet.		5			
		3		33.3				2		8.7	
		-5	4					-25	2		
	748.30						728.30				
Loose, gray SAND, some gravel. Wet.		5				Very loose, gray SANDY LOAM, some cobbles. Wet.		3			
		6		10.7				1		9.8	
		3						1			
	745.80						725.80				
Hard, gray CLAY, trace gravel. Moist.		5				Hard, gray CLAY, some gravel, trace rock aggregate. Moist.		11			
		6		19.6				14		9.1	
		-10	10	4.5 P				-30	21	4.5 P	
		5									
		7		19.9							
		5		4.3 P							
	740.80										
Medium dense, gray SAND, some gravel. Wet.		6						11			
		10		8.6				21		9.6	
		-15	10				718.80	-35	33	4.4 B	
	738.30					End of boring @ 35'.					
Loose, gray SANDY LOAM, trace gravel. Wet.		4									
		4		9.3							
		5									
	735.80										
Medium dense, gray SILT, traces gravel. Wet.		2									
		4		20.3							
		9									
		-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/9/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065683.687, 1000116.415

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-05	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	452+74	H	S	Qu	T	First Encounter	747.4 ft	(ft)	(/6")	(tsf)	(%)
Offset	20.00ft LT					Upon Completion	745.4 ft				
Ground Surface Elev.	753.87 ft	(ft)	(/6")	(tsf)	(%)	After	Hrs.	Filled ft			
Medium dense, brown SAND FILL, some gravel and cobbles. Moist.			19			Medium dense, gray SAND, some gravel, trace rock aggregate. Wet. (continued)			6		
			14		4.1				8		18.0
			9						9		
	750.87						730.87				
Very loose, black SILTY CLAY LOAM, trace gravel. Moist.			3			Medium dense, gray SANDY LOAM, trace gravel. Wet.			5		
			1		17.6				10		17.9
		-5	2					-25	9		
	748.37										
Loose, gray SAND, some gravel. Wet.			6						7		
			5		11.2				9		19.3
			2						8		
	745.87						725.87				
Hard, gray CLAY. Moist			5			Very loose, gray SANDY LOAM, trace gravel. Wet.			1		
			4		21.0				1		20.1
		-10	7	4.0				-30	1		
	743.37			B							
Very stiff, gray CLAY. Moist			5								
			6		19.9						
			14	3.0		Medium dense, gray SANDY LOAM, trace gravel. Wet.					
	740.87			B							
Medium dense, gray SAND, some gravel. Wet.			6						8		
			5		16.3				6		10.8
		-15	6						5		
							718.87	-35			
			5			End of boring @ 35'.					
			6		17.6						
			8								
	735.87										
Medium dense, gray SAND, some gravel, trace rock aggregate. Wet.			4								
			5		18.9						
		-20	5					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/10/21

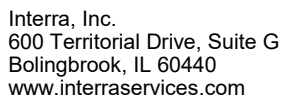
ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065824.758,1000106.138

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-06	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	454+15	H	S	Qu	T	First Encounter	743.2 ft ▼	H	S	Qu	T
Offset	27.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Not taken ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	754.19 ft					After 72 Hrs.	750.5 ft ▼				
Medium dense, brown SAND FILL, some gravel. Moist.			3			Medium dense, gray SAND AND GRAVEL. Wet. (continued)			9		
			4		6.8				7		13.1
			7						8		
751.19						731.19					
Very loose, black PEAT. Moist. Organic content=31.7%	▼		1			Loose, gray SANDY LOAM, trace gravel. Wet.			3		
			1		172.3				3		9.5
		-5	1					-25	6		
748.69						728.69					
Very stiff, gray CLAY, trace gravel. Moist			3			Medium dense, gray SANDY LOAM, trace gravel. Wet.			6		
			3		20.9				8		11.0
			4	2.7 B					3		
746.19						726.19					
Hard, gray CLAY, trace gravel. Moist.			4			Medium dense, gray LOAM, trace gravel. Wet.			7		
			3		22.0				7		9.4
		-10	2	4.4 B				-30	5		
743.69											
Very stiff, brown CLAY, trace gravel. Moist. LL=38%, PI=29%.	▼				19.4						
				3.1 B		722.19					
741.19						Hard, gray CLAY, trace gravel. Moist.					
Medium dense, gray SAND, traces gravel. Wet.			9						10		
			10		21.4				11		10.4
		-15	12					-35	9	4.1 B	
738.69						719.19					
Medium dense, gray SAND AND GRAVEL. Wet.			2			End of boring @ 35'.					
			5		19.5						
			6								
			4								
			5		15.6						
		-20	8					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

Date 12/13/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2066169.673,1000099.300

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-08	P	O	S	I	Groundwater Elev.:		T	W	Q	S
Station	457+60	T	S	Qu	T	First Encounter	747.9 ft	H	S		T
Offset	28.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	748.9 ft				
Ground Surface Elev.	754.87 ft					After	Hrs.	Filled ft			
Medium dense, light gray SAND, some gravel. Moist.						Very stiff, gray CLAY. Moist.	734.37			B	
			8			(continued)					
			9		7.6	Loose, gray SANDY LOAM, some gravel. Wet.			2		17.5
			5						2		
	751.87								2		
Loose, brown and gray organic CLAY LOAM. Moist											
			2						3		
			3		47.1				4		20.4
			-5						5		
	749.37								-25		
Medium dense, light brown SAND AND GRAVEL. Wet.							729.37				
			5			Medium dense, gray SAND , Wet.			6		
			6		14.9				8		13.8
			9						8		
	746.87										
Loose, light brown SAND AND GRAVEL. Wet.							726.87				
			2			Medium dense, gray SILTY LOAM AND GRAVEL. Wet.			4		
			4		19.0				5		13.4
			-10						8		
									-30		
			3								
			4		16.5						
			3				722.87				
	741.87					Loose, gray SAND. Wet.					
Stiff, gray SILTY CLAY. Moist.											
			2						4		
			3		24.1				4		23.5
			4	1.3					5		
			-15				719.87	-35			
	739.37			B		End of boring at 35'.					
Very stiff, gray CLAY. Moist.											
			2								
			3		23.6						
			5	2.5							
				B							
			2								
			1		25.8						
			-20						-40		
			4	2.8							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/13/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2066374.490,1000103.000

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-09	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	459+65	H	S	Qu	T	First Encounter	748.1 ft	(ft)	(/6")	(tsf)	(%)
Offset	20.00ft LT					Upon Completion	748.1 ft				
Ground Surface Elev.	755.11 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	754.78						734.61			P	
CONCRETE (7")	754.19					Medium dense, light brown SAND, some gravel. Wet.			2		
Loose, light gray SILTY LOAM, some gravel. Moist.			5		17.7				4		20.1
			6						9		
	752.11										
Stiff, black SILTY CLAY, some gravel, trace organic material. Moist.			3						5		
			2		24.5				5		18.8
		-5	3	1.0				-25	5		
	749.61			P							
Medium dense, gray SAND AND GRAVEL. Wet.			5						8		
			8		11.9				10		13.2
			9						11		
	747.11					No recovery	727.11				
Very stiff, gray CLAY, trace gravel. Moist.			3						4		
			4		19.4				4		
		-10	5	2.4				-30	5		
				B							
			4								
			4		19.4						
			5	2.2							
	742.11			B							
Medium stiff, gray CLAY LOAM, trace gravel. Moist.			4				721.61		4		
			3		23.8				23		18.6
		-15	5	0.5			720.11	-35	28		
	739.61			P		End of boring @ 35'.					
Very stiff, gray CLAY, trace gravel. Moist.			2								
			2		21.2						
			4	2.0							
	737.11			P							
Stiff, gray CLAY, trace gravel. Moist.			3								
			3		18.3						
		-20	4	1.8				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/14/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2066584.266,1000102.498

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-10	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	461+74	H	S	Qu	S	First Encounter	749.3 ft ▼				
Offset	23.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Not taken ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.34					After	Filled ft				
ASPHALT (4")	755.01						734.84				
CONCRETE (8")	754.34					Medium dense, brown SAND, trace gravel. Wet.		6			
Loose, light brown SANDY LOAM, some gravel. Moist.		4			17.5			8		16.2	
		3						9			
	752.34						732.34				
Medium stiff, brown and gray SILTY CLAY, traces of gravel. Moist.		2			23.5	Medium dense, brown SAND AND GRAVEL. Wet.		8		11.6	
		2						10			
		-5	2	0.8				-25	9		
	749.84			P							
Medium dense, gray SAND AND GRAVEL. Wet.		9			8.9			10			
		11						12		14.0	
		8						9			
	747.34						727.34				
Very stiff, gray SILTY CLAY. Moist.		5			18.1	Dense, brown SAND, some gravel. Wet.		8		13.7	
		6						15			
		-10	8	3.8				-30	23		
				P							
		3			22.4						
		3					723.34				
		5		3.3		Hard, gray, SILTY CLAY LOAM. Moist.					
				P							
	742.34				20.2			7		10.7	
Very stiff, brown SILTY CLAY. Moist. LL=29%, PI=14%								13			
		-15		2.6				9	4.5		
				B					P		
	739.84					End of boring @f 35'.					
Medium dense, brown SAND, trace gravel. Wet.		5			21.5						
		7									
		6									
	737.34										
Medium dense, brown SANDY LOAM, trace gravel. Wet.		4			18.7						
		4									
		7									
		-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/14/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2066767.250,1000115.216

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-11	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	463+58	H	S	Qu	S	First Encounter	739.7 ft	H	S	Qu	T
Offset	21.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	741.7 ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.67					After	Filled ft				
ASPHALT (4")	755.34										
CONCRETE (7")	754.75										
Stiff dark brown SANDY CLAY LOAM. Moist.			5		10.2	Medium dense, gray SAND AND GRAVEL, some crushed rock. Wet.			4		5.8
			7	1.0					13		
			7	B					15		
	752.67										
Stiff, black SANDY CLAY LOAM. Moist.			3		26.5				5		9.2
			3						10		
		-5	3	1.3				-25	9		
				B							
	750.17					Dense, gray SANDY LOAM, some gravel. Wet.					
Medium dense, gray SAND AND GRAVEL. Wet.			5		9.2				23		7.5
			9						11		
			6						24		
	747.67										
Stiff, gray SILTY CLAY. Moist.			3		19.0				2		6.8
			4						11		
		-10	3	2.5				-30	25		
				B							
			3		23.1						
			3	2.3							
			4	B							
			3		24.6				50/4"		11.2
			3			End of boring at 33.8'. Auger refusal at 33.8'.					
		-15	5	2.3				-35			
				B							
	740.17										
Medium dense, gray SAND AND GRAVEL. Wet.			2		13.8						
			4								
			13								
	737.67										
Medium dense, brown and gray SAND AND GRAVEL. Wet.			2		13.5						
			4								
		-20	13					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/14/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2066952.897,1000134.580

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-12	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	465+38	H	S	Qu	S	First Encounter	739.9 ft	(ft)	(/6")	(tsf)	(%)
Offset	22.00ft LT					Upon Completion	741.9 ft				
Ground Surface Elev.	755.88 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	755.55						735.38				
CONCRETE (7")	754.96					Stiff gray, SANDY CLAY LOAM, trace gravel. Moist.			9		10.4
Loose brown, SANDY LOAM. Moist.			9		15.8				15		
			4						6	1.3	
			4							P	
	752.88						732.88				
Stiff black, CLAY. Moist			4		30.0	Medium dense, gray SILTY LOAM. Moist.			3		17.6
			3						4		
		-5	3	1.3			730.88	-25	8		
	750.38			P		Very stiff gray CLAY LOAM, trace gravel. Moist					
Very stiff, brown CLAY. Moist.			2		18.1				50/10"		8.6
			3							2.3	
			3	2.5						P	
	747.88			P			727.88				
Very stiff, brown CLAY. Moist. LL=36%, PI=18%					22.2	Hard, gray CLAY LOAM, trace gravel. Moist.			25		8.9
									23		
		-10		3.4				-30	28	4.5	
				B					15	P	
	745.38								23		11.4
Very stiff, gray CLAY. Moist.			4						35		
			5		23.9						
			5	2.5			723.88				
				P		Hard, gray CLAY LOAM, trace gravel. Moist.					
			3								
		▽	3		28.5						
		-15	5	3.3							
				P			720.88	-35			
	740.38					End of boring at 35'.					
Medium dense, gray SAND AND GRAVEL. Wet.		▽	4		11.2						
			8								
			11								
			4								
			7		8.9						
		-20	18					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/14/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2067158.186,1000166.891

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-13	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	467+46	H	S	Qu	S	First Encounter	738.9 ft	(ft)	(/6")	(tsf)	(%)
Offset	24.00ft LT					Upon Completion	741.9 ft				
Ground Surface Elev.	755.86 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (10")	755.03						735.36				
Medium dense, brown SAND, some gravel. Moist.			5			Medium dense, light brown SAND. Wet.			5		
			8		4.6				6		19.0
			8						8		
	752.86						732.86				
Soft, black SANDY CLAY LOAM, trace gravel. Moist.			3			Medium dense, gray SILTY LOAM. Wet.			5		
			5		16.7				7		24.5
			-5	1	0.3				-25	4	
					P		730.36				
Medium dense, brown SAND AND GRAVEL. Moist.	750.36		5			Medium dense, gray SAND AND GRAVEL. Wet.			5		
			9		8.9				10		7.1
			9						10		
	747.86						727.86				
Very stiff, gray CLAY. Moist.			2			Hard, brown SILTY CLAY, trace gravel. Moist.			15		
			3		20.2				16		8.8
			-10	4	2.3				-30	19	4.5
					P						P
			3								
			4		18.9						
			5		2.0		723.86				
					B	Hard, gray SILTY CLAY, trace gravel. Moist.					
Stiff gray CLAY. Moist.	742.86		3						50/10"		
			3		20.0						11.0
			-15	3	1.0					4.5	
					P		720.86		-35		P
Loose, brown SANDY LOAM, trace gravel. Wet.	740.36		3			End of boring @ 35'.					
			3		28.8						
			7								
	737.86										
Medium dense, gray SAND AND GRAVEL. Wet.			2								
			3		10.1						
			9								
			-20						-40		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/15/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2067366.404,1000214.515 (offset 12' E)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-14	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	469+60	H	S	Qu	S	First Encounter	740.1 ft	(ft)	(/6")	(tsf)	(%)
Offset	23.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	742.1 ft				
Ground Surface Elev.	756.09 ft					After	Hrs.	Filled ft			
ASPHALT (4")	755.76					Medium dense, gray SAND AND GRAVEL. Wet. (continued)					
CONCRETE (7")	755.17										
Stiff, black SILTY CLAY LOAM. Moist			7						3		
			4		8.8				4		15.2
			4	1.3					6		
	753.09			P			733.09				
Loose, brown fine SAND to brown SILT, Moist.			3			Loose, gray SAND AND GRAVEL. Wet.			2		
			4		13.7				2		19.9
		-5	4					-25	6		
	750.59						730.59				
Very Stiff, gray CLAY. Moist.			4			Medium dense, gray SAND, some gravel. Wet.			12		
			4		19.2				12		18.1
			4	2.3					11		
				P			728.09				
			3			Very dense, gray SAND AND GRAVEL. Wet.			15		
			4		20.4				24		6.9
		-10	5	2.8				-30	50/4"		
				P							
Stiff brown CLAY, Moist. LL=40%, PI=22%	745.59				25.9						
				1.6							
				B							
Very stiff, gray CLAY. Moist.	743.09										
			3						27		
			3		19.8	Very stiff, gray SILTY CLAY. Moist.	722.09		50/5"		17.4
		-15	4	2.3							
				P			721.09	-35			
Medium dense, gray fine SAND. Wet.	740.59					End of boring at 35'.					
			3								
			4		19.2						
			6								
	738.09										
Medium dense, gray SAND AND GRAVEL. Wet.			3								
			3		16.7						
		-20	8					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/15/21

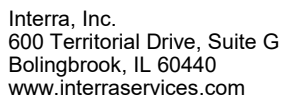
ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2067479.765,1000243.426 (offset 10' E)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	P	L	S	I
BORING NO.	BCSB-15	T	W	Q	S	Groundwater Elev.:		H	S	u	T
Station	470+77	H	S	u	T	First Encounter	740.5 ft	(ft)	(/6")	(tsf)	(%)
Offset	24.00ft LT					Upon Completion	742.5 ft				
Ground Surface Elev.	756.45	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	756.12										
CONCRETE (7")	755.53										
Stiff, dark brown CLAY LOAM.			3			Loose brown SAND, trace gravel.			3		
Moist.			3		22.4	Wet.			3		16.4
			5						6		
	753.45										
Loose, very dark brown SANDY			2						3		
CLAY LOAM, trace gravel. Moist.			3		16.4				2		17.6
			-5						-25	7	
	750.95										
Stiff to very stiff, brown SILTY			3			Medium dense, brown SAND,	730.95				
CLAY, trace gravel. Moist.			3		19.6	trace gravel. Wet.			4		
			3	1.5					4		14.7
			3	P					9		
	748.45										
Medium Stiff, brown SILTY LOAM.			3			Very dense, brown SAND AND	728.45				
Wet.			5		23.1	GRAVEL. Wet.			8		
			-10						50/5"		13.3
			6	0.8					-30		
	745.95										
Very stiff, gray CLAY. Moist.			2			Hard brown SILTY CLAY LOAM,	725.95				
			2		25.3	trace gravel. Moist.					
			3	2.0							
				B							
	743.45										
Stiff, gray CLAY. Moist			2						9		
			2		21.1				11		10.1
			-15						23	4.5	
			3	1.0						P	
	740.95					End of boring at 35'.	721.45	-35			
Very stiff, gray CLAY. Moist.			2								
			2		32.9						
			3	2.0							
				P							
	738.45										
Medium dense, brown SAND AND			6								
GRAVEL. Wet.			8		11.2						
			-20						-40		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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BBS, from 137 (Rev. 8-99)



SOIL BORING LOG

Date 12/15/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2067717.435,1000308.217 (offset 10' E)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-17	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	473+23	H	S	Qu	S	First Encounter	745.4 ft	(ft)	(/6")	(tsf)	(%)
Offset	24.00ft LT					Upon Completion	747.4 ft				
Ground Surface Elev.	761.35 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (11")											
	760.43					Loose, brown SILTY LOAM, Wet.	740.85				
Medium dense, brown SAND AND GRAVEL. Moist.		10						4			
		8		6.2				4		21.2	
		5						4			
	758.35										
Medium dense, brown SAND AND GRAVEL. Moist.		5						4			
		3		9.7				3		20.6	
		-5	2					-25	5		
	755.85					Medium dense, brown SILTY LOAM, Wet.	735.85				
Soft, brown SILTY CLAY LOAM, trace gravel. Moist.		1						5			
		1		22.3				7		20.0	
		2	0.5 P					8			
	753.35					Medium dense, gray SAND AND GRAVEL, Wet.	733.35				
Loose, brown SANDY LOAM, trace gravel. Moist.		3						3			
		3		15.0				5		14.2	
		-10	3					8			
								3			
		3						8		14.1	
		3		22.6		Medium dense, gray SILT. Wet.	729.35				
		2									
	748.35										
Very stiff, gray CLAY. Moist.		3									
		3		21.5							
		-15	4	2.5 P							
						End of boring @ 35'.	726.35	-35			
	744.85										
Loose, brown SAND AND GRAVEL. Wet.		3		27.9							
		6									
	743.35										
Loose, brown SILTY LOAM, little gravel. Wet.		5									
		3		23.7							
		-20	3					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/21/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2067882.823,1000354.485 (offset 9' E)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-18	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	474+95	H	S	Qu	S	First Encounter	743.7 ft ▼	(ft)	(/6")	(tsf)	(%)
Offset	22.00ft LT					Upon Completion	Not taken ft				
Ground Surface Elev.	761.70 ft	(ft)	(/6")	(tsf)	(%)	After	Hrs. Filled ft				
ASPHALT (4")	761.37					Medium dense, brown fine SAND,					
CONCRETE (8")	760.70					some gravel. Wet. (continued)					
Stiff to very stiff dark brown			2						7		
SANDY CLAY LOAM. Moist.			2		18.9				7		12.1
			3	1.0-2.25					5		
	758.70			P			738.70				
Very stiff dark brown SANDY			3			Loose, brown SAND AND			3		
CLAY LOAM. Moist.			4		17.1	GRAVEL. Wet.			3		6.3
		-5	5	2.3				-25	3		
	756.20			P							
Medium dense, brown SAND.			4						4		
Moist.			4		4.3				4		17.4
			6						4		
							733.70				
			4			Medium dense, brown SAND AND			4		
			6		2.6	GRAVEL. Wet.			5		18.0
		-10	8					-30	9		
			5								
			6		3.9						
			8				729.70				
	748.70					Medium dense, gray SAND AND					
Medium dense, brown fine SAND.						GRAVEL. Wet.					
Moist.			5						4		
			7		4.6				10		11.3
		-15	9				726.70	-35	10		
	746.20					End of boring @ 35'.					
Medium dense, brown fine SAND,			5								
some gravel. Moist.			7		7.1						
			12								
	743.70 ▼										
Medium dense, brown fine SAND,			9								
some gravel. Wet.			9		7.4						
		-20	9					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/20/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068160.3666,1000539.9689 (offset 4' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-20	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	300+87	H	S	Qu	S	First Encounter	738.2 ft ▼	H	S	Qu	T
Offset	42.00ft RT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Not taken ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.18 ft					After	Hrs. Filled ft				
CONCRETE (8")	754.52						734.68				
STONE (4")	754.18					Medium dense, gray SILTY LOAM, trace gravel. Wet.			4		
Loose, brown SAND. Moist.		4			9.0				7		8.7
		4							21		
		2									
							732.18				
		4				Dense brown SILTY LOAM, little rock pieces, and gravel. Wet.			14		
		3			9.5				20		13.5
		-5	5					-25	21		
	749.68						729.68				
Medium dense, brown fine SAND. Moist.		7				Hard, brown SILTY CLAY LOAM, trace gravel. Wet.			9		
		7			6.9				12		9.4
		10							15		
	747.18										
Medium dense, brown SILTY LOAM. Moist.		6							11		
		6			21.3				14		9.7
		-10	9					-30	17		
	744.68										
Stiff to very stiff, brown SILTY CLAY. Moist.		5									
		4			33.6						
		4	1.5-2.5								
			P								
	742.18										
Stiff, brown SILTY CLAY. Moist.		3							10		
		3			22.4				12		7.7
		-15	5	1.5					20		
			P				720.18	-35			
	739.68					End of boring @ 35'.					
Brown SANDY LOAM. Moist.											
					16.5						
		▼									
	737.18										
Medium dense, brown SAND AND GRAVEL. Wet.		7									
		7			12.5						
		-20	8					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/17/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068195.2582,1000629.3647 (offset 16' W)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-21	P	W	S	I	Groundwater Elev.:		T	S	Q	T
Station	301+81	H	S	Qu	S	First Encounter	738.4 ft	(ft)	(/6")	(tsf)	(%)
Offset	37.00ft RT					Upon Completion	740.4 ft				
Ground Surface Elev.	754.39 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
CONCRETE (9")	753.64						733.89			P	
STONES (4")	753.31					Medium dense, GRAVEL. Wet.			7		
Stiff, brown SILTY CLAY LOAM.		4			23.1				8		9.9
Moist.		4							7		
	751.39	3	1.5	P		Dense GRAVEL. Wet.	731.39				
Medium stiff, brown SILTY CLAY									45		
LOAM. Moist.		5			6.8				15		7.2
		5	1.0	P					17		
	748.89	-5				No recovery.	728.89				
Very stiff, brown SILTY CLAY		3							50/4"		
LOAM. Moist.		4			17.5						4.7
		4	2.5	P							
						Hard brown SILTY CLAY LOAM,	726.39				
		4				trace rock pieces and gravel.			11		
		5			21.3	Moist.			30		8.9
		5	3.0	P					25	4.5	
		-10								P	
		3									
	742.39	9			18.6						
Medium dense, brown fine SAND		19	2.5	P							
AND GRAVEL. Moist.											
	740.89										
Medium dense, brown fine SAND.		8							11		
Moist.		7			2.8				15		10.2
		9							26	4.5	
	738.89	-15				End of boring at 35'.	719.39	-35		P	
Medium dense, SAND AND											
GRAVEL. Wet		5									
	737.39	6			14.5						
Stiff, gray, SILTY CLAY LOAM.		5	1.0	P							
Wet.											
		4									
		4			10.4						
		5	1.0								
		-20									

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/20/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068217.8484, 1000698.3035 (offset 5' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-22	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	302+42	H	S	Qu	T	First Encounter	736.5 ft ▼	H	S	Qu	T
Offset	34.00ft RT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Not taken ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	754.53 ft					After	_____ Hrs. Filled ft				
CONCRETE (8")	753.87						734.03				
STONE (4")	753.53					Medium dense, gray SAND AND GRAVEL. Wet.		12			
Loose brown, SAND. Moist.		8			11.0			13		10.0	
		3						10			
		4									
		6						7			
		3			9.8			4		15.7	
		-5	3					-25	6		
	749.03						729.03				
Medium dense, brown, fine SAND. Moist.		6				Very stiff to hard, brown CLAY LOAM, trace gravel. Wet.		7			
		5			2.8			13		9.7	
		6						21	3.5-4 P		
	746.53						726.53				
Very stiff, brown, SILTY CLAY, trace gravel. Moist.		7				Hard, brown CLAY LOAM, trace gravel. Wet.		20			
		4			17.7			22		10.7	
		-10	5	2.5 P				-30	24	4.5 P	
		6									
		4			20.8						
		4		2.5 P							
	740.53							17			
Brown SAND					2.7			23		10.2	
		-15					719.53	-35	28	4.5 P	
	739.03					End of boring @ 35'.					
Medium dense, brown, SAND AND GRAVEL. Moist.		7									
		11			2.5						
		13									
	736.53 ▼										
Medium dense, brown, fine SAND. Wet.		6									
		7			20.5						
		-20	11					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/17/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068238.7912, 1000769.9258 (offset 5' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-23	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	303+17	H	S	Qu	S	First Encounter	734.6 ft	(ft)	(/6")	(tsf)	(%)
Offset	37.00ft RT					Upon Completion	736.6 ft				
Ground Surface Elev.	754.64 ft	(ft)	(/6")	(tsf)	(%)	After	Hrs. Filled ft				
CONCRETE (9")	753.89					Very stiff, brown CLAY. Moist.	734.14			B	
STONES (5")	753.47					(continued)					
Medium dense, brown fine SAND, trace gravel. Moist.		13			2.1	Medium dense SAND AND GRAVEL. Wet.		4			10.4
		12						6			
		13						11			
Medium dense, brown fine SAND. Moist.	751.64					Medium dense gray SAND AND GRAVEL. Wet.	731.64				
		6			4.4			5			16.6
		6						10			
		-5						10			
Medium dense, brown SILTY LOAM. Moist.	749.14					Stiff, gray SILTY CLAY LOAM, trace gravel. Wet.	729.14				
		6						1			
		8			12.8			4			10.2
		10						5	1.5		
						Dense, gray SILTY LOAM, trace gravel. Wet.	726.64			B	
		4						30			
		6			19.1			16			7.9
		-10						10			
Stiff brown CLAY. Moist.	744.14										
		7									
		2			17.8						
		3	1.0			Hard, gray SILTY CLAY LOAM, trace gravel. Wet.	722.64				
Very stiff, brown CLAY. Moist.	741.64										
		4						50/5"			
		2			19.2						9.8
		-15	2.5							4.5	
			B			End of boring @ 35'.	719.64	-35		P	
		3									
		3			19.1						
		5	2.0								
			B								
		4									
		4			29.2						
		-20	2.0					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/17/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068273.4859,1000869.0321

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-24	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	304+21	H	S	Qu	S	First Encounter	738.2 ft	H	S	Qu	T
Offset	34.00ft RT	(ft)	(/6")	(tsf)	(%)	Upon Completion	740.2 ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	754.21					After	_____ Hrs.				
							Filled ft				
Very dense brown SANDY LOAM. Moist.							733.71				
			50/4"			Medium dense, brown SAND. Wet.			3		
					5.4				7		21.4
									10		
751.21											
No recovery			7						5		
			6						3		10.2
			-5	4					-25	8	
748.71							728.71				
Medium dense, brown fine SAND, trace gravel. Moist.			6			Medium dense brown SILTY LOAM AND GRAVEL. Wet.			3		
			7		32.3				5		8.8
			7						15		
746.21							726.21				
Medium dense, brown SILTY LOAM. Moist.			4			Hard brown SILTY CLAY, trace gravel. Wet.			8		
			5		20.8				5		10.4
			-10	6	1.3				-30	11	4.5
743.71					P					13	P
Very stiff brown, SILTY CLAY. Moist.			4						9		16.4
			3		20.8		722.21		29		
			5		2.3	Dense, gray, SAND AND GRAVEL. Wet.					
741.21					P						
Medium dense, brown SANDY CLAY LOAM AND GRAVEL. Moist.			3								
			7		8.4						
			-15	10			719.21	-35			
738.71						End of boring @ 35'.					
Medium dense, brown SAND AND GRAVEL. Wet.			5								
			8		10.1						
			9								
			5								
			8		9.9						
			-20	9					-40		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/20/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068329.5440,1001045.8846 (offset 5' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-25	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	306+07	H	S	Qu	T	First Encounter	737.2 ft	(ft)	(/6")	(tsf)	(%)
Offset	37.00ft RT					Upon Completion	738.2 ft				
Ground Surface Elev.	754.21 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
CONCRETE (8")	753.55						733.71				
STONE (4")	753.21					Loose, brown SAND, trace gravel.					
Medium dense, brown SAND.			12			Wet.			4		
Moist.			11		6.5				5		16.4
			7						4		
	751.21						731.21				
Loose, brown SAND AND						Medium dense, gray SAND, trace					
GRAVEL. Moist.			8			gravel. Wet.			4		
			4		4.6				4		18.1
			-5						-25	6	
	748.71										
Loose, brown fine SAND. Moist.			3							7	
			4		4.6					10	9.2
			5							10	
	746.21										
Medium stiff, brown SANDY			4							4	
LOAM. Moist.			3		17.3					3	13.5
			-10							8	
	743.71				0.5 P						
Medium stiff, brown SILTY CLAY.			4								
Moist.			7		16.0						
	742.21		11		0.8 P		722.21				
Medium dense, brown SAND AND						Dense, gray SAND AND					
GRAVEL. Moist.			4			GRAVEL. Wet.				8	
			8		3.2					12	8.7
			-15							20	
	738.71						719.21				
Medium dense, brown SAND AND			7			End of boring @ 35'.					
GRAVEL. Wet.			6		6.6						
			4								
	736.21										
Loose brown SAND AND			4								
GRAVEL. Wet.			4		13.7						
			5								
			-20								

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/20/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068390.3551,1001228.4569 (offset 5' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-26	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	307+99	H	S	Qu	S	First Encounter	736.5 ft	(ft)	(/6")	(tsf)	(%)
Offset	35.00ft RT					Upon Completion	737.0 ft				
Ground Surface Elev.	753.45 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
CONCRETE (8")	752.79						732.95				
STONE (4")	752.45					Loose, gray SAND AND GRAVEL. Wet.			5		
Loose, brown SAND. Moist.		7							3		13.6
		4		8.8					3		
		4									
							730.45				
		3				Medium dense, gray SAND AND GRAVEL. Wet.			9		
		4		8.7					8		14.5
		-5	3					-25	8		
	747.95										
Medium dense, brown SAND, trace gravel. Moist.		5							8		
		6		4.4					10		18.2
		9							6		
	745.45										
Loose, brown SAND, trace gravel. Moist.		5					724.45		6		
		3		4.2		Very stiff, brown SILTY CLAY LOAM. Wet.			7		8.9
		-10	4					-30	16	3.0 P	
	742.95										
Medium dense, brown SAND, some rock pieces. Moist.		10									
		8		2.8							
		12					721.45				
						Very dense SAND AND GRAVEL, some rock. Wet.					
		7							15		
		7		3.3					30		7.8
		-15	10						35		
	737.95						718.45	-35			
Medium dense, brown SAND, some rock pieces. Wet.		9				End of boring @ 35'.					
		7		7.6							
		7									
	735.45										
Medium dense, brown SAND AND GRAVEL. Wet.		5									
		6		13.6							
		6									
		-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/21/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068446.4630,1001417.1150 (offset 3' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	S	I
BORING NO.	BCSB-27	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	309+96	H	S	Qu	T	First Encounter	736.1 ft	(ft)	(/6")	(tsf)	(%)
Offset	40.00ft RT					Upon Completion	734.1 ft				
Ground Surface Elev.	753.07 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
CONCRETE (8")	752.41						732.57				
STONE (4")	752.07					Medium dense, brown SAND, some rock pieces. Wet.			5		
Hard, brown SILTY CLAY, trace gravel. Moist.		18			10.9				8		16.8
		9							11		
		8	4.5								
	750.07		P			Medium dense, brown SAND , some gravel. Wet.	730.07				
Very stiff, brown SILTY CLAY, trace gravel. Moist.		10							2		
		7			14.0				4		12.5
		-5	12	2.5				-25	8		
			P								
		5							10		
		5			10.8				11		17.0
		6	2.5						11		
	745.07		P								
Very stiff, brown CLAY LOAM, trace gravel. Moist.		4							4		
		4			13.7				4		10.4
		-10	5	2.5				-30	10		
	742.57		P								
Stiff, brown SILTY CLAY. Moist.		3									
	741.57										
Medium dense, brown SAND. Moist.		4			14.9						
		6	1.5			Hard brown SANDY CLAY LOAM, trace gravel. Wet.	721.07				
	740.07		P								
Very stiff, brown SILTY CLAY. Moist.		3							8		
		4			22.1				20		7.1
		-15	5	2.5				-35	24	4.5	
			P						B		
	737.57					End of boring @ 35'.	718.07				
Medium dense, brown SAND AND GRAVEL. Wet.		2									
		7			16.6						
		7									
		5									
		5			13.0						
		-20	7					-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/21/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068508.9192,1001591.3499 (offset 11' N)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	Box Culvert Sewer	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	446+00 to 477+80	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	BCSB-28	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	311+82	H	S	Qu	T	First Encounter	736.8 ft	(ft)	(/6")	(tsf)	(%)
Offset	35.00ft RT					Upon Completion	733.3 ft				
Ground Surface Elev.	754.75 ft	(ft)	(/6")	(tsf)	(%)	After	Hrs.	Filled ft			
CONCRETE (8")	754.09					Loose GRAVEL. Wet. (continued)	734.25				
STONE (4")	753.75					Medium dense, SAND AND GRAVEL. Wet.			5		
Hard, brown, SILTY CLAY LOAM, trace gravel. Moist.		18			15.0				6		14.9
		6							8		
		7	4.5	P							
		3							3		
		4			13.3				6		15.2
	-5	5	4.5	P				-25	10		
	749.25						729.25				
Hard, brown, SILTY CLAY LOAM, trace gravel and pieces of rock. Moist.		3				Medium dense, gray fine SAND. Wet.			5		
		3			11.4				7		15.5
		3	4.5	P					11		
	746.75										
Very stiff, brown, SILTY CLAY LOAM, trace gravel and pieces of rock. Moist.		4							3		
		4			12.4				7		17.7
	-10	4	2.3	P				-30	18		
	744.25						722.75				
Medium stiff, brown CLAY LOAM, trace gravel. Moist.					14.9						
				0.9		Dense, brown SAND AND GRAVEL. Wet.					
	741.75			B					15		
Hard brown SILTY CLAY LOAM, trace gravel. Moist.		6							16		9.2
	740.25	5			24.4				22		
Very soft to stiff, black ORGANIC CLAY. Moist.	-15	6	4.0-0.0	P			719.75	-35			
Organic content=9.1%						End of boring @ 35'.					
		2									
		2			51.0						
		2	1.0	P							
	736.75										
Loose GRAVEL. Wet.		4									
		3			18.8						
	-20	4						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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Page 1 of 1

SOIL BORING LOG

Date 4/15/24

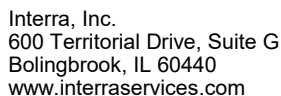
ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Sponaugle

SECTION IL 120 to IL 176 PTB 195-015 LOCATION E: 1001823.4; N: 2068075.2

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (95.6% efficiency)

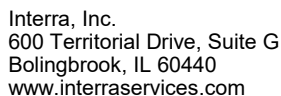
STRUCT. NO.	NA	D	B	U	M	Surface Water Elev.	NA	ft	D	B	U	M
Station	NA	E	L	C	O	Stream Bed Elev.	NA	ft	E	L	C	O
BORING NO.	DPB-BC-01	P	W	S	I	Groundwater Elev.:			T	S	Q	S
Station	312+59	H	S	Qu	T	First Encounter	735.7	ft	H	S	Qu	T
Offset	519.20ft RT					Upon Completion	731.8	ft				
Ground Surface Elev.	744.20	(ft)	(/6")	(tsf)	(%)	After	Filled	ft	(ft)	(/6")	(tsf)	(%)
TOPSOIL (2")	744.00						723.70					
Loose, very pale Brown (10YR 7/4) fine SANDY LOAM (fill), moist			4			Very dense, Gray (10YR 5/1) SILT, moist			12			
			3		9.8				25		20.4	
			1						35			
							721.20					
Very loose			2			Medium dense, Gray (10YR 5/1) fine SAND, wet			3			
			2		8.5				5		16.1	
		-5	1				719.20	-25	7			
	738.70					End of boring at 25' Borehole backfilled with cuttings and bentonite.						
Loose, Gray (10YR 6/1) SILTY LOAM, little gravel, moist			4									
			3		6.6							
			4									
Free water at 8.5'			6									
Medium dense, wet			5		10.7							
		-10	7						-30			
Trace gravel			9									
			10		9.0							
			9									
Very dense			8									
			12		7.5							
		-15	50/4"						-35			
	728.70											
Very dense, light Gray (10YR 7/1) coarse to fine SANDY LOAM and GRAVEL, wet			21									
			29		8.3							
			40									
	726.20											
Very dense, Gray (10YR 5/1) SILTY LOAM, little gravel, moist			16									
			35		8.6							
		-20	30						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



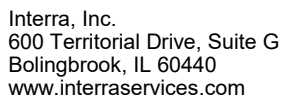
ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Sponaugle
SECTION	IL 120 to IL 176 PTB 195-015		LOCATION	E: 1000009.2; N: 2062822.9	
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (95.6% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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BBS, from 137 (Rev. 8-99)

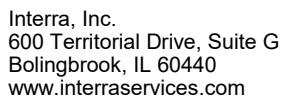


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2060416.9822,1000281.0275 (offset 16' E)

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

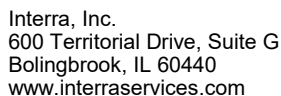


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2060714.2842,1000191.1401 (offset 15' E)

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

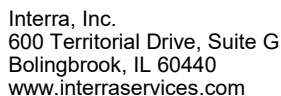


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2061022.2372,1000269.6848 (offset 18' N)

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

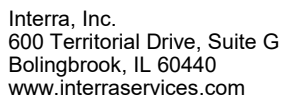


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2061313.5935,1000189.3054 (offset 10' E)

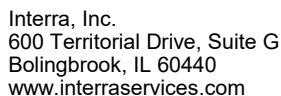
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Sponaugle
SECTION	IL 120 to IL 176 PTB 195-015		LOCATION	E: 1000265.8; N: 2061532.1	
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (95.6% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



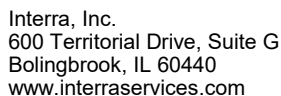
ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Sponaugle
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SECTION IL 120 to IL 176 PTB 195-015

LOCATION 2061948.349,1000166.059

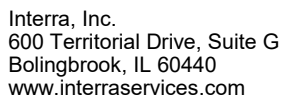
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



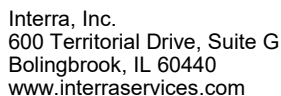
ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Sponaugle
SECTION	IL 120 to IL 176 PTB 195-015		LOCATION	E: 1000220.0; N: 2062237.7	
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (98.2% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Sponaugle
SECTION	IL 120 to IL 176 PTB 195-015		LOCATION	E: 1000144.5; N: 2062547.2	
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (95.6% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

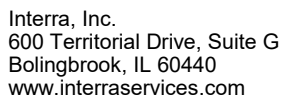


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2062820.451.1000215.846

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

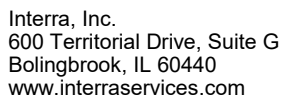


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2063088.480,1000154.024

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

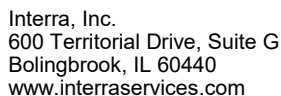


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2063444.506,1000202.973

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

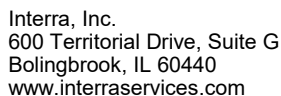


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2063717.634.1000142.742

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

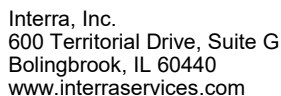


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY GEO-Jason
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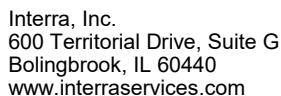
SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064036.886,1000192.360

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



BBS, from 137 (Rev. 8-99)

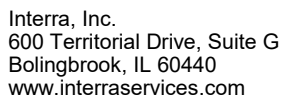


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2064621.261,1000183.792

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

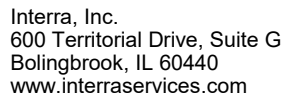


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Vianney
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2065797.696,1000158.686 (offset 4' W)

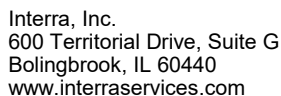
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE IL 31 **DESCRIPTION** IL 31, from IL 176 to IL 120 **LOGGED BY** Atul Kumar
SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068171.5553,999956.4751 (offset 5' W & 4' S)
COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** D50 Auto (93% efficiency)

BBS, from 137 (Rev. 8-99)



ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068167.9575,1000257.7083

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/21/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068382.7618,1000964.8114

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. SGB-ELM04
Station 305+46
Offset 39.00ft LT
Ground Surface Elev. 754.30 ft

D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

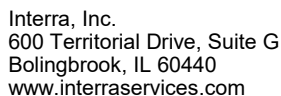
Groundwater Elev.:
First Encounter _____ Dry ft
Upon Completion _____ Dry ft
After _____ Hrs. _____ Filled ft

STONES

752.80	23		
Medium dense, brown fine SAND. Moist.	14		4.2
751.30	15		
Medium dense, brown fine to medium SAND AND GRAVEL. Moist.	6		
	8		7.7
	8		
	-5		
	4		
	6		8.4
746.80	6		
Medium dense brown SILT. Moist.			
745.00	4		
Stiff, brown SILTY CLAY. Moist.	6		26.0
744.30	5	1.0	
End of boring @ 10'	-10	P	

-15
-20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

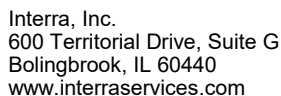


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068574.3237,1001530.6974

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

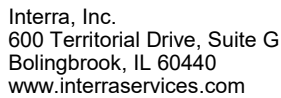


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068284.0807,1000462.9835

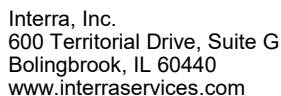
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE IL 31 **DESCRIPTION** IL 31, from IL 176 to IL 120 **LOGGED BY** Atul Kumar
SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068412.8813,1000536.4271 (offset 12' S & 8' W)
COUNTY McHenry **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** D50 Auto (93% efficiency)

BBS, from 137 (Rev. 8-99)

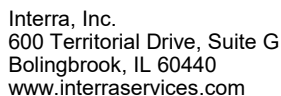


ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY	Vianney
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2065096.0630,1000414.6868

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	IL 31, from IL 176 to IL 120	LOGGED BY Atul Kumar
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COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/22/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068060.4416,1000364.8412 (offset 14' N & 10' W)

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. _____ Station _____	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev. _____ ft Stream Bed Elev. _____ ft	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)
BORING NO. <u>TSB-IL120-01</u> Station <u>476+69</u> Offset <u>59.00ft LT</u> Ground Surface Elev. <u>759.02</u> ft					Groundwater Elev.: First Encounter _____ Dry ft Upon Completion _____ Dry ft After _____ Hrs. _____ Filled ft				
Very stiff dark brown, SILTY CLAY LOAM. Moist.								P	
	4			13.7					
	4		3.5						
	4		P						
	4								
	2			13.9					
	-5	3	3.0			-25			
			P						
753.52 Stiff, dark brown SILTY CLAY LOAM. Moist. Thin layer of sand at 6.0'.		3							
	2			27.1					
	3		1.0						
			P						
751.02 Very stiff, dark brown SILTY CLAY LOAM. Moist.		3							
	3			14.2					
	-10	3	2.0			-30			
			P						
748.52 Medium stiff, brown LOAM, Moist. NP.				15.1					
			0.7						
			B						
746.02 Very stiff, brown SILTY CLAY LOAM. Wet.		7							
	7			19.9					
	-15	8	3.0			-35			
			P						
743.52 Hard brown, SILTY CLAY. Moist.		3							
	5			21.4					
	6		4.5						
			P						
	8								
	8			17.5					
End of Boring @ 20.0'	739.02	-20	10	4.5		-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/22/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Atul Kumar

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2068275.4238,1000517.9336

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. TSB-IL120-02
Station 479+19
Offset 38.00ft RT
Ground Surface Elev. 752.85 ft

D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 737.9 ft ▼
Upon Completion 736.9 ft ▼
After _____ Hrs. Filled ft

TOPSOIL (6")	752.35			
Stiff, dark brown SILTY CLAY LOAM. Moist.		2		
		2		16.4
		2	1.3	
	749.85		P	
Medium stiff, dark brown SILTY CLAY LOAM. Moist.		3		
		1		20.6
		-5	3	0.5
	747.35		P	
Loose, brown fine SILTY LOAM. Moist.		3		
		2		11.1
		4		
	744.85			
Loose, brown SILT. Moist.		3		
	743.85	4		18.0
Stiff brown SILTY CLAY. Moist.		5	1.5	
	-10		P	
	742.35			
Stiff, Brown SILTY CLAY. Moist. LL=27.0%, PI=12.0%				16.9
			2.0	
			B	
	739.85			
Very stiff brown SILTY CLAY. Moist.		5		
	738.85	8		20.2
Medium dense, brown SAND AND GRAVEL. Moist.		16	2.5	
	▼-15		P	
	737.35			
Medium dense, brown SAND AND GRAVEL. Wet.		5		
		6		9.6
		7		
		4		
		4		9.7
End of boring at 20.0'	732.85	-20	6	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 2/1/22

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY GEO-Jason

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065028.185,1000115.059

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. TSB-LL-01
Station 446+18
Offset 34.00ft LT
Ground Surface Elev. 754.64 ft

D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 748.6 ft ▼
Upon Completion 748.6 ft ▼
After _____ Hrs. Filled ft

TOPSOIL (5")	754.22			
Medium dense, brown SANDY LOAM, trace gravel. Moist.		11		
		7		4.4
		5		
	751.64			
Very loose, black PEAT. Moist.		1		
		1		90.4
		-5	2	0.3
			P	
	749.14			
Medium dense gray SILTY LOAM. Wet.		3		
		10		19.2
		9	1.5	
			P	
	746.64			
Medium dense, gray SANDY LOAM, little gravel. Wet.		1		
		5		11.4
		-10	6	
	744.14			
Dense, gray SANDY LOAM, little gravel. Wet.		6		
		14		11.6
		18		
	741.64			
Loose, gray SAND, some gravel. Wet.		3		
		3		11.9
		-15	6	
	737.64			
Medium dense, gray SANDY LOAM, some gravel. Wet.		4		
		5		13.5
End of boring @ 20.0'.	734.64	-20	5	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/13/21

ROUTE IL 31 DESCRIPTION IL 31, from IL 176 to IL 120 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2065143.7391,1000177.9349

COUNTY McHenry DRILLING METHOD Hollow Stem Auger HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. _____
Station _____

BORING NO. TSB-LL-02
Station 447+33
Offset 31.00ft RT
Ground Surface Elev. 754.30 ft

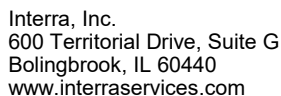
D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter 748.3 ft ▼
Upon Completion 745.3 ft ▽
After _____ Hrs. Filled ft

Loose, brown SAND, some gravel. Moist.			
	6		
	3		9.1
	4		
751.30			
Very loose, black PEAT, some gravel. Moist. Organic content=13%	2		
	1		38.8
	-5		
748.80			
Medium dense, gray SAND AND CRUSHED ROCK AGGREGATES. Wet.	11		
	12		8.2
	7		
746.30			
Medium dense, gray SAND, some gravel. Wet.	6		
	6		14.3
	-10		
743.80			
Medium dense, gray, SANDY LOAM, some gravel. Wet.	8		
	7		7.3
	8		
741.30			
Medium dense, gray SAND, some gravel. Wet.	2		
	6		18.5
	-15		
738.80			
Medium dense, gray SAND AND GRAVEL. Wet.	5		
	6		12.5
	9		
	10		
	15		11.0
End of boring @ 20'	12		
734.30	-20		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

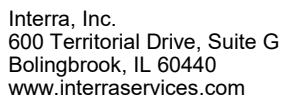


ROUTE	IL 31	DESCRIPTION	Box Culvert No. 14	LOGGED BY GEO-Jason
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2062775.421,1000162.214

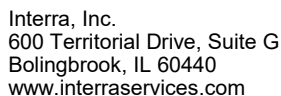
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



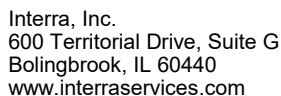
COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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BBS, from 137 (Rev. 8-99)



COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D50 Auto (93% efficiency)
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BBS, from 137 (Rev. 8-99)



ROUTE	IL 31	DESCRIPTION	Box Culvert No. BC-01	LOGGED BY	Boland
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** E: 1001598.1: N: 2068363.6

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D50 Auto (98.2% efficiency)
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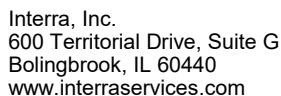
STRUCT. NO. BC-01
Station _____

Ground Surface Elev. 751.70

D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

	Before	After	Hrs.	Filled ft
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
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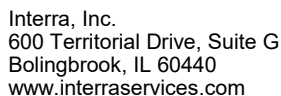
BBS, from 137 (Rev. 8-99)



Retaining Wall		D E P T H	B L O W S	U C S	M O I S T	Surface Water Elev. _____ ft	
STRUCT. NO. _____	ELM-01					Stream Bed Elev. _____ ft	
Station _____	296+86						
BORING NO. _____ RW-ELM01		(ft)	(6")	(tsf)	(%)	Groundwater Elev.: _____	
Station _____	296+86					First Encounter _____ Dry ft	
Offset _____	45.00ft LT					Upon Completion _____ Dry ft	
Ground Surface Elev. _____	761.13 ft					After _____ Hrs. _____ Filled ft	

[illegible]

BBS, from 137 (Rev. 8-99)



ROUTE	IL 31	DESCRIPTION	Retaining Wall ELM-02	LOGGED BY	Atul Kumar
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SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2068183.7396,1000197.4296 (offset 5' W)

COUNTY Mc Henry **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** D50 Auto (93% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/22/21

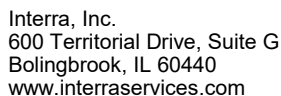
ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2042363.1,1000133.456

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-01	P	W	S	I	Groundwater Elev.:		T	S	Q	S
Station	443+53	H	S	Qu	T	First Encounter	749.2 ft ▼	H	S		T
Offset	20.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Mud rotary ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.22 ft					After	Filled ft				
ASPHALT (4")	754.89						734.72				
CONCRETE (7")	754.30					Medium dense, gray SAND, trace gravel. Wet.		6			
Medium dense, light brown SAND FILL, trace gravel. Dry.		13			3.8			4		16.6	
		4						7			
	752.22					Loose, gray SAND, trace gravel. Wet.	732.22				
Loose, brown SAND FILL, trace gravel. Dry.		4						4			
		3			5.4			3		19.9	
		-5						-25			
	749.72					Medium dense, gray SAND, trace gravel. Wet.	729.72				
Medium dense, gray SAND, some gravel. Wet.		8						9			
		7			13.9			9		16.5	
		10						11			
	747.22					Medium dense, gray SAND, trace gravel. Wet.	727.22				
Medium dense, gray SAND, trace gravel. Wet.		10						22			
		7			25.4			15		13.8	
		-10						-30			
	744.72					Hard, gray CLAY LOAM, some gravel. Moist.	723.22				
Loose, gray SAND, trace gravel and rock aggregate. Wet.		3									
		5			21.6						
		3									
	742.22										
Medium dense, gray SAND, trace gravel. Wet.		15						22			
		10			12.8			25		7.8	
		-15						-35		6.8	
	739.72									B	
Very dense, gray SAND, little gravel. Wet.		13									
		32			20.4						
		41									
	737.22										
Loose, gray SAND, trace gravel. Wet.		7						26			
		5			16.1			50/5"		7.8	
		-20						-40		8.7	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	SN 056-0105	LOGGED BY
		Unnamed Tributary to Fox River S-Span Bridge		Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 **LOCATION** 2042363.1.1000133.456

COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger/Mud Rotary	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 11/23/21

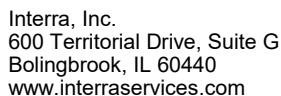
ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.804,1000133.209

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-02	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	443+87	H	S	Qu	T	First Encounter	746.5 ft ▼				
Offset	20.00ft LT					Upon Completion	Mud rotary ft				
Ground Surface Elev.	755.04 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft	(ft)	(/6")	(tsf)	(%)
ASPHALT (4")	754.71					Medium dense, gray SAND AND GRAVEL. Wet. (continued)					
CONCRETE (7")	754.12										
Medium dense, brown and gray SAND FILL, some gravel. Moist.			11						3		
			11		7.6				6		15.7
			7						5		
	751.04		4						4		
Very soft, black CLAY LOAM FILL, trace gravel. Moist.			1		33.6				10		11.5
	-5		1	0.0 P				-25	4		
	749.54						729.54				
Very soft, gray SANDY CLAY LOAM, trace gravel. Moist.			3			Loose, gray SAND, some gravel. Wet.			4		
			2		12.9				3		15.0
			3	0.0 P					3		
	747.04						727.04				
Medium dense, gray SANDY CLAY LOAM, little gravel. Wet.			4			Medium dense, gray SAND, some gravel. Wet.			12		
			7		6.1				9		16.2
	-10		10					-30	5		
	744.54										
Loose, gray SILTY LOAM, trace gravel. Wet.			3								
			2		12.1						
			3				723.04				
	742.04					Hard, brown and gray CLAY LOAM, some gravel. Moist.					
Very loose, gray SAND AND GRAVEL. Wet.			1						12		
			1		21.7				30		8.1
	-15		2					-35	50/4"	7.3 B	
	739.54										
Medium dense, gray SAND AND GRAVEL. Wet.			5								
			7		9.4						
			8								
			5						12		
			6		16.0				17		9.6
	-20		8					-40	18	5.3	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	SN 056-0105	LOGGED BY	Vianney
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SECTION <u>IL 120 to IL 176 PTB 195-015</u>	LOCATION 2064796.804,1000133.209
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COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger/Mud Rotary	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/19/21

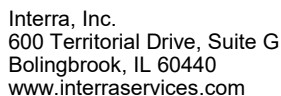
ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064817.678,1000132.884

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-03	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	444+07	H	S	Qu	T	First Encounter	746.0 ft ▼	H	S	Qu	T
Offset	20.00ft LT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Mud rotary ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.04 ft					After	Hrs. Filled ft				
ASPHALT (4")	754.71					Medium dense, gray SAND, some gravel. Wet. (continued)					
CONCRETE (8")	754.04										
Medium stiff, black CLAY, Moist.			5						4		
			4		29.3				7		18.8
			2	0.5					10		
	752.04			P							
Medium stiff, dark brown organic CLAY, Moist.			1						5		
			1		70.5				7		17.4
		-5	2	0.5				-25	9		
	749.54			P							
Medium dense, dark brown organic SANDY CLAY LOAM, some gravel. Moist.			7						19		
			5		12.1				17		13.5
			5						15		
	747.04										
Medium dense, gray SANDY CLAY LOAM, trace gravel. Wet.			9						16		
			7		10.8				24		10.0
		-10	5					-30	36		
	744.54										
Medium dense, gray SANDY LOAM, some gravel. Wet.			3								
			5		12.3						
			8				723.04				
	742.04					Hard, gray SANDY CLAY LOAM, little gravel. Wet.					
Medium dense, gray SAND, some gravel. Wet.			5								
			10		15.4				23		
		-15	17					-35	27		7.9
									34	4.5	
										P	
			5								
			7		13.7						
			10								
			5						16		
			6		19.4				19		8.7
		-20	6					-40	21	4.5	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	SN 056-0105	LOGGED BY	Vianney
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SECTION <u>IL 120 to IL 176 PTB 195-015</u>	LOCATION 2064817.678,1000132.884
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COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger/Mud Rotary	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/18/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064875.375,1000131.779

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-04	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	444+65	H	S	Qu	T	First Encounter	744.0 ft ▼	(ft)	(/6")	(tsf)	(%)
Offset	20.00ft LT					Upon Completion	Mud rotary ft				
Ground Surface Elev.	754.99 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft				
ASPHALT (4")	754.66					Medium dense, gray SAND, some gravel. Wet. (continued)					
CONCRETE (8")	753.99										
Loose, brown SAND FILL, trace gravel, Moist			5						5		
			4		4.7				8		14.0
			3						9		
							731.99				
			4			Medium dense, gray SILTY CLAY LOAM, trace gravel. Wet.			6		
			3		6.7				7		10.0
			-5						8	0.3 P	
	749.49						729.49				
Medium dense, brown and gray SAND AND GRAVEL. Moist.			3			Medium dense, gray SAND, trace gravel. Wet.			4		
			5		17.2				10		13.9
			7						11		
	746.99						726.99				
Medium stiff, gray CLAY LOAM, trace gravel. Moist.			5			Medium dense, gray SANDY LOAM, trace gravel. Wet.			3		
			5		9.0				5		14.4
			-10						6		
	744.49			0.5 P							
Medium dense, gray SANDY LOAM. Wet.			5								
			5		14.3						
			10				722.99				
	741.99					Hard gray CLAY LOAM, trace gravel. Wet.					
Medium dense, gray SAND AND GRAVEL. Wet.			5						7		
			7		6.4				27		9.8
			-15						21	4.5 P	
	739.49										
Medium stiff, gray CLAY LOAM. Wet.			3								
			5		8.7						
			7				717.99				
	736.99					Very stiff gray CLAY LOAM, trace gravel. Wet.					
Medium dense, gray SAND, some gravel. Wet.			4						13		
			5		13.1				15		9.2
			-20						24	2.3	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/18/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge
SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064875.375,1000131.779

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-04
Station 444+65
Offset 20.00ft LT
Ground Surface Elev. 754.99 ft

D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ ft	D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)	Stream Bed Elev. _____ ft	(ft)	(/6")	(tsf)	(%)
				Groundwater Elev.: First Encounter <u>744.0</u> ft ▼ Upon Completion <u>Mud rotary</u> ft After _____ Hrs. <u>Filled</u> ft				
Very stiff gray CLAY LOAM, trace gravel. Wet. (continued)		P		Hard gray CLAY LOAM, trace gravel. Wet. (continued)			P	
				692.99				
				Very dense, gray SAND, trace gravel. Wet.				
	17					26		
	16		8.4			30		17.9
-45	16	2.8			-65	25		
		P						
707.99				687.99				
Hard gray CLAY LOAM, trace gravel. Wet.	20			Very dense, gray SAND, some gravel and cobbles. Wet				
	24		10.6					
	37	4.5			50/4"			16.3
-50		P			-70			
				682.99				
701.99				Dense, gray SANDY LOAM, trace gravel. Wet.				
Dense, gray SILTY CLAY LOAM, some gravel, Wet.	50/3"					20		
			14.2			18		11.8
-55				679.99	-75	24		
				End of Boring @ 75.0'.				
697.99								
Hard gray CLAY LOAM, trace gravel. Wet.								
	15							
	16		11.3					
-60	23	4.5			-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/15/21

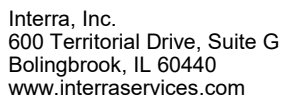
ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064763.709,1000170.336

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-05	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	443+53	H	S	Qu	S	First Encounter	751.8 ft ▼	H	S	Qu	T
Offset	17.00ft RT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Mud rotary ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	755.33					After	Filled ft				
ASPHALT (4")	755.00										
CONCRETE (8")	754.33					Medium dense, gray SAND, trace rock aggregate and gravel. Wet. (continued)			5		
Dense, brown SAND, some cobbles and gravel, Moist.		20			5.0				8		11.6
		23							9		
	752.33						732.33				
Loose, brown SAND, some cobbles and gravel. Wet.	▼	20				Medium dense, GRAVEL. Wet.			3		
		5			11.5				7		17.1
		-5	3					-25	15		
	749.83						729.83				
Medium dense, brown and gray SAND, trace gravel and cobbles. Wet.		5				Medium dense, gray SAND AND GRAVEL, trace cobbles. Wet.			9		
		8			14.7				16		18.6
		11							11		
	747.33						727.33				
Medium dense, brown SAND, trace gravel and cobbles. Wet.		3				Medium dense, gray SILTY LOAM, trace gravel and cobbles. Wet.			8		
		6			18.3				8		13.8
		-10	8					-30	12		
	744.83						724.83				
Loose, gray SANDY CLAY LOAM, trace gravel and cobbles. Wet.		7				Very dense, gray SAND AND GRAVEL, trace rock aggregate. Wet.					
		4			8.7						
		4									
	742.33										
Medium dense, gray SAND, trace rock aggregate and gravel. Wet.		3							50/4"		
		7			8.4						13.6
		-15	9					-35			
		5									
		6			15.1						
		7					718.33				
						Very stiff, gray CLAY LOAM, trace gravel and cobbles, Moist.					
		5							6		
		7			11.7				10		8.3
		-20	8					-40	16	3.3	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	SN 056-0105	LOGGED BY	Vianney
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SECTION <u>IL 120 to IL 176 PTB 195-015</u>	LOCATION 2064763.709,1000170.336
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COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger/Mud Rotary	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/12/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.625,1000170.318

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-06	P	O	S	I	Groundwater Elev.:		T	W	Qu	S
Station	443+86	T	S	Qu	T	First Encounter	749.0 ft ▼	H	S		T
Offset	17.00ft RT					Upon Completion	Mud rotary ft				
Ground Surface Elev.	755.02 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft	(ft)	(/6")	(tsf)	(%)
ASPHALT (4")	754.69					Medium dense, gray SAND, trace gravel. Wet. (continued)					
CONCRETE (8")	754.02										
Medium dense, gray SAND FILL, trace crushed rock aggregate. Moist.		15			4.7			6			16.4
		15						13			
		12						11			
	752.02										
Very loose, ROCK AGGREGATE. Moist.		3						8			
		1			22.5			11			15.9
		-5						14			
	749.52						729.52				
Medium dense, gray SAND, trace rock aggregate and gravel. Wet. ▼		2				Medium dense, gray SANDY LOAM, trace gravel and cobbles. Wet.		6			
		5			12.2			7			16.3
		8						9			
	747.02						727.02				
Loose, gray SAND, trace rock aggregate and gravel. Wet.		2				Dense, gray SANDY CLAY LOAM, trace gravel. Wet.		10			
		4			10.8			11			7.8
		-10						20			
		2									
		4			20.7						
		4									
	742.02										
Medium dense, gray SAND, trace gravel. Wet.		2						14			
		7			15.2			18			13.9
		-15						22			
		2									
		3			14.5						
		7					718.02				
						Hard, gray CLAY, trace gravel. Moist.					
		5						27			
		4			16.3			17			9.1
		7						20	5.7		
		-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/12/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064796.625,1000170.318

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-06	P	O	S	I	Groundwater Elev.:		P	O	S	I
Station	443+86	T	W	Qu	S	First Encounter	749.0 ft ▼	T	W	Qu	S
Offset	17.00ft RT	H	S		T	Upon Completion	Mud rotary ft	H	S		T
Ground Surface Elev.	755.02 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft	(ft)	(/6")	(tsf)	(%)
Hard, gray CLAY, trace gravel. Moist. (continued)				B		Hard gray CLAY LOAM, trace gravel, Moist. (continued)				P	
	713.02						693.02				
Very stiff, gray CLAY, trace gravel. Moist.			10			Very dense, gray SANDY CLAY LOAM, trace gravel, Moist.			50/5"		
			17		9.4						12.5
		-45	29	2.9				-65			
				B							
	708.02						688.02				
Very stiff gray SANDY CLAY LOAM, trace rock aggregate and gravel. Moist.			50/4"		8.4	Very stiff, gray CLAY LOAM, trace gravel, Moist.			30		
									30		11.3
		-50		3.5				-70	26	3.8	
				P						P	
	703.02						683.02				
Very dense, gray GRAVEL AND COBBLES. Moist.			50/2"		5.5	Hard, gray CLAY LOAM, trace gravel, Moist.			15		
									21		10.0
		-55					680.02	-75	24	4.0	
						End of Boring @ 75.0'.				P	
	698.02										
Hard gray CLAY LOAM, trace gravel, Moist.			14								
			30		10.8						
		-60	33	4.5				-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



SOIL BORING LOG

Date 12/6/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064819.141,1000170.729

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-07	P	W	S	I	Groundwater Elev.:		T	S	Qu	S
Station	444+08	H	S	Qu	T	First Encounter	743.0 ft ▼				
Offset	17.00ft RT					Upon Completion	Mud rotary ft				
Ground Surface Elev.	754.99 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft	(ft)	(/6")	(tsf)	(%)
ASPHALT (4")	754.66					Medium dense, gray SAND AND GRAVEL. Wet. (continued)			5		
CONCRETE (7")	754.07								7		11.9
STONES (3")	753.82		7						9		
Medium dense, brown and light gray SAND AND GRAVEL FILL, trace cobbles. Moist	751.99		7		3.1						
			9								
Medium stiff, dark brown and black organic CLAY LOAM, trace root and gravel. Moist			3						5		
			2		82.0				5		16.5
		-5	2	1.0 B				-25	7		
							728.99				
	748.49		2			Medium stiff, brown SANDY CLAY LOAM, trace gravel. Moist			7		
Medium stiff to stiff, gray CLAY LOAM, trace gravel. Moist			3		59.0				8		16.9
			4						6	0.5 P	
							726.99				
			2			Stiff, brown SANDY CLAY LOAM, trace gravel. Moist.			8		
			3		10.7				12		9.7
		-10	4	0.5 P				-30	15	1.0 P	
			2								
			3		9.7						
			5				722.99				
Medium dense, gray SAND AND GRAVEL, trace cobbles. Wet.	741.99					Hard, brown SANDY CLAY LOAM, trace gravel. Moist.					
			3						15		
			6		6.3				17		8.9
		-15	13					-35	14	4.5 P	
Medium dense, gray SAND AND GRAVEL. Wet.	739.49										
			4								
			4		11.3						
			6								
			4						10		
			5		12.6				22		7.8
		-20	7					-40	25	4.5	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/6/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064819.141,1000170.729

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-07	P	W	S	I	Groundwater Elev.:		P	W	S	I
Station	444+08	T	S	Qu	T	First Encounter	743.0 ft ▼	H	S	Qu	T
Offset	17.00ft RT	H				Upon Completion	Mud rotary ft				
Ground Surface Elev.	754.99 ft	(ft)	(/6")	(tsf)	(%)	After	Filled ft	(ft)	(/6")	(tsf)	(%)
Hard, brown SANDY CLAY LOAM, trace gravel. Moist. (continued)				P		Hard brown CLAY, trace gravel. Moist. (continued)				B	
	712.99										
Very stiff, brown SANDY CLAY LOAM, trace gravel. Moist.											
		13							50/5"		
		13			8.6						11.9
	-45	16	3.0	P		689.99	-65			10.7	
						Medium dense, brown SAND, little gravel. Wet.				B	
	707.99										
Hard, brown SANDY CLAY LOAM, trace gravel. Moist.											
		15							11		
		31			7.0				12		13.0
	-50	23	4.3	P			-70		17		
	702.99						682.99				
Very stiff, brown SANDY CLAY LOAM, trace gravel. Moist.						Very dense, brown SANDY LOAM, some gravel. Wet.					
		21							25		
		27			8.3				29		12.2
	-55	15	2.3	P			-75		24		
	697.99						677.99				
Hard brown CLAY, trace gravel. Moist.						Very dense, brown SILT. Wet.					
		24							44		
		21			11.0				46		16.7
	-60	20	8.7				-80		21		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 12/6/21

ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Abde Sellah

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064819.141,1000170.729

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO. 056-0105
Station IL 31 Stn. 444+46

BORING NO. UTB-BSB-07
Station 444+08
Offset 17.00ft RT
Ground Surface Elev. 754.99 ft

D E P T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter 743.0 ft ▼
Upon Completion Mud rotary ft
After _____ Hrs. Filled ft

Very dense, brown SILT. Wet.
(continued)

672.99

Hard, brown CLAY, trace gravel.
Moist

14

19

26

-85

8.0

B

12.7

22

45

36

-90

8.5

B

13.0

31

22

27

-95

7.8

B

15.8

657.99

Very dense, gray SAND. Wet.

35

38

35

14.3

End of boring at 100'.

654.99 -100

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/16/21

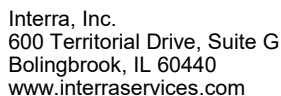
ROUTE IL 31 DESCRIPTION Unnamed Tributary to Fox River 3-Span Bridge SN 056-0105 LOGGED BY Vianney

SECTION IL 120 to IL 176 PTB 195-015 LOCATION 2064876.291,1000168.945

COUNTY McHenry DRILLING METHOD Hollow Stem Auger/Mud Rotary HAMMER TYPE D50 Auto (93% efficiency)

STRUCT. NO.	056-0105	D	B	U	M	Surface Water Elev.	ft	D	B	U	M
Station	IL 31 Stn. 444+46	E	L	C	O	Stream Bed Elev.	ft	E	L	C	O
BORING NO.	UTB-BSB-08	P	W	S	I	Groundwater Elev.:		T	S	Qu	T
Station	444+65	H	S	Qu	S	First Encounter	746.4 ft ▼	H	S	Qu	T
Offset	17.00ft RT	(ft)	(/6")	(tsf)	(%)	Upon Completion	Mud rotary ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev.	754.92 ft					After	Hrs. Filled ft				
ASPHALT (5")	754.50					Medium dense, gray SAND, trace gravel. Wet. (continued)			5		
CONCRETE (6")	754.00								6		17.8
STONE (6")	753.50	11							7		
Medium dense, brown SAND, some gravel, little cobbles. Moist.		12			7.6						
	751.92	8									
Soft to very soft, dark gray and black CLAY. Moist		2							4		
		2			44.0				6		14.7
		-5	2	0.5					7		
				B			729.42				
		2				Medium stiff, gray CLAY LOAM, trace gravel. Moist.			6		
		3			46.9				4		9.8
		4		0.0					6	0.5	
	746.92			P			726.92			P	
Medium dense, gray SANDY LOAM, trace gravel. Wet.		5				Medium dense, gray SANDY CLAY LOAM, trace gravel, Moist.			15		
		5			15.4				13		7.3
		-10	7						24	2.8	
	744.42									P	
Medium dense, gray SANDY LOAM trace gravel. Wet.		5									
		8			7.4						
		5					722.92				
Medium dense, gray SAND, little gravel and crushed aggregate. Wet.	741.92					Dense, gray SANDY CLAY LOAM, trace gravel, Moist.			21		
		3							21		8.7
		6			10.6				24	2.0	
		-15	11							P	
	739.42										
Medium dense, gray SAND, trace gravel. Wet.		6									
		7			16.5						
		10					717.92				
						Very stiff, gray CLAY LOAM, trace gravel. Moist.					
		6							12		
		7			20.5				14		8.9
		7							14	3.3	
		-20									

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 31	DESCRIPTION	SN 056-0105	LOGGED BY	Vianney
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SECTION <u>IL 120 to IL 176 PTB 195-015</u>	LOCATION 2064876.291,1000168.945
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COUNTY	McHenry	DRILLING METHOD	Hollow Stem Auger/Mud Rotary	HAMMER TYPE D50 Auto (93% efficiency)
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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

Appendix D
Laboratory Test Reports



Interra File No.: 9012

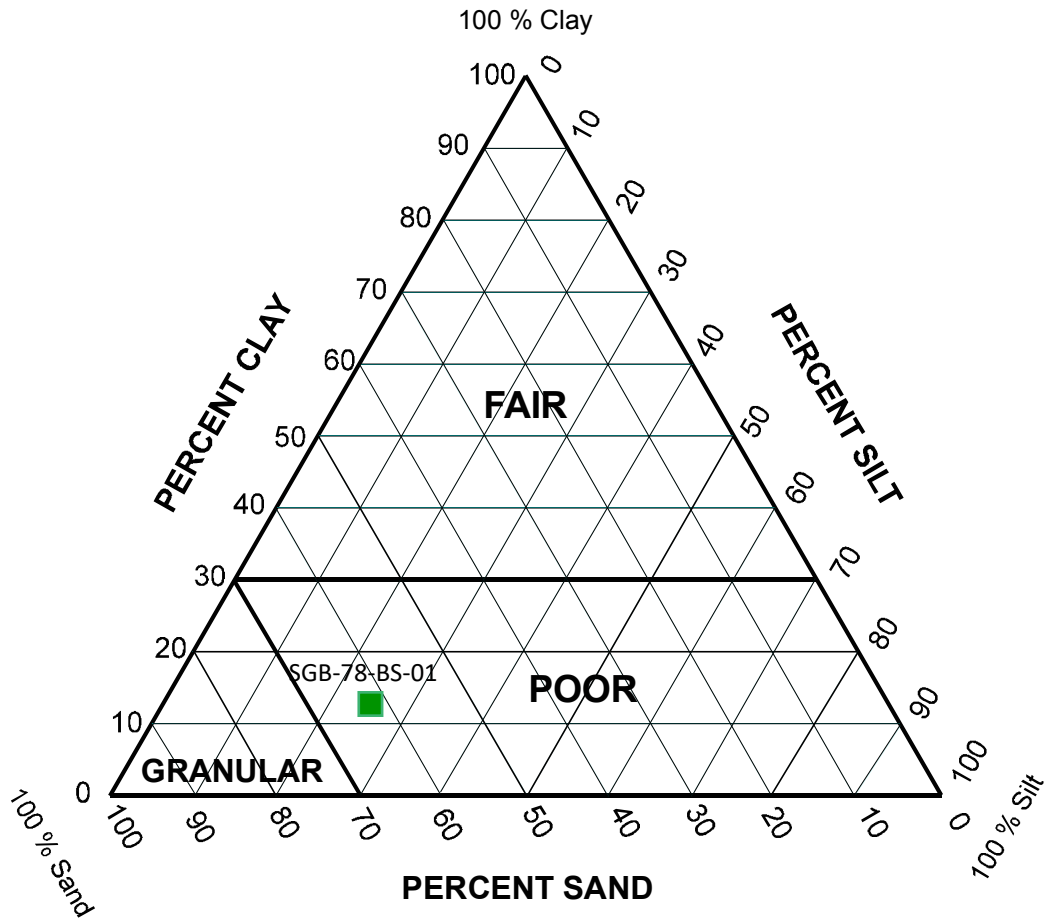
SOIL TEST RESULTS

PROJECT: Geotechnical Investigation, IL 31 from IL 120 to IL 176

Route: IL 31 from Bull Valley Road to North End

County: McHenry, Illinois

SAMPLE	SGB-78-BS-01		
BORING LOCATION	SGB-78-BS-01		
DEPTH	2'-5'		
AASHTO CLASSIFICATION (AASHTO M 145)	A-4(0)		
ILLINOIS TEXTURAL CLASSIFICATION	Sandy Loam		
GRADATION-PASSING 1" SIEVE %	100		
" 3/4" " %	100		
" 1/2" " %	97.6		
" NO. 4 " %	87.5		
" NO. 10 " %	79.9		
" NO. 40 " %	67.1		
" NO. 100 " %	45.8		
" NO. 200 " %	38.7		
GRAVEL (AASHTO T88) %	20.1		
SAND (COARSE+FINE) (AASHTO T88) %	41.2		
SAND (FINE) (AASHTO T88) %	28.4		
SILT (AASHTO T88) %	26.7		
CLAY (AASHTO T88) %	12.0		
LIQUID LIMIT (AASHTO T89) %	21		
PLASTICITY INDEX (AASHTO T90) %	8		
STD. DRY DENSITY (IL MOD AASHTO T 99) PCF	127.4		
OPTIMUM MOISTURE (IL MOD AASHTO T 99)%	8.6		
SUBGRADE SUPPORT RATING	Poor		
IN SITU MOISTURE (AASHTO T 265)%	9.8		
REMARKS			



Subgrade Support Rating (SSR Chart)

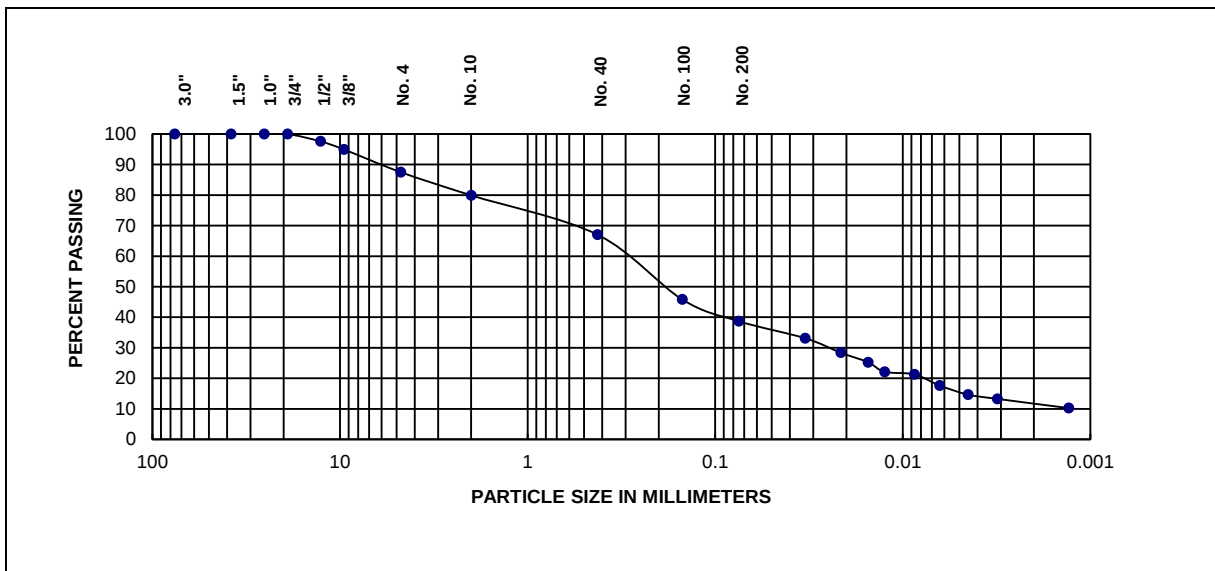
IL 31 From Bull Valley Road to IL 120

SGB-78-BS-01



GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB-78-BS01	Date Tested	1/24/2022	Tested by	DG
						Qc by	RC
Date Sample Received:	1/17/2022						
Sample Location	SGB-78 (2.0'-5.0')						
Sample Description	Brown sandy loam, some gravel						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	20.1	41.2	26.7	12.0

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	21	13	8
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification: A-4(0)		
1/2"	97.6			
3/8"	94.9	IDH Classification: Sandy Loam		
No. 4	87.5			
No. 10	79.9			
No. 40	67.1			
No. 100	45.8			
No. 200	38.7			

Remarks:	



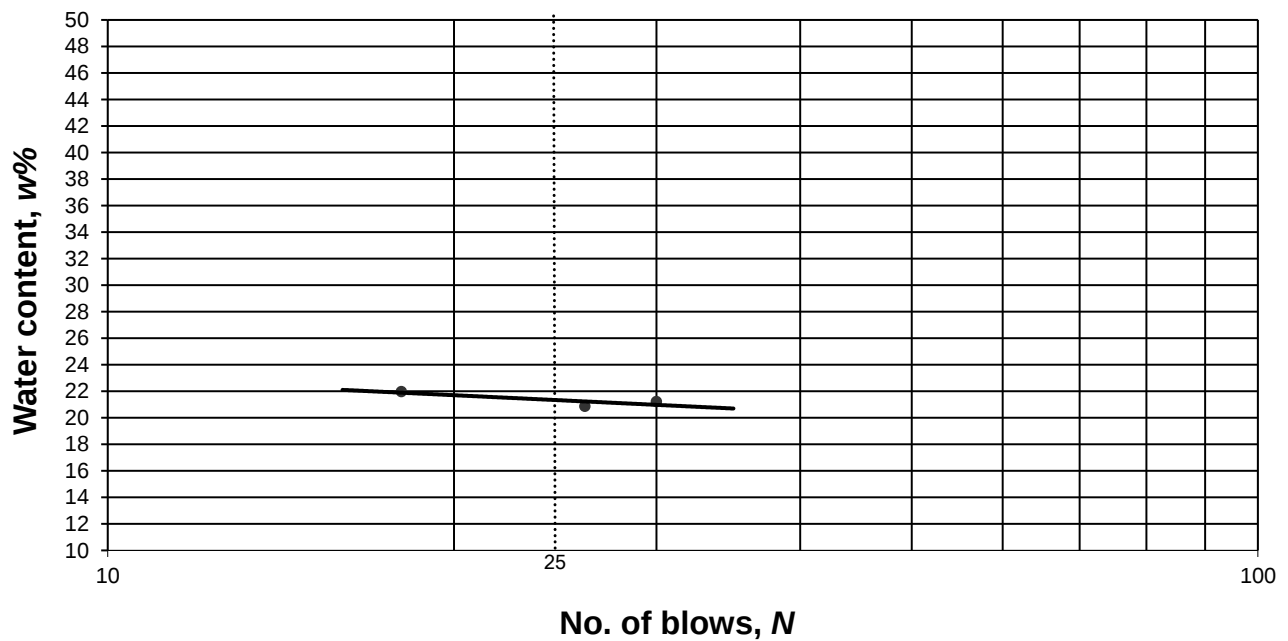
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB-78-BS01	Date Tested	1/18/2022	Tested By	DG
						Qc By	

Date Sample Recd.	1/17/2022
Sample Location	SGB-78 (2.0'-5.0')
Sample Description	Brown sandy loam, some gravel

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	21	Plastic Limit, PL	13	Plasticity Index, PI	8

Remarks					



Moisture Content
ASTM D2216 / AASHTO T265

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB-78-BS01	Date Tested	1/18/2022	Tested By	DG
						Qc By	RC

Date Sample Received	1/17/2022
Sample Location	SGB-78 (2.0'-5.0')
Sample Description	Brown sandy loam, some gravel
Can Number : P12 Can Weight : 272.30 gm Can + Wet Sample Weight : 1100.50 gm Can + Dry Sample Weight : 1026.50 gm Moisture Content : 9.81 %	

Remarks	
www.interraservices.com	Test ID 68046

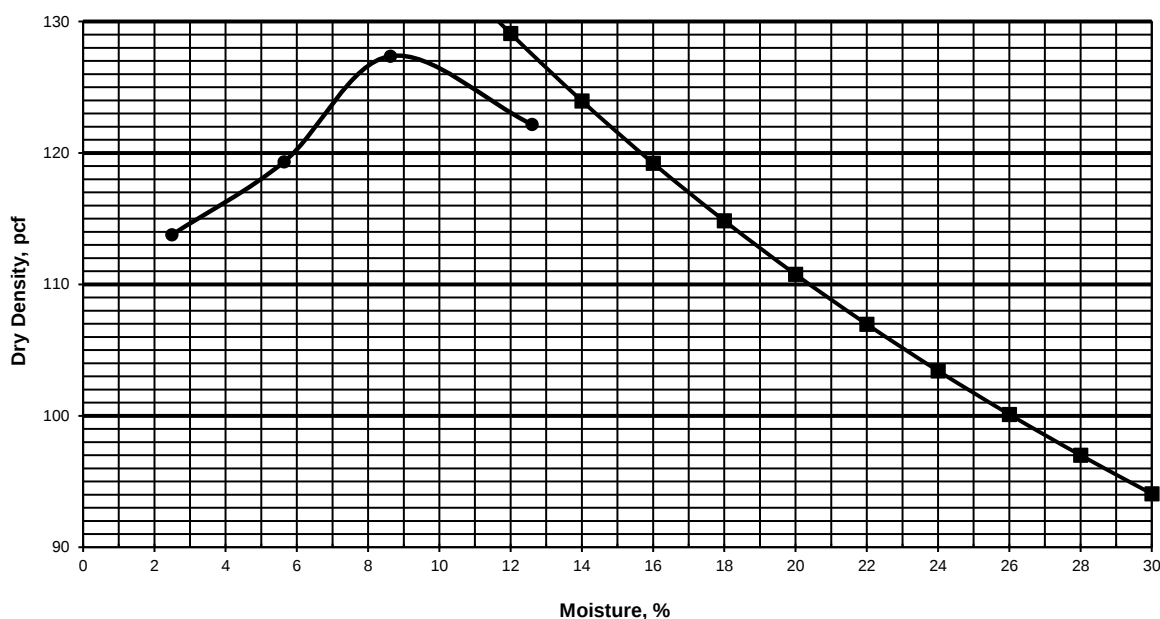


MOISTURE - DENSITY RELATIONSHIP CURVE

AASHTO T 99

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB-78-BS01	Date Tested	1/19/2022	Tested By	DG
						Qc By	RC

Date Sample Recd.	1/17/22						
Sample Location	SGB-78 (2.0'-5.0')						
Sample Description	Brown sandy loam, some gravel						
Type of Proctor	Standard	Method:	C	Mold Size, in.	4	Hammer Weight, lb.	5.5
						Drop, in.	12
No. of Layers	3	No. of Blows per Layer		25			



Zero Air Void Curve Specific Gravity: 2.75

Results					
Maximum Dry Density, pcf	127.4	Optimum Moisture Content, %	8.6	Natural Moisture Content, %	9.8
Corrected Max. Dry Density, pcf		Corrected Optimum Moisture Content, %			
Remarks					



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB93-SS02	Date Tested	6/8/2023	Tested By	DG
						Qc By	AB

Date Sample Received	12/9/2021
Sample Location	3.5-5'
Sample Description	Dark brown peat
Moisture Content Determination	
Can Number :	#9
Can Weight :	316.63 gm
Can + Wet Sample Weight :	407.18 gm
Can + Dry Sample Weight :	369.59 gm
Moisture Content :	70.98 %
Organic Content Determination	
Dish Number :	J
Dish Weight :	86.24 gm
Dish + Initial Sample Weight :	105.82 gm
Dish + Final Sample Weight :	103.71 gm
Oven-dried test specimen mass, B:	19.58 gm
Mass of ash, C:	17.47 gm
Ash Content, D:	89.22 %
Organic Content, (100-D):	10.8 %

Remarks	
www.interraservices.com	Test ID 72040



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB-FR01-SS02	Date Tested	6/7/2023	Tested By	DG
						Qc By	AB

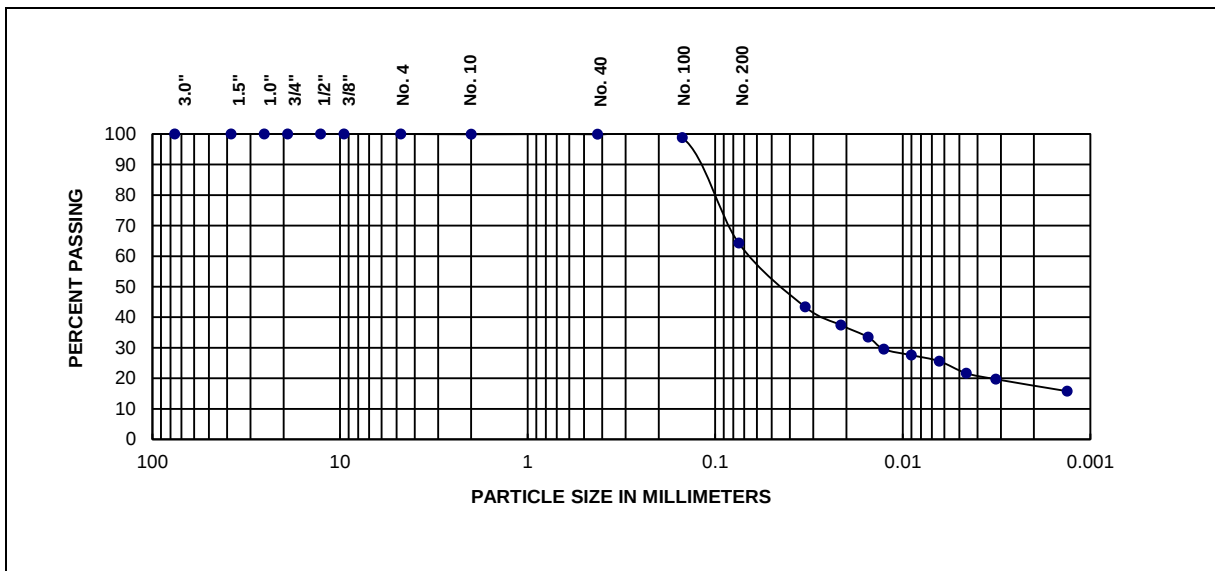
Date Sample Received	12/22/2021
Sample Location	3.5-5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#13
Can Weight :	327.41 gm
Can + Wet Sample Weight :	416.42 gm
Can + Dry Sample Weight :	403.08 gm
Moisture Content :	17.63 %
Organic Content Determination	
Dish Number :	H
Dish Weight :	81.20 gm
Dish + Initial Sample Weight :	108.41 gm
Dish + Final Sample Weight :	106.68 gm
Oven-dried test specimen mass, B:	27.21 gm
Mass of ash, C:	25.48 gm
Ash Content, D:	93.64 %
Organic Content, (100-D):	6.4 %

Remarks	
www.interraservices.com	Test ID 72043



**GRAIN SIZE ANALYSIS
AASHTO T 88**

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation					
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532					
File No.	9012	Sample #	TSB-IL120-01-ST05	Date Tested	12/28/2021	Tested by BKP
					Qc by RC	
Date Sample Received:	12/22/2021					
Sample Location	11-12.5'					
Sample Description	Brown loam					



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.1	35.6	46.1	18.2

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	NP	NP	NP
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0			
No. 4	100.0	IDH Classification:		
No. 10	99.9			
No. 40	99.9			
No. 100	98.8			
No. 200	64.3			

Remarks:	NP:Non-plastic soil



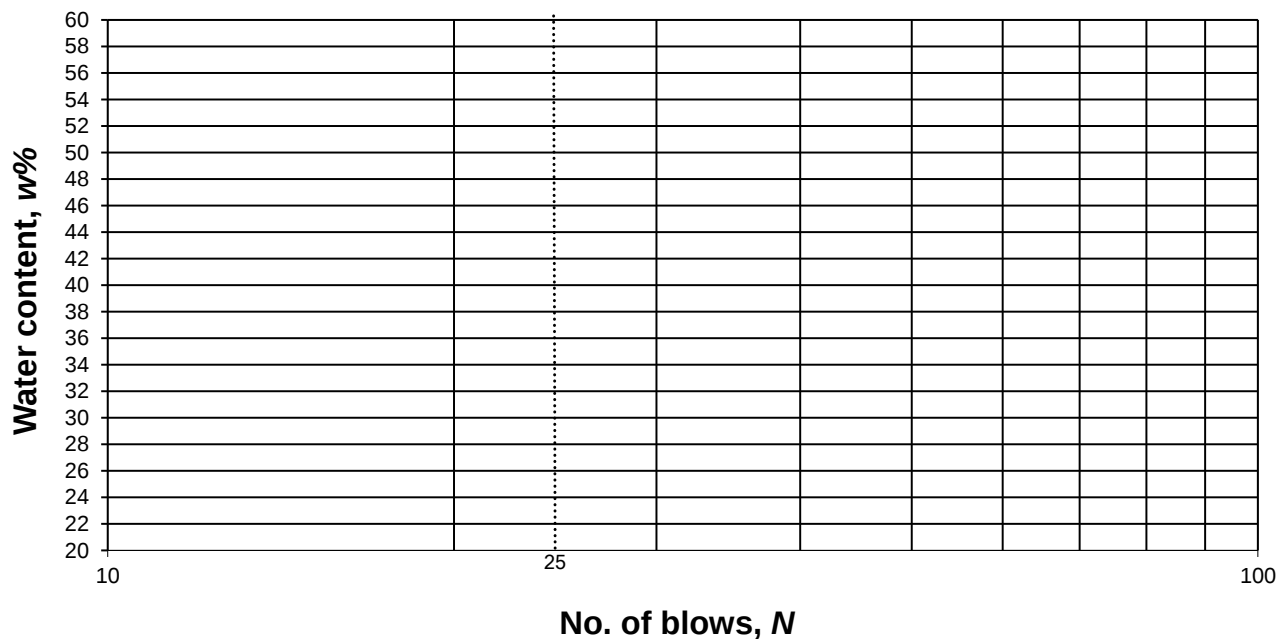
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	TSB-IL120-01-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/22/2021
Sample Location	11-12.5'
Sample Description	Brown loam

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	NP	Plastic Limit, PL	NP	Plasticity Index, PI	NP

Remarks	NP:Non-plastic soil		
www.interraservices.com			Test ID 68009



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	TSB-IL120-01-ST05	Date Tested	12/27/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/22/21
Description of Soil	Brown Silty soil
Location	11-12.5'

Type of Sample	ST	
Average Height =	14.24	cm
Average Diameter =	7.21	cm
Height/Diameter Ratio =	1.98	
Wet Sample Weight=	1306.28	g
Wet Density =	2.25	g/cc
Moisture Content =	15.1	%
Dry Density =	1.95	g/cc
Strain Rate =	0.60	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

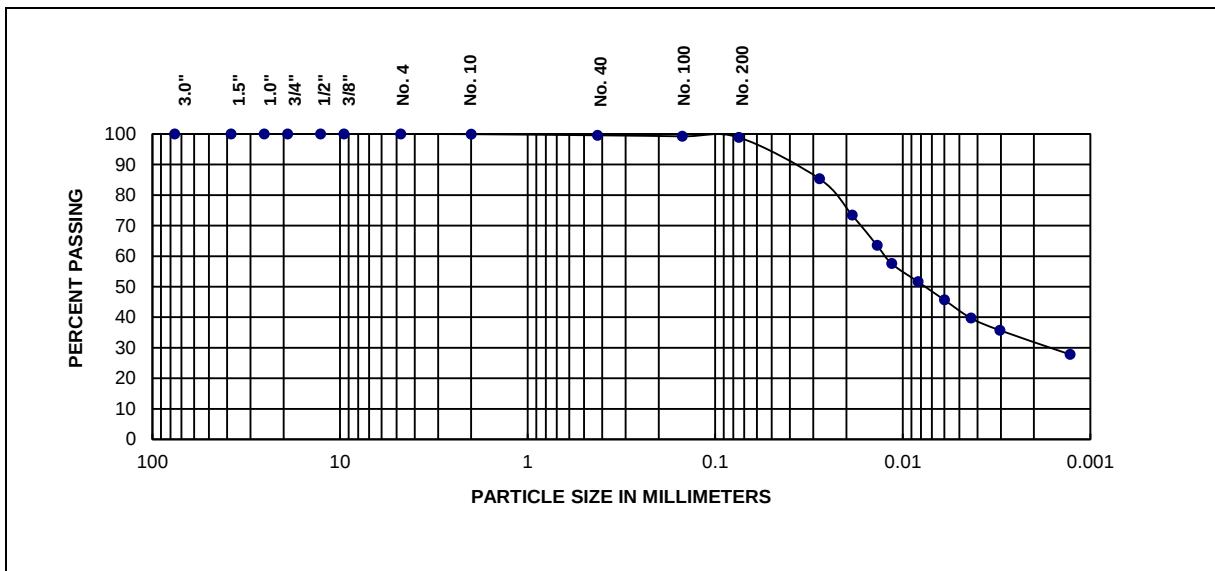
Unconfined Compressive Strength =	10.14 psi
	0.73 tsf
Shear Strength =	5.07 psi
	0.37 tsf
Strain at Failure =	%

Remarks:	
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GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation					
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532					
File No.	9012	Sample #	TSB-IL120-02-ST05	Date Tested	12/28/2021	Tested by BKP
					Qc by RC	
Date Sample Received:	12/22/2021					
Sample Location	11-12.5'					
Sample Description	Brown silty clay					



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.1	1.0	66.7	32.2

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	27	15	12
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0			
No. 4	100.0	IDH Classification:		
No. 10	99.9			
No. 40	99.6			
No. 100	99.2			
No. 200	98.9			

Remarks:	



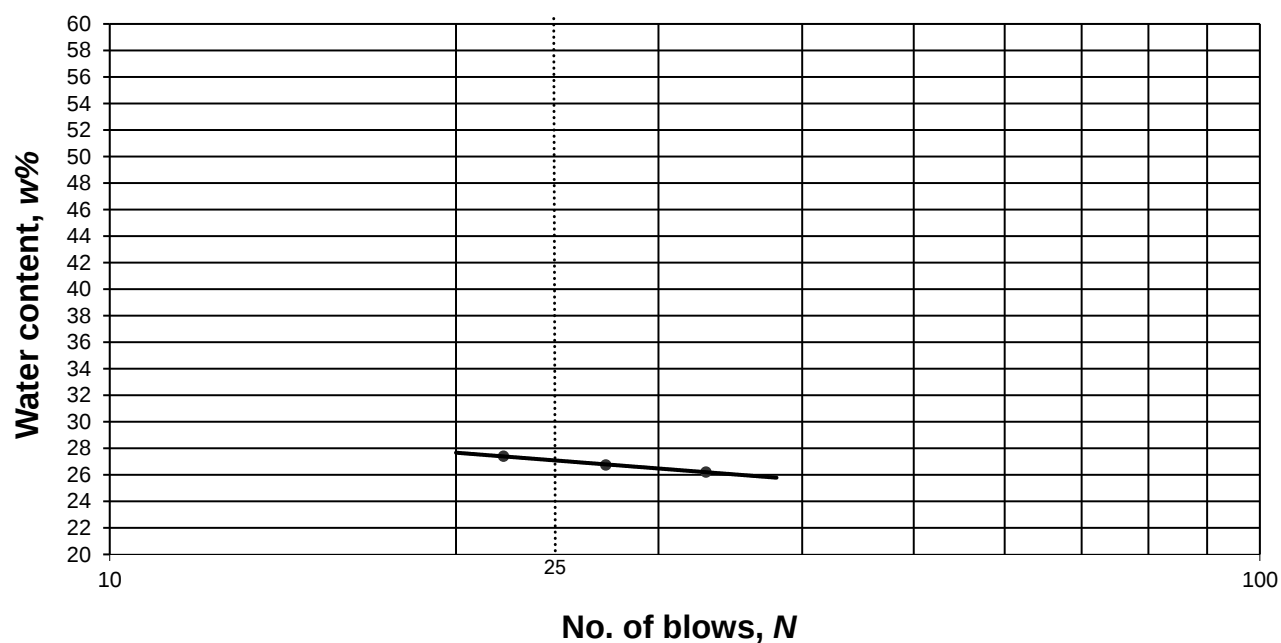
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	TSB-IL120-02-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/22/2021
Sample Location	11-12.5'
Sample Description	Brown silty clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	27	Plastic Limit, PL	15	Plasticity Index, PI	12

Remarks					
				Test ID	68012



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	TSB-IL120-02-ST05	Date Tested	12/27/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/22/21
Description of Soil	Brown silty clay
Location	11-12.5'

Type of Sample	ST	
Average Height =	14.70	cm
Average Diameter =	7.23	cm
Height/Diameter Ratio =	2.03	
Wet Sample Weight=	1334.85	g
Wet Density =	2.21	g/cc
Moisture Content =	16.9	%
Dry Density =	1.89	g/cc
Strain Rate =	0.06	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

Unconfined Compressive Strength =	27.29 psi
	1.96 tsf
Shear Strength =	13.64 psi
	0.98 tsf
Strain at Failure =	15.2 %

Remarks:	
www.interraservices.com	Test ID 68014



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	TSB-LL02-SS02	Date Tested	6/7/2023	Tested By	DG
						Qc By	AB

Date Sample Received	12/13/2021
Sample Location	3.5-5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#36
Can Weight :	319.63 gm
Can + Wet Sample Weight :	405.01 gm
Can + Dry Sample Weight :	373.68 gm
Moisture Content :	57.96 %
Organic Content Determination	
Dish Number :	K
Dish Weight :	126.55 gm
Dish + Initial Sample Weight :	146.72 gm
Dish + Final Sample Weight :	144.09 gm
Oven-dried test specimen mass, B:	20.17 gm
Mass of ash, C:	17.54 gm
Ash Content, D:	86.96 %
Organic Content, (100-D):	13.0 %

Remarks	
www.interraservices.com	Test ID 72037



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-03-SS01	Date Tested	6/7/2023	Tested By	DG
						Qc By	AB

Date Sample Received	12/10/2021
Sample Location	1-2.5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#24
Can Weight :	321.93 gm
Can + Wet Sample Weight :	412.02 gm
Can + Dry Sample Weight :	370.53 gm
Moisture Content :	85.37 %
Organic Content Determination	
Dish Number :	G
Dish Weight :	87.17 gm
Dish + Initial Sample Weight :	107.82 gm
Dish + Final Sample Weight :	103.03 gm
Oven-dried test specimen mass, B:	20.65 gm
Mass of ash, C:	15.86 gm
Ash Content, D:	76.80 %
Organic Content, (100-D):	23.2 %

Remarks	
www.interraservices.com	Test ID 72038



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-03-SS02	Date Tested	6/7/2023	Tested By	DG
						Qc By	AB

Date Sample Received	12/10/2021
Sample Location	3.5-5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#38
Can Weight :	322.54 gm
Can + Wet Sample Weight :	415.76 gm
Can + Dry Sample Weight :	373.21 gm
Moisture Content :	83.97 %
Organic Content Determination	
Dish Number :	M
Dish Weight :	121.52 gm
Dish + Initial Sample Weight :	141.59 gm
Dish + Final Sample Weight :	138.64 gm
Oven-dried test specimen mass, B:	20.07 gm
Mass of ash, C:	17.12 gm
Ash Content, D:	85.30 %
Organic Content, (100-D):	14.7 %

Remarks	
www.interraservices.com	Test ID 72039



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-06-SS02	Date Tested	6/7/2023	Tested By	DG
						Qc By	AB

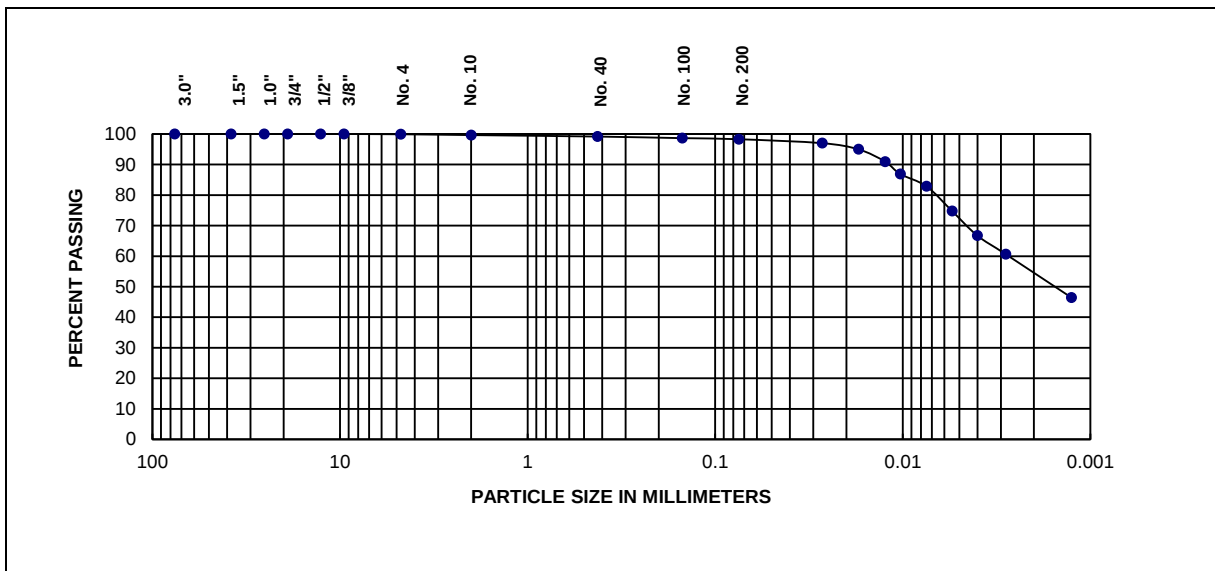
Date Sample Received	12/10/2021
Sample Location	3.5-5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#34
Can Weight :	326.09 gm
Can + Wet Sample Weight :	410.37 gm
Can + Dry Sample Weight :	358.56 gm
Moisture Content :	159.56 %
Organic Content Determination	
Dish Number :	I
Dish Weight :	85.34 gm
Dish + Initial Sample Weight :	104.16 gm
Dish + Final Sample Weight :	98.20 gm
Oven-dried test specimen mass, B:	18.82 gm
Mass of ash, C:	12.86 gm
Ash Content, D:	68.33 %
Organic Content, (100-D):	31.7 %

Remarks	
www.interraservices.com	Test ID 72041



**GRAIN SIZE ANALYSIS
AASHTO T 88**

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-06-ST05	Date Tested	12/21/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/10/2021						
Sample Location	11-12.5'						
Sample Description	Brown clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.3	1.4	42.7	55.6

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	38	9	29
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0			
No. 4	99.9	IDH Classification:		Clay
No. 10	99.7			
No. 40	99.2			
No. 100	98.6			
No. 200	98.3			

Remarks:	



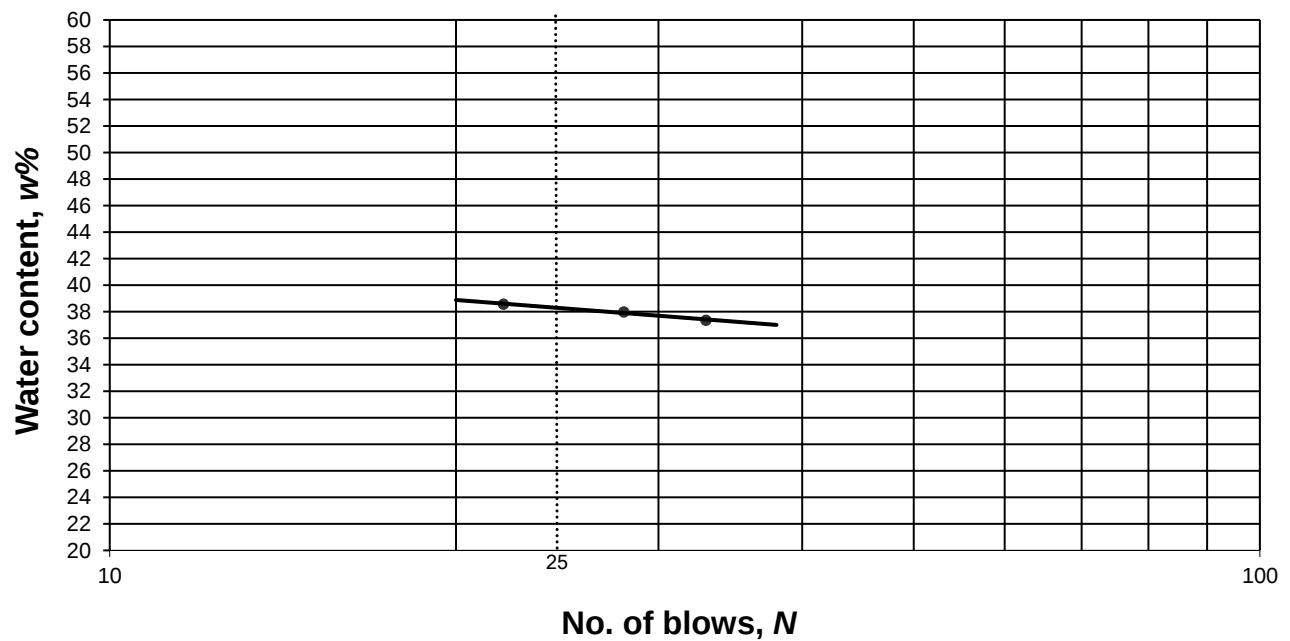
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-06-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/10/2021
Sample Location	11-12.5'
Sample Description	Brown clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	38	Plastic Limit, PL	9	Plasticity Index, PI	29

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-06-ST05	Date Tested	12/18/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/10/21
Description of Soil	Brown clay
Location	11-12.5'

Type of Sample	ST	
Average Height =	15.38	cm
Average Diameter =	7.12	cm
Height/Diameter Ratio =	2.16	
Wet Sample Weight=	1295.21	g
Wet Density =	2.12	g/cc
Moisture Content =	19.4	%
Dry Density =	1.77	g/cc
Strain Rate =	1.00	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

Unconfined Compressive Strength =	42.79 psi
	3.08 tsf
Shear Strength =	21.40 psi
	1.54 tsf
Strain at Failure =	14.9 %

Remarks:	
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Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-07-SS02	Date Tested	6/8/2023	Tested By	DG
						Qc By	AB

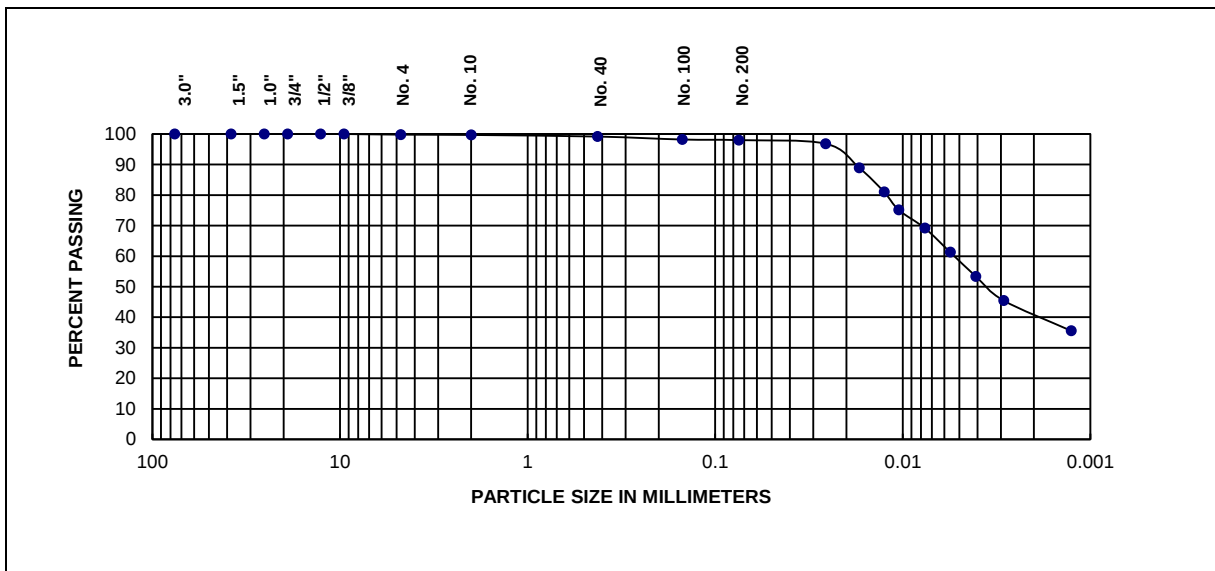
Date Sample Received	12/13/2021
Sample Location	3.5-5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#25
Can Weight :	329.07 gm
Can + Wet Sample Weight :	451.72 gm
Can + Dry Sample Weight :	413.43 gm
Moisture Content :	45.39 %
Organic Content Determination	
Dish Number :	E
Dish Weight :	88.63 gm
Dish + Initial Sample Weight :	106.80 gm
Dish + Final Sample Weight :	105.68 gm
Oven-dried test specimen mass, B:	18.17 gm
Mass of ash, C:	17.05 gm
Ash Content, D:	93.84 %
Organic Content, (100-D):	6.2 %

Remarks	
www.interraservices.com	Test ID 72042



GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-07-ST08	Date Tested	12/26/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/13/2021						
Sample Location	18.5-20'						
Sample Description	Brown silty clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.3	1.7	55.7	42.3

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	31	15	16
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification: A-6(15)		
1/2"	100.0			
3/8"	100.0	IDH Classification: Silty Clay		
No. 4	99.8			
No. 10	99.7			
No. 40	99.2			
No. 100	98.2			
No. 200	98.0			

Remarks:	



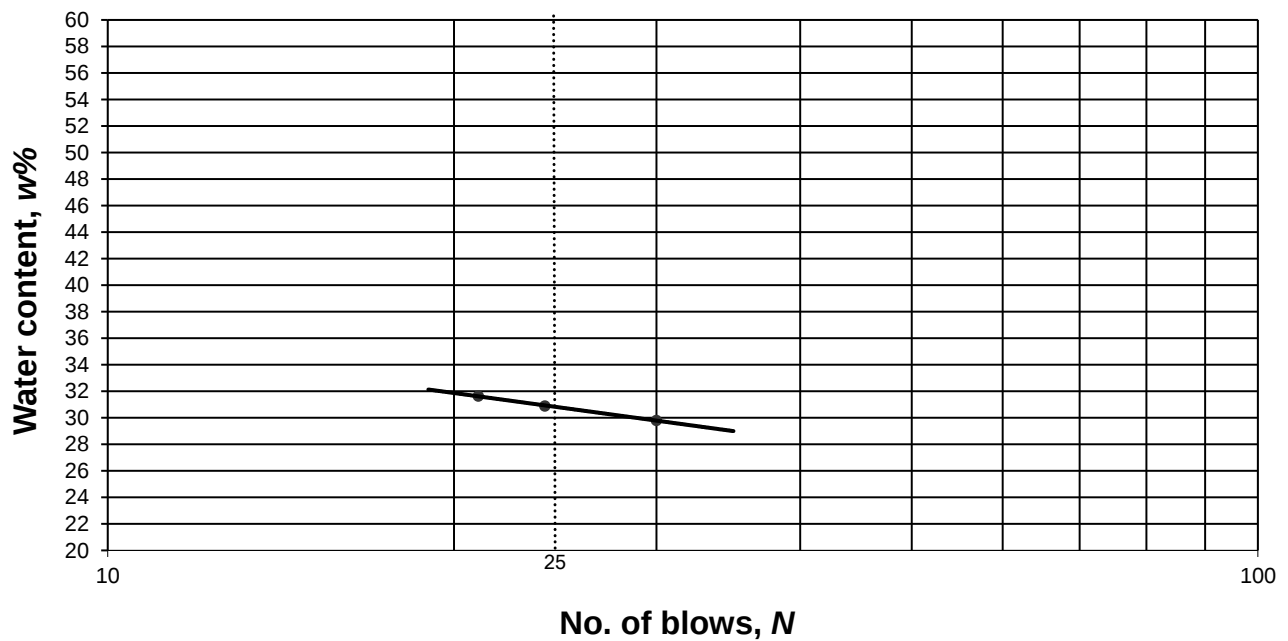
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-07-ST08	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/13/2021
Sample Location	18.5-20'
Sample Description	Brown silty clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	31	Plastic Limit, PL	15	Plasticity Index, PI	16

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-07-ST08	Date Tested	12/21/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/13/21
Description of Soil	
Location	18.5-20'

Type of Sample	ST	
Average Height =	15.44	cm
Average Diameter =	7.13	cm
Height/Diameter Ratio =	2.17	
Wet Sample Weight=	1299.23	g
Wet Density =	2.11	g/cc
Moisture Content =	21.9	%
Dry Density =	1.73	g/cc
Strain Rate =	1.00	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

Unconfined Compressive Strength =	9.48 psi
	0.68 tsf
Shear Strength =	4.74 psi
	0.34 tsf
Strain at Failure =	14.8 %

Remarks:	

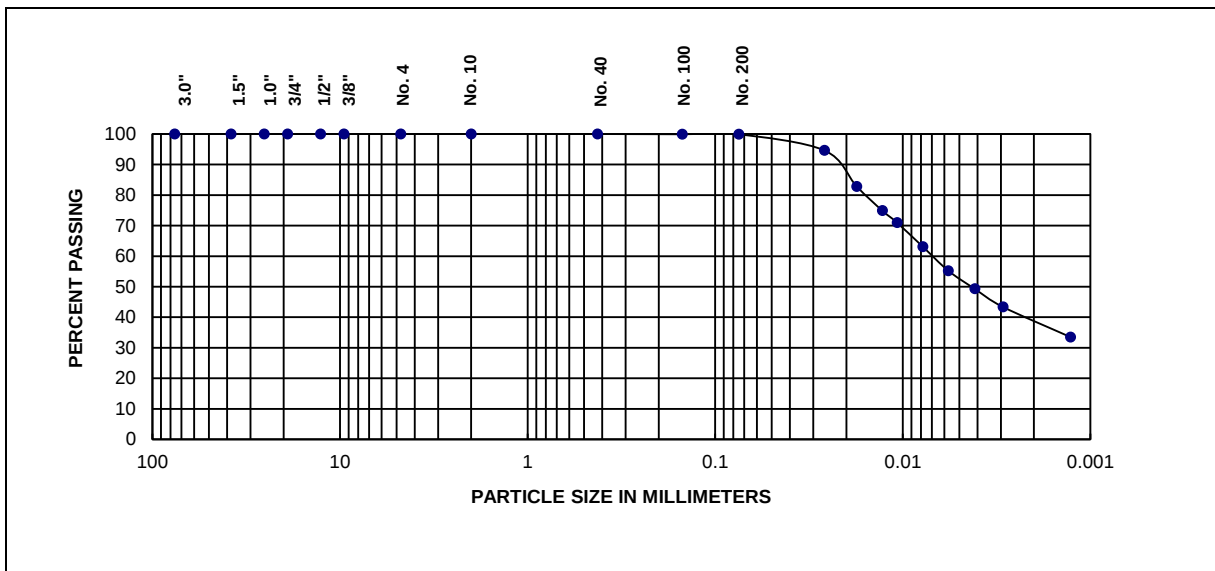
www.interraservices.com

Test ID
67615



GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-10-ST06	Date Tested	12/26/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/14/2021						
Sample Location	13.5'-15'						
Sample Description	Brown silty clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.0	0.1	60.7	39.2

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	29	15	14
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0	IDH Classification:		
No. 4	100.0			
No. 10	100.0			
No. 40	100.0			
No. 100	99.9			
No. 200	99.9			

Remarks:	



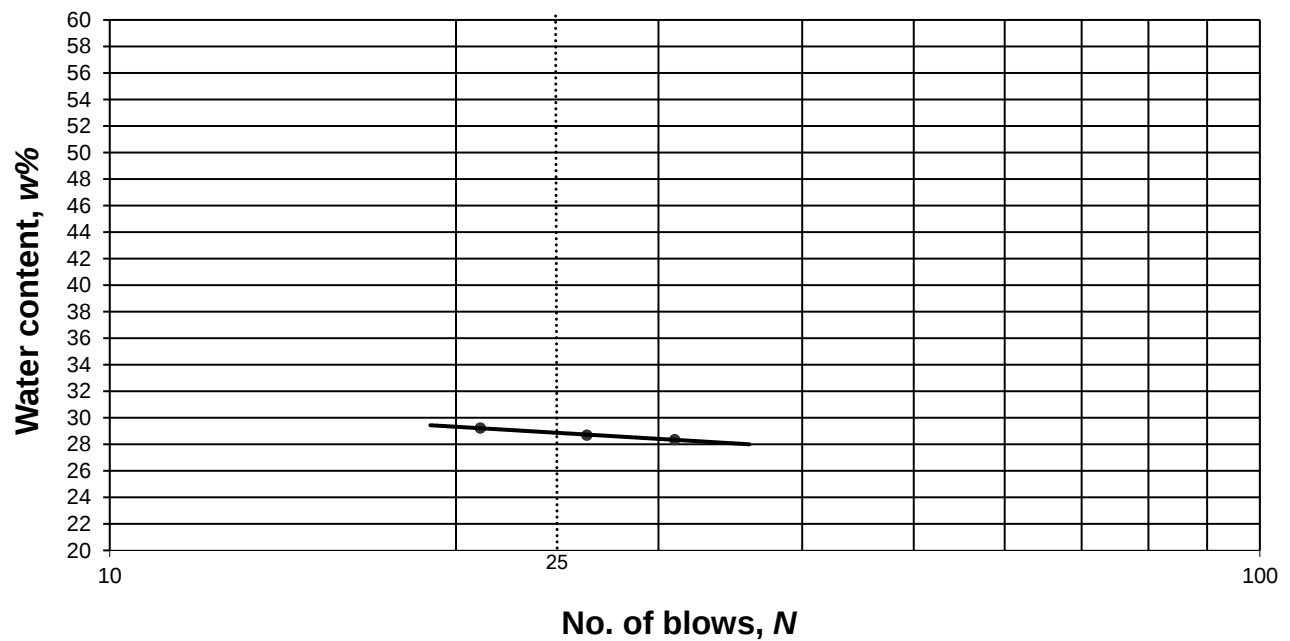
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-10-ST06	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/14/2021
Sample Location	13.5'-15'
Sample Description	Brown silty clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	29	Plastic Limit, PL	15	Plasticity Index, PI	14

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-10-ST06	Date Tested	12/22/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/14/21
Description of Soil	Brown silty clay
Location	13.5'-15'

Type of Sample	ST	
Average Height =	15.42	cm
Average Diameter =	7.19	cm
Height/Diameter Ratio =	2.14	
Wet Sample Weight=	1353.64	g
Wet Density =	2.16	g/cc
Moisture Content =	20.2	%
Dry Density =	1.80	g/cc
Strain Rate =	1.00	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

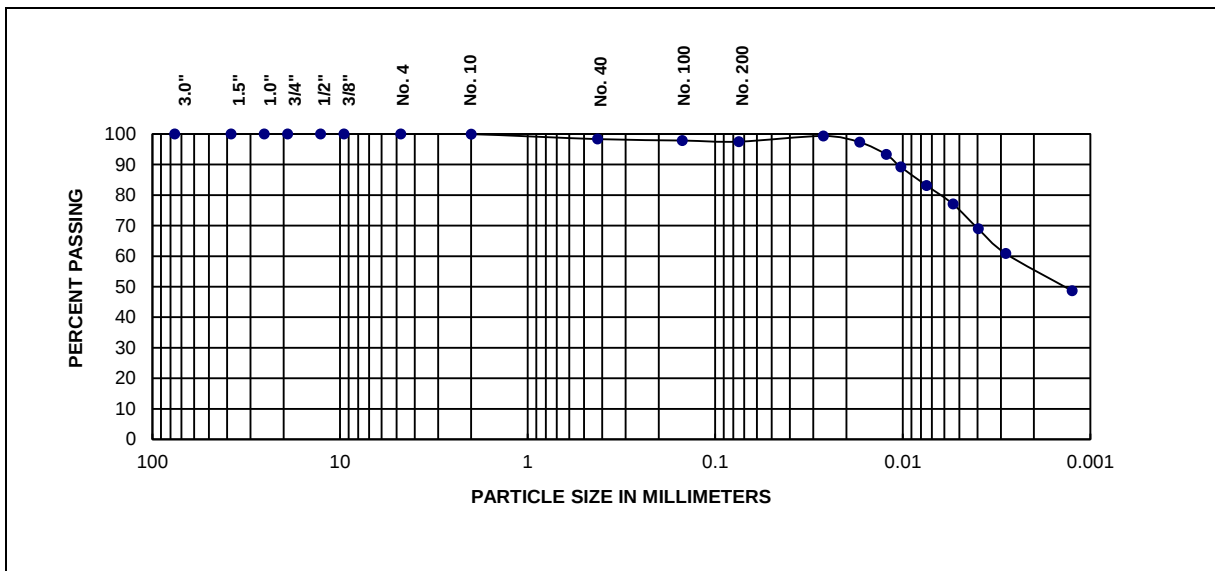
Unconfined Compressive Strength =	36.54 psi
	2.63 tsf
Shear Strength =	18.27 psi
	1.32 tsf
Strain at Failure =	14.8 %

Remarks:	
www.interraservices.com	Test ID 67627



**GRAIN SIZE ANALYSIS
AASHTO T 88**

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-12-ST04	Date Tested	12/21/2021	Tested by	BKP
						Qc by	
Date Sample Received:	12/14/2021						
Sample Location	8.5'-10'						
Sample Description	Brown clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.0	2.5	40.3	57.2

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	36	18	18
1.5"	100.0			
1.0"	100.0			
3/4"	100.0			
1/2"	100.0	AASHTO Classification:		A-6(18)
3/8"	100.0	IDH Classification:		
No. 4	100.0			Clay
No. 10	100.0			
No. 40	98.3			
No. 100	97.9			
No. 200	97.5			

Remarks:	



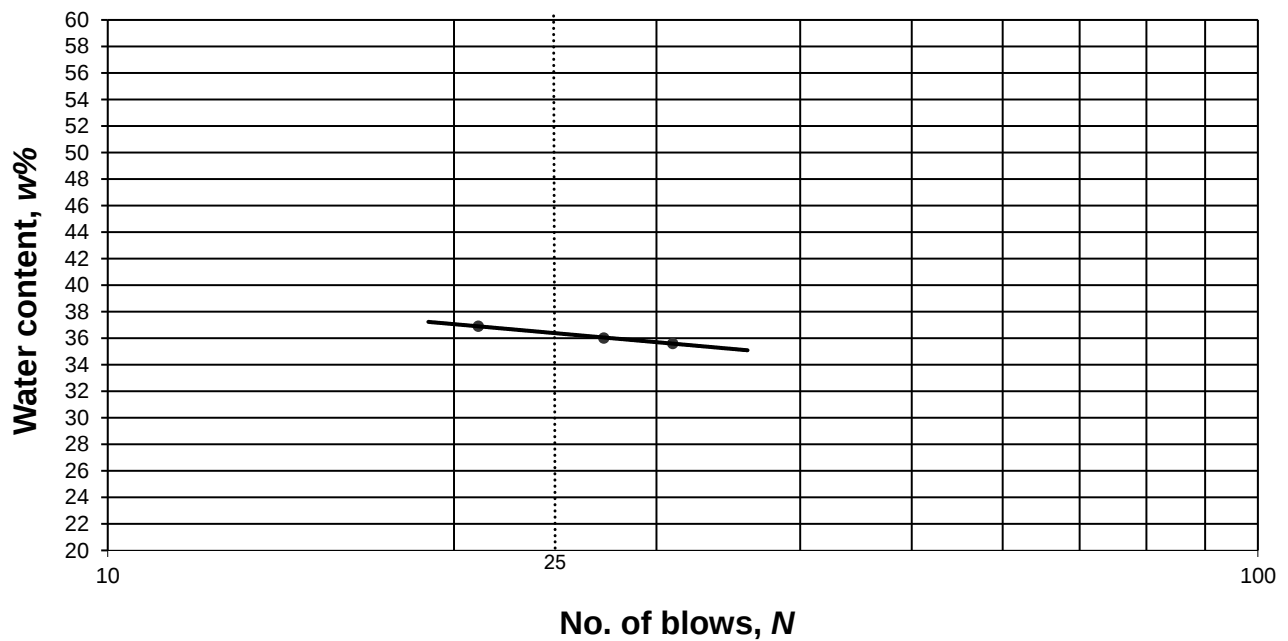
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-12-ST04	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/14/2021
Sample Location	8.5'-10'
Sample Description	Brown clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	36	Plastic Limit, PL	18	Plasticity Index, PI	18

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-12-ST04	Date Tested	12/18/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/14/21
Description of Soil	Brown clay
Location	8.5'-10'

Type of Sample	ST	
Average Height =	15.29	cm
Average Diameter =	7.24	cm
Height/Diameter Ratio =	2.11	
Wet Sample Weight=	1317.94	g
Wet Density =	2.09	g/cc
Moisture Content =	22.2	%
Dry Density =	1.71	g/cc
Strain Rate =	1.00	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

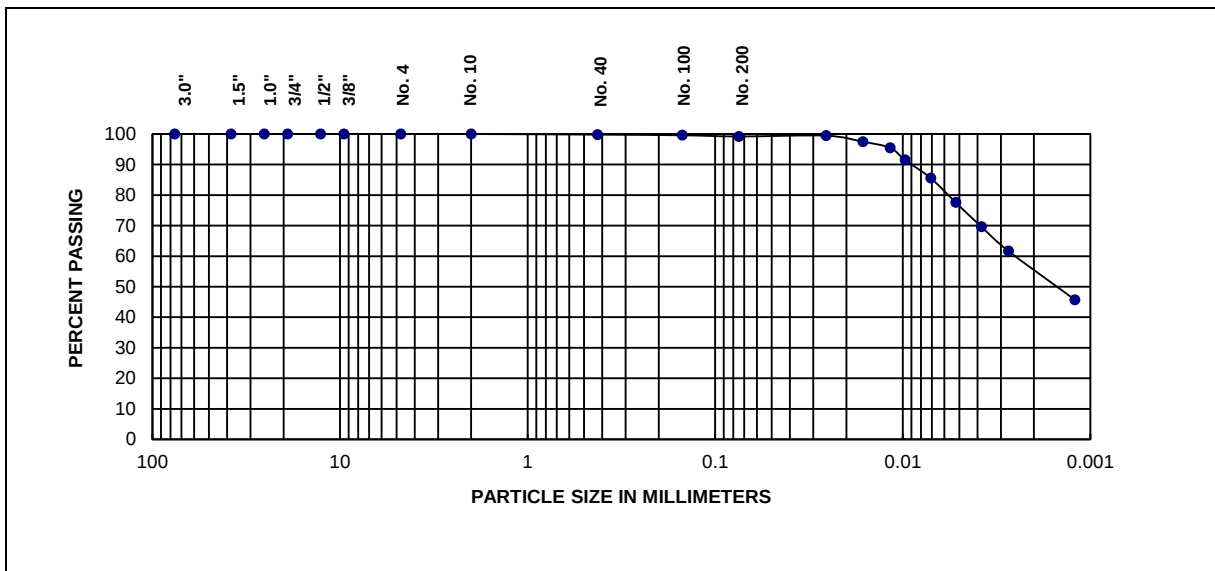
Unconfined Compressive Strength =	47.23	psi
	3.40	tsf
Shear Strength =	23.61	psi
	1.70	tsf
Strain at Failure =	12.0	%

Remarks:	
www.interraservices.com	Test ID 67631



GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-14-ST05	Date Tested	12/26/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/15/2021						
Sample Location	11'-12.5'						
Sample Description	Brown clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.0	0.8	42.7	56.5

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	40	18	22
1.5"	100.0			
1.0"	100.0			
3/4"	100.0			
1/2"	100.0	AASHTO Classification:		A-6(23)
3/8"	100.0	IDH Classification:		
No. 4	100.0			Clay
No. 10	100.0			
No. 40	99.8			
No. 100	99.6			
No. 200	99.2			

Remarks:	



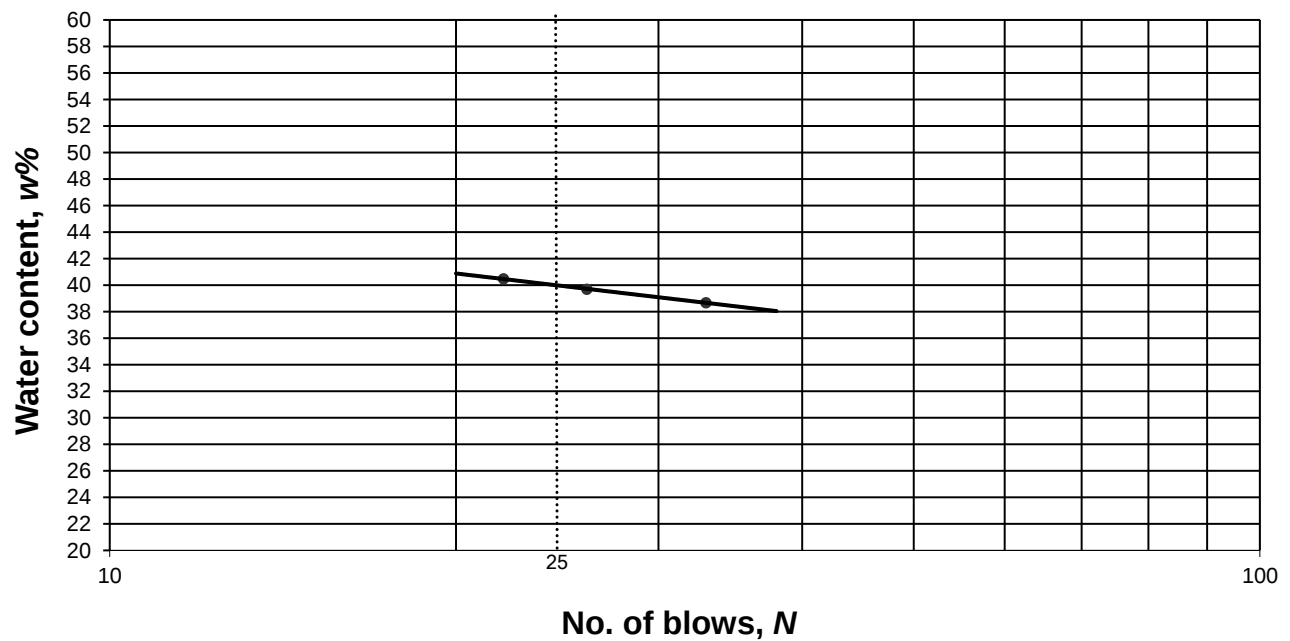
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-14-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/15/2021
Sample Location	11'-12.5'
Sample Description	Brown clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	40	Plastic Limit, PL	18	Plasticity Index, PI	22

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-14-ST05	Date Tested	12/19/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/15/21
Description of Soil	Brown clay
Location	11'-12.5'

Type of Sample	ST	
Average Height =	15.38	cm
Average Diameter =	7.27	cm
Height/Diameter Ratio =	2.12	
Wet Sample Weight=	1302.00	g
Wet Density =	2.04	g/cc
Moisture Content =	25.9	%
Dry Density =	1.62	g/cc
Strain Rate =	1.00	%/min

Failure Sketch (Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

Unconfined Compressive Strength =	22.72 psi
	1.64 tsf
Shear Strength =	11.36 psi
	0.82 tsf
Strain at Failure =	9.3 %

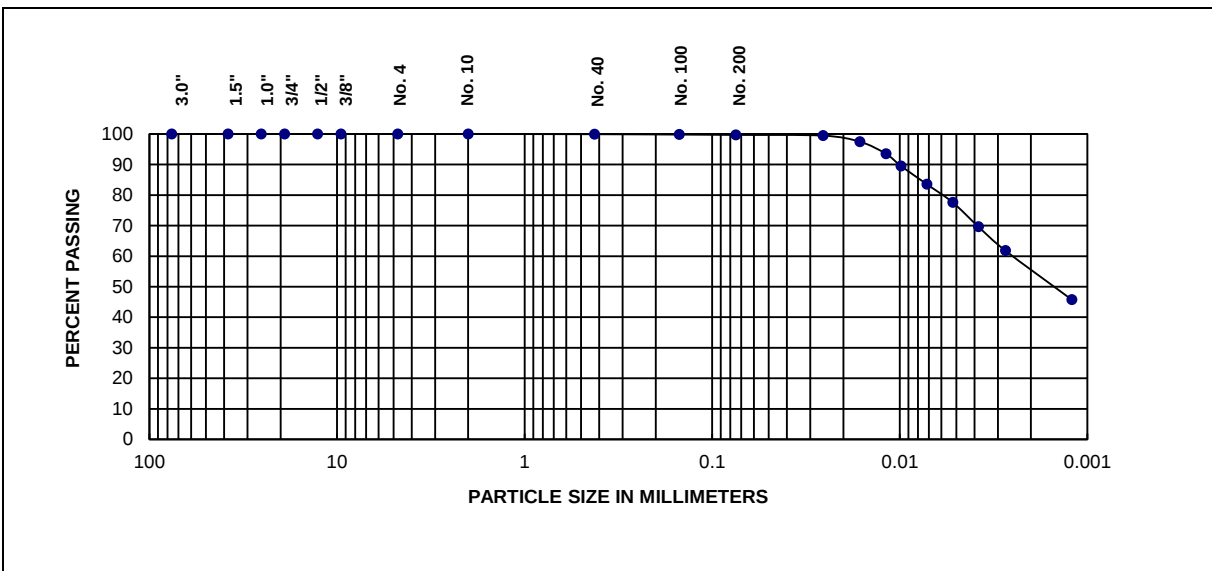
Remarks:	

www.interraservices.com	Test ID	67619
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GRAIN SIZE ANALYSIS AASHTO T 88

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-16-ST05	Date Tested	12/26/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/15/2021						
Sample Location	11'-12.5'						
Sample Description	Brown clay						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.0	0.3	42.8	56.9

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI	
3.0"	100.0	38	17	21	
1.5"	100.0				
1.0"	100.0				
3/4"	100.0	AASHTO Classification:			A-6(22)
1/2"	100.0				
3/8"	100.0	IDH Classification:		Clay	
No. 4	100.0				
No. 10	100.0				
No. 40	99.9				
No. 100	99.8				
No. 200	99.7				

Remarks:	



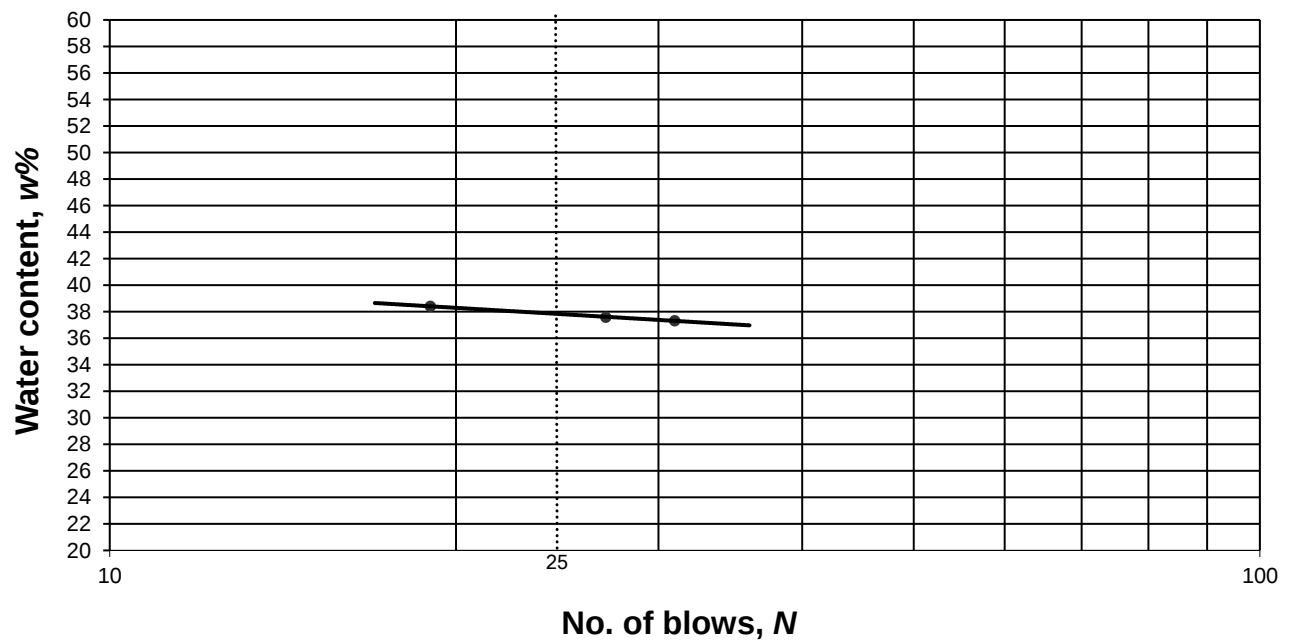
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-16-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/15/2021
Sample Location	11'-12.5'
Sample Description	Brown clay

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	38	Plastic Limit, PL	17	Plasticity Index, PI	21

Remarks					



UNCONFINED COMPRESSIVE STRENGTH (ASTM D 2166)

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-16-ST05	Date Tested	12/19/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/15/21
Description of Soil	Brown clay
Location	11'-12.5'

Type of Sample	ST	
Average Height =	15.28	cm
Average Diameter =	7.24	cm
Height/Diameter Ratio =	2.11	
Wet Sample Weight=	1276.19	g
Wet Density =	2.03	g/cc
Moisture Content =	24.9	%
Dry Density =	1.62	g/cc
Strain Rate =	1.00	%/min

Failure Sketch(Front)

Failure Sketch (Back)

Failure Image

Stress (psi)

Strain (%)

Unconfined Compressive Strength =	30.61 psi
	2.20 tsf
Shear Strength =	15.31 psi
	1.10 tsf
Strain at Failure =	9.6 %

Remarks:	
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Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-28-SS07	Date Tested	6/8/2023	Tested By	DG
						Qc By	AB

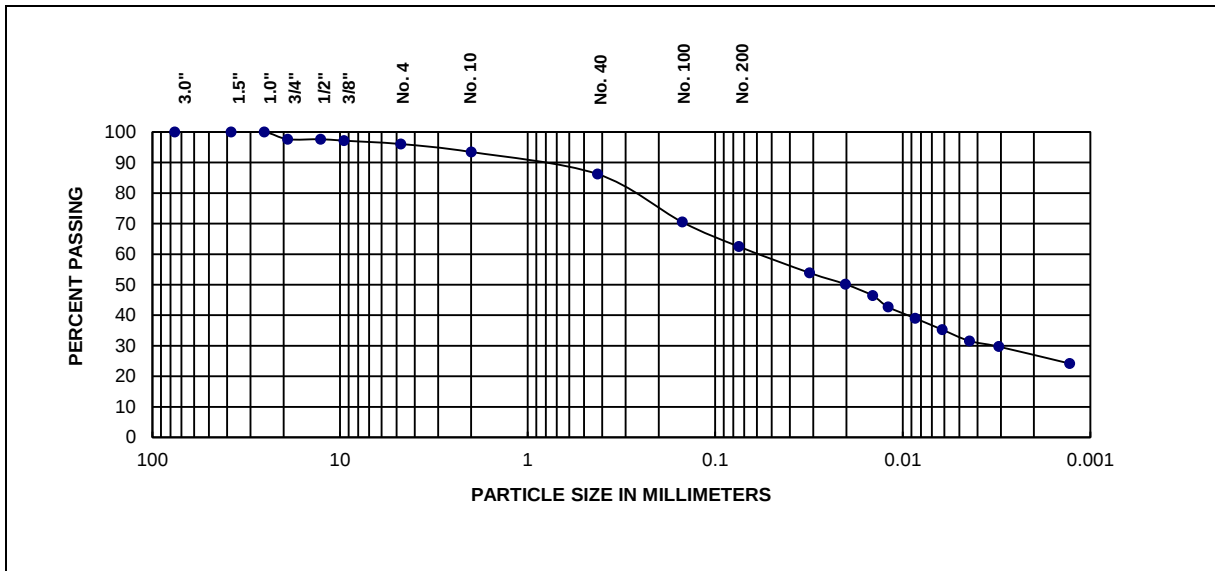
Date Sample Received	12/21/2021
Sample Location	16-17.5'
Sample Description	Black peat
Moisture Content Determination	
Can Number :	#40
Can Weight :	318.80 gm
Can + Wet Sample Weight :	421.62 gm
Can + Dry Sample Weight :	385.13 gm
Moisture Content :	55.01 %
Organic Content Determination	
Dish Number :	F
Dish Weight :	77.10 gm
Dish + Initial Sample Weight :	96.59 gm
Dish + Final Sample Weight :	94.82 gm
Oven-dried test specimen mass, B:	19.49 gm
Mass of ash, C:	17.72 gm
Ash Content, D:	90.92 %
Organic Content, (100-D):	9.1 %

Remarks	
www.interraservices.com	Test ID 72044



**GRAIN SIZE ANALYSIS
AASHTO T 88**

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-28-ST05	Date Tested	12/28/2021	Tested by	BKP
						Qc by	RC
Date Sample Received:	12/21/2021						
Sample Location	11-12.5'						
Sample Description	Brown clay loam, trace gravel						



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	6.5	31.0	35.4	27.1

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI	
3.0"	100.0	26	12	14	
1.5"	100.0				
1.0"	100.0				
3/4"	97.6	AASHTO Classification:			A-6(6)
1/2"	97.6				
3/8"	97.2	IDH Classification:			Clay Loam
No. 4	96.1				
No. 10	93.5				
No. 40	86.2				
No. 100	70.5				
No. 200	62.5				

Remarks:	



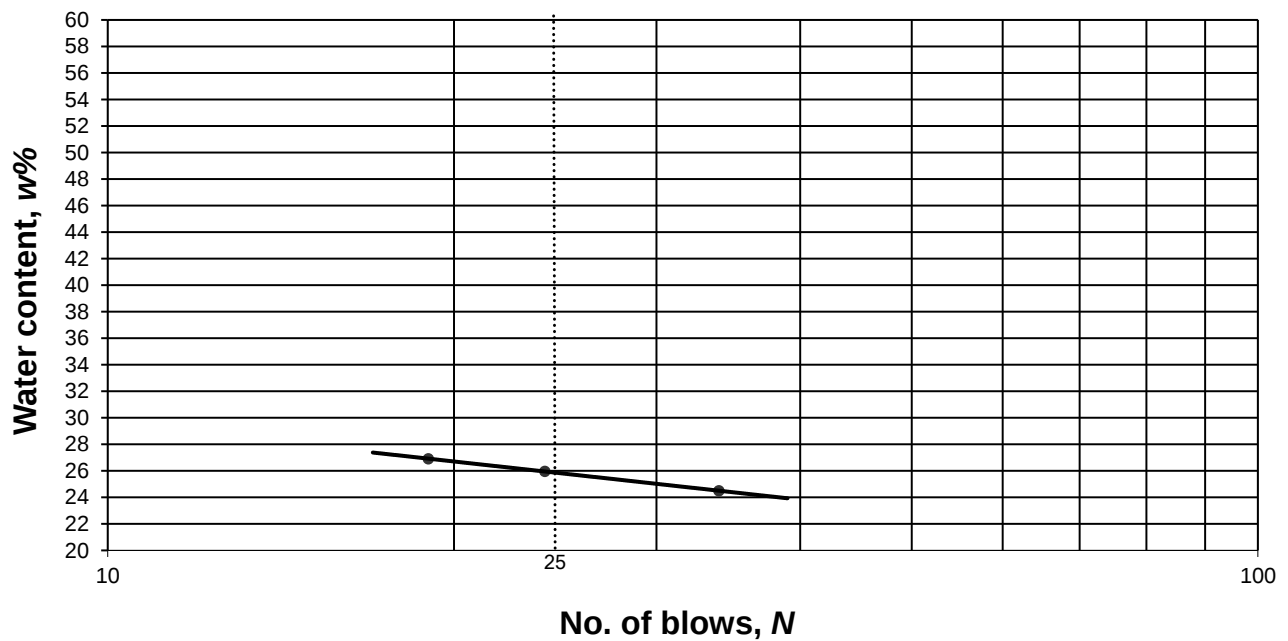
Atterberg Limits

AAASHTO T 89,90

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	BCSB-28-ST05	Date Tested	12/27/2021	Tested By	BKP
						Qc By	RC

Date Sample Recd.	12/21/2021
Sample Location	11-12.5'
Sample Description	Brown clay loam, trace gravel

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	26	Plastic Limit, PL	12	Plasticity Index, PI	14

Remarks					

**UNCONFINED COMPRESSIVE
STRENGTH (ASTM D 2166)**

Project	IL 31 from IL 120 to IL 176 PTB 195-015 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample No.	BCSB-28-ST05	Date Tested	12/27/21	Tested By	BKP
						QC By	RC

Date Sample Received	12/21/21
Description of Soil	Brown clay loam, trace gravel
Location	11-12.5'

Type of Sample	ST	
Average Height =	15.44	cm
Average Diameter =	7.25	cm
Height/Diameter Ratio =	2.13	
Wet Sample Weight=	1419.58	g
Wet Density =	2.23	g/cc
Moisture Content =	14.9	%
Dry Density =	1.94	g/cc
Strain Rate =	0.60	%/min

Failure Sketch (Front)

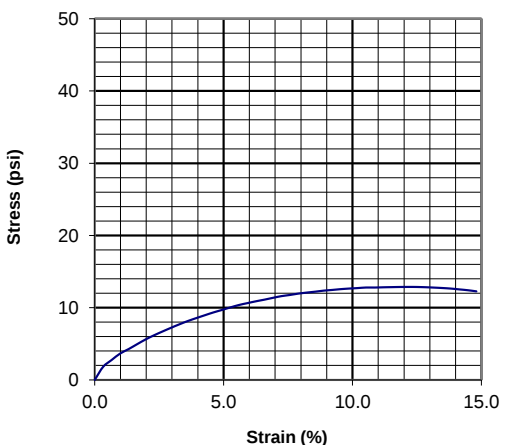


Failure Sketch (Back)



Failure Image

Stress (psi)



Strain (%)

Unconfined Compressive Strength =	12.87	psi
	0.93	tsf
Shear Strength =	6.44	psi
	0.46	tsf
Strain at Failure =	12.2	%

Remarks:



Moisture Content
AASHTO T265

Project	IL 31 from IL 120 to IL 176 PTB 195-005 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	DPB-IL31-04-01-ST	Date Tested	5/1/2024	Tested By	DG
						Qc By	AB

Date Sample Received	4/12/2024
Sample Location	4-6'
Sample Description	Black (10YR 2/1) organic clay
Can Number : M-68 Can Weight : 20.61 gm Can + Wet Sample Weight : 117.77 gm Can + Dry Sample Weight : 85.71 gm Moisture Content : 49.25 %	

Remarks	
www.interraservices.com	Test ID 73734



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-005 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	DPB-IL31-04-01-ST	Date Tested	5/2/2024	Tested By	DG
						Qc By	AB

Date Sample Received	4/12/2024
Sample Location	4-6'
Sample Description	Black organic clay
Moisture Content Determination	
Can Number :	M-68
Can Weight :	20.61 gm
Can + Wet Sample Weight :	117.77 gm
Can + Dry Sample Weight :	85.71 gm
Moisture Content :	49.25 %
Organic Content Determination	
Dish Number :	F
Dish Weight :	81.18 gm
Dish + Initial Sample Weight :	100.29 gm
Dish + Final Sample Weight :	97.59 gm
Oven-dried test specimen mass, B:	19.11 gm
Mass of ash, C:	16.41 gm
Ash Content, D:	85.87 %
Organic Content, (100-D):	14.1 %

Remarks	
www.interraservices.com	Test ID 73737



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-005 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB 82-SS-02	Date Tested	4/29/2024	Tested By	DG
						Qc By	AB

Date Sample Received	4/12/2024
Sample Location	3.5-5
Sample Description	Greenish gray clay
Moisture Content Determination	
Can Number :	6
Can Weight :	307.62 gm
Can + Wet Sample Weight :	381.57 gm
Can + Dry Sample Weight :	369.38 gm
Moisture Content :	19.74 %
Organic Content Determination	
Dish Number :	B
Dish Weight :	86.19 gm
Dish + Initial Sample Weight :	116.72 gm
Dish + Final Sample Weight :	114.62 gm
Oven-dried test specimen mass, B:	30.53 gm
Mass of ash, C:	28.43 gm
Ash Content, D:	93.12 %
Organic Content, (100-D):	6.9 %

Remarks	
www.interraservices.com	Test ID 73690



Organic Content
AASHTO T267

Project	IL 31 from IL 120 to IL 176 PTB 195-005 Geotechnical Investigation						
Client	Patrick Engineering, Inc., 4970 Varsity Drive, Lisle, IL 60532						
File No.	9012	Sample #	SGB 84-SS-02	Date Tested	4/29/2024	Tested By	DG
						Qc By	AB

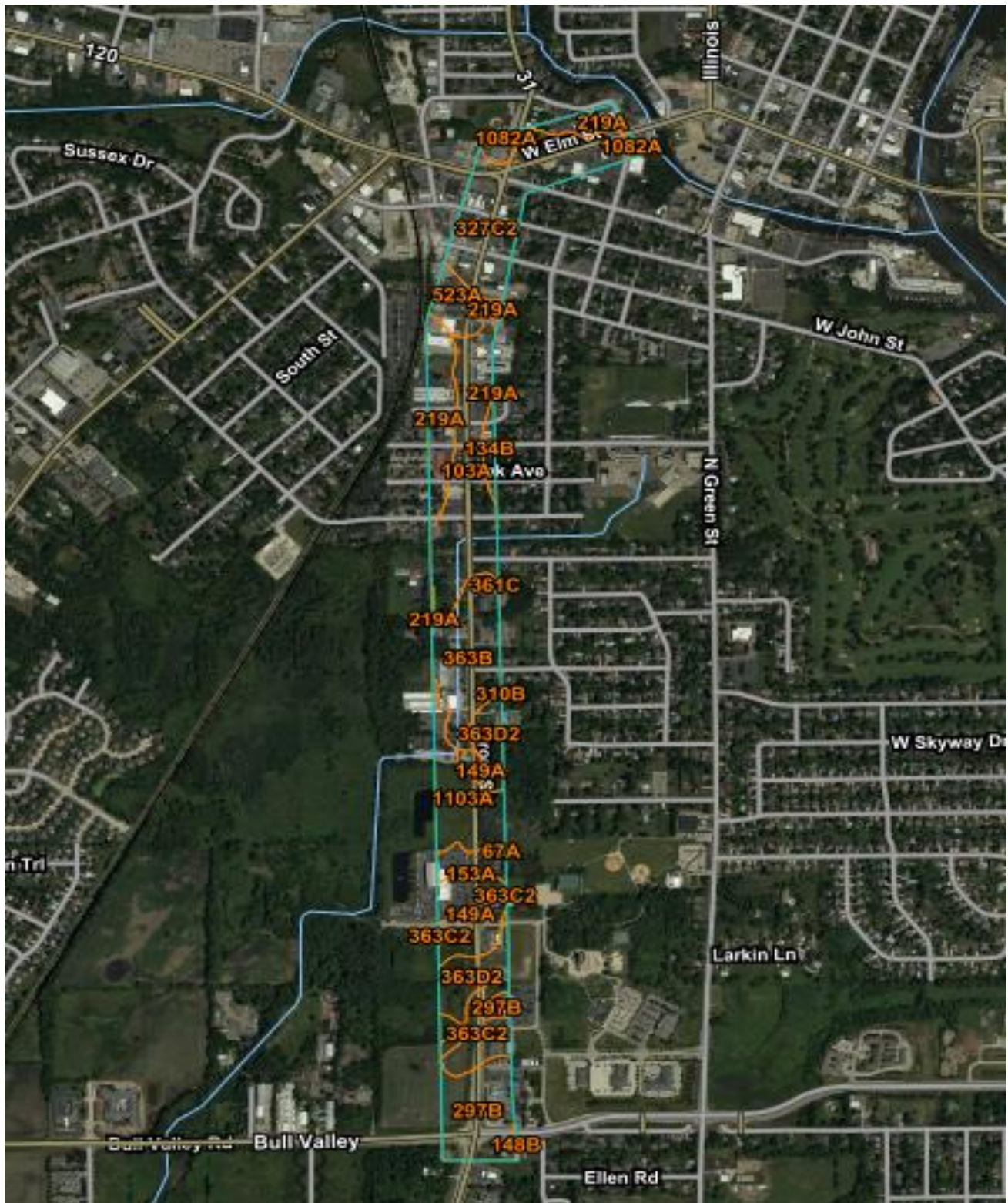
Date Sample Received	4/9/2024
Sample Location	3.5-5
Sample Description	Black peat
Moisture Content Determination	
Can Number :	2
Can Weight :	323.00 gm
Can + Wet Sample Weight :	392.93 gm
Can + Dry Sample Weight :	350.86 gm
Moisture Content :	151.01 %
Organic Content Determination	
Dish Number :	A
Dish Weight :	77.08 gm
Dish + Initial Sample Weight :	94.27 gm
Dish + Final Sample Weight :	84.40 gm
Oven-dried test specimen mass, B:	17.19 gm
Mass of ash, C:	7.32 gm
Ash Content, D:	42.58 %
Organic Content, (100-D):	57.4 %

Remarks	
www.interraservices.com	Test ID 73689

Appendix E

Soil Erosion Factors and Hazard Ratings

Soil Types for Erosion Factors and Hazard Rating



Hazard Rating and Soil Erosion Factors

Map Unit Symbol	Map Unit Name	Soil Erosion Factor, k	Hazard Rating
67A	Harpster silty clay loam, 0 to 2 percent slopes	0.24	Slight
103A	Houghton muck, 0 to 2 percent slopes		Slight
134B	Camden silt loam, 2 to 5 percent slopes	0.37	Moderate
148B	Proctor silt loam, 2 to 5 percent slopes	0.32	Moderate
149A	Brenton silt loam, 0 to 2 percent slopes	0.32	Slight
153A	Pella silty clay loam, cool, 0 to 2 percent slopes	0.28	Slight
219A	Millbrook silt loam, 0 to 2 percent slopes	0.32	Moderate
297B	Ringwood silt loam, 2 to 4 percent slopes	0.24	Moderate
310B	McHenry silt loam, 2 to 4 percent slopes	0.49	Moderate
327B	Fox silt loam, 2 to 4 percent slopes	0.37	Moderate
327C2	Fox silt loam, 4 to 6 percent slopes, eroded	0.37	Moderate
361C	Kidder loam, 4 to 6 percent slopes	0.37	Moderate
363B	Griswold loam, 2 to 4 percent slopes	0.2	Slight
363C2	Griswold loam, 4 to 6 percent slopes, eroded	0.24	Moderate
363D2	Griswold loam, 6 to 12 percent slopes, eroded	0.24	Moderate
523A	Dunham silty clay loam, 0 to 2 percent slopes	0.32	Slight
1082A	Millington silt loam, 0 to 2 percent slopes, undrained, occasionally flooded	0.32	Slight
1103A	Houghton muck, 0 to 2 percent slopes, undrained		Slight