Roadway Geotechnical Report

Wood Street/Ashland Avenue Reconstruction South of US Route 6 (159th Street) to 138th Street Cook County

IDOT PTB 173-001

Project Design Engineer Infrastructure Engineering 33 West Monroe, Suite 1540 Chicago, IL 60603

Geotechnical Consultant GSG Consultants, Inc. 312-733-6262

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855 West Adams, Suite 20 Chicago, Illinois 60607 tel: 312.733.6262 fax: 312.733.5612 Roadway Geotechnical Report

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Prepared by:

Kalyan Chandhuri, M.S, P.E. Senior Engineer

Dawn Edgell.

Reviewed by:

Dawn Edgell, P.E. Senior Project Engineer

Approved by:

Ala E. Sassila Ph.D., P.E. Principal

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1.0 Introduction

GSG Consultants, Inc. (GSG) completed a geotechnical investigation for the proposed roadway improvements along Wood Street/Ashland Avenue between 159th Street and 138th Street, and Thornton Road on either side of Wood Street in Cook County, Illinois. The project also includes the installation of a deep sanitary/storm sewer along the majority of the alignment. The purpose of the investigation was to explore and characterize the subsurface soil and groundwater conditions to determine engineering properties of the subsurface soil, and develop design and construction recommendations for the project. Figure 1 shows the project location map and the approximate project limits.



Figure 1: Project Location Map



1.1 **Project Information**

Based on preliminary information and drawings provided by Infrastructure Engineering, GSG understands that the proposed roadway project will include the reconstruction of Wood Street starting approximately 1200 feet south of W. 159th Street and extending north to 138th Street. The reconstruction will likely include widening of the shoulders and the addition of turn lanes at various intersections. The project improvements will also include intersection improvements of Thornton Road approximately 500 feet on either side of the intersection with Wood Street. In addition to the realignment and intersection improvements, the project will include the installation of a new sanitary/storm sewer along the majority of the length of the alignment from the southern end of the project limits, terminating at the Little Calumet River to the north. It is anticipated that the new sewer could be as deep as 20 to 25 feet below existing pavement grades.

Based on the preliminary information provided, the proposed roadway improvements will have minimal grade changes across the entire alignment.

1.2 Existing Subsurface Information

GSG reviewed several published documents in an effort to determine the regional geological setting in the area of the site. The subject area is located in the central portion of Cook County, Illinois. The surficial geologic deposits in this area are typically glacial deposited during the Wisconsin Episode. The subject area consists of deposits from the Wadsworth Formation of the Wedron Group. The Wadsworth Formation consists of diamicton; silty clay loam to silty clay, pebbly with occasional cobbles and or sand and gravel lenses. This formation overlies the Silurian Racine Dolomite Bedrock Formation with an average depth of 80 to 100 feet below ground surface in the subject area.

1.3 Climatic Conditions

The geotechnical field exploration was performed during the months of October, November and December 2015. The climate conditions for these months and the three previous months are summarized in Table 1. The data in this table was obtained from the National Weather Service Forecast Office website for Chicago, Illinois and the surrounding area. The data was evaluated to determine any effects of temperature and precipitation on the water table level and soil moisture content that was encountered at the site at the time the borings were performed.



For the months included in the study, the precipitation rate was generally higher than normal, except for the months of July and August prior to the field investigation. The average monthly temperatures varied from as high as 11.3 degrees above the average temperature in December, to approximately 1.7 degrees below the average in July. Also, the snowfall for the month of November was higher than normal and for December was lower than average.

It is our opinion that the higher than average rainfall that occurred around the time that the field exploration was performed may have caused fluctuations observed in the water table observations in the soil borings.

	Precipita	ation (in.)	Temper	ature (F⁰)	Snow	fall (in)
Date (M-Y)	Total	Departure from Mean	Average	Departure from Mean	Average	Departure from Mean
July – 2015	2.85	-0.85	72.3	-1.7	0	n/a
August – 2015	2.16	-2.74	71.8	-0. 6	0	n/a
September – 2015	4.64	1.43	69.0	4.4	0	n/a
October – 2015	2.23	0.92	54.7	2.2	0	-0.2
November – 2015	nber – 2015 4.49 1.34 4		44.6	4.3	11.2	10.0
December – 2015	4.87	2.62	39.0	11.3	4.5	-4.0

Table 1 – Climate Conditions

NOTE: All fieldwork was completed between October and December 2015.



2.0 Subsurface Exploration

This section describes the subsurface exploration program and laboratory testing program completed as part of this project. The locations of the soil borings were proposed by GSG, and were completed based on field conditions and accessibility. The locations of the soil borings are shown on the **Boring Location Diagram and Subsurface Profiles (Appendix A)**. The subsurface exploration program was performed in accordance with applicable IDOT geotechnical manuals and procedures.

2.1 Subsurface Site Investigation

The subsurface investigation was conducted between October 12th and December 7th, 2015, and included advancing a total of sixty-two (62) standard penetration test (SPT) borings within the vicinity of the proposed improvements. Fifty-eight (58) were drilled for the proposed improvements along Wood Street/Ashland Avenue and four (4) soil borings were drilled for the proposed improvements along Thornton Road. The depths of the borings ranged between 3.5 feet and 39.5 feet below existing ground surface.

GSG contacted JULIE to clear the boring locations prior to starting the field activities. As there were significant utility conflicts at most of the boring locations, many of the borings were offset from the original proposed locations. Due to the number of utilities along the project corridor, the borings (SGB-54, SGB-55 and SGB-58) that encountered relatively shallow obstructions or refusal (less than 5 feet) were terminated at the shallow depths. A summary of the borings completed and their as-drilled locations is included in **Table B – 1, Appendix B – Soil Boring Logs.**

The soil borings were drilled using a track mount Diedrich D-50 and a truck mounted Mobile B-57 drill rig equipped with 3¼-inch I.D. hollow stem augers and automatic hammers. Soil sampling was performed according to AASHTO T 206, "Penetration Test and Split Barrel Sampling of Soils." Soil samples were obtained with the use of a split spoon sampler, at intervals of 2.5 feet. GSG's field representative inspected, visually classified and logged the soil samples during the subsurface exploration activities, and performed unconfined compressive strength tests on cohesive soil samples using a calibrated Rimac compression tester and a calibrated hand penetrometer in accordance with IDOT procedures and requirements. Representative soil samples were collected from each sample interval, and were placed in jars and returned to the laboratory for further testing and evaluation. The existing ground surface elevations shown in the soil boring logs are based on the profiles by Infrastructure Engineering.



2.2 Laboratory Testing Program

All samples were inspected in the laboratory to verify the field classifications. A laboratory testing program was undertaken to characterize and determine engineering properties of the subsurface soils encountered in the area of the proposed roadway improvements. The following laboratory tests were performed on representative soil samples:

- Moisture content ASTM D2216 / AASHTO T-265
- Organic Content ASTM D7348/AASHTO T-267
- Grain Size Analysis ASTM C136/AASHTO T-27
- Particle Size Analysis ASTM D422/AASHTO T-88
- Atterberg Limits ASTM D4318/AASHTO T-89/AASHTO T-90
- Dry Unit Weight ASTM D7263
- Unconfined Compressive Strength ASTM D2166

The laboratory tests were performed in accordance with test procedures outlined in the IDOT Geotechnical Manual (2015), and per ASTM and AASHTO requirements. Based on the laboratory test results, the soils encountered were classified according to the AASHTO and the Illinois Division of Highways (IDH) classification systems. The results of the laboratory testing program are shown along with the field test results in the **Soil Boring Logs (Appendix B)** and in the **Laboratory Test Results (Appendix C)**.

2.3 Subsurface Soil Conditions

The subsurface soil conditions were evaluated based on the results of both the site investigation and laboratory results. Detailed descriptions of the subsurface soils, as well as the surface elevations, are provided in the Soil Boring Logs (Appendix B). The soil boring logs provide specific soil conditions encountered at each boring location, including: soil descriptions, stratifications, penetration resistance, elevations, location of the samples, water levels (when encountered), and laboratory test data. Variations in the general subsurface soil profile were noted during the drilling activities. The stratifications shown on the boring logs represent the conditions only at the actual boring locations, and represent the approximate boundary between subsurface materials; however, the actual transition may be gradual.



All the borings along Wood Street and Thornton Road were drilled in the existing pavement. Table B-2 in Appendix B lists a summary of the pavement section encountered at each of the boring location. The pavement generally consisted of asphalt, over concrete with a sand and gravel base course. Below this pavement section, the soil borings generally noted approximately 3 feet of stiff to very stiff black and gray clay. This layer was generally medium to high plasticity, with moisture contents in excess of 25 percent. The black and gray clay layer was generally underlain by 8 to 12 feet of very stiff to hard brown and gray silty clay, except between borings SGB-30 and SGB-41, where it was underlain by 2 feet of soft to medium stiff gray clay layer followed by 10 feet of brown and gray silty clay. Below the clay layers, the majority of the borings noted approximately 5 to 10 feet of stiff to very hard gray silt interbedded with 5 to 10 feet of medium dense to extremely dense gray sand, to the termination or auger refusal depths. The soil layers noted at the termination or auger refusal depths varied between the gray silt and gray sand layers among all the borings drilled. Where auger refusal was encountered, these borings typically encountered rock pieces and gravel within the final samples. Many of the borings also encountered cobbles at varying depths, generally below depths of 15 feet.

2.4 Groundwater Conditions

Water levels were checked in each boring to determine the general groundwater conditions present at the site, and were measured while drilling and after each boring was completed. None of the borings were left open after leaving the site due to safety concerns. Water was encountered in 24 of the 62 borings between depths of 1.5 and 29 feet (between 581.5 MSL and 597.5 MSL) below grade during drilling. Water level readings were made in the boreholes at times and under conditions shown on the boring logs and stated in the text of this report. Based on the soils encountered in the field exploration, the proximity of the Little Calumet River, and the above average rainfall that was encountered around the time the borings were performed, it is anticipated that the seasonal ground water level could be as high as 7 feet. The brown color of the soil is typically caused by oxidation that occurs above the long term water level. This color transition did not occur at a consistent elevation in all of the borings, which may indicate seasonal fluctuations from the above average rainfall and climatic conditions or impacts from the drainage of the surrounding area.



3.0 Geotechnical Analysis and Recommendations

This section provides GSG's geotechnical analysis and recommendations for the design of the proposed roadway improvements based on the results of the field exploration, laboratory testing, and geotechnical analysis.

3.1 Embankment Settlement

GSG estimated the anticipated settlement of the embankment for the new roadway based on the proposed roadway profile. The proposed roadway grading includes between 0.5 to 1.5 feet of cut at most locations and up to 1 feet of new fill material to be placed at a few locations of the project. The new embankment materials shall meet the requirements in Borrow Material and Compaction Requirements, Section 6.4 of this report. Based on the field and laboratory analysis, the anticipated settlement caused by the proposed fill placement is estimated to be minimal.

3.2 Slope Stability

IDOT requires that slope stability analysis be performed in areas where the cut or fill heights will exceed 15 feet in height. For the proposed improvements, it is anticipated that the maximum cut and fill height will be less than 2 feet, and thus no slope stability analysis was required for this project.

3.3 Drainage Characteristics

The drainage characteristics of the site were evaluated per the IDOT Geotechnical Manual, Section 6.3.4, based on the subgrade soil type and moisture condition, depth of water table, project topography, the proposed profile grade line, and depth and grade of the proposed drainage ditch along the roadways. Based on the proposed profile, only a portion of the roadway improvements will be supported on subgrade soils consisting of new fill materials. All the other areas where the existing soils will remain within the subgrade soil zone were typically cohesive consisting of clays and silty clays. Based on the proposed cross section drawings provided by Infrastructure Engineering, a curb and gutter will be constructed along Wood Street and Thornton Road with a slope greater than 0.5%. GSG utilized Table 6.3.4.1-1, Drainage Classification in the IDOT Geotechnical Manual, to assign the drainage classes for the site. The drainage class for the site is classified as <u>Poor to Fair</u>.



3.4 Frost Susceptibility

The frost susceptibility of the subgrade soils was evaluated per Section 6.3.2.2.3 of the IDOT Geotechnical Manual. The maximum anticipated frost penetration depth below pavement in northern Illinois is 45 to 60 inches for extreme weather conditions. The frost susceptibility was evaluated for the soils encountered that would be within the proposed roadway subgrade. The frost class for the subgrade soils in these areas was assigned using Table 6.3.2.2.3-1, Frost Susceptibility Classification of Soils, in the IDOT Geotechnical Manual. The subgrade soils primarily consisted of clayey soils, and were found to have a <u>Frost Class of F3</u> (high frost susceptibility). However, the subgrade soil at boring SGB-54 consisted of silt and was found to have a <u>Frost Class of F4</u> (very high frost susceptibility).

Perched water could be present in the upper soil layers and the water trapped in the soil layers closer to the pavement section is susceptible to frost action and should be considered when designing the proposed roadway. Treatment measures, such as maintaining proper drainage of the subgrade soils through raising the grade line above the surrounding area, or the using an underdrain system to lower the water table and eliminate capillary rise of groundwater could be considered. Based on the cross section information provided by Infrastructure Engineering, the proposed curb and gutter along the roadway should have a slope of 0.5% or greater, and appears to be adequate for the proposed improvements to minimize infiltration of surface water and prevent capillary rise of water table. However, pavement sections constructed over clay subgrade could be damaged by intrusion of soil fines into base course aggregate. Therefore, the subgrade at few locations would need improvement as recommend in Subgrade Treatment and Recommendations Section 4.3 of this report.

3.5 Subgrade Support Rating

The subgrade support rating (SSR) was determined based on the physical properties of in-situ soils present beneath the proposed pavement section. The SSR includes three categories (poor, fair, and granular), and are used to determine the depth of soil treatment to provide a stable working platform that is required to prevent excessive rutting, and moisture related problems during construction activities. Granular soils have the highest rating, and provide a stable working platform that may require less than a 12 inch thick improved subgrade layer, while poor subgrade may require more than 12 inches to provide stable subgrade during construction activities. The near surface soils encountered in the borings were generally cohesive, consisting of clays with a few borings with near surface soils consisting of sand or sand with gravel. These soils have a Subgrade Support Rating (SSR) of <u>Poor to Granular</u>. It is recommended that a



Subgrade Support Rating of <u>Poor</u> be used for the project areas where the native soils will be part of the proposed subgrade. For the other areas where new fill materials are proposed, it is recommended utilizing granular fill for the construction of the embankment, which would provide a subgrade support rating of <u>Granular</u>.

3.6 Illinois Bearing Ratio

The Illinois Bearing Ratio (IBR) is a measure of the support provided by the roadbed soils for the new pavement. In areas where the native clays will be included as part of the roadway subgrade, it is recommended that an IBR value of 2; in areas where sand soils will be part of the subgrade, an IBR of 5 should be used for the roadway pavement design and correlated to the subgrade resilient modulus based on the AASHTO recommended pavement design formula for fine grained soils ($M_r = 1,500 \times IBR$).

3.7 Organic Content

Soils encountered in the borings in which organic material was observed were tested to determine the percentage of organic material present. The organic content of these samples ranged from 4 to 5.7 percent. Typically, soils with an organic content in excess of 10 percent are considered unsuitable to remain below proposed pavement areas. Based on the soil borings and laboratory testing performed, it is anticipated that highly organic soils should not be encountered within subgrade soils at the site.



4.0 Roadway Recommendations

This section provides GSG's geotechnical recommendations for the design of the proposed improvements based on the results of the field exploration, laboratory testing, and geotechnical analysis. Based on the cross section drawings provided by Infrastructure Engineering, the proposed roadway pavement section along Wood Street/Ashland Avenue and Thornton Road will include 8.75 inches of concrete over 12 inches of aggregate base course. The IDOT Mechanistic Pavement Design (MPD) requires providing a minimum of 12 inches of improved subgrade beneath the pavement section to ensure a stable construction platform. Subgrade improvements including any undercuts or compaction of existing soils should be completed to the proposed elevations in the design plan and in accordance with the Subgrade Treatment and Recommendation Section 4.3 of this report.

4.1 Subgrade Preparation

The pavement and aggregate base should be cleared and stripped where new fill will be placed. Based on the pavement thicknesses encountered in the borings, it is anticipated that pavement stripping depths of asphalt and/or concrete materials will range from 4 to #16 inches. Undercuts of the subgrade soils and backfilling should be based on the recommendations provided in this report, and field evaluation of the materials encountered during construction. Any unstable or unsuitable materials encountered during construction activities should be removed and replaced with compacted material meeting the requirement of District One Aggregate Improvement Special Provision.

4.2 Topsoil Removal

GSG did not note any topsoil in the borings completed as a part of this project. However if topsoil is encountered outside the existing pavement areas during reconstruction or widening, these materials should be removed from the improvement limits. GSG recommends a minimum stripping depth of 6 inches be used to estimate any topsoil removal quantities. . If the topsoil is to be reused, mechanical and chemical analyses for nutrients should be performed in order to determine the suitability and nature of treatment required for the top soil prior to reuse for this project.

4.3 Subgrade Treatment and Recommendations

The suitability of the existing subgrade soils was evaluated in terms of frost susceptibly, stability, settlement, and drainage. The evaluation included determining the presence of



unstable, compressible deposits, low-strength soils, high organic content soils, and soils with high-moisture content immediately below the proposed pavement section.

Treatment options for unsuitable subgrade soils include mechanical stabilization, chemical stabilization or soil modification. Mechanical stabilization includes methods such as removal and replacement with select materials or using geosynthetics (geotextiles and/or geogrids). Chemical stabilization or soil modification includes the use of additives to improve the engineering properties of the in-situ soils. The choice of a specific treatment option depends on several factors, including: soil type; required treatment depth; construction variables (cost, availability, and time); project location; and treatment objective. Based on the subsurface conditions, mechanical stabilization and chemical modification methods can be used to remediate the unsuitable soils noted at the site. GSG recommends mechanical stabilization as the preferred option, however, chemical modification can be considered provided IDOT and the design team approve it.

For the proposed roadway alignment, high moisture content, high plasticity and frost susceptible soils were encountered within the proposed subgrade elevations. These materials are considered unsuitable to remain below the proposed pavement section and should be remediated as presented in Table 2 below. This table provides the locations and areas that will require subgrade treatment during the proposed construction activities. The treatment depth recommended in the table is to be below the proposed 12 inches of aggregate base course section as planned in the design drawings provided by Infrastructure Engineering. The extents and depth of the treatment areas provided in the table should be field verified by a licensed geotechnical engineer. The treatment area is also graphically presented on the Plan and Profile sheets in Appendix A.



Location		Depth of Treatment	Recommended	Treatment	Description of Soils	Reason for						
Station Station from to		(Inches)	Treatment	Width	Encountered	Treatment						
Wood	Street	12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
113+75 115+00			Soil modification with lime⁺	roadway	29% (SGB-01)	content						
Wood Street 143+00 145+00		12*	Remove and replace with structural fill or	Entire width of the	Black Sand trace cinders with	Excessive moisture						
			Soil modification with cement ⁺	roadway	Moisture Content = 27% (SGB-11)	content						
Wood Street		12*	Remove and replace with structural fill or Soil modification	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
173+00	175+00		with lime ⁺	roadway	26% (SGB-21)	content						
Wood	Street	12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
192+00	195+00		Soil modification with lime ⁺	roadway	26% (SGB-27)	content						
Wood	Street	12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
195+00 197+00			Soil modification with lime ⁺	roadway	27% (SGB-29)	content						
Wood Street 207+00 210+50		12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
			Soil modification with lime ⁺	roadway	26% (SGB-32)	content						
Wood	Street	12*	Remove and replace with structural fill	Entire width of the	Black Clay with Moisture Content =	Excessive moisture						
210+50	214+00		the entire width of the roadway	roadway	37% & Dry Density = 85.5 pcf (SGB-33)	content						
Wood	Street	12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Liquid Limit = 57%	High swell						
234+00	236+00	12	Soil modification with lime ⁺	roadway	(SGB-44)	potential clay						

Table 2 - Recommended Subgrade Treatment
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Loca	Location	Depth of	Recommended	Treatment	Description of Soils	Reason for			
Station from	Station to	Treatment (Inches)	Treatment	Width	Encountered	Treatment			
Wood Street		12*	Remove and replace with structural fill	Entire width of the	Soils with PI = 2.7 and frost susceptibility of	Low point in the profile & high frost			
272+00 275+00				roadway	F-4 (SGB-54)	heave potential			
Thornton Road		12*	Remove and replace with structural fill or	Entire width of the	Black Clay with Moisture Content =	Excessive moisture			
95+00 96+00		12	Soil modification with lime ⁺	roadway	28% (SGB-61)	content			

*Below the bottom of the proposed 12 inch base course

⁺Soil modification should only be considered upon design team and IDOT approval

In areas where undercuts are recommended, approved structural fill includes District One Aggregate Subgrade Improvement Special Provision (revised March 3, 2015) or IDOT Porous Granular Embankment (PGE), or suitable borrow materials, as specified in the Borrow Material and Compaction Requirements section of this report. It is also recommended that a woven geotechnical fabric be placed at the base of the undercut. The geotextile fabric should consist of a woven material meeting the requirements of Section 1080.02 of the IDOT SSRBC (2012), and should be placed in accordance with Section 210 of the IDOT SSRBC (2012). The geotextile fabric should be placed under the full width of the proposed pavement area.

In areas where soil modification with lime and cement is considered, the mix design and laboratory evaluation should be performed in accordance with Appendix B.3, IDOT Geotechnical Manual 2015.

4.4 Drainage Recommendations

A drainage classification of <u>Poor</u> should be used for the project design. Groundwater was encountered between depths of 1.5 and 29 feet below grade. It is anticipated that the relatively shallow water at depths of 1.5 feet below grade was perched within existing fill materials and does not represent actual groundwater. The overall depth of groundwater is slightly deeper than the anticipated frost depth of 45 to 60 inches within the northern Illinois region and as such no subgrade saturation is anticipated due to capillary action. However, pavement systems could become saturated following periods of precipitation and the clay



subgrade could undergo pumping. Therefore, GSG recommends installing edge drain systems as recommended in Section 6.3.4.2 of the IDOT Geotechnical Manual to maintain the subgrade from deteriorating. These underdrains should be installed at undercut areas and low points in the roadway profile.

5.0 Excavation Considerations

This section provides GSG's geotechnical recommendations for the design of the proposed storm/sanitary sewer improvements based on the results of the field exploration, laboratory testing, and geotechnical analysis. It is anticipated that the new sewer would be between 1 and 6 feet in diameter and could be as deep as 20 to 25 feet below existing pavement grades. The sewer is proposed between Station 128+00 through Station 267+00 along Wood Street.

5.1 Derivation of Soil Parameters for Design

GSG determined the geotechnical parameters to be used for the project design based on the results of field and laboratory test data on individual boring logs as well as our experience. Unit weights, friction angles and shear strength parameters were estimated using corrected standard penetration test (SPT) using published correlations for N values results for the cohesionless soils and in-situ and laboratory test results for cohesive soils. The SPT values were corrected for hammer efficiency. The hammer efficiency correction factor considers the use of a safety hammer/rope/cat-head system, generally estimated to be 60% efficient. Thus, correlations should be based upon what is currently termed as N₆₀ data. The efficiency of the automatic hammers for the drill rigs used for this exploration is based on efficiency is a direct ratio of relative efficiencies as follows for each of the drill rigs:

 $N_{60} = N * (91/60) \quad (Drill rig D-50)$ $N_{60} = N * (96/60) \quad (Drill rig B-57)$ * Where the N value is the field recorded blow counts.

Due to the variable nature of soil stratigraphy, soil types and properties along the project alignment or at locations away from a particular boring may vary substantially. Based on the overall soils encountered in the investigation, the project corridor was broken into several sections, with consistent soils types in order to provide recommended soil parameters for use in design. Recommended geotechnical parameters for the subsurface soils within the boring areas of each project section, to be used for design of the proposed sewer installations are presented in **Tables D-1 to D-4**, Appendix D: Recommended Geotechnical Design Parameters.

5.2 Bearing Capacity

The subsurface investigation indicates that majority of the new sewers will be installed in very stiff to very hard silty clay or silt soils encountered at the proposed invert elevations with



isolated portions of the sewer system being installed in medium dense to dense sands. In addition a portion of the sewer system between the Stations 206+00 and 238+00 had invert elevations below the auger refusal depths noted within the borings drilled. The soils noted at the refusal depths generally noted very hard silts and/or extremely dense sand with gravel. The proposed improvements may be designed using a net allowable bearing capacity of 3,500 psf, which includes a factor of safety against failure of 3.

5.3 Trench Stability

The contractor is responsible for designing, constructing and maintaining safe excavations. The excavations should not cause any distress to existing underground utilities and adjacent structures. Excavation near existing structures and underground utilities should be performed with extreme care to avoid undermining existing structures. Excavations should not extend below the level of adjacent existing foundations or utilities unless underpinning or other support is installed. All excavations that extend more than 4 feet should be sloped or braced to prevent excavation instability. The excavation sloping and bracing should be designed in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR, Part 1926, regulations and requirements. Tables D-1 to D-4, also present recommended OSHA soil types for trench design based on the results of the subsurface investigation.

5.4 Earth Retention System

Temporary Earth Retention Systems will be required for construction of the proposed sewers. Based on the subsurface soil conditions, the new sewers could be installed using a trench/utility box at all the locations, except between Station 206+00 and 238+00, where special consideration should be given in designing the appropriate retention system. Due to very hard or extremely dense nature of the soils encountered at the proposed based of excavation between Station 206+00 and 238+00, trench/utility boxes may not be a feasible option. Soldier pile and lagging with driving shoes attached to the piles could be considered in lieu of the trench box at this location. GSG recommends that a licensed Structural Engineer in the State of Illinois should design the retention system for the entire project.

The soil parameters and the pressure distribution for the practical design of struts in open cuts for clays for short-term and long term conditions are provided in **Charts E-1, Chart E-2 and Chart E-3, Appendix E**: **Lateral Earth Pressure Diagrams.** For the purposes of this investigation, all temporary earth retention systems between Station 200+00 and Station 236+00 should be designed using Chart E-1; Chart E-2 may be used for the remainder of the project. If the project



requires any long term earth retention system, Chart E-3 should be utilized. The soil parameters provided in Tables D-1 through D-4 should be utilized in the design.

If sand is used to fill the annular space between the trench box and the excavation wall, an active earth pressure coefficient of 0.33 and an in-situ unit weight of 120 pcf can be used in calculating the lateral earth pressures.

Lateral pressure resulting from construction equipment, excavated materials, traffic loads, or other surcharge should be taken into account by adding the equivalent uniformly distributed surcharge to the design lateral pressure. The minimum recommended surcharge load for traffic is 250 psf. In general, stockpiles of excavated materials and equipment should not be placed near the top of the excavation.

5.5 Excavation Base Stability

In open-cuts, it is necessary to consider the possibility of the base of the excavation failure by heaving, due to the removal of the weight of excavated soil. Heaving typically occurs in very soft or fat clays when the excavation depth is sufficiently deep enough to cause the surrounding soil to displace vertically due to a bearing capacity failure of the soil beneath the excavation bottom, with a corresponding upward movement of the soils in the bottom of the excavation. In fat and lean clays, heave normally does not occur unless the ratio of Critical Height to Depth of Cut approaches one. In very sandy and silty lean clays and granular soils, heave can occur if an artificially large head of water is created due to installation of impervious sheeting while bracing the cut. This could be mitigated if groundwater is lowered below the excavation by dewatering the area.

Based on the invert elevations provided in the design plans and subsurface soil encountered at the site, the anticipated bottom of the proposed excavation was evaluated for the entire project, except between Station 206+00 and 238+00. The excavation base stability at these locations appears to be adequate with a factor of safety greater than 1.5; therefore, no heave concern is anticipated.



6.0 Construction Considerations

All work performed for the proposed project should conform to the requirements in the IDOT Standard Specifications for Road and Bridge Construction (SSRBC) (2012), IDOT Geotechnical Manual (2015) and the IDOT Subgrade Stability Manual (2005). Any deviation from the requirements in the manuals above should be approved by the design engineer.

6.1 Site Preparation

Any topsoil encountered during construction should be stripped and stockpiled as per Section 211.03 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC). The topsoil should be separated from other materials being stockpiled onsite for reuse or haul off. Base course aggregate encountered at the site should be evaluated to determine suitability for reuse as general fill. The contractor should not mix the existing base course materials with existing subgrade soils during the stripping and stockpiling activities. The subgrade below the base course should be evaluated in accordance with the Pavement Subgrade Preparation section of this report.

6.2 Pavement Subgrade Preparation

The stability of the subgrade should be evaluated immediately after excavation and prior to placement of base aggregate in the field in accordance with the IDOT Subgrade Stability Manual (2005) to determine if additional treatment is required. The subgrade soils inspection should include visual inspection and performing a proof roll using heavy equipment or heavily loaded tandem axle dump truck with a minimum gross weight of 25 tons to check for deflection or rutting. Areas with excessive rutting and deflection shall be evaluated using a dynamic cone penetrometer (DCP) and static cone penetrometer (SCP) to determine the depth of required treatment in accordance with the IDOT Subgrade Stability Manual (2005) and IDOT SSRBC (2012), Section 301. The subgrade should be prepared in accordance with Section 301, Subgrade preparation, of the IDOT SSRBC (2012).

Treatment for unstable and unsuitable soils encountered during proof rolling and subgrade evaluation may include the use of a geotextile fabric, removal and replacement with approved structural fill for small areas, or the use of additive materials, such as lime, cement or fly ash. Subgrade improvements should be based on the recommendations in the Subgrade Treatment and Recommendations Section ## of this report, or based on field evaluation of the materials during construction. Field evaluation of the subgrade soils should be conducted in accordance



with the procedures outlined in the IDOT Geotechnical Manual and Subgrade Stability Manual, and under the supervision of a licensed geotechnical engineer.

6.3 Site Excavation

Site excavations are expected to encounter various types of soils as described in the Subsurface Exploration Section 2.0 of this report. Due to very hard or extremely dense nature of the soils encountered between the Station 206+00 and 238+00, difficult construction conditions should be anticipated in this area. The contractor will be responsible to provide a safe excavation during the construction activities of the project. All excavations should be conducted in accordance with applicable federal, state, and local safety regulations, including, but not limited to the Occupational Safety and Health Administration (OSHA) excavation safety standards. In accordance with OSHA Regulation 29 CFR 1926 Subpart P Appendix B, the maximum allowable slopes for excavations made in layered soil systems shall use the maximum allowable slope for each layer as prescribed in the OSHA Regulation. Excavations greater than 20 feet deep should be designed by a registered professional engineer; any shoring or bracing systems should be designed by a licensed structural engineer.

Soil or Rock Type	Maximum Allowable Slope (H:V) for less than 20 feet
Stable Rock	Vertical (90°)
Type A Type B	¾:1 (53 °)
Туре В	1:1 (45 °)
Туре С	1 ½:1 (34 °)

Table 3 – OSHA Excavation Slopes

6.4 Borrow Material and Compaction Requirements

If borrow material is to be used for onsite construction, it should conform to District One Embankment I Special Provision (revised November 1, 2013). The fill material should be free of organic matter and debris, and should be placed and compacted in accordance with District One Embankment I Special Provision (revised November 1, 2013). Earth-moving operations should be avoided during excessively cold or wet weather to avoid freezing of softening subgrade soils. Fill should be placed in lifts and compacted according to Section 205.06, Embankment (IDOT, SSRBC 2012). Backfill materials for undercut areas should be placed in 8 inches loose lifts and should be



compacted to 95% of the maximum dry density as determined by AASTHO T 99, Standard Proctor Method.

6.5 Groundwater Management

The existing soils may be saturated and water seepage may be encountered during excavation. Groundwater may be noted at shallower depths than noted in the borings and could be trapped within the layers of coarse-grained soils noted at the surface of several borings. This seepage will be temporary but there may be localized sloughing and near-surface instability of some soil slopes. The contractor should control groundwater and surface water infiltration to provide a dry condition for construction. Temporary ditches, sumps, granular drainage blankets, stone ditch protection, or hand-laid riprap with geotextile underlayment could be used to divert groundwater if significant seepage is encountered during construction. If water seepage occurs during construction or where wet conditions are encountered, such that the water cannot be removed with conventional sumping, we recommend placing open grade stone similar to IDOT CA-7 or material that meets the aggregate subgrade improvement special provision requirement, to stabilize the bottom of the excavation below the water table. The CA-7 stone should be placed to 12 inches above the water table, in 12-inch lifts, and should be compacted with the use of a heavy smooth drum roller or heavy vibratory plate compactor until stable. The remaining portion of the excavation should be backfilled using approved structural fill.



7.0 Limitations

This report has been prepared for the exclusive use of Infrastructure Engineering and its design team, and the Illinois Department of Transportation. The recommendations provided in the report are specific to the project described herein, and are based on the information obtained from the soil boring locations within the proposed roadway project limits. The analyses have been performed and the recommendations have been provided in this report are based on subsurface conditions determined at the location of the borings. This report may not reflect all variations that may occur between boring locations or at some other time, the nature and extent of which may not become evident until during the time of construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and review the recommendations presented herein.



APPENDIX A

BORING LOCATION DIAGRAM AND SUBSURFACE PROFILES











DATE

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Silt role Silt role Silt role Silt role Silt role Silt role 21 7,5 P 11 46 18 Silt role Silt role	5 12 9.16 B 47 Very Hard Gray, Moist Very Hard SILTY CLAY, A-6 Very Hard Gray, Moist Very Hard SILTY CLAY, A-6 Very Hard Gray, Moist Very Hard SILTY CLAY, A-6 Very Hard SILTY CLAY, A-6	5 12 9.16 8 47 Very Hard Gray, Moist SILT / CLAY. trace gravel, A-8 Very Hard Gray, Moist SILT / A-4 13 Very Hard Gray, Moist SILT / A-4 0 12 10 Very Hard Gray, Moist SILT / A-4 Silt / A-8 Silt / A-4 20 13 Very Hard Gray, Moist SILT / A-4 0 20 580.50 SILT with rock fragments, A-4 Silt / A-4 20 10 Integravely Silt / A-4 Silt / A-4	5 12 9.16 8 47	5 12 9.16 47 Very Hard Gray, Moist SILT, A-4 20 13 Very Hard Gray, Moist 33 12 0 11 00+ 582.00 Very Hard Gray, Moist 21 10 582.00 27 4.58 40 12 0 20 00+ 580.00 22 7.5 11 10 582.00 27 4.58 13 4.17 14 40 12 0 21 00+ 580.00 22 7.5 11 18 4.17 14 4.17 14 4.17 14.17 14 4.17 14 4.17 14 4.17 14 4.17 18 4.17 18 4.17 18 4.17 18 4.17 18 4.17 18 4.17 18 4.17 18 4.17	5 12 9.16 B 47 Very Hard Gray, Moist 42 13 Very Hard Gray, Moist 33 12 6 12 100 B 44 15 13 Very Hard Gray, Moist 33 12 7 11 11 15 15 13 Very Hard Gray, Moist 40 12 7 11 15 15 15 15 15 15 15 7 11 15 15 15 15 15 12 12 7 11 15 16 16 18 18 17 18 18 18 18 18 18 18 18 18 18 18 18	5 12 9.16 8 47 Very Hard 33 12 6 12 13 Very Hard 33 12 33 12 1 100+ SLTV CLAV. trace gravel, As SLTV CLAV. trace gravel, As SLTV CLAV. trace gravel, As 33 12 40 12 SLTV CLAV. trace gravel, As 6 11 100+ 20 532.60 20 40 12 SLTV CLAV. trace gravel, As 50LTV CLAV. As 50LTV CLAV. As 50LTV CLAV. As 50LTV CLAV. As 51LTV CLAV. As	5 12 0.10 567.50 13 Very Hard Gray, Molst Very Hard Gray, Molst St.T Very Hard Gray, Molst St.T Very Hard Gray, Molst St.T Very Hard Gray, Molst Gray, Molst St.T Att It St.T Att It St.T Att St.T <t< td=""><td>12 0.1 0.2 <th0.2< th=""> <th0.2< th=""> <th0.2< th=""></th0.2<></th0.2<></th0.2<></td></t<>	12 0.1 0.2 <th0.2< th=""> <th0.2< th=""> <th0.2< th=""></th0.2<></th0.2<></th0.2<>









PROFILE SURVEYED PLOTED NOTE BOOK CRADES CHECI B.M. NOTED STRUCTURE N










		OX 1	
state ist			
			610
			605
и <u>w% w% Qu N D</u> 595.75.	11 inches of Asphalt		600
	11 inches of Asphalt 4 inches of Sand and Gravel Very Stiff to Hard Brown and Gray, Moist SILTY CLAY, A-6		595
14 17 7.25 S 21	Hard Brown, Moist SILTY CLAY, trace sand and gravel, .	A-6	590
			585
			580
			575
			570
595.50 595.46 595.55 595.60 595.72 595.72			
104+00 AND AVENUE STREET) TO 138TH STREET	F.A. SECTION RTE. SECTION 2857	СООК	TAL SHEET
& PROFILE S STA. 95+00 TO STA.	ILLINOIS FED. AI	CONTI PROJECT	RACT NO.

APPENDIX B

SOIL BORING LOGS

Location	Station	Offset Distance (ft)	Offset Direction	Soil Boring ID	Depth (ft)	Existing Ground Elevation					
Wood Street	114+00	26	RT	SGB-01	10	608.5					
Wood Street	116+99	32	LT	SGB-02	10	609					
Wood Street	120+05	33	RT	SGB-03	10	608.5					
Wood Street	123+08	36	LT	SGB-04	10	608.5					
Wood Street	125+96	40	RT	SGB-05	10	608.5					
Wood Street	129+00	32	LT	SGB-06	20	608.5					
Wood Street	132+00	29	RT	SGB-07	20	608.5					
Wood Street	134+99	34	LT	SGB-08	20	608					
Wood Street	137+99	33	RT	SGB-09	20	608					
Wood Street	141+00	28	LT	SGB-10	19.5	607					
Wood Street	144+16	33	RT	SGB-11	19	606.5					
Wood Street	146+99	32	LT	SGB-12	20	606					
Wood Street	150+26	29	RT	SGB-13	18.6	605					
Wood Street	153+36	41	LT	SGB-14	20	605					
Wood Street	156+02	29	RT	SGB-15	19	604.5					
Wood Street	158+99	37	RT	SGB-16	20	604.5					
Wood Street	161+99	27	RT	SGB-17	30	604.5					
Wood Street	165+00	32	LT	SGB-18	30	604.5					
Wood Street	168+00	28	RT	SGB-19	30	604.5					

Table B-1 – Summary of Subsurface Exploration Borings



Location	Station	Offset Distance (ft)	Offset Direction	Soil Boring ID	Depth (ft)	Existing Ground Elevation
Wood Street	171+08	31	LT	SGB-20	30	604
Wood Street	174+00	30	RT	SGB-21	24	604
Wood Street	177+99	32	LT	SGB-22	30	603.5
Wood Street	180+99	31	RT	SGB-23	30	603.5
Wood Street	183+97	31	LT	SGB-24	30	603.5
Wood Street	186+99	32	RT	SGB-25	30	602.5
Wood Street	190+40	27	LT	SGB-26	30	603
Wood Street	193+01	32	RT	SGB-27	30	603
Wood Street	196+00	27	LT	SGB-28	29	603
Wood Street	198+94	34	RT	SGB-29	30	603
Wood Street	202+00	32	LT	SGB-30	21.5	602.5
Wood Street	205+00	33	RT	SGB-31	28.7	602.5
Wood Street	208+10	34	LT	SGB-32	23.5	604.5
Wood Street	210+99	30	RT	SGB-33	21.1	604
Wood Street	214+02	33	LT	SGB-34	17	603.5
Wood Street	216+99	25	RT	SGB-35	21.1	604
Wood Street	220+00	33	LT	SGB-36	18.8	603
Wood Street	222+99	24	RT	SGB-37	19.3	601.5
Wood Street	226+0876	34	LT	SGB-38	21.1	601
Wood Street	229+03	31	RT	SGB-39	18.6	601



Location	Station	Offset Distance (ft)	Offset Direction	Soil Boring ID	Depth (ft)	Existing Ground Elevation
Wood Street	232+00	31	LT	SGB-40	19.5	600
Wood Street	235+00	44	RT	SGB-41	17	599.5
Wood Street	238+00	26	RT	SGB-42	28.7	599
Wood Street	244+00	29	LT	SGB-44	30	597.5
Wood Street	247+02	30	RT	SGB-45	30	597
Wood Street	249++99	26	LT	SGB-46	30	597
Wood Street	253+00	21	RT	SGB-47	30	596
Wood Street	256+14	18	RT	SGB-48	19.6	596
Wood Street	259+01	25	LT	SGB-49	29	595.5
Wood Street	262+12	41	LT	SGB-50	30	595.5
Wood Street	265+00	32	RT	SGB-51	30	596
Wood Street	267+14	35	RT	SGB-52	39.5	592
Wood Street	271+01	31	RT	SGB-53	9.5	583
Wood Street	274+02	28	LT	SGB-54	5	584.5
Wood Street	277+03	37	RT	SGB-55	3.5	594.5
Wood Street	280+00	39	LT	SGB-56	10	596.5
Wood Street	282+99	42	RT	SGB-57	10	597
Wood Street	286+00	45	LT	SGB-58	5	597
Wood Street	288+93	35	RT	SGB-59	10	597.5
Thornton Road	97+25	n/a	RT	SGB-60	10	596



Location	Station	Offset Distance (ft)	Offset Direction	Soil Boring ID	Depth (ft)	Existing Ground Elevation
Thornton Road	95+00	n/a	LT	SGB-61	10	596
Thornton Road	102+75	n/a	RT	SGB-62	10	595.75
Thornton Road	104+50	n/a	LT	SGB-63	10	595.75



Location	Soil Boring ID	Asphalt (in.)	Concrete (in.)	Sand and Gravel Base Course (in.)
Wood Street	SGB-01	6	8	8
Wood Street	SGB-02	8	8	8
Wood Street	SGB-03	6	10	8
Wood Street	SGB-04	3	6	8
Wood Street	SGB-05	None	8	8
Wood Street	SGB-06	6	8	8
Wood Street	SGB-07	6	8	8
Wood Street	SGB-08	6	None	8
Wood Street	SGB-09	8	9	3
Wood Street	SGB-10	6	None	8
Wood Street	SGB-11	6	6	3
Wood Street	SGB-12	6	10	8
Wood Street	SGB-13	7	8	5
Wood Street	SGB-14	6	10	14
Wood Street	SGB-15	6	10	8
Wood Street	SGB-16	6	8	8
Wood Street	SGB-17	5	8	7
Wood Street	SGB-18	4	None	8
Wood Street	SGB-19	6	8	8

Table B-2 – Summary of Pavement Section



Location	Soil Boring ID	Asphalt (in.)	Concrete (in.)	Sand and Gravel Base Course (in.)
Wood Street	SGB-20	4	None	8
Wood Street	SGB-21	6	8	8
Wood Street	SGB-22	6	None	8
Wood Street	SGB-23	6	8	8
Wood Street	SGB-24	6	None	8
Wood Street	SGB-25	6	8	8
Wood Street	SGB-26	6	None	8
Wood Street	SGB-27	6	8	8
Wood Street	SGB-28	6	8	8
Wood Street	SGB-29	4	6	8
Wood Street	SGB-30	6	6	8
Wood Street	SGB-31	6	10	2
Wood Street	SGB-32	3.5	11.5	3
Wood Street	SGB-33	None	None	3
Wood Street	SGB-34	5	None	None
Wood Street	SGB-35	7	7	2
Wood Street	SGB-36	8	None	7
Wood Street	SGB-37	8	4	None
Wood Street	SGB-38	12	None	3
Wood Street	SGB-39	5	5	1



Location	Soil Boring ID	Asphalt (in.)	Concrete (in.)	Sand and Gravel Base Course (in.)
Wood Street	SGB-40	4	10	3
Wood Street	SGB-41	6	4	2
Wood Street	SGB-42	4	10	2
Wood Street	SGB-44	4	10	3
Wood Street	SGB-45	4	10	3
Wood Street	SGB-46	6	8	3
Wood Street	SGB-47	2	12	5
Wood Street	SGB-48	4	8	4
Wood Street	SGB-49	6	8	3
Wood Street	SGB-50	4	6	4
Wood Street	SGB-51	6	None	4
Wood Street	SGB-52	2	9	4
Wood Street	SGB-53	8	None	8
Wood Street	SGB-54	8	None	8
Wood Street	SGB-55	8	None	6
Wood Street	SGB-56	8	None	8
Wood Street	SGB-57	8	None	8
Wood Street	SGB-58	8	None	7
Wood Street	SGB-59	8	None	8
Thornton Road	SGB-60	7	6	3



Location	Soil Boring ID	Soil Boring ID Asphalt (in.)		Sand and Gravel Base Course (in.)
Thornton Road	SGB-61	4	None	8
Thornton Road	SGB-62	11	None	4
Thornton Road	SGB-63	11	None	4



Illinois De of Transpo Division of Highways GSG Consultants, Inc.	partn ortati	ne on	nt		SC	DIL BORING LOG	-	<u>1</u> of <u>1</u> 10/12/15
					_			
ROUTE <u>FAU 2857 - Wood Stree</u> (145,146 & 146S-2		SCR	PTION		Prop	osed Wood Street Improvements	LOGGED BY	JR
SECTIONB-1	,	_ L	OCAT		Wood	Street, SEC., TWP., RNG., Ide 41.5974106, Longitude -87.6606642		
COUNTY Cook I	DRILLING	ME	THOD					ТО
STRUCT. NO. NA Station NA		D E	BL	U C	M O	Surface Water Elev. NA ft Stream Bed Elev. NA ft		
BORING NO. SGB-01 Station 114+00 Offset 25.97ft RT Ground Surface Elev. 608.5		P T H (ft)	O W S (/6")	S Qu (tsf)	I S T (%)	Groundwater Elev.: First Encounter <u>None</u> ft Upon Completion <u>NA</u> ft After <u>Hrs.</u> <u>NA</u> ft		
6 inches of Asphalt								
8 inches of Concrete 8 inches of Sand and Gravel			9					
Stiff	606.70		5	1.3	29	-		
Black and Gray, Very Moist CLAY, A-7-6			2	Р		-		
			1					
			1	1.5 P	39			
		-5		1		-		
			1					
Stiff	602.00		2	1.5	27	-		
Brown and Gray, Very Moist SILTY CLAY, trace gravel, A-6			2	Р				
	599.50		14					
Hard Gray, Moist			18 25	7.5	10	-		
SILTY CLAY, trace gravel, A-6		-10	25	В		-		
End of Boring								
		-15						
		_						
		-20						

Illinois Department

of Transportation

Division of Highways GSG Consultants, Inc. Page <u>1</u> of <u>1</u> Date 10/16/15

ROUTE _____ FAU 2857 - Wood Street ___ DESCRIPTION _____ Proposed Wood Street Improvements LOGGED BY JR (145,146 & 146S-2)WRS & B-1 LOCATION Wood Street, SEC. , TWP. , RNG. , SECTION Latitude 41.598232, Longitude -87.6608786 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO U Μ D В STRUCT. NO. NA Surface Water Elev. NA ft Е L С 0 NA Stream Bed Elev. NA ft Station Ρ S ο L т W S BORING NO. SGB-02 Groundwater Elev.: н S Qu т Station _____ 116+99 None ft First Encounter Upon Completion 31.69ft LT NA ft (ft) (/6") (%) (tsf) Ground Surface Elev. 609.00 ft After Hrs. NA ft 6 inches of Asphalt 8 inches of Concrete 8 inches of Sand and Gravel 6 607.20 3 1.3 10 Stiff 3 Ρ Black and Gray, Moist CLAY, A-7-6 2 605.00 2 Stiff 23 1.5 Brown and Gray, Moist 2 Ρ -5 SILTY CLAY, trace gravel, A-6 1 1 1.3 23 6 Ρ 600.50 Hard 14 Gray, Moist 22 9 7.5 SILTY CLAY, trace gravel, A-6 31 В 599.00 -10 End of Boring -20

Illinois Department of Transportation Division of Highways GSG Consultants, Inc.

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Date 10/12/15

ROUTE FAU 2857 - Wood Stree			PTION	I	Prop	osed Wood Street Imp	rovements	LOGGE	DBY JR
(145,146 & 146S-2)W	VRS &	_ L	OCAT		Wood	Street, SEC. , TWP. , R	RNG. ,		
						de 41.599071, Longitu			
COUNTY Cook DF		S ME	THOD			HSA	_ HAMMER	ТҮРЕ	AUTO
STRUCT. NO. NA NA		D	в	U	м	Surface Water Elev.	NΔ	ft	
Station NA		Е	L	С	0	Stream Bed Elev.	NA NA	ft	
		Р	0	S	1				
BORING NO. SGB-03		T	W	_	S	Groundwater Elev.:			
Station 120+05 Offset 32.70ft RT		н	S	Qu	Т	First Encounter Upon Completion	None	_ ft	
Offset 32.70ft RT		(f +)	(/6'')	(tof)	10/1	Upon Completion	NA	_ ft	
Ground Surface Elev. 608.50	ft	(ft)	(/0)	(tsf)	(%)	After Hrs.	NA	ft	
6 inches of Asphalt 10 inches of Concrete									
8 inches of Sand and Gravel									
			4						
	606.50		5	3.0	17				
Very Stiff Black and Gray, Very Moist			5	Р					
CLAY, A-7-6									
			2	2.0	24				
			2	2.0 P	31				
		5	5	Р					
		_							
			2						
Very Stiff to Hard	602.00		4	3.0	24				
Brown and Gray, Moist			4	B.0	24				
SILTY CLAY, trace gravel, A-6				Б					
			3						
			8	6.0	25				
	598.50	10	17	B					
End of Boring	596.50	-10		_					
5									
		-15							
		-20							

(Reference) Illinois Dep of Transpo	partn ortati	ne on	nt		SC	DIL BORIN		6	Page	<u>1</u> of <u>1</u>
Division of Highways GSG Consultants, Inc.									Date _	10/12/15
ROUTEFAU 2857 - Wood Stree		SCR	PTION	I	Prop	osed Wood Street Imp	provements	LOGO	ED BY	JR
(145,146 & 146S-2) SECTION	WRS &	_ L	.OCAT		Wood	Street, SEC. , TWP. ,	RNG. ,			
COUNTY <u>Cook</u> D	RILLING) ME	THOD			ide 41.5999014, Long HSA			AUT	ГО
		D	в	U	м	Surface Water Elev	NA	4		
STRUCT. NO. NA NA		E	L	C S	0	Surface Water Elev. Stream Bed Elev.	NA	ft		
BORING NO. SGB-04 Station 123+08 Offset 35.79ft LT		г Т Н	W S	Qu	S T	Groundwater Elev.: First Encounter	None	ft ff		
Ground Surface Elev608.50) ft	(ft)	(/6")	(tsf)	(%)	Upon Completion After Hrs.	NA	ft		
3 inches of Asphalt 6 inches of Concrete 8 inches of Sand and Gravel	607.00		3							
Stiff Black and Gray, Moist CLAY, A-7-6	007.00		3 3		12					
			2							
Very Stiff Brown and Gray, Moist	604.00	5	2 1	1.3 P	20	-				
SILTY CLAY, trace gravel, A-6										
			4	3.0	21					
		_	6	P		_				
	599.50		7							
Very Stiff Gray, Moist SILT, A-4	598.50	-10	12 15		14					
End of Boring										
		-15								
		-20								

Illinois Department of Transportation

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ROUTE FAU 2857 - Wood Stree			PTION	l	Prop	osed Wood Street Impr	ovements	LO	GGED BY	JR
(145,146 & 146S-2)	VRS &									
SECTION B-1		_ เ	-OCAT	ION _	Wood	Street, SEC. , TWP. , R	<u>NG.,</u>			
						ide 41.6006919, Longit				
COUNTY Cook D	RILLING	6 ME	THOD			HSA	HAMMER	TYPE _	AUTO	
STRUCT. NO. NA		D	В	U	M	Surface Water Elev.	NA	ft		
STRUCT. NO. NA Station NA		E	L	С	0	Surface Water Elev Stream Bed Elev	NA	ft		
		Ρ	0	S				-		
BORING NO. SGB-05		Т	w		S	Groundwater Elev.:				
Station 125+96		н	S	Qu	Т	11	600.5	ft 🔻		
Station 125+96 Offset 40.39ft RT							NA	ft		
Ground Surface Elev. 608.50		(ft)	(/6")	(tsf)	(%)	Upon Completion _ After Hrs	NA	ft		
8 inches of Concrete		. ,	. ,	. ,			100			
8 inches of Sand and Gravel base		_								
course										
	607.10		7							
Brown and Gray, Moist			15		13					
FILL: SAND with gravel, A-2-4			14							
						-				
Noted cobble and concrete			5							
fragments at 3.5 ft			5		10	-				
		_			10					
		-5	5			-				
	602.50									
Very Stiff			2							
Brown and Gray, Moist			5	3.5	14					
SILTY CLAY, trace gravel, A-6			7	Р						
				•		-				
		<u> </u>								
	599.50		4			4				
Very Stiff			8	3.0	15					
Gray, Moist SILTY CLAY, trace gravel, A-6	598.50	-10	16	Р						
]									
End of Boring			1							
		-15								
		-20	1							

Illinois Department of Transportation Division of Highways GSG Consultants, Inc.

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Date 10/15/15

SECTION (145,146 & 146S-2)WRS & B-1 LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.601526, Longitude -87.6608932 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. NA D B U M Surface Water Elev. NA ft Station NA P O S I Stream Bed Elev. NA ft	
COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. NA D B U M Surface Water Elev. NA ft Station NA P O S I Stream Bed Elev. NA ft	
COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. NA D B U M Surface Water Elev. NA ft Station NA D B U C O Stream Bed Elev. NA ft	
STRUCT. NO. NA D B U M Surface Water Elev. NA ft Station NA E L C O Stream Bed Elev. NA ft	
BORING NO. SGB-06 T W S Groundwater Elev.:	
Station 129+00 H S Qu T First Encounter None ft	
BORING NO. SGB-06 T W S Groundwater Elev.: Station 129+00 H S Qu T First Encounter None ft Offset 32.04ft LT (ft) (ft) (ft) (ft) (ft) (ft)	
Ground Surface Elev. <u>608.50</u> ft (ft) (/6") (tsf) (%) After Hrs. <u>NA</u> ft	
6 inches of Asphalt	
8 inches of Concrete	
8 inches of Sand and Gravel 2	
<u>606.70</u> <u>2</u> <u>2.0</u> <u>25</u>	
Very Stiff 3 P	
CLAY, trace gravel, A-7-6	
2 2.5 25	
603.50 <u>-5</u> 3 B	
Hard	
Gray, Moist	
7 5.0 14	
30 P	
600.00	
Hard 3	
Gray, Moist1214 SILT, A-42014	
SIL I, A-4	
<u>595.00</u>	
Very Hard 8 Gray, Moist 14 8.3 12	
SILTY CLAY, trace gravel, A-6	
<u>-15</u> 10 B	
592.50 Jan 192.50	
Hard 5 Gray, Moist 12 15	
$\begin{array}{c} \text{SILT, A-4} \end{array} \qquad \begin{array}{c} 12 \\ \text{20} \end{array} \qquad \begin{array}{c} 15 \\ \text{15} \end{array}$	

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Date 10/26/15

ROUTEFAU 2857 - Wood Stree			PTION	I	Prop	osed Wood Street Imp	provements	LOGGED BY JR
(145,146 & 146S-2) SECTION	WRS &	_ เ	.OCAT		Wood	Street, SEC., TWP., I	RNG. ,	<u>.</u>
						de 41.602351, Longit		
COUNTY Cook D	RILLING	5 ME	THOD			HSA	_ HAMMER TY	PEAUTO
		D	в	U	м			
STRUCT. NO. NA NA		E	L	c	0	Surface Water Elev. Stream Bed Elev.		
		Ρ	Ō	S	Ĩ	Stream Deu Elev.		L
BORING NO. SGB-07		Т	W		S	Groundwater Elev.:		
Station 132+00 Offset 28.99ft RT		Н	S	Qu	Т	First Encounter	None f	t
Offset28.99ft RT		(#)	(/6'')	(tof)	(%)	Upon Completion After Hrs.	NA ff	t
Ground Surface Elev. 608.50) ft	(ft)	(/0)	(tsf)	(%)	After Hrs.	NAf	1
6 inches of Asphalt 8 inches of Concrete								
8 inches of Sand and Gravel			_					
	606.70		3	20	45			
Very Stiff	000.70		4	2.0 P	15			
Black and Gray, Moist			т —					
CLAY, A-7-6	605 00							
Hard to Very Hard	605.00		2					
Brown and Gray, Moist			3	4.0	20			
SILTY CLAY, A-6		-5	4	В				
			5					
			7	10.8	13			
			14	В				
			· ·					
Hard to Very Hard	599.50		6 20	8.3	9			
Gray, Moist			25	B B	9			
SILTY CLAY, trace gravel, A-6		-10	20	Б				
			9					
			17	7.0	10			
			24	Р				
]					
			7					
		_	50	9.0	10			
		-15		<u> </u>				
		_						
Hard	592.50		0					
Hard Gray, Moist		_	9 28		10			
SILT, A-4			33					
			12					
			28		13			
	588.50	-20	32					
<u></u>								

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Date 10/15/15

ROUTE FAU 2857 - Wood Stre		SCR	IPTION	I	Prop	osed Wood Street Imp	rovements) BY	JR
(145,146 & 146S-2)	WRS &									
SECTION B-1		_ [Wood	Street, SEC. , TWP. , F Ide 41.6031713, Longi	<u>RNG.,</u>	0014		
COUNTY Cook D			тиор		Laulu	HSA		5014 ГҮРЕ	AUTO	
	RILLING		THOD			поя			AUTO	
		D	в	U	м	Surface Motor Elev	NIA			
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev. Stream Bed Elev.		_ IL 		
		Ρ	0	S	Ī	Stream Deu Liev.	NA NA	, n		
BORING NOSGB-08		Т	W		S	Groundwater Elev.:				
Station 134+99		н	S	Qu	T	First Encounter	None	ft		
Offset 33.75ft LT						Upon Completion	NA	ft		
Ground Surface Elev. 608.00	0 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft		
6 inches of Asphalt										
8 inches of Sand and Gravel			1							
Stiff	606.80		3							
Black and Gray, Moist	606.00		2	1.5	24					
CLAY, A-7-6			3	P						
Stiff										
Brown and Gray, Moist										
SILTY CLAY, trace gravel, A-6			2							
			2	1.5	11					
		-5	3	Р						
	602.00									
Very Hard			3							
Gray, Moist SILTY CLAY, A-6			7	8.3	14					
			11	В		-				
			-							
			7							
Hard	599.00		7 22		14	-				
Gray, Moist		_	26		14					
SILTY LOAM, A-4		-10	00							
			-							
			10							
			21		10	-				
			40							
						-				
	594.50		-							
Hard to Very Hard	004.00	·	10							
Gray, Moist			21	8.3	10	-				
SILTY CLAY, trace gravel, A-6		-15	21	В						
			1							
			7							
			12	6.3	12	1				
		_	19	В						
			6							
			8	9.2	13					
	588.00	-20	12	В						
End of Boring										

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Division of Highways GSG Consultants, Inc. ROUTE ______ FAU 2857 - Wood Street _____ DESCRIPTION _____ Proposed Wood Street Improvements LOGGED BY JR (145,146 & 146S-2)WRS & SECTION B-1 LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.6039953, Longitude -87.6606596 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO В U Μ D STRUCT. NO. NA Surface Water Elev. NA ft Е L С 0 NA Stream Bed Elev. NA ft Station Ρ S ο L т W S BORING NO. SGB-09 Groundwater Elev.: н S Qu т Station _____ 137+99 None ft First Encounter Upon Completion 32.66ft RT NA ft (ft) (/6") (%) (tsf) Ground Surface Elev. 608.00 ft After Hrs. NA ft 8 inches of Asphalt 9 inches of Concrete 3 inches of Sand and Gravel 3 606.20 4 24 2.5 Very Stiff 6 Ρ Black and Gray, Moist CLAY, A-7-6 3 604.00 4 Very Stiff to Very Hard 23 2.5 Brown and Gray, Moist 4 В -5 SILTY CLAY, A-6 2 3 4.2 23 6 В 7 13 8.3 15 27 В -10 8 596.50 21 10 Hard Gray, Moist 26 SILT, trace gravel, A-4 9 594.00 16 Hard 7.5 11 Gray, Moist 25 В -15 SILTY CLAY, trace gravel, A-6 592.00 Hard 8 Gray, Moist 14 13 SILT, trace gravel, A-4 35 31 36 10 50 588.00

End of Boring

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ROUTEFAU 2857 - Wood Stree	et DE	SCR	PTION	I	Prop	osed Wood Street Imp	provements	LOGGED BY	JR
(145,146 & 146S-2)	WRS &								
SECTION B-1		_ L	-OCAT	ION _	Wood	Street, SEC. , TWP. , I	RNG. ,		
			TUOD			de 41.6048188, Long			T-0
COUNTY Cook D	RILLING		THOD			HSA		TYPE AU	10
		D	в	U	м			C.	
STRUCT. NO. NA Station NA		E	L	c	Ö	Surface Water Elev.	NA	_π	
StationNA		P	ō	S	Ĩ	Stream Bed Elev.	NA	_ π	
BORING NO. SGB-10		Т	Ŵ		S	Groundwater Elev.:			
Station 141+00		н	S	Qu	Т		None	ft	
Offset 27.95ft LT						Upon Completion			
Ground Surface Elev. 607.00) ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	
6 inches of Asphalt								-	
8 inches of Sand and Gravel									
Very Stiff to Hard	605.80		2						
Brown and Gray, Moist			3	2.1	21	-			
SILTY CLAY, trace gravel, A-6			4	В					
3									
			2						
			6	3.1	15				
		-5	7	В					
			_						
			5						
			12	7.5	13				
			19	В					
			7						
Hard	598.00		14		9				
Gray, Moist			22						
SILŤ, trace gravel, A-4		-10							
			14						
			34		15				
			31						
						-			
			7						
			18		10				
		-15	31						
			17						
			50		7				
			04						
			21		10				
Auger Refusal at 19.5 ft.	587.50	. <u> </u>	50		10				
- Auger Nerusar at 13.0 II.		-20			1	11			

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ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Imp	provements	LOGGED BY	JR
(145,146 & 146S-2))WRS &	-							
SECTION B-1		L	LOCAT	ION _	Wood	Street, SEC., TWP., I	RNG.	0004	
			TUOD			de 41.6056872, Long			-
COUNTY Cook I	DRILLING		THOD			HSA		TYPEAUT	0
		D	в	U	м			6 4	
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev.	<u> </u>	_ ft	
StationNA		P	ō	s	ĩ	Stream Bed Elev.	NA	_ π	
BORING NO. SGB-11		T	Ŵ	-	S	Groundwater Elev.:			
Station 144+16		н	S	Qu	Т		None	ft	
Station 144+16 Offset 33.00ft RT						Upon Completion			
Ground Surface Elev. 606.5		(ft)	(/6")	(tsf)	(%)	After Hrs.			
6 inches of Asphalt									
6 inches of Concrete									
3 inches of Sand and Gravel	605.20		7						
Black and Gray, Wet			4		27				
FILL: SAND, trace gravel and	604.50		3		21				
cinders, A-2-4			-						
Very Stiff Brown and Gray, Moist									
CLAY, A-7-6			6						
	000.00		3	2.5	22				
Hard	602.00		3	P.0					
Brown and Gray, Moist		5	-						
SILTY CLAY, trace gravel, A-6									
			14						
	500 50		19	7.0	11				
Very Hard	599.50		21	P					
Gray, Moist									
SILTY CLAY, trace gravel, A-6									
			7						
			14	8.3	13				
		40	19	B					
		-10							
Very Hard	595.50		21						
Gray, Moist			25		11				
SILT with gravel, A-4			28						
			8						
			21		11				
		-15	30						
		-15							
			10						
			24		11				
			42						
	587.50		50		11				
Auger Refusal at 19 ft.	507.50								
End of Boring		-20							

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ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Imp	provements	LOGGED BY	JR
(145,146 & 146S-2)	WRS &	-							
SECTION B-1		_ L	OCAT	ION _	Wood	Street, SEC., TWP., F	<u>RNG.,</u>	0004	
COUNTY Cook D						de 41.6064647, Long			то
	RILLING		THOD			пра		TYPE AU	10
		D	в	U	м		N1.0		
STRUCT. NO. NA Station NA		E	L	č	0	Surface Water Elev. Stream Bed Elev.		_ TL 	
		Ρ	Ō	S	Ĩ	Stream Deu Elev.	NA	_ n	
BORING NOSGB-12		Т	W		S	Groundwater Elev.:			
Station 146+99		н	S	Qu	Т	First Encounter		ft	
Station 146+99 Offset 31.76ft LT						Upon Completion			
Ground Surface Elev. 606.00) ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	
6 inches of Asphalt									
10 inches of Concrete									
8 inches of Sand and Gravel			7						
	604.00		4	1.5	21				
Stiff			4	Р					
Black and Gray, Moist									
CLAY, A-7-6									
	602.00		2						
Very Stiff to Very Hard			2	2.0	22				
Brown and Gray, Moist SILTY CLAY, trace gravel, A-6		-5	2	Р					
SIETT CENT, Table gravel, NO									
			9 13	0.0	40				
			13	9.2 B	12				
			14	В					
			12						
Hard to Very Hard	597.00		26		14				
Gray, Moist			28						
SILŤ, trace gravel, A-4		-10							
			13						
			20		10				
			24						
						-			
			1						
			7						
			17		9				
		-15	37						
			12						
			13		14				
			14						
			20						
			20 15		17				
Cobble at 19.5			34		17				
	586.00	-20			1				

Illinois Dep of Transpo Division of Highways GSG Consultants, Inc.	partn ortati	ne on	nt		SC	DIL BORING LOG	Page <u>1</u> of <u>1</u> Date 10/14/15
				_	_		
ROUTE <u>FAU 2857 - Wood Stree</u> (145,146 & 146S-2) ¹		SCRI	PTION		Prop	osed Wood Street Improvements	LOGGED BY
SECTION B-1		_ L	OCAT	ION	Wood	<u>Street</u> , SEC. , TWP. , RNG. , ide 41.6073608, Longitude -87.6606762	
COUNTY Cook D	RILLING	S ME	THOD				
STRUCT. NO. NA Station NA		DE	BL	U C S	M O	Surface Water Elev. NA ft Stream Bed Elev. NA ft	
BORING NO. SGB-13		P T	O W	3	I S	Groundwater Elev.:	
Station 150+26		н	S	Qu	Т	First Encounter None ft	
Offset 29.23ft RT Ground Surface Elev. 605.00) ft	(ft)	(/6'')	(tsf)	(%)	Upon Completion NA ft After Hrs. NA ft	
7 inches of Asphalt							
8 inches of Concrete 5 inches of Sand and Gravel			1				
Stiff	603.20	. —	2	1.5	23	-	
Black and Gray, Moist CLAY, A-7-6			2	Р			
	601.00		2				
Very Stiff to Very Hard Brown and Gray, Moist	001.00		2	2.1	22		
SILTY CLAY, trace gravel, A-6		5	3	В		-	
			5 14	9.2	14		
			20	B			
	596.00		18				
Very Hard Gray, Moist			42 50/3		11	-	
SILT, trace gravel, A-4		10	50/3			-	
		_	19 38		7	-	
			46				
	591.00		22				
Very Hard Gray, Dry to Moist			50/3		4		
SILT with gravel, A-4		-15					
			= 0 /0				
			50/3		5	1	
Auger Refusal at 18.6 ft.	586.40		50/1		6		
End of Boring		_					
		-20					

Illinois D of Transp Division of Highways GSG consultants, Inc.	epartr portati	ne on	nt		SC	DIL BORING LOG	Page <u>1</u> of <u>1</u> Date <u>10/26/15</u>
ROUTE FAU 2857 - Wood St		SCR	PTION	۱	Prop	osed Wood Street Improvements	OGGED BY JR
(145,146 & 146S- SECTION	2)WRS &	_ L			Wood	Street, SEC., TWP., RNG.,	
COUNTY Cook	DRILLING	6 ME	THOD			Ide 41.6082106, Longitude -87.6609342 HSA HAMMER TYPE	
STRUCT. NO. NA Station NA BORING NO. SGB-14 Station 152+26		D E P T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev. NA ft Stream Bed Elev. NA ft Groundwater Elev.:	
Station 153+36 Offset 41.05ft LT Ground Surface Elev. 605		(ft)			(%)	First Encounter 586.0 ft ▼ Upon Completion NA ft After Hrs. NA ft	
6 inches of Asphalt 10 inches of Concrete 14 inches of Sand and Gravel			3				
	602.50		3		2		
Very Hard Gray, Moist SILTY CLAY, A-6			2				
		-5	4 7	8.0 P	12		
			10 15	10.8	12		
			28	S			
Very Hard Gray, Moist SILTY CLAY, trace gravel, A-6	596.50		16	10.0 P	11		
	593.50		7				
Hard to Very Hard Gray, Moist SILT, A-4	093.00		20 17		14		
Noted cobble at 13.5 ft			50/5		12		
Hard	589.00	15	7				
Gray, Dry to Very Moist SILT, trace gravel, A-4			12 21		20		
		▼	7		4		
	585.00	-20	23				

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ROUTE _ FAU 2857 - Wood Stre			IPTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY JR
(145,146 & 146S-2) SECTION B-1)WRS &	I		ION _	<u>Wood</u>	<u>Street</u> , SEC. , TWP. , F Ide 41.6089428, Longi	RNG. , itude -87 6606776	<u>.</u>
COUNTY Cook	ORILLING	6 ME	THOD					EAUTO
STRUCT. NO. NA NA Station		D E P	B L O	U C S	M O I	Surface Water Elev. Stream Bed Elev.	<u>NA</u> ft <u>NA</u> ft	
BORING NO. SGB-15 Station 156+02 Offset 29.30ft RT Ground Surface Elev. 604.5		T H (ft)	W S (/6")	Qu (tsf)	S T (%)	Groundwater Elev.: First Encounter Upon Completion After Hrs.	NA ft	
6 inches of Asphalt 10 inches of Concrete			-					
8 inches of Gravel			2	2.0	01	-		
Very Stiff Brown and Gray, Moist	602.50		4	2.0 P	21			
SILTY CLAY, A-6			2					
			4	2.5 P	16			
	598.50	5	-					
Very Hard Brown and Gray, Moist	596.50		10 13	10.8	12			
SILTY CLAY, A-6			20	В				
	595.50		8					
Hard to Very Hard Gray, Moist SILT, trace gravel, A-4	000.00	-10	29 28		17			
			10					
			25 26		8			
			13					
			23		9			
		15						
			22 50/5		10			
	585.50		50/5		13			
Auger Refusal at 19 ft. End of Boring		-20						

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ROUTE ______ FAU 2857 - Wood Street _____ DESCRIPTION _____ Proposed Wood Street Improvements LOGGED BY JR (145,146 & 146S-2)WRS & SECTION <u>B-1</u> LOCATION Wood Street, SEC. , TWP. , RNG. , Latitude 41.609758, Longitude -87.6609215 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. _____NA В U Μ D Surface Water Elev. NA ft Е L С 0 NA Stream Bed Elev. NA ft Station Ρ S ο L т W S BORING NO. SGB-16 Groundwater Elev.: н S Qu т
 Station
 158+99

 Offset
 37.20ft RT
 None ft First Encounter Upon Completion NA ft (ft) (/6") (%) (tsf) Ground Surface Elev. 604.50 ft After Hrs. NA ft 6 inches of Asphalt 8 inches of Concrete 8 inches of Sand and Gravel 8 602.70 4 21 2.5 Brown and Gray, Moist 3 Ρ FILL: SILTY CLAY, trace gravel and wood, A-6 5 600.50 3 24 Very Stiff 2.0 Brown and Gray, Moist 3 Р -5 SILTY CLAY, trace gravel, A-6 9 11 2.5 21 16 Р 7 595.50 Very Hard 15 10.0 10 Gray, Moist 23 Ρ -10 SILTY CLAY, trace gravel, A-6 593.50 Very Stiff to Hard 5 Gray, Moist 11 13 SILT, trace gravel, A-4 20 4 9 13 17 10 13 16 Noted cobble at 16.5 ft 15 17 17 20 17 584.50 -20

End of Boring

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		SCRI	PTION	I	Prop	osed Wood Street Improvements	LOGGED BY JR				
(145,146 & 146S-2)	WRS &										
SECTION		L	IADU.	ION _	<u>vvood</u> Latitu	de 41.6105816, Longitude -87.660	6855				
COUNTY Cook D	RILLING	ME.	THOD						AL	ло	
						· · · · · · · · · · · · · · · ·					
STRUCT. NO. NA		D	В	U	М	Surface Water Elev. NA	ft	D	В	U	М
STRUCT. NO. NA Station NA		E	L	C	0	Stream Bed Elev. NA	ft	E	L	C	0
		P T	O W	S	I S			P T	O W	S	l S
BORING NO. SGB-17 Station 161+99		н	S	Qu	T	Groundwater Elev.: First Encounter 583.5	f4 🛡	H	S	Qu	T
Offset27.34ft RT						Upon Completion NA					
Ground Surface Elev. 604.50	ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)
5 inches of Asphalt						Very Stiff to Very Hard		L			
8 inches of Concrete						Gray, Moist to Very Moist		▼_			
7 inches of Sand and Gravel			2			SILT, trace gravel, A-4 (continued)		-	10		
Very Stiff	602.70		2	2.5	25				17		21
Black and Gray, Very Moist			2	Р					35		
CLAY, A-7-6											
			2						14		
Very Stiff to Very Hard	600.50		2	2.5	28				28		21
Brown and Gray, Moist		-5	2	B				-25	FOID		
SILTY CLAY, trace gravel, A-6											
							578.50				
			2			Medium Dense			4		
			4	5.0	21	Gray, Wet SAND, medium grained, A-3			5		19
			10	В		or trub, meanant grained, rr o			6		
			7						3		
			15	9.2	12				6		19
		-10	19	В			574.50	-30	8		
						End of Boring	01 1.00	00			
	593.50										
Hard to Very Hard			5								
Gray, Moist SILTY CLAY, trace gravel, A-6			18 24	8.3	11						
			24	В							
			5								
			11	8.3	17						
		-15	19	В				-35			
			4	F 0	10						
	507 00		5 8	5.0 B	12						
Very Stiff to Very Hard	587.00		~	D							
Gray, Moist to Very Moist											
SILT, trace gravel, A-4		_	5								
			10		17						
		-20	15					-40			

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ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	L(LOGGED BY				
(145,146 & 146S-2)	WRS &											
SECTION B-1		_ L	-OCAT	ION _	Wood	<u>Street, SEC., TWP., RNG.,</u> de 41.6114068, Longitude -87.660	00001					
COUNTY Cook D									A 1			
	RILLING					HSA HAMMER	ITFE		AL	10		
		D	в	υ	м	Surface Water Flow		D	в	U	м	
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev. NA Stream Bed Elev. NA	_π	E	L	c	0	
		P	ō	S	I		_ "	P	ō	S	Ĩ	
BORING NOSGB-18		Т	W	_	S	Groundwater Elev.:		Т	W		S	
Station 165+00		н	S	Qu	Т	First EncounterNone	ft	н	S	Qu	Т	
Station 165+00 Offset 31.50ft LT						Upon Completion NA						
Ground Surface Elev. 604.50) ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)	
4 inches of Asphalt						Very Stiff to Hard						
8 inches of Sand and Gravel	603.50					Gray, Moist						
Stiff	000.00		2			SILT, A-4 (continued)			9			
Black and Gray, Very Moist	602.50	_	4	1.5	21				17		17	
CLAY, A-7-6			5	Р					20			
Very Stiff to Very Hard												
Brown and Gray, Moist to Very Moist												
SILTY CLAY, trace gravel, A-6			2				580.50		6			
			4	3.0	22	Hard	000.00	-	8	7.1	17	
		-5	5	Р		Gray, Moist		-25	13	В		
		0				SILTY CLAY, trace gravel, A-6						
			6						8			
			11	11.7	12				10	6.0	18	
			14	В					13	S		
							576.00					
	595.50		4			Very Stiff			8			
Very Hard			12	10.0	12	Gray, Moist			13		20	
Gray, Moist		-10	16	В		SILŤ, A-4	574.50	-30	11			
SILTY CLAY, trace gravel, A-6						End of Boring						
	593.50											
Hard			6									
Gray, Moist			15		13							
SILT, trace gravel, A-4			23									
	590.50		9									
Very Stiff to Hard		_	18		20			_				
Gray, Moist SILT, A-4		-15	13					-35				
SIL1, A-4												
			11									
			18		12							
			21									
			12									
			20		16							
		-20	19					-40				

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Date	10/16/15
Duito	

ROUTE FAU 2857 - Wood Stree	et DE	SCR	IPTION	I	Prop	osed Wood Street Improve	ements	L(DGG	ED BY	J	R
(145,146 & 146S-2)	WRS &	_										
SECTION B-1		L		ION _	Wood	Street, SEC., TWP., RNG	i. ,	0054				
					Lautu	ue 41.0122230, Longituu	e -07.000					
COUNTY Cook D	RILLING		THOD			HSA	HAMMER	ITPE		AL	10	
		D	в	U	м				D	в	U	м
STRUCT. NO. NA NA		E	L	c	Ö	Surface Water Elev.	NA NA	_π	E	L	c	0
		P	ō	S	Ĩ	Stream Bed Elev.	NA	_ π	P	ō	S	ĭ
BORING NO. SGB-19		T	W		S	Groundwater Elev.:			T	W	-	S
Station 168+00		н	S	Qu	Т	First Encounter	583 5	ft 🔻	н	S	Qu	Т
Station 168+00 Offset 27.94ft RT						Upon Completion	NA	ft				
Ground Surface Elev. 604.50) ft	(ft)	(/6")	(tsf)	(%)	After Hrs	NA	ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt												
8 inches of Concrete			1					583.50	•			
8 inches of Sand and Gravel			3			Very Hard		505.50	<u> </u>	22		
	602.70		3	2.0	21	Gray, Moist				31		12
Very Stiff to Very Hard			3	Р		SILT, with gravel, A-4				50/5		
Brown and Gray, Moist SILTY CLAY, trace gravel, A-6												
			1									
			4							43		
			2	2.5	20					50/5		10
		-5	2	Р					-25			
			4							31		
			10	12.5	10					42		8
			13	В						50/5		
			1									
	595.50		5							22		
Very Hard			10	11.7	12					36		6
Gray, Moist		-10	13	В				574.50	-30	32		
SILTY CLAY, trace gravel, A-6						End of Boring						
	593.00		10									
Very Hard			31		15							
Gray, Moist SILT, A-4			33									
SIL1, A-4												
			10									
			28		18							
		-15	28						-35			
			-									
	588.50											
Very Hard			12									
Gray, Moist SILTY CLAY, trace gravel, A-6			19	9.2	10							
GIETT OLAT, HACE GIAVES, A-0			26	В								
			4									
			11	40.0	10							
			18	10.0	10							
		-20	22	В					-40			

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Date 10/23/15

ROUTE FAU 2857 - Wood Stree	et DE	DESCRIPTION				osed Wood Street Improvements	L0)GGI		IR				
(145,146 & 146S-2)\	NRS &													
SECTION B-1		L	.OCAT	ION _	Wood	Street, SEC., TWP., RNG.,	0000							
			TUOD			de 41.6130734, Longitude -87.660								
	RILLING					HSA HAMMER								
		D	в	U	м				в	U	м			
STRUCT. NO. NA Station NA		E	L	C	0	Surface Water Elev. NA	_ft	D E	L	C	0			
Station NA		P	ō	s	i	Stream Bed Elev. NA	_ ft	P	ō	S	i			
		T	w	0	S	Creve durates Flaves		T	w	0	S			
BORING NO. SGB-20		Ĥ	s	Qu	T	Groundwater Elev.: First Encounter580.0	4 V	H.	s	Qu	T			
Station 171+08 Offset 31.37ft LT			•		-	Linen Completion	_ IL <u>¥</u> #				-			
Ground Surface Elev. 604.00	ff	(ft)	(/6")	(tsf)	(%)	Upon Completion <u>NA</u> After <u>Hrs.</u>	_ 11 ff	(ft)	(/6'')	(tsf)	(%)			
	n	19	\ = 7	1 1	()		_ "	(4	X = 7	()	(/			
4 inches of Asphalt														
8 inches of Gravel	603.00		~				583.00		10					
Stiff Black and Gray, Moist			2			Very Hard			42					
CLAY, A-7-6			3	1.5	23	Gray, Moist SILT, with gravel, A-4			50/5		9			
			2	Р										
	600.50						580.50							
Stiff			1			Very Hard		V	16					
Brown and Gray, Moist			2	1.5	21	Gray, Wet		-	27		9			
SILTY CLAY, A-6		-5	4	Р		SILT, with sand and gravel, A-4		-25	23					
	598.00													
Very Hard	030.00		8						16					
Brown and Gray, Moist			11	10.0	12			_	17		10			
SILTY CLAY, trace gravel, A-6			13	B	12				30					
								_						
			10			Hard	575.50		12					
llard	595.00		20	0.0	12	Gray, Moist			12	4.0	17			
Hard Gray, Moist			20 34	8.0	12	SILTY CLAY, A-6			21	4.2	17			
SILTY LOAM, A-6		-10	54	Р			574.00	-30	21	S				
Noted cobble at 9.5 ft						End of Boring								
			7											
			14	8.0	11									
			32	S										
	590.00		7											
Very Hard			34		8									
Gray, Moist		-15	22					-35						
SILŤ, trace gravel, A-4														
	588.00													
Very Hard	00.00		8											
Gray, Moist			19	8.8	9			_						
SILTY CLAY, trace gravel, A-6			19	0.0 S	9									
			.0	3										
			-											
			7	40.0										
			20	10.8	10									
		-20	19	В				-40						

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Date	10/16/15
Date	10/10/10

ROUTE FAU 2857 - Wood Stree	et DE	SCR	PTION	I	Prop	osed Wood Street Improvements	L	OGG	J	IR	
(145,146 & 146S-2)	WRS &		~~~~								
SECTIONB-1		_ L	OCAT	ION _	Wood Latitu	<u>Street, SEC. , TWP. , RNG. ,</u> de 41.6138755, Longitude -87.6	606776				
COUNTY Cook D		ME	тнор		Lautu	HSA HAMME			Δ١	ΙТΟ	
STRUCT. NO. NA Station NA		D	в	U	м	Surface Water Elev.	A ft	D	в	U	м
Station NA		Е	L	С	0	Stream Bed Elev.	A ft	E	L	С	0
		P	0	S				P	0	S	I
BORING NO. SGB-21 Station 174+00 Offset 30.48ft RT		T H	W S	<u></u>	S T	Groundwater Elev.:		T H	W S	.	S T
Station <u>174+00</u>		п	э	Qu	'	First Encounter Nor			3	Qu	
Ground Surface Elev. 604.00	f f	(ft)	(/6")	(tsf)	(%)	Upon Completion <u>N</u> After <u>Hrs.</u>	<u>Α</u> π Λ #	(ft)	(/6'')	(tsf)	(%)
6 inches of Asphalt	<u> </u>	(,		(,	(///		<u>A</u> II	(,			(/0)
8 inches of Concrete									-		
8 inches of Sand and Gravel			12			Very Hard	583.00		50/1	╞───┤	11
	602.20		4	2.5	27	Gray, Moist			<u>, 30/ 1</u>		
Very Stiff			3	P		SILŤ, with gravel, A-4					
Black and Gray, Moist to Very Moist				•					-		
CLAY, A-7-6							580.50		1		
	600.00		3			Very Hard	580.00		50/5		2
Very Stiff to Hard	000.00		3	2.5	18	Gray, Dry	000.00				
Brown and Gray, Moist		-5	4	Р		SILT, with rock fragments, A-4		-25			
SILTY CLAY, A-6						Auger Refusal at 24 ft. End of Boring			1		
]		
			5					_			
			8	6.0	11						
			9	Р					-		
									-		
			_					_	-		
Vord	595.00		5 11	0.0	10				-		
Very Hard Gray, Moist			13	9.2 B	13				-		
SILTY CLAY, trace gravel, A-6		-10	10	Б				-30	-		
	500.00							_	-		
Very Hard	593.00		11						1		
Gray, Moist			36		11						
SILŤ, A-4			50	в					1		
									1		
			19						1		
			30		9				1		
		-15	22					-35	1		
								_			
	588.00										
Very Hard			15					_			
Gray, Moist SILTY CLAY, trace gravel, A-6			23	9.2	12				ļ		
			24	В				_	-		
									-		
			10								
			10 17	10.0	12				-		
			27	B	12				-		
1		-20	, <u> </u>		1	11		-40	1		(I

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			PTION	I	Prop	osed Wood Street Improvements	L(DGGI	ED BY	J	IR
(145,146 & 146S-2)	WRS &										
SECTION B-1		_ L	LOCAT	ION _	Wood	<u>Street</u> , SEC. , TWP. , RNG. , de 41.6149707, Longitude -87.660	0074				
					Lautu	HSA HAMMER	19074 TVDE		Δ1		
	RILLING						TIPE		AL	10	
		D	в	U	м	Surface Water Flow		D	в	υ	м
STRUCT. NO. NA Station NA		Ē	L	c	0	Surface Water Elev. NA Stream Bed Elev. NA	_ IL #	E	L	č	0
		Ρ	Ō	S	Ī		_ n	P	0	S	Ī
BORING NOSGB-22		Т	w		S	Groundwater Elev.:		Т	W		S
Station 177+99		н	S	Qu	Т	First Encounter574.5	ft 🔳	H	S	Qu	Т
Station 177+99 Offset 32.12ft LT						Upon Completion NA					
Ground Surface Elev. 603.50) ft	(ft)	(/6")	(tsf)	(%)	After Hrs NA	_ ft	(ft)	(/6'')	(tsf)	(%)
6 inches of Asphalt						Very Hard		1			
8 inches of Gravel			1			Gray, Moist					
Stiff	602.30	-	2			SILT, A-4 (continued)			7		
Black and Gray, Moist			1	1.5	23				12		10
CLAY, A-6			3	P		Noted a sand lens at 22 ft			9		
	600.00						580.00				
Very Stiff to Very Hard			2			Hard			11		
Brown and Gray, Moist			2	2.1	19	Gray, Moist			10	7.5	11
SILTY CLAY, A-6		-5	3	В		SILŤY CLAY, A-6		-25	12	В	
			8						8		
			10	10.0	12				11	7.5	11
			13	S					10	Р	
			-								
			_								
	594.50		7	10.5	10		574.50	T	13		10
Very Hard Gray, Moist		_	13 12	12.5 B	13	Very Hard Gray, Moist		_	25 21		18
SILTY CLAY, A-6		-10	12	В		SILT, A-4	573.50	-30	21		
		_	-			End of Boring	_	_			
			6								
			9	10.0	13						
			13	B	13						
			10	Б							
	500.00		ł								
Very Hard	590.00		7								
Gray, Moist			25		11						
SILŤ, A-4		45	18								
		15						-35			
			14								
			24		13						
			18								
			1								
			9								
			22		15						
		-20	19					_40			

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ROUTE _	FAU 2857 - Wood St	reet DE	DESCRIPTION				Proposed Wood Street Improvements				LOGGED BY			
	(145,146 & 146S-	2)WRS &	_											
SECTION	B-1		_ L	OCAT	ION _	Wood	Street, SEC., TWP., I	<u>RNG.</u> ,	207					
COUNTY	Cook		• ME-				de 41.615796, Longit				Δ1	ITO		
COUNTY	Cook	DRILLING		THOD			HSA		ITPE		AL	10		
OTDUOT			D	в	U	м	Ourford Water Flour		<i>6</i> 4	D	в	U	м	
Station	NO. <u>NA</u> NA		E	L	c	Ö	Surface Water Elev. Stream Bed Elev.	NA	_π	E	L	c	Ö	
Station			P	ō	S	I	Stream Deu Liev.		_ 11	P	ō	S	Ī	
	IO . <u>SGB-23</u>		Т	W		S	Groundwater Elev.:			Т	W		S	
Station	180+99		н	S	Qu	Т	First Encounter		ft 🔻	H	S	Qu	Т	
Offset	180+99 31.09ft RT						Upon Completion							
Ground	Surface Elev. 603.	.50 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	(ft)	(/6")	(tsf)	(%)	
	f Asphalt							-						
8 inches o	f Concrete								582.50					
8 inches o	f Sand and Gravel			10			Hard		002.00		9			
		601.70	. —	6	2.5	24	Gray, Moist				12	4.6	15	
Very Stiff Black and				4	Р		SILŤY CLAY, A-6				15	В		
Clay, A-7-														
010,717	•									v				
		599.50		4						<u> </u>	7			
Very Stiff	to Hard			5	3.0	15					8	4.2	14	
	d Gray, Moist		-5	7	Р					-25	10	В		
SILTYCL	AY, trace gravel, A-6													
				18							8			
				31	7.0	13					12	4.2	18	
				27	Р						15	В		
		594.50		4							10			
Hard to Ve				7	5.8	15					17	4.6	22	
Gray, Mois	AY, trace gravel, A-6		-10	10	В				573.50	-30	17	В		
			_				End of Boring							
				4										
				89	8.3	13								
			_	9	В									
				F										
				5 9	9.2	13								
				9	9.2 B	13								
			-15	3	D					-35				
			_							_				
Very Hard		587.50		10										
Gray, Mois				15		12								
SILT, A-4				18		' <i>Z</i>								
			_											
			_	11										
				19		12								
			-20	21						-40				

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						osed Wood Street Improvements	LC	LOGGED BY			
(145,146 & 146S-2)	WRS &										
SECTION		_ L	IAJOCAI	ION _	<u>vvood</u> Latitu	de 41.6166121, Longitude -87.660)9139				
COUNTY Cook D	RILLING	S ME	THOD						AL	ло	
STRUCT. NO. NA		D	В	U	M	Surface Water Elev. NA	ft	D	В	U	М
STRUCT. NO. NA Station NA		E	L	C	0	Stream Bed Elev. NA	ft	E	L	C	0
		P T	O W	S	I S			P T	O W	S	I
BORING NO. SGB-24		H	S	Qu	- 3 - T	Groundwater Elev.:	a 🛡	H	S	Qu	S T
Station 183+97 Offset 31.37ft LT			0	QU	•	First Encounter577.5Upon CompletionNA		••	U	QU	•
Ground Surface Elev. 603.50) ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt						Very Hard					
8 inches of Sand and Gravel						Gray, Moist	582.50				
Very Stiff	602.30		2			SILTY CLAY, trace gravel, A-6	502.50		13		
Black and Gray, Moist			3	2.5	21	(continued) Very Hard]		27		21
CLAY, A-7-6			4	Р		Gray, Moist to Very Moist			28		
						SILT, trace clay, A-4					
			•								
Van (Cliff to Van (Lland	599.50		3	0.4	01				12 21		14
Very Stiff to Very Hard Brown and Gray, Moist			4 5	2.1 B	21				21 25		14
SILTY CLAY, trace gravel, A-6		5	5	Б				-25	20		
							577 50				
			10			Medium Dense to Very Dense	577.50	<u> </u>	12		
			12	8.8	13	Gray, Moist			10		15
			14	S		SANDY CLAY, trace gravel, A-2-4			12		
Manulland	594.50		4	10.0	10				8		10
Very Hard Gray, Moist			10 12	10.8 S	12				30 25		10
SILTY CLAY, trace gravel, A-6		-10	12	3		End of Boring	573.50	-30	23		
	502 50										
Very Hard	592.50		15								
Gray, Moist			30		12						
SILŤ, A-4			32								
			16								
		_	44 50/5		9						
		-15	30/3					-35			
	597 50										
Very Hard	587.50		11								
Gray, Moist			16		9						
SILT, trace gravel and clay, A-4			25								
		_	_					_			
	584.50		6	0.0							
			26 30	9.2	11						
		-20	50	В				-40			
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ROUTE FAU 2857 - Wood Stree	et DES	SCRI	PTION	I	Prop	osed Wood Street Improvements	L()GGI	ED BY	J	R
(145,146 & 146S-2)	WRS &		~~~~								
SECTIONB-1		_ L		ION _	<u>Wood</u>	<u>Street, SEC. , TWP. , RNG. ,</u> de 41.6174414, Longitude -87.660	16876				
COUNTY Cook D		. ME.	тиор						AI	ITO	
		D	в	U	м	Surface Water Elev. NA	ft	D	в	U	м
STRUCT. NO. NA Station NA		Е	L	С	0	Stream Bed Elev. NA	_ 't	E	L	С	0
		Ρ	0	S	I			P	0	S	I
BORING NO. SGB-25		T	W		S	Groundwater Elev.:		T	W	•	S
Station 186+99 Offset 32.08ft RT		н	S	Qu	Т	First Encounter None		н	S	Qu	т
Offset <u>32.08ft RT</u>	e	(ft)	(/6")	(tsf)	(%)	Upon Completion NA	_ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev. 602.50	π	(14)	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(131)	(70)	After Hrs. NA	_ π	(14)	(,,,)	(131)	(70)
6 inches of Asphalt 8 inches of Concrete						Very Hard Gray, Moist					
8 inches of Sand and Gravel						SILT, A-4 (continued)			10		
	600.70		4	25	23				19 47		16
Very Stiff	000.10		3	2.5 P	23				50/4		10
Black and Gray, Moist			-	Г					00/1		
CLAY, A-7-6											
	598.50		2				578.50		15		
Very Stiff to Hard	390.30		4	2.5	18	Hard	578.50		12	4.6	15
Brown and Gray, Moist		-5	8	P		Gray, Moist		-25	13	В	_
SILTY CLAY, trace gravel, A-6						SILTY CLAY, trace gravel, A-6					
			4						4		
			6	5.0	14				7	6.3	15
			11	Р					8	В	
	593.50		16	10.0	10				3	07	45
Very Hard Gray, Moist		_	21 21	10.0	12				7 9	6.7	15
SILTY CLAY, trace gravel, A-6		-10	21	В		End of Boring	572.50	-30	9	В	
		_									
Very Hard	591.50		45								
Gray, Moist			36		12						
SILT, trace gravel, A-4			33		12						
			11								
			22		10						
		-15	24					-35			
		_	8								
	585.50		21		11						
Very Hard Gray, Moist		_	40								
SILT, A-4											
		_	13								
			47		15						
		-20	50/4								
		-20	1	1	1			-40	1		

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SECTION	ROUTE FAU 2857 - Wood Str	reet DE	SCRI	PTION	I	Prop	osed Wood Street Improve	ements	L(DGG	ED BY	J	R
COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. NA P B U M Surface Water Elev. NA ft P B U M Surface Water Elev. NA ft P B U M Surface Water Elev. NA ft P B U M Surface Water Elev. NA ft P B U M Surface Water Elev. NA ft F B U M Surface Water Elev. NA ft F B U M Surface Water Elev. NA ft (ft) (ft) (ft) (ft) (ft) (ft) (ft) (ft) NA ft NA ft (ft)	(145,146 & 1468-2	2)WRS &											
COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO STRUCT. NO. NA B U M Surface Water Elev. NA ft B U M Station NA Ft Station Station NA ft V M Station Station 109:40 M Station Station Station Station NA ft Station Station <td>SECTIONB-1</td> <td></td> <td>_ L</td> <td></td> <td>ION _</td> <td>Wood</td> <td>Street, SEC., TWP., RNG</td> <td>i<u>.</u> • • • • • • • • • • • • • • • • • • •</td> <td>0007</td> <td></td> <td></td> <td></td> <td></td>	SECTIONB-1		_ L		ION _	Wood	Street, SEC., TWP., RNG	i <u>.</u> • • • • • • • • • • • • • • • • • • •	0007				
STRUCT. NO. NA P B U M Surface Water Elev. NA ft P B U M Station 190:40 1 S 1 Groundwater Elev. NA ft F V S 1 Offset 27.00fL1 (ft) (ft)<	COUNTY		- MC	тилл							۸١		
Station NA F L C O I NA F L C O Station NA F L C O Station NA F L C O Station NA T W S Qu T W S Cu T W S Cu T W S Cu T W S Cu T W Cu T T T T <		DRILLING									AL	10	
Station NA F L C O I NA F L C O Station NA F L C O Station NA F L C O Station NA T W S Qu T W S Cu T W S Cu T W S Cu T W S Cu T W Cu T T T T <			п	в	U	м	Curfees Weter Flore		£4	П	в	U	м
BORING NO. SGB-26 130440 (Pfret P T V W V U V W V U V W V W<	Station NA						Surface water Elev.		_ TL #			-	
Station 190+40 H S Qu T First Encounter 582.0 ft M S Qu T Offset 27.00TLT 603.00 ft (ft) (fs) (fs								INA	_ 11				-
Station 190+40 Participance First Encounter S22.0 H S Uu I Offset 27.00H LT MA ft	BORING NO. SGB-26		Т	W		S	Groundwater Fley.:			Т	W		S
Ground Surface Elev. 603.00 ft (W) (V) (V) (V) AfterHrs. NA_ft (W) (V) (V) </td <td>Station 190+40</td> <td></td> <td>н</td> <td>S</td> <td>Qu</td> <td>T</td> <td></td> <td>582.0</td> <td>ft 🔳</td> <td>н</td> <td>S</td> <td>Qu</td> <td>Т</td>	Station 190+40		н	S	Qu	T		582.0	ft 🔳	н	S	Qu	Т
Ground Surface Elev. 603.00 ft (W) (V) (V) (V) AfterHrs. NA_ft (W) (V) (V) </td <td>Offset 27.00ft LT</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Upon Completion</td> <td>NA</td> <td>ft</td> <td></td> <td></td> <td></td> <td></td>	Offset 27.00ft LT						Upon Completion	NA	ft				
8 inches of Sand and Gravel Very Stiff Black and Gray, Moist CLAY, A-7-6 Very Stiff to Very Hard 599.00 2 2 Very Stiff to Very Hard 599.00 2 2 Very Stiff to Very Hard 590.00 2 2 10 2 2 10 2 2 10 2 2 10 2 2 10 2 2 10 2 2 10 2 2 10 10 2 2 10 10 2 2 10 10 2 2 10 10 2 2 10 10 2 2 10 10 2 2 10 11 12 2 9 2 1 12 2 9 2 1 12 2 9 2 1 12 2 9 2 1 11.7 10 2 1 9 2 1 10 2 1 10 2 1 10 2 1 10 2 1 10 2 1 10 2 1 10 2 1 10 2 1 10 2 2 10 11 11 12 2 1 11.7 12 12 12 11.7 12 13 12 13 12 13 12 13 12 13 12 13 12 13 12 13 12 13 12 14 15 15 15 17 12 15 17 12 16 10 10 11 10 11 11 12 12 13 12 13 12 13 12 13 12 13 12 13 12 13 12 13 12 14 15 15 15 17 12 15 17 12 16 17 12 16 17 12 16 17 12 16 17 12 16 17 12 16 17 12 16 17 17 12 16 17 12 16 17 17 12 16 17 17 12 16 17 17 12 16 17 17 12 16 16 19 16 19 16 19 16 16 19 16 17 17 12 18 15 15 15 15 15 15 15 15 15 15	Ground Surface Elev. 603.	00 ft	(ft)	(/6")	(tsf)	(%)	After Hrs	NA	ft	(ft)	(/6")	(tsf)	(%)
601.80 2 4 302.00 9 Black and Gray, Moist CLAY, A-7-6 2 2.0 10 19 16 599.00 2 - - - 27 16 599.00 2 - - - - 10 - 599.00 2 - - 10 - - 10 - Very Stiff to Very Hard - 2 2.0 24 - - 10 - SILTY CLAY, trace gravel, A-6 - </td <td>6 inches of Asphalt</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>L</td> <td></td> <td></td> <td></td>	6 inches of Asphalt									L			
Wery Stiff Black and Gray, Moist 2 2 2.0 10 10 10 S12 Very Stiff to Very Hard 9 2 2 10 </td <td>8 inches of Sand and Gravel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>582.00</td> <td>v</td> <td></td> <td></td> <td></td>	8 inches of Sand and Gravel								582.00	v			
Very Stiff to Very Hard - 2 2.0 10 599.00 2 - - - Very Stiff to Very Hard - 2 2.0 24 SILTY CLAY, trace gravel, A-6 - - - - 594.00 10 - - - - 12 9.2 10 - - - 594.00 10 - - - - 594.00 10 - - - - 6ray, Moist - - - - - 594.00 10 - - - - 7 11 10 - - - 7 12 9.2 10 - - 7 12 9.2 10 - - 7 12 9.2 10 - - 6ray, Moist - - - 23 10 51LT A-4 - - - - - 18 15 - - - - 7 - - - - - 6ray, Moist - - </td <td>Von Stiff</td> <td>601.80</td> <td></td> <td>2</td> <td></td> <td></td> <td>Very Hard</td> <td></td> <td>002.00</td> <td><u> </u></td> <td>9</td> <td></td> <td></td>	Von Stiff	601.80		2			Very Hard		002.00	<u> </u>	9		
CLAY, A-7-6 3 P 3 P 1 27 1 599.00 2 2 1 1 1 1 1 1 Yery Stiff to Very Hard 2 2.0 24 24 9 25 39 9 SILTY CLAY, trace gravel, A-6 - 2 2.0 24 - 13 - 24 9 12 9.2 10 - - 13 - - 23 10 5 - - 12 9.2 10 - - 23 10 6ray, Moist - - 1 17 10 - - 23 10 6ray, Moist - - 1 17 10 - 23 10 592.00 - - 1 - - 23 10 6ray, Moist - 18 15 - - - - SILT, A-4 - 26 15 - - - - - - - - - - - - - - - - - - -				2	2.0	10	Gray, Moist				19		16
599.00 2 - Very Stiff to Very Hard Brown and Gray, Moist SILTY CLAY, trace gravel, A-6 2 2.0 24 - 2 2.0 24 - - - - - 12 9.2 10 - 12 9.2 10 - 12 9.2 10 - 12 9.2 10 - 17 B - - - - 10 - - 10 - - 12 9.2 - 12 9.2 - 17 B - - - - 10 - - 24 B SILTY CLAY, trace gravel, A-6 - - 11 - Gray, Moist 11 - SILT, A-4 - - - 13 - - 13 - - - - - 13 - - - - - - - - - - - - - <td></td> <td></td> <td></td> <td>3</td> <td>Р</td> <td></td> <td>SILT, with gravel, A-4</td> <td></td> <td></td> <td></td> <td>27</td> <td></td> <td></td>				3	Р		SILT, with gravel, A-4				27		
Very Stiff to Very Hard Brown and Gray, Moist SILTY CLAY, trace gravel, A-6 2 2.0 24 P -5 - <	- , -												
Very Stiff to Very Hard Brown and Gray, Moist SILTY CLAY, trace gravel, A-6 2 2.0 24 P -5 - <													
Very Stiff to Very Hard Brown and Gray, Moist 2 2.0 24 2 P 2 2.0 24 9 SILTY CLAY, trace gravel, A-6 -5 2 P - - - - - 39 9 - - 2 P - - - 39 9 SILTY CLAY, trace gravel, A-6 - - - - - 13 - 594.00 10 - - - - - 12 - - 12 - - - - 24 12 - - - - - - - - - - 13 - - - - - - - 23 10 - - - 23 10 - - - 23 10 -		599 00		2							10		
SILTY CLAY, trace gravel, A-6 	Very Stiff to Very Hard	000.00		2	2.0	24					21		9
SILTY CLAY, trace gravel, A-6 - 5 5 5			-5	2	Р					-25	39		
- 12 9.2 10 - 17 B - - - - 594.00 10 - - 21 11.7 Gray, Moist -10 24 SILTY CLAY, trace gravel, A-6 - 592.00 - - </td <td>SILTY CLAY, trace gravel, A-6</td> <td></td>	SILTY CLAY, trace gravel, A-6												
- 12 9.2 10 - 17 B - - - - 594.00 10 - - 21 11.7 Gray, Moist -10 24 SILTY CLAY, trace gravel, A-6 - 592.00 - - </td <td></td>													
17 B 37 37 594.00 10 11 17 10 Gray, Moist 21 11.7 10 23 10 SILTY CLAY, trace gravel, A-6 -10 24 B 573.00 -30 38 10 Very Hard -10 24 B - - 23 10 SILTY CLAY, trace gravel, A-6 -10 24 B - - - 23 10 SiLTY CLAY, trace gravel, A-6 -10 24 B - <td></td> <td></td> <td></td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>13</td> <td></td> <td></td>				5							13		
Very Hard 21 11.7 10 Gray, Moist -10 24 B SILTY CLAY, trace gravel, A-6 -10 24 592.00 -10 -10 Very Hard -10 24 Gray, Moist -11 Gray, Moist -11 -13 -11 -15 27 -16 19					9.2	10							12
Very Hard 21 11.7 10 Gray, Moist -10 24 B 573.00 -30 38 10 SILTY CLAY, trace gravel, A-6 -10 24 B End of Boring -30 38 10 Very Hard 592.00 11 -				17	В						37		
Very Hard 21 11.7 10 Gray, Moist -10 24 B 573.00 -30 38 10 SILTY CLAY, trace gravel, A-6 -10 24 B End of Boring -30 38 10 Very Hard 592.00 11 -													
Very Hard 21 11.7 10 Gray, Moist -10 24 B 573.00 -30 38 10 SILTY CLAY, trace gravel, A-6 -10 24 B End of Boring -30 38 10 Very Hard 592.00 11 -													
Gray, Moist SILTY CLAY, trace gravel, A-6 10 24 B 573.00 -30 38 592.00 - - - - - - - - Very Hard Gray, Moist SILT, A-4 11 - - - - - - 18 15 - - - - - - 26 - - - - - - 13 - - - - - - 17 12 - - - - - 10 - - - - - 16 19 19 - - - -		594.00											
SILTY CLAY, trace gravel, A-6 -10 -10 -10 -30						10							10
Subscription Subscription Subscription Subscription Subscription Very Hard Gray, Moist SILT, A-4 11 - - 18 15 - - 26 - - - - 13 - - - 17 12 - - - - - - 10 - - 16 19 - -			-10	24	В				573.00	-30	38		
Very Hard 11	OILTT OLAT, Tace gravel, A-0						End of Boring						
Gray, Moist SILT, A-4		592.00											
SILŤ, A-4													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$						15							
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u> </u>		_	20									
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$													
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				10									
<u>-15</u> 27 <u>-35</u> <u>-</u> 10 <u>-</u> 16 19						10							
						12							
16 19			-15	21						-35			
16 19													
16 19				10									
			_			19							
			_	9									
						16							
$\frac{1}{20}$ 22			-20							_40			

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Date 10/19/15

ROUTE FAU 2857 - Wood Stree	t DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	LC)GGI	ED BY	J	R
(145,146 & 146S-2)V	VRS &	_									
SECTION		_ L	OCAT	ION _	Wood	<u>Street</u> , SEC. , TWP. , RNG. , de 41.6190931, Longitude -87.66	16080				
COUNTY Cook DF		- ME	тиор						ΔΙ	ITO	
		D	в	U	м	Surface Water Elev. NA	ft	D	в	υ	м
STRUCT. NO. NA Station NA		Е	L	C	0	Stream Bed Elev. NA	_ ft	Е	L	C	0
• • • • • • • • • • • • • • • • • • •		Р	0	S	I			Ρ	0	S	I
BORING NO. SGB-27		Т	W	_	S	Groundwater Elev.:		Т	W		S
Station 193+01 Offset 32.16ft RT		н	S	Qu	Т	First Encounter 577.0	_ ft 👤	н	S	Qu	Т
Offset 32.16ft RT		(64)	((0))	(4 - 5)	(0/)	Upon Completion NA	_ ft	(64)	(/OII)	(4-5)	(0/)
Ground Surface Elev. 603.00	ft	(π)	(/6")	(tsf)	(%)	After HrsNA	_ ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt						Very Hard					
8 inches of Concrete 8 inches of Sand and Gravel						Gray, Moist					
o inches of Sand and Graver			10			SILTY CLAY, trace gravel, A-6 (continued)			12		
Very Stiff	601.20		7	2.0	26				14	8.3	11
Black and Gray Moist			5	Р					21	В	
Clay, A-7-6											
		_									
	599.00		1						13		
Stiff to Hard			2	1.5	19				15	9.2	11
Brown and Gray, Moist SILTY CLAY, trace gravel, A-6		-5	3	Р				-25	23	В	
			_				577.00	V			
			7			Dense Crov Moint			10		
			13 10	7.5	8	Gray, Moist SAND, medium grained, A-3			16 28		9
			10	В					28		
			0						0		
Very Hard	594.00		8 14	10.0	12	Very Hard	574.00		8 14		8
Gray, Moist			16	B	12	Gray, Moist			20		0
SILTY CLAY, trace gravel, A-6		-10	10			SILT, trace gravel, A-4	573.00	-30			
	500.00	_				End of Boring	_				
Very Hard	592.00		10								
Gray, Moist		_	24		10						
SILŤ, trace gravel, A-4			44								
		_						_			
			10								
			22		10						
		-15	23					35			
	587.00										
Very Hard	001.00		12								
Gray, Moist			18	8.3	10						
SILTY CLAY, trace gravel, A-6			24	В							
			10								
			16	10.0	12						
		-20	20	В				-40			

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Date	10/15/15
Date	10/10/10

ROUTE FAU 2857 - Wood Stree	et DE	SCR	PTION	I	Prop	osed Wood Street Improve	ments	LC	DGGI	ED BY	J	R
(145,146 & 146S-2)	WRS &											
(145,146 & 146S-2) SECTION		L		ION _	Wood	<u>Street</u> , SEC. , TWP. , RNG. (de 41.6199126, Longitude)	, 97.660	021				
COUNTY Cook D					Lautu	ue +1.0133120, Longitude	-01.000			ΔΙ	ITO	
		D	в	U	м	Surface Water Flov	ΝΙΑ	4	D	в	U	м
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev Stream Bed Elev		_ IL ff	E	L	Ċ	0
		Ρ	0	S	1		11/ 1		Р	0	S	I
BORING NO. SGB-28		Т	W		S	Groundwater Elev.:			Т	W		S
BORING NO. SGB-28 Station 196+00 Offset 27.00ft LT		н	S	Qu	Т	First Encounter	577.0	ft 🔳	н	S	Qu	Т
Offset 27.00ft LT						Upon Completion	NA	ft				
Ground Surface Elev. 603.00) ft	(ft)	(/6")	(tsf)	(%)	After Hrs	NA	_ ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt		1										
8 inches of Concrete								582.00				
8 inches of Sand and Gravel			4			Very Hard				24		
Very Stiff	601.20		3	2.0	23	Gray, Moist				50/5		8
Black and Gray, Moist			3	P		SILT, with gravel, A-4						
CLAY, A-7-6	600.00											
CLAY, A-7-6 Very Stiff to Hard												
BIOWITATIQ Gray, MOISL			4							21		
SILTY CLAY, trace gravel, A-6			2	2.0	21					31		10
		-5	5	Р					-25	32		
		_										
									y			
			8		10					17		10
			6	3.0	13	Very Hard		576.00		22 37		10
			0	Р		Green and Gray, Moist				31		
						SANDY LOAM with shale						
			47			fragments, A-4				50/4		5
			17 18	7.0	12	Auger Refusal at 29 ft.		574.00		50/4		5
			20	P 7.0	12	End of Boring						
		-10	20	Г					-30			
Very Hard	592.00		13									
Gray, Moist			31		7	•						
SILT, trace gravel, A-4			50/5		'							
	589.50											
Hard to Very Hard	009.00		10									
Gray, Moist			14	7.5	9	-						
SILTY CLAY, trace gravel, A-6		-15	28	В					35			
						-			00			
			10									
			20	8.3	10							
			21	В						ĺ		
			7									
			13	9.2	12							
		-20	15	В					-40			

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Date 10/19/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	L(DGGI	ED BY	J	R
(145,146 & 146S-2))WRS &	-									
SECTION B-1		_ L		ION _	Wood	Street, SEC., TWP., RNG.,	054				
						de 41.620721, Longitude -87.6607			A 1		
COUNTY Cook C	JRILLING		THOD			HSA HAMMER	ITPE		AL	10	
		D	в	U	м		<i>c</i> ,	D	в	U	м
STRUCT. NO. NA Station NA		E	L	c	Ö	Surface Water Elev. NA	_π	E	L	c	Ö
Station NA		P	ō	S	Ĩ	Stream Bed Elev. NA	_ π	P	ō	S	ĩ
BORING NO. SGB-29		T	Ŵ	-	S	Groundwater Elev.:		T	Ŵ	•	S
Station 198+94		н	S	Qu	Т	First Encounter584.0	ft 🛡	н	S	Qu	Т
Station 198+94 Offset 33.51ft RT						Upon Completion NA					
Ground Surface Elev. 603.00	0 ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)
4 inches of Asphalt						Medium Dense to Dense					
6 inches of Concrete						Grav. Moist					
8 inches of Sand and Gravel			2			SAND, medium grained, A-3			4		
	601.40	. —	2	2.0	26	(continued)			8		13
Very Stiff Black and Gray, Moist to Very			3	2.0 P	20				18		10
Moist			-	•							
CLAY, A-7-6											
	500.00		2						2		
Very Stiff to Hard	599.00		2	2.5	24				3		13
Brown and Gray, Moist			2	B	21				22		10
SILTY CLAY, trace gravel, A-6		-5	-	-				-25			
			6						8		
			7	5.0	13				17		12
			14	P.0					23		12
				•							
	504.00		8						10		
Very Hard	594.00		14	11.7	11				15		13
Gray, Moist			1/	B			F70.00		10		10
SILTY CLAY, trace gravel, A-6		-10				End of Boring	573.00	-30			
			9								
			17	10.4	10						
			19	B							
			8								
			22	10.0	10						
		45	26	В							
		-15		_				-35			
	587.00		1								
Very Hard	007.00		6								
Gray, Moist			17		16						
SILŤ, A-4			19								
	584.50		1								
Medium Dense to Dense	504.50		5								
Gray, Moist		<u> </u>	13		20						
SAND, medium grained, A-3		_20	14					_40			

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Date 10/21/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	L(DGG	ED BY	J.	JR
(145,146 & 146S-2))WRS &	-									
SECTION B-1		_ L	OCAT	ION _	Wood	Street, SEC. , TWP. , RNG. ,	00500				
			TUOD			de 41.6215582, Longitude -87.66					
COUNTY Cook I	JRILLING	5 ME	THOD			HSA HAMMER	IYPE		AL	10	
		D	в	U	м			D	в	U	м
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev. NA	_ ft	E	L	C	O
Station NA		P	ō	s	Ĭ	Stream Bed Elev. NA	_π	P	ō	Š	ĩ
BORING NO. SGB-30		T	Ŵ	-	S	Groundwater Elev.:		T	Ŵ	•	S
Station 202+00		н	S	Qu	Т	First Encounter None	ft	н	S	Qu	Т
Station 202+00 Offset 31.83ft LT						Upon Completion NA					
Ground Surface Elev. 602.5	0 ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt						Hard to Very Hard					
8 inches of Concrete	601.60					Gray, Moist					
8 inches of Sand and Gravel	/		3			SILT, with gravel, A-4	504.00		50/3		
Very Stiff			4	2.5	22	Auger Refusal at 21.5 ft.	581.00		00/0		
Black and Gray, Moist to Very			4	P.0		End of Boring					
Moist CLAY, A-7-6											
CEAT, A-7-0											
	598.50		2								
Very Stiff to Hard	596.50		3	2.5	26						
Brown and Gray, Moist		-5	3	P				-25			
SILTY CLAY, trace gravel, A-6		3		-				-20			
			10								
			21	4.0	21						
			33	Р							
	593.50		6								
Very Hard			13	12.5	12						
Gray, Moist		-10	15	В				-30			
SILTY CLAY, trace gravel, A-6											
	591.50										
Hard to Very Hard			10								
Gray, Moist to Very Moist			21		21						
SILŤ, A-4			22								
			14								
			27		15						
		-15	28					-35			
			10					_			
			23		18						
			24								
			5								
			50/5		10						
	582 50	-20						-40			

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Date 10/22/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	L0	DGGI	ED BY		IH
(145,146 & 146S-2)	WRS &										
SECTION B-1		L		ION _	Wood	Street, SEC., TWP., RNG.,	7004				
			TUOD			de 41.6223831, Longitude -87.660					
COUNTY Cook D	RILLING		THOD			HSA HAMMER	ITPE		AL	10	
		D	в	U	NA		-	D	в	U	NA.
STRUCT. NO. NA Station NA		D E	L	C	M O	Surface Water Elev. NA	_ ft	D E	BL	C	M O
Station NA		P	Ō	S	I	Stream Bed Elev. NA	_ ft	P	0	S	I
		T	w	5	s			T	w	3	S
BORING NO. SGB-31		н.	S	Qu	T	Groundwater Elev.:	a 🛡	H.	S	Qu	Т
Station 205+00 Offset 32.59ft RT						First Encounter 576.5					•
Ground Surface Elev602.50) ft	(ft)	(/6'')	(tsf)	(%)	Upon Completion NA	_ IL #	(ft)	(/6'')	(tsf)	(%)
	<u> </u>	()	,	(001)	(/	After Hrs. NA	_ 11	()	(-)	(,	(,
6 inches of Asphalt 10 inches of Concrete			-			Very Hard Gray, Moist			-		
2 inches of Gravel			_			SILT, A-4 (continued)					
	600.90		5						34		
Stiff to Very Stiff			4	3.0	17				46		9
Black, Moist to Very Moist			5	Р					50/3		
CLAY with sand, trace organic, A-7-6											
A-7-0											
			2						47		
			2	1.0	29				50/5		8
		-5	2	P				-25			
									1		
	596.50		1					•			
Hard			5			Fragments of limestone recovered			50/3		8
Brown and Gray, Moist			7	7.5	14	at 26 ft					
SILTY CLAY, A-6			10	Р					1		
	594.00		1						1		
Very Hard	001.00		10			Auger Refusal at 28.7 ft.	573.80		50/2		8
Gray, Moist			19		7	End of Boring					
SILT, A-4		-10	25					-30			
								00			
			30								
			37		16						
			45						-		
									-		
			-						-		
			47								
			50/3		16				-		
					10				-		
		-15	-					-35			
		_	{								
Vory Hord	586.50		17								
Very Hard Gray, Moist			27		40						
SILT, A-4			32		16						
			52								
			ł								
			10								
			19								
			25		16						
		-20	33					40			

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Date 12/4/15

ROUTE FAU 2857 - Wood Street	DESC	RIPTION	۱	Prop	osed Wood Street Improvements	L(DGG	ED BY	J	P
(145,146 & 146S-2)WRS	&									
SECTIONB-1		LOCAT		Wood	Street, SEC., TWP., RNG.,	700				
					de 41.623234, Longitude -87.6609					
COUNTY Cook DRILL					HSA HAMMER	ITPE		AL	10	
		в	U	м				в	U	м
STRUCT. NO. NA Station NA	D E		C	0	Surface Water Elev. NA	_ ft	D E	L	c	O
Station NA	P	Ō	s	I	Stream Bed ElevNA	_π	P	ō	s	ĭ
	Ι. T			s	Crown dweter Flow		T.	w	Ŭ	s
BORING NO. SGB-32	H H		Qu	Ť	Groundwater Elev.: First Encounter583.5_	4 V	н.	S	Qu	Ť
Station 208+10 Offset 34.07ft LT				-	Upon Completion NA			-		-
Ground Surface Elev. 604.50	ft (ft) (/6")	(tsf)	(%)	After HrsNA	ff	(ft)	(/6")	(tsf)	(%)
3.5 inches of Asphalt			· ,		Very Hard		. ,	· · ·	. ,	. ,
11.5 inches of Concrete	_	_			Gray, Moist					
3 inches of Sand and Gravel					Silt, A-4 (continued)		T	50/4		0
602	.90 –	1	0.0	00				50/4		8
Stiff			2.0	28						
Black, Very Moist CLAY, A-7-6	-	2	P							
ULAT, A-7-0		_								
	_					581.00				
		3	4.5	07	Auger refusal at 23.5 ft. End of Boring					
	-	5	1.5	27						
599	.50 -	5 5	В				-25			
Hard to Very Hard Gray, Moist	_	_					_			
SILTY CLAY, A-6		-								
	-	6 14	74	-						
		14	7.1 B	8						
	-	10								
		_								
	-	6								
		11	7.7	13						
	-	11	B							
	1	0 11					30			
	_	_								
		11								
	-	24	12.0	10						
		28	P							
	-		<u> </u>							
		-								
	-	12								
		28	13.3	8						
	_	35	P							
	1	5	<u> </u>				-35			
	-									
		19								
	-	50/3		8						
	-									
586	00									
Very Hard		50/5		6						
Gray, Moist										
Silt, A-4	-2	0					-40			

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Date 10/22/15

ROUTE FAU 2857 - Wood Street	DESC	CRI	PTION	l	Prop	osed Wood Street Improvements	L(DGG	ED BY	J	IH
(145,146 & 146S-2)WRS	8 &										
(145,146 & 146S-2)WRS		. L	OCAT	ION _	Wood	Street, SEC., TWP., RNG.,	7400				
COUNTY Cook DRILL	ING		HOD			HSA HAMMER	ITPE		AL	010	
			в	U	M			D	в	U	м
STRUCT. NO. NA Station NA		D E	L	C	M O	Surface Water Elev. NA	_ft	D E	L	C	0
Station NA		P	Ō	S	I	Stream Bed Elev. NA	_π	P	ō	S	i
		т	w	U	s	Croundwater Flow		Т	w		S
BORING NO. SGB-33 Station 210+99		Ĥ	S	Qu	T	Groundwater Elev.: First EncounterNone	ft	Ĥ	S	Qu	T
Offset 30.37ft RT			-			Upon Completion NA					
Ground Surface Elev. 604.00	ft (ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6'')	(tsf)	(%)
3 inches of Gravel	75		. ,					. ,	. ,	. ,	
Stiff	.75	_									
Black, Very Moist			5				582.90		50/1		
CLAY with sand, trace organic,		_	2	1.5	37	Auger refusal at 21.1 ft.			<u></u>		
A-7-6			2	1.5 P	31	End of Boring					
		_	2	Г							
		_	1								
600 Stiff to Very Stiff	.00		1 2	1.0	30						
Brown and Gray, Moist to Very			2	1.0 P	30						
Moist		-5	2	Р				-25			
SILTY CLAY, A-6		_									
			~								
		_	2	0.0	10						
			4 9	2.0	12						
			9	Р							
	.50		_								
Hard to Very Hard Gray, Moist			5	0.0							
SILT, A-4		_	21 25	8.0	9						
		-10	20	Р				30			
		_									
			~								
		_	6	0.5	10						
			18 20	6.5	10						
		_	20	Р							
			•								
			8	7.0							
		_	15	7.0	11						
		-15	24	Р				-35			
		_									
			23								
	_		29		NR						
			37								
	_										
			24								
			34		11						
		-20	40					-40			

Illinois Department of Transportation

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Date <u>11/30/15</u>

ROUTE _	FAU 2857 - Wood Stre		SCR	PTION	I	Prop	osed Wood Street Imp	rovements	LO	GGED BY _	JP
SECTION	(145,146 & 146S-2) 	WR5 &	_ L			Wood	Street, SEC. , TWP. , R	NG.,			
						Latitu	de 41.6248581, Longi				
COUNTY	Cook D	RILLING	ME	THOD			HSA	_ HAMMER 1	YPE _	AUTO)
STRUCT.	NO NA		D	в	U	м	Surface Water Elev.	NA	ft		
	NA		E	L	C	0	Stream Bed Elev.	NA	ft		
			P T	O W	S	I S					
Station	IO. <u>SGB-34</u> 214+02		н	S	Qu	T	Groundwater Elev.: First Encounter	594.5	ff 🛡		
Offset	214+02 33.00ft LT						Upon Completion	<u>004.0</u>	ft		
	Surface Elev603.50	0 ft	(ft)	(/6'')	(tsf)	(%)	After Hrs.	NA	ft		
	f Asphalt	603.10									
Very Loos			·								
Brown, Mo	bist to Wet			3							
	ce gravel and clay,			4		12					
A-2-4				4							
		599.50		1							
Soft				2	0.3	28					
Gray, Very	/ Moist		-5	1							
CLAY, trad	ce gravel, A-7-6										
		597.50									
	to Very Hard			4							
Gray, Mois				5	3.5	13					
gravel, A-6	AY, trace sand and			8	В						
gravel, / t											
			Y	50/5	9.0	13					
			-10								
				20							
				30 43	2.0	10					
				43	3.8 S	12					
				· · ·	3						
Very Stiff	to Very Hard	590.00		30							
Gray, Mois				43	2.3	18					
SILT, A-4				48	S						
			-15								
				30							
Noted sha	le fragments at 16.5 ft.	586.50		50/4		7					
	usal at 17.0 ft.	500.50				-					
End of Bo	ring										
				1							
			-20								

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Date 10/23/15

ROUTE FAU 2857 - Wood Stree			PTION	I	Prop	osed Wood Street Impro	ovements	LOGG	ED BY		IH
(145,146 & 146S-2)\ SECTION	WRS &	ı	OCAT	ION	Wood	Street, SEC., TWP., R	NG				
				.on _	Latitu	de 41.6256747, Longit	ude -87.660771	13			
COUNTY Cook D	RILLING	S ME	THOD			HSA	HAMMER TYP	PE	AL	JTO	
		_	_						_		
STRUCT. NO. NA Station NA		D E	B	U C	M	Surface Water Elev Stream Bed Elev	NA ft		B	U C	M
Station NA		P	L	S	0	Stream Bed Elev.	<u> </u>	E P	LO	S	0
BODING NO SCD 25		T	w		s	Groundwater Elev.:		Γ,	w		s
BORING NO. SGB-35 Station 216+99		H	S	Qu	T	First Encounter	None ft		S	Qu	T
Station 216+99 Offset 25.08ft RT						Upon Completion	NA ft				
Ground Surface Elev. 604.00	ft	(ft)	(/6")	(tsf)	(%)	First Encounter _ Upon Completion _ After Hrs	NA ft	(ft)	(/6'')	(tsf)	(%)
7 inches of Asphalt		I									
7 inches of Concrete							583	3.00			
2 inches of Gravel	602.60		5			Auger refusal at 21 ft			50/1		4 /
Brown and Gray, Moist FILL: SILTY CLAY with sand, A-6			5	3.0	19	End of Boring					
FILL. SILTY CLAY WITT Sand, A-0			4	Р							
			3	0.0							
			3 2	2.0 P	23			-25			
		5	2	Г				25			
								_			
			1								
			2		NR						
			1								
	595.50										
Very Stiff			3								
Gray, Moist SILTY CLAY, A-6		_	4	3.0	18						
		-10	4	Р				30			
		_						_			
Very Hard	593.00		10								
Gray, Dry to Moist			28		9						
SILT, A-4			35		9						
			17					_			
			50/3		11						
		-15						-35			
			33								
			50/3		2						
								_			
		_	18								
			33		9						
		-20	46					-40			
L		-20			1	11		-+0			

Illinois Department

of Transportation

Division of Highways GSG Consultants, Inc. Page <u>1</u> of <u>1</u> Date 11/20/15

Proposed Wood Street Improvements LOGGED BY JP ROUTE FAU 2857 - Wood Street DESCRIPTION (145,146 & 146S-2)WRS & _____ B-1 SECTION LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.6265002, Longitude -87.6609896 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO В U Μ STRUCT. NO. NA D Surface Water Elev. NA ft Е С L 0 NA Stream Bed Elev. NA ft Station Ρ S ο L т W S BORING NO. SGB-36 Groundwater Elev.: н S Qu Т Station _____ Offset _____ 220+00 First Encounter <u>585.0</u> ft **T** Upon Completion 33.00ft LT NA ft (ft) (/6") (%) (tsf) Ground Surface Elev. 603.00 ft After Hrs. NA ft 8 inches of Asphalt 7 inches of Sand and Gravel 601.70 9 Very Stiff 5 NR Brown and Gray, Moist 5 SILTY CLAY, A-6 4 6 24 5 2 4 2.3 21 4 В 8 594.00 Very Hard 12 11 Gray, Moist SILT, A-4 23 593.00 -10 Hard to Very Hard Gray, Moist 9 SILTY CLAY, A-6 12 11 5.2 16 S 12 40 5.5 10 18 Ρ 50/5 8 584.40 50/3 5 Auger refusal at 18.6 ft End of Boring -20

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways GSG Consultants, Inc.

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Date 10/23/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY	JH
(145,146 & 146S-2)\	WRS &								
SECTION B-1		L	OCAT	ION _	Wood	Street, SEC., TWP., R	RNG. ,		
						de 41.6273218, Longi			
COUNTY Cook D	RILLING	5 ME	THOD			HSA	_ HAMMER	IYPE AU	10
		n	в	U	м				
STRUCT. NO. NA Station NA		D E	L	C	0	Surface Water Elev.	NA	_ft	
Station NA		P	ō	s	i	Stream Bed Elev.	NA	_π	
BORING NO. SGB-37		T	Ŵ	•	S	Groundwater Elev.:			
Station 222+99		H	S	Qu	T	First Encounter	None	ft	
Offset23.97ft RT						Upon Completion			
Ground Surface Elev601.50) ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	
8 inches of Asphalt									
4 inches of Concrete									
	600.30		5						
Very Stiff			4	3.0	24				
Dark Gray, Moist CLAY, A-7-6			4	P					
			3						
			4	2.0	25				
		-5	4	P					
		3		-					
	595.50								
Hard	595.50		3						
Brown, Moist			6	4.2	19				
SILTY CLAY, A-6			10	В					
	593.00								
Hard			8						
Gray, Moist			12	5.0	11	-			
SILTY CLAY, A-6		-10	14	Р					
	590.50								
Hard to Very Hard			12						
Gray, Moist			15	5.0	13				
SILT, trace gravel, A-4			19	Р					
			12						
			23	5.0	10				
		-15	29	Р					
			49		19				
			50/0						
Trace Limestone and Shale at			28						
19.3 ft.	582.20		50/2		9				
Auger refusal at 19.3 ft.		-20							

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Date 12/7/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Improvements	LOGO	GED BY		IP				
(145,146 & 146S-2))WRS &	-												
SECTION B-1		_ L	OCAT	ION _	Wood	Street, SEC., TWP., RNG.,	0044							
			TUOD			de 41.6281684, Longitude -87.661								
COUNTY Cook I	JRILLING		THOD			HSA HAMMER		AL	010					
		D	в	U	м		ft D	в	U	м				
STRUCT. NO. NA Station NA		E	L	c	0	Surface Water Elev. NA	_ '' _	L	c	O				
Station NA		P	ō	s	Ĩ	Stream Bed Elev. NA	- π Ξ	Ō	s	Ĭ				
BORING NO. SGB-38		Т	Ŵ	-	S	Groundwater Elev.:	T	w		S				
Station 226+0876		н	S	Qu	Т	First EncounterNone	ff H	S	Qu	Т				
Station 226+0876 Offset 33.72ft LT						Upon Completion NA								
Ground Surface Elev. 601.0		(ft)	(/6")	(tsf)	(%)	After HrsNA	ft (ft)	(/6'')	(tsf)	(%)				
12 inches of Asphalt														
3 inches of Sand and Gravel						Trace Limestone fragments at 21		-						
	599.70		3			ft.	<u>579.90 — </u>	50/1		3 /				
Medium Stiff to Hard			3	4.0	20	Auger Refusal at 21.1 ft.	-							
Brown and Gray, Moist to Very			5	P		End of Boring		-						
Moist CLAY, A-7-6							-	-						
								-						
			2				-	-						
			2	0.8	28			-						
	596.00	-5	3	В				_						
Stiff to Very Hard	530.00						2	-						
Gray, Moist							-	-						
SILTY CLAY, trace sand and			3					-						
gravel, A-6			5	2.7	17		-	1						
			7	В				-						
							_	1						
								1						
			3				-	1						
			6	3.8	17			1						
		-10	7	В			-3	2						
								7						
							_	1						
			6					1						
			8	8.0	13		-	1						
			12	Р				1						
							-	1						
]						
Noted cobble pieces at 13.7 ft			50/3	1.8	11		_							
				P										
		-15					-3	5						
	585.00						_							
Dense		_	5											
Gray, Moist			16		9		_							
SAND, trace gravel, A-2-4			28											
							_							
	582.50													
Very Hard			50/2		8									
Gray, Moist		_												
SILT		-20					-4							

Illinois Department of Transportation

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Date 10/23/15

ROUTE FAU 2857 - Wood Street	DE	SCRI	PTION	I	Prop	osed Wood Street Imp	provements	LOGGED BY	EF
(145,146 & 146S-2)WF	RS &	-							
SECTIONB-1		_ L	OCAT	ION _	Wood	Street, SEC., TWP., I	<u>RNG.,</u>	7740	
						de 41.6289781, Long			~
COUNTY Cook DRIL			THOD			HSA		TYPE AUT	0
		D	в	U	м	Ourfeas Mater Flag	N1.0	6	
STRUCT. NO. NA Station NA	-	E	L	c	0	Surface Water Elev. Stream Bed Elev.		_π #	
	-	Ρ	Ō	S	Ī	Stream Deu Liev.		_ n	
BORING NOSGB-39		Т	w		S	Groundwater Elev.:			
Station 229+03	_	н	S	Qu	Т	First Encounter		ft	
Offset 31.42ft RT						Upon Completion			
Ground Surface Elev. 601.00	ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	
5 inches of Asphalt		I							
5 inches of Concrete 60	00.10								
1 inch of Gravel			4						
Stiff Dark Gray, Moist			2		24				
CLAY, A-7-6			3						
59	97.50								
Very Stiff to Hard			2						
Brown and Gray, Moist			4	2.5	21				
SILTY CLAY, A-6		-5	6	В					
			3						
			4	2.7	20				
			5	В					
			4						
			9	6.9	16				
		-10	15	В					
			_						
			5						
			10	3.3	22				
			16	В					
58	87.50		6						
Very Hard Gray, Moist			6	10.0	16				
SILTY CLAY, A-6			7 12	10.0 S	10				
		-15	12	5					
58 Voru Hard	35.00		7						
Very Hard Gray, Moist			7 28	6.0	12				
SILT, with shale, A-4			35	0.0 P					
				r"					
58 Augor refueel 19.6.#	32.40		50/1						
Auger refusal 18.6 ft End of Boring			00/1						
		-20							

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Date <u>11/30/15</u>

SECTION B-1 LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.6297929, Longitude -87.6610061	
Latitude 41 6297929 Longitude -87 6610061	
COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO	
STRUCT. NO. NA D B U M Surface Water Elev. NA ft Station NA NA P O S I Stream Bed Elev. NA ft	
BORING NO. SGB-40 T W S S Groundwater Elev.: Station 232+00 H S Qu T First Encounter None ft Offset 31.08ft LT (ft) (ft) (ft) (sf) (%) After Hrs. NA ft	
4 inches of Asphalt	
10 inches of Concrete 3 inches of Sand and Gravel 598.60 9	
Medium Stiff to Very Stiff 6 19 Brown and Gray, Moist 5 5	
591.50 Very Stiff to Hard	
Gray, Moist SILTY CLAY, trace sand and gravel, A-6	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	
7 8 7.3 12	
<u>-15</u> 9	
584.00 10 Very Hard 10 Gray, Moist 16 9	
Gray, Moist SILT, trace sand and gravel, A-4	
581.50 21	
Gray, Moist 580.60 50/5 7 SILT, with gravel, A-4 -20 -20 -20 -20	

Illinois De of Transpo Division of Highways GSG Consultants, Inc.	partn ortati	nen on	t		SC	DIL BORIN	IG LOO	3		<u>1</u> of <u>1</u> 10/23/15
ROUTE FAU 2857 - Wood Stre		CRIP	TION		Prop	osed Wood Street Imp	provements	LOGG	-	
(145,146 & 146S-2 SECTION)WRS &	_ LO	CAT		<u>Wood</u>	Street, SEC., TWP., F de 41.6306167, Long	RNG. , itude _87.660	7403		
COUNTY Cook I		METH	HOD						AUT	го
STRUCT. NO. NA Station NA BORING NO. SGB-41			B L O W	U C S	M O I S	Surface Water Elev. Stream Bed Elev. Groundwater Elev.:	NA NA	ft ft		
Station 235+00 Offset 43.54ft RT Ground Surface Elev. 599.5		H	S /6")	Qu (tsf)	Т (%)		None NA NA	ft ft ft		
6 inches of Asphalt 4 inches of Concrete 2 inches of Gravel Very Stiff		_	7							
Dark Gray and Brown, Moist CLAY, A-7-6	-		12 18		NR					
	-	5	3 3 3	2.8 P	25					
Hard Brown, Moist	593.50	_	3		- 10					
SILTY CLAY, A-6	-		4 6	6.3 B	19					
Hard Gray, Moist SILTY CLAY, A-6	591.00	-	6 8 11							
	-	-10	5							
	-	_	9 12	6.5 P	11					
	-		6 11	6.7	12					
	- 583.50		19	В						
Very Hard Gray, Moist SILT, trace shale, A-4 Auger Refusal at 17 ft.	582.50	5	50/4		10					
End of Boring	-									
		-20								

Illinois Department of Transportation Division of Highways GSG Consultants, Inc.

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Date 11/25/15	
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			PTION	l	Prop	osed Wood Street Improvements	LC)GGF	ED BY	J	IP			
(145,146 & 146S-2) SECTION	WRS &	ı	OCAT	ION	Wood	Street, SEC., TWP., RNG.,								
					Latitu	de 41.6314388, Longitude -87.66								
COUNTY Cook D	RILLING	6 ME	THOD		HSA HAMMER			TYPE AUTO						
			-						-		••			
STRUCT. NO. NA Station NA		D E	BL	U C	M O	Surface Water Elev. NA	_ft	D E	BL	U C	M O			
Station NA		P	ō	S	I	Stream Bed Elev. NA	_ ft	P	ō	S	ĭ			
BORING NO. SGB-42		T	w		S	Groundwater Elev.:		Т	W	-	S			
Station 238+00 Offset 25.58ft RT		н	S	Qu	Т	First Encounter597.5	_ ft 👤	н	S	Qu	Т			
Offset 25.58ft RT		(54)	((0))	4-6	(0/)	Upon Completion NA	ft	(50)		(4-6)	(0/)			
Ground Surface Elev. 599.00)ft	(ft)	(/6")	(tsf)	(%)	After Hrs. NA	_ ft	(ft)	(/6")	(tsf)	(%)			
4 inches of Asphalt 10 inches of Concrete			-			Dense to Extremely Dense Gray, Moist to Wet								
3 inches of Sand and Gravel			1			SAND, A-3 (continued)			10					
Stiff to Hard	597.50	_	1	2.8	22			_	13 18		25			
Brown, Moist to Very Moist			3	2.0 P	22				25		25			
SILTY CLAY, A-6				•				-						
			2						17					
			3	1.9	22				50/5		21			
		5	4	В				-25						
			-											
			3				570 50		18					
			3	4.4	26	Extremely Dense	572.50	·	50/5		9			
			6	В		Gray, Moist								
						GRÁVEL with sand, A-1-a								
	590.50						570.30							
Hard Gray, Moist			2	4.0	01	Auger Refusal at 28.7 ft.			50/2		_ 5			
SILTY CLAY, trace sand and			7	4.6 B	21	End of Boring		_						
gravel, A-6		-10	'					30						
			-					-						
			4											
			6	7.3	19									
			9	В										
			-											
			4					_						
			7	5.8	14									
		-15	Q	P				-35						
								0						
Pushed cobble at 16 ft			9											
			11 18		16									
		_	10					_						
	580 50													
Dense to Extremely Dense	580.50		10					_						
Gray, Moist to Wet			17		21									
SAND, A-3		-20	32					-40						

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Date 11/30/15

ROUTE _	FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Proposed Wood Street Improvements			LOGGED BYJP				
	(145,146 & 146S-2)	WRS &	_					_					
SECTION	B-1		_ L	OCAT	ION _	Wood	Street, SEC., TWP., RNG de 41.6330859, Longitud	<u>3.,</u> 10. 97.661	0280				
COUNTY	Cook D		- ME.	тилл							۸١		
COUNTY		RILLING					ПЭА				AL	10	
STRUCT			D	в	U	м	Surface Water Flow	ΝΙΔ	4	D	в	U	м
Station	NO. <u>NA</u> NA		E	L	Ċ	0	Surface Water Elev Stream Bed Elev		_ IL 	E	L	c	0
Otation			Ρ	0	S	I		11/7	_ n	Р	0	S	I
BORING N	NOSGB-44		Т	W		S	Groundwater Elev.:			Т	W		S
Station	244+00		н	S	Qu	Т	First Encounter	579.0	ft 👤	н	S	Qu	Т
Offset	29.08ft LT						Upon Completion	NA	ft				
Ground	Surface Elev. 597.50	<u>)</u> ft	(ft)	(/6")	(tsf)	(%)	After Hrs	NA	ft	(ft)	(/6")	(tsf)	(%)
4 inches o							Dense to Very Dense						
	of Concrete						Gray, Moist to Wet						
3 inches d	f Sand and Gravel	596.00		9			SAND, A-3 (continued)				17		
Very Stiff				11	3.3	21					23		22
Brown and	d Gray, Moist			12	Р						20		
SILTY CL	AY, A-0												
			_										
				2							17		
			_	4	2.7	21					30		19
			5	6	В					-25	48		
			_										
											10		
				3		10					12		10
				7	5.2	19					13 22		16
				10	В						22		
			_	3							7		
				5	4.6	19					20		19
			10	a	B		Noted cobble at 29.5 ft		567.50	-30	22		10
			-10		_		End of Boring		507.50	-30			
Noted trac	e sand at 11 ft			4									
				7	5.0	13							
				10	В								
		584.00											
Hard				5									
Gray, Mois	st			9	7.9	11							
gravel, A-6	AY, trace sand and		-15	13	В					-35			
graver, / t	0												
		581.00		7									
	Very Dense			21		13							
Gray, Mois SAND, A-			_	30									
5,	-												
			▼	0									
				9 22		21							
			_	22		21							
			-20	20						-40			

Illinois Department of Transportation

Division of Highways GSG Consultants, Inc. Page <u>1</u> of <u>1</u>

Date 11/24/15

ROUTE FAU 2857 - Wood Street	DES	SCRI	PTION	l	Prop	osed Wood Street Improvements	LC)GGI	ED BY	J	IP
(145,146 & 146S-2)WR	S &										
SECTION B-1		_ L	OCAT	ION _	Wood	<u>Street</u> , SEC. , TWP. , RNG. , de 41.6339143, Longitude -87.660	10200				
COUNTY Cook DRIL			тиор						۸١		
	LING										
		D	в	U	м	Surface Water Flow	#	D	в	U	м
STRUCT. NO. NA Station NA	-	Е	L	Ċ	0	Surface Water Elev. NA Stream Bed Elev. NA	_ '\ ff	E	L	C	0
	-	Ρ	0	S	I			Р	0	S	I
BORING NO. SGB-45	_	Т	W	_	S	Groundwater Elev.:		Т	W		S
Station 247+02		Н	S	Qu	Т	First Encounter 570.0		н	S	Qu	Т
Offset 29.58ft RT		(64)	((01))	(4 - 5)	(0/)	Upon Completion NA	_ ft	(64)	((0))	(4-6)	(0/)
Ground Surface Elev. 597.00	ft	(π)	(/6")	(tsf)	(%)	After HrsNA	_ ft	(ft)	(/6")	(tsf)	(%)
4 inches of Asphalt						Very Stiff to Hard					
10 inches of Concrete 3 inches of Sand and Gravel						Gray, Moist SILTY CLAY, trace sand, A-6					
59	5.50		5			(continued)		_	10		
Gray, Moist			5	4.5	21	(26	5.0	10
FILL: SILTY CLAY, A-6		_	7	Р				_	29	Р	
	3.50	_	3			Von Stiff	573.50		10		
Stiff Gray, Moist			3 5	10	20	Very Stiff Gray, Moist			19 29	2.0	10
SILTY CLAY, trace limestone			5 5	1.9 S	20	SILT, trace gravel, A-4			12	2.0 P	12
pieces, A-6		-5	5	3		, 3 ,		-25	43	P	
							/ ^ ^				
Pushed cobble at 6 ft			4			Medium Dense to Dense	571.00		4		
			6		20	Gray, Wet			5		21
			7		20	SAND, A-3		<u> </u>	6		21
58	8.50										
Very Stiff to Hard	0.00	·	4			Noted trace gravel at 28.5 ft			11		
Gray, Moist		_	6	4.4	15				18		21
SILTY CLAY, trace sand, A-6		-10	6	S			567.00	-30	21		
						End of Boring					
			2								
			5	3.1	15						
			6	В							
		_						_			
Noted trace gravel below 13.5 ft			9		10						
			11	3.0	13						
		-15	13	Р				-35			
			44								
			34	4.3	9						
			47	4.3 P	3						
		_		•							
			16								
			26	4.0	13						
		-20	26	P				-40			
		20									

Illinois Department of Transportation

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Date 12/4/15

ROUTE FAU 2857 - Wood S	treet DE	SCR	PTION	I	Prop	osed Wood Street Improvements	L(OGGI	ED BY		IP
(145,146 & 146S	-2)WRS &										
SECTION B-1		L		ION _	Wood	Street, SEC., TWP., RNG.,	40000				
			TUOD			de 41.6347303, Longitude -87.66			. 1		
COUNTY Cook	DRILLING		THOD			HSA HAMMER	KIYPE		AL	10	
		D	в	U	м			D	в	U	м
STRUCT. NO. NA Station NA		E	L	C	0	Surface Water Elev. NA	ft	E	L	C	O
Station NA		P	ō	s	Ĩ	Stream Bed Elev. NA	_ π	P	ō	Š	ĭ
BORING NO. SGB-46		T	Ŵ		S	Groundwater Elev.:		T	Ŵ	•	S
Station 249++99		н	S	Qu	Т	First EncounterNone	ft	н	S	Qu	т
Station 249++99 Offset 25.54ft LT	-					Upon Completion NA					
Ground Surface Elev. 597	7.00 ft	(ft)	(/6")	(tsf)	(%)	After Hrs NA	ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt						Hard to Very Hard					
8 inches of Concrete						Gray, Moist					
3 inches of Sand and Gravel	595.50		2			SILT, trace sand and gravel, A-4			24		
Very Stiff to Hard	395.50		2	2.1	21	(continued)			50/4		6
Brown and Gray, Moist			3	В							
SILTY CLAY, trace sand, A-6											
			2						32		
			3	2.3	20				50/3		10
		-5	4	Р				-25			
			1								
			3						16		
			4	4.8	18				50/5		7
			7	В							
	588.50										
Very Stiff			3						12		
Gray, Moist SILTY CLAY, trace sand and			6	3.8	19				24	5.0	9
gravel, A-6		-10	10	В			567.00	-30	38	Р	
			-			End of Boring		_			
	586.00										
Very Stiff Gray, Moist			3								
SILTY CLAY, A-6			4	3.1	20						
·····			5	В							
			-								
Noted trace sand at 13.5 ft			2								
Noted trace sand at 13.5 IT			3	3.3	15						
			6	B	15						
		-15	0	Б				-35			
	F04 00										
Hard to Very Hard	581.00		11								
Gray, Moist			29	12.8	10						
SILT, trace sand and gravel, A	-4		34	P 12.0							
			1								
			45								
			39	14.0	7						
		-20	= - 10	Р				-40			

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Date 11/24/15

	AU 2857 - Wood Stre	et DES	SCRI	PTION	I	Proposed Wood Street Improvements				LOGGED BYI				
	(145,146 & 146S-2))WRS &												
SECTION	B-1		_ L	LOCAT	ION _	Wood	Street, SEC., TWP., RNG., de 41.6355560, Longitude	07.000	0004					
COUNTY _	Cook C	JRILLING		THOD			HSA HA		ITPE		AL	10		
			D	в	U	м			•	D	в	U	м	
STRUCT. N	IO. <u>NA</u> NA		E	L	c	0	Surface Water Elev.		_ ft	E	L	c	0	
Station _	INA		P	ō	S	Ĩ	Stream Bed Elev.	NA	_ π	P	ō	s	ĭ	
	O . <u>SGB-47</u>		Т	Ŵ		S	Groundwater Elev.:			Т	W	-	S	
Station	253+00		н	S	Qu	Т	First Encounter	574 5	ft 🔻	н	S	Qu	Т	
Offset	253+00 20.58ft RT						Upon Completion	NA	ft					
Ground S	urface Elev. 596.00	0 ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	(ft)	(/6")	(tsf)	(%)	
2 inches of														
12 inches o	of Concrete								575.00					
5 inches of	Sand and Gravel	504.40		16			Medium Dense to Dense		010.00	•	10			
Stiff		594.40	. —	9		5	Gray, Wet			<u> </u>	10		20	
	Gray, Dry to Moist			7			SAND, A-3				14			
SILTY CLA	Y, A-6													
				2							8			
				2	1.3	24					12		17	
			-5	2	В					-25	15			
		590.00												
Stiff to Ver				5							13			
Gray, Mois SILTY CLA				7	1.8	24					11		20	
	AT, A-0			8	Р						14			
				4		10					15		10	
				6 11	4.2	19					18		18	
			-10		В		Fred of Devices		566.00	-30	16			
							End of Boring							
Noted trees	e sand below 11 ft			3										
Noted trace				5	5.0	14								
				9	B.0	14								
				-	Б									
				3										
				7	10.0	13								
			45	10	B									
			-15	-						-35				
				15										
				21	11.0	11								
				37	P									
			_											
		577.50		1										
Very Hard				24										
Gray, Mois	t			50/2		8								
SILT, A-4			-20							-40				

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Date 11/20/15

ROUTE	FAU 2857 - Wood Street DESCRIPTION						osed Wood Street Imp	LOGGED BY	JP	
	(145,146 & 146S-2)	WRS &								
SECTION	B-1		L	OCAT	'ION _	Wood	Street, SEC., TWP., F	RNG.,		
							de 41.6364121, Long			_
COUNTY	Cook	RILLING	S ME	THOD			HSA	_ HAMMER	TYPE AUT	2
			-	_						
STRUCT.	NO. <u>NA</u> NA		D E	B	U C	M	Surface Water Elev.	NA	ft	
Station	NA		P	0	S	0	Stream Bed Elev.	NA	_ ft	
			T	w	3	S				
Station	IO. <u>SGB-48</u> 256+14		Ĥ	S	Qu	T	Groundwater Elev.: First Encounter		4	
Offset	18.00ft RT						Upon Completion			
	Surface Elev		(ft)	(/6'')	(tsf)	(%)	After Hrs.	NA	ft	
4 inches o		<u> </u>	. ,	. ,		. ,			_ **	-
	f Concrete									
	f Sand and Gravel	594.60		4						
Very Stiff t	o Hard			4	4.5	18				
Brown and	l Gray, Moist			5	5 P	10				
SILTY CLA	AY, A-6			-	1					
				4						
				3	2.5	22				
			-5	4	P					
			5		-					
				3						
				6	5.8	20				
				9	В					
		587.50								
Hard				8						
Gray, Mois				11	6.0	17				
SIL1, trace	e gravel and clay, A-4		-10	13	Р					
				5						
				11		14				
				14						
		582.50								
Hard				6						
Gray, Mois	AY, trace sand and			8	6.5	7				
gravel, A-6			-15	10	Р					
0										
				45						
				15 28	50	0				
				28	5.3 P	8				
				50						
Very Hard		577.50		15						
Gray, Mois	st			48	12.0	10				
SILT, A-4		576.40		50/1	12.0					
			-20			1				

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Date 12/4/15

						Proposed Wood Street Improvements			LOGGED BYJP		
(145,146 & 146S-2)W	VRS &		001		NA / I						
SECTIONB-1		L	LOCAI	ION _	VV 000	<u>Street, SEC., TWP., RNG.,</u> ide 41.6372086, Longitude -87.660	18201				
COUNTY Cook DF			тнор						Δ١		
							···· -			10	
		D	в	U	м	Surface Water Elev. NA	ft	D	в	U	м
STRUCT. NO. NA Station NA		Е	L	С	0	Stream Bed Elev. NA	ft	Е	L	С	Ο
		Р	0	S	1			Ρ	0	S	T
BORING NO. SGB-49		Т	W	_	S	Groundwater Elev.:		Т	W	-	S
Station 259+01		н	S	Qu	Т	First Encounter None		н	S	Qu	Т
Offset 25.08ft LT		(64)	((0))	(4 - 6	(0/)	Upon Completion NA	_ ft	(64)	(/OII)	(A - 6)	(0/)
Ground Surface Elev. 595.50	ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	_ ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt											
8 inches of Concrete 3 inches of Sand and Gravel							574.50				
	594.00		3			Very Stiff			16		
Very Stiff			4	2.7	21	Gray, Moist SILT, A-4			33	2.0	14
Brown and Gray, Moist SILTY CLAY, A-6			4	В					38	Р	
			-								
			2				572.00		44		
			3	2.9	19	Hard to Very Hard Gray, Moist			11 18	4.4	10
			4	2.9 B	19	SILTY CLAY, trace sand and			24	4.4 S	10
		5				gravel, A-6		-25	21	0	
			-								
Very Stiff to Hard	589.50		4						9		
Gray, Moist			7	4.6	15				12	10.0	16
SILTY CLAY, trace sand, A-6			6	S					16	Р	
Noted trace gravel below 8.5 ft.			4				566.50		50/3	11.0	18
			6	2.5	21	Auger Refusal at 29 ft				P /	
		-10	7	S		End of Boring		-30			
			-								
	583.80		3								
Stiff			5	1.3	19						
Gray, Moist			1	Р							
SILT, A-4											
Very Stiff to Very Hard	582.00		7					_			
Gray, Moist			10	2.9	21						
SILTY CLAY, trace sand and			7	2.9 B	ے _ا						
gravel, A-6		-15	- ·	5				-35			
								_			
Noted cobble pieces at 16 ft			15								
· · · · · · · · · · · ·			25	1	5			_			
			31								
				<u> </u>							
			1								
			17								
			26	14.0	10			_			
		-20	32	Р				-40			

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Date 12/1/15

ROUTE FAU 2857 - Wood Street D	ESCR	IPTION	I	Proposed Wood Street Improvements LOGGED BY JP					IP	
(145,146 & 146S-2)WRS &	x									
SECTIONB-1			ION _	Wood	Street, SEC. , TWP. , RNG. ,	0444				
		TUOD			de 41.6380506, Longitude -87.660			. 1		
COUNTY Cook DRILLIN		THOD			HSA HAMMER	ITPE .		AL	10	
	D	в	U	м	.	•	D	в	U	м
STRUCT. NO. NA Station NA	E	L	C	0	Surface Water Elev. NA	_ ft	E	L	C	O
Station NA	P	Ō	s	i	Stream Bed Elev. NA	_π	P	ō	S	ĩ
BORING NO SGB-50	T	Ŵ		S	Groundwater Elev.:		T	Ŵ	•	S
Station 262+12	H	S	Qu	T	First Encounter574.5	ft 🛡	H	S	Qu	T
Offset 40.60ft LT					Upon Completion NA					
Ground Surface Elev. 595.50 ft	(ft)	(/6")	(tsf)	(%)	After HrsNA	ft	(ft)	(/6")	(tsf)	(%)
4 inches of Asphalt										
6 inches of Concrete		-				574 50				
4 inches of Sand and Gravel 594.3	0	4			Very Stiff	574.50	<u> </u>	18		
Very Stiff		3	2.5	21	Gray, Moist			27	2.0	12
Black, Moist		5	2.5 P	21	SILT, A-4			28	2.0 P	12
SILTY CLAY, trace sand, A-7-6		-	1						1	
		-								
592.0 Very Stiff to Hard	0	2			Hard to Very Hard	572.00	·	8		
Brown and Gray, Moist		4	2.9	21	Gray, Moist			19	7.5	9
SILTY CLAY, A-6		5	B	21	SILTY CLAY, trace sand and			25	7.5 P	3
	5				gravel, A-6		-25	20	1	
	_	-					_			
Noted trace gravel at 6 ft		4						12		
	_	7	4.6	17				13	6.3	11
		8	B					19	0.0 P	
		-								
		-								
	_	4			Pushed cobble at 28.5 ft			17		
		6	5.4	17				19		15
		10	B			565.50	-30	20		
	10				End of Boring	305.50	-30	-		
	_	-								
		3								
	_	6	3.3	21						
		9	B							
			_							
		-								
	_	2								
		3	2.1	25						
		1	B							
	15		_				-30			
579.5	o —	-								
Hard to Very Hard	U	8								
Gray, Moist		25	7.0	12			_			
SILTY CLAY, trace sand and		50/5	P							
gravel, A-6										
		1								
		-								
		28		9						
	-20	FOU					-40			

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Date 11/23/15

ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Proposed Wood Street Improvements LOGGED BY JP					IP	
(145,146 & 146S-2)\	NRS &	_									
SECTION <u>B-1</u>		_ L	.OCAT	ION _	Wood	Street, SEC., TWP., RNG.,	01001				
COUNTY Cook D		· ME				de 41.6387736, Longitude -87.0			A 1		
	RILLING					HSA HAMMI	RITPE		AL	10	
		D	в	U	м	Surface Water Flow	۸ د	D	в	U	м
STRUCT. NO. NA NA		E	L	c	0	Surface Water ElevN Stream Bed ElevN	<u>Α</u> π Λ #	E	L	č	0
		Ρ	Ō	S	Ī		<u>A</u> II	P	0	S	Ĩ
BORING NO. SGB-51		Т	W		S	Groundwater Elev.:		Т	W		S
Station 265+00		н	S	Qu	Т	First Encounter 571	.0 ft ▼	н	S	Qu	Т
Offset 31.58ft RT						Upon Completion	A_ft				
Ground Surface Elev. 596.00	ft	(ft)	(/6")	(tsf)	(%)	After Hrs N	A_ft	(ft)	(/6")	(tsf)	(%)
6 inches of Asphalt								-			
4 inches of Sand and Gravel	<u>_595.20</u>						575.00				
Stiff to Hard Gray, Moist			3			Very Stiff to Very Hard		_	29		
SILTY CLAY, trace sand, A-6			5	3.8	16	Gray, Moist SILT, A-4			48	9.8	9
,,,,,			7	Р		SILT, A-4		_	50/1	Р	
			r.								
		_	•								
			2 3	10					14 21		17
			3	4.0 P	22				20		17
		5	-	Г				-25	20		
								_			
			2						21		
			2	1.3	18				34	2.3	18
	588.50		2	P					50/3		
Soft	500.50			-						-	
Gray, Very Moist											
CLÁY, A-7-6			1						14		
			1	0.3	33				22	3.0	15
	586.00	-10	2	Р			566.00	-30	33	Р	
Hard to Very Hard						End of Boring					
Gray, Moist SILTY CLAY, A-6											
SIETT CEAT, A-0			4					_			
			7	4.8	20						
			8	В				_			
		_	5					_			
			13	5.0	19						
			17	B.0	13						
		-15						-35			
		_									
			17								
Noted cobble at 16.5 ft			33		1						
			34								
			21								
			35		1						
		-20	50/2					-40	1		

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Division of Highways GSG Consultants, Inc.

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Date 12/7/15

ROUTE FAU 2857 - Wood Street DES	CRI	PTION	I	Prop	osed Wood Street Improvements	LC	oggi	ED BY	J	IP
(145,146 & 146S-2)WRS &										
SECTION B-1	_ L	.OCAT	ION _	Wood	Street, SEC. , TWP. , RNG. ,	70				
				Latitu	ae 41.639363, Longituae -87.6599					
COUNTY Cook DRILLING	ME	THOD			HSA HAMMER	IYPE .		AL	ЛО	
	n	Р		NA		_	n	Р		NA
STRUCT. NO. NA Station NA	D E	B L	U C	M O	Surface Water Elev. NA	ft	D E	BL	U C	M O
Station NA	P	Ō	S	I	Stream Bed Elev. NA	_ ft	P	ō	s	I
	Т	w	U	S	Creating division Flows		T	w	0	S
BORING NO. SGB-52	Ĥ	S	Qu	T	Groundwater Elev.: First Encounter576.0	4 V	Ĥ	S	Qu	T
Station 267+14 Offset 34.79ft RT		-			Upon Completion NA			-		_
Ground Surface Elev. 592.00 ft	(ft)	(/6")	(tsf)	(%)	After Hrs NA	ft	(ft)	(/6'')	(tsf)	(%)
2 inches of Asphalt	· /	. ,	. ,	. ,	Very Hard		. ,	. ,	. ,	. ,
9 inches of Concrete					Gray, Moist					
4 inches of Sand and Gravel 590.70		7			SILT, A-4 (continued)			25		
Hard	_	5	5.0	19				50/5		10
Brown and Gray, Moist		5	9.0 P	13				00/0		10
SILTY CLAY, A-6	_	-	•							
-						500 50				
	_	7			Very Stiff	568.50		9		
-		6			Gray, Moist			19	2.9	17
		7			SILŤÝ CLAY, A-6			35	S	.,
-	-5	•					-25			
586.00	_					566.00				
Very Stiff to Hard		4			Very Stiff to Very Hard	566.00		19		
Brown, Moist		6	6.5	15	Gray, Moist			25	2.5	16
SILTY CLAY, trace sand and	_	10	B		SILŤ, A-4			36	P	
gravel, A-6									•	
-										
	_	5						33		
-		8	7.5	19				45		12
	-10	12	В				-30	50/2		
-	-10									
-		3								
		5	2.5	13						
-		6	В							
	_									
-						558.50				
	_	50/4			Medium Stiff			9		
-					Gray, Moist			13	1.0	18
	-15				SILTY CLAY, A-6		-35	19	Р	
-										
576.00	•									
Very Hard		22								
Gray, Moist		50/5		9						
SILT, A-4										
-						553.50				
_		35			Very Dense			22		
	_	50/3		7	Gray, Moist SAND, trace gravel, A-2-4	552.50		50/4		11
	-20						-40			

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Date <u>11/19/15</u>

ROUTE FAU 2857 - Wood Stre	et DE	SCR	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGE	D BY	JP
(145,146 & 146S-2))WRS &									
SECTION B-1		L	-OCAT	ION _	Wood	Street, SEC. , TWP. , F	RNG.,			
					Latitu	Ide 41.6404337, Longi	itude -87.659	9406		
COUNTY Cook I	ORILLING	6 ME	THOD			HSA	_ HAMMER	ГҮРЕ	AUTO	
STRUCT. NO. NA		D	В	U	M	Surface Water Elev.	NA	ft		
STRUCT. NO. NA Station NA		Е	L	С	0	Surface Water Elev. Stream Bed Elev.	NA	ft		
		Ρ	ο	S	1					
BORING NO. SGB-53		Т	w		S	Groundwater Elev.:				
Station 271+01		н	S	Qu	Т	First Encounter	574 5	ft 🔻		
Offset 30.58ft RT						Upon Completion	NA	ff		
Ground Surface Elev. 583.0		(ft)	(/6")	(tsf)	(%)	Upon Completion After Hrs.	NA	ff		
8 inches of Asphalt	<u> </u>	. ,	. ,	. ,						
8 inches of Sand and Gravel			-							
o lifelies of Sand and Graver	E01 70									
Hard	581.70		2							
Gray, Moist			3	4.2	16					
SILTY CLAY, A-6			4	S						
			1							
Noted trace sand at 3.5 ft			5							
			7	5.0	12					
			11	S	12					
		5		5						
			-							
	577.00									
Very Hard			14							
Gray, Moist			17	11.0	13					
SILTY CLAY, trace sand and gravel, A-6			32	P						
graver, A-0										
		▼	İ							
		<u> </u>	15							
	570 50		50/4		11	-				
Auger Refusal at 9.5 ft.	573.50				· ·					
End of Boring		-10	{							
			-							
			-							
			1							
			1							
			ł							
			-							
		-15	-							
			-							
			-							
			ł							
			1							
			1							
			1							
			-							
1		20	1		1	11				

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ROUTE _	FAU 2857 - Wood 8	Street DE	SCR	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BYJF
	(145,146 & 1468	S-2)WRS &							
SECTION	B-1		_ L		ION _	Wood	Street, SEC., TWP., F	RNG. ,	
	On all			TUOD			de 41.6412876, Longi		
COUNTY	Cook			THOD			HSA		AUTO
			_	P					
STRUCT.	NO. <u>NA</u> NA		D	B	U C	M	Surface Water Elev.	NA ft	
Station	NA		E P	L	S	0	Stream Bed Elev.	<u> </u>	
			г Т	w	3	S			
BORING N	NO. <u>SGB-54</u>		H	S	Qu	T	Groundwater Elev.:		
Station	NO. <u>SGB-54</u> 274+02 28.00ft L				Qu	'	First Encounter		
	28.00TL L	<u> </u>	(ft)	(/6")	(tsf)	(%)	Upon Completion		
	Surface Elev. 58	4.50 I	(14)	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(101)	(/0)	After Hrs.	<u> </u>	
8 inches c	of Asphalt		_	-					
o inches c	Sanu anu Graver	502.00							
Gray, Moi	st	583.20		5					
FILL: SIL	т. А-4			6		13			
	.,			6					
		581.00							
Medium D				6					
Gray, Moi	st			7		8			
clay, A-2-4	ND and GRAVEL, tra	ace 579.50	-5	10					
	4 fusal at 5 ft due to ai								
obstructio	n								
End of Bo				1					
	5			1					
				1					
				-					
			-10	-					
			-10	1					
				1					
				-					
				-					
				-					
				-					
				-					
				-					
				-					
				-					
			-15	-					
			-15	-					
				-					
				-					
				ļ					
				ļ					
			-20	1					

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The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

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Proposed Wood Street Improvements LOGGED BY JP ROUTE _____ FAU 2857 - Wood Street ___ DESCRIPTION _____ (145,146 & 146S-2)WRS & SECTION B-1 LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.6420865, Longitude -87.6599789 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO В U Μ STRUCT. NO. NA D Surface Water Elev. NA ft Е L С 0 NA Stream Bed Elev. NA ft Station Ρ S ο L т W S BORING NO. SGB-55 Groundwater Elev.: н S Qu Т Station _____ 277+03 None ft First Encounter Upon Completion Offset 37.07ft RT NA ft (ft) (/6") (%) (tsf) NA ft Ground Surface Elev. 594.50 ft After Hrs. 8 inches of Asphalt 6 inches of Sand and Gravel 593.30 -7 Gray, Moist 14 11 FILL: SAND, A-3 15 591.00 Auger Refusal at 3.5 ft due to an obstruction End of Boring -5 ____ -20

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Proposed Wood Street Improvements LOGGED BY JP ROUTE FAU 2857 - Wood Street DESCRIPTION (145,146 & 146S-2)WRS & <u>B-1</u> SECTION LOCATION Wood Street, SEC., TWP., RNG., Latitude 41.6428941, Longitude -87.6602862 COUNTY Cook DRILLING METHOD HSA HAMMER TYPE AUTO В U Μ D STRUCT. NO. NA Surface Water Elev. NA ft Е L С 0 NA Stream Bed Elev. NA ft Station Ρ S ο L Т BORING NO. SGB-56 W S Groundwater Elev.: н S Qu Т Station _____ 280+00 First Encounter None ft Upon Completion 38.59ft LT NA ft (ft) (/6") (%) (tsf) NA ft Ground Surface Elev. 596.50 ft After Hrs. 8 inches of Asphalt 8 inches of Sand and Gravel 595.10 4 Stiff to Hard 4 1.5 17 Brown and Gray, Moist 2 Ρ SILTY CLAY, A-6 2 2 23 1.8 3 Ρ Pushed cobble at 6 ft 3 3 20 5 Noted trace sand and gravel at 3 8.5 ft 4 4.0 16 10 В 586.50 -10 End of Boring _____ -20

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ROUTE FAU 2857 - Wood Stree	et DE	SCRI	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY	JP
(145,146 & 146S-2)	WRS &								
SECTION B-1		L	OCAT	ION _	Wood	Street, SEC., TWP., F	RNG. ,		
					Latitu	de 41.6437207, Longi	itude -87.6600	220	
COUNTY Cook D	RILLING	B ME	THOD			HSA	HAMMER T	YPE AUTO)
STRUCT, NO. NA		D	В	U	M	Surface Water Elev.	NA	ft	
STRUCT. NO. NA Station NA		Е	L	С	ο	Stream Bed Elev.		ft	
		Ρ	ο	S	1	Otroani Boa Elov.		i.	
BORING NOSGB-57		Т	w		s	Groundwater Elev.:			
Station 282+99		н	S	Qu	Т		None	ft	
Offset 42.08ft RT						Upon Completion			
Ground Surface Elev. 597.00) ft	(ft)	(/6'')	(tsf)	(%)	After Hrs.		ff	
	<u> </u>	1.7	(-)	()	()			ii ii	
8 inches of Asphalt 8 inches of Sand and Gravel									
o inches of Sand and Graver									
	595.60		10						
Medium Stiff to Very Stiff			7						
Brownish Gray, Moist SILTY CLAY, A-6			6						
SILT CLAT, A-0									
			3						
			2		21				
			2		2.				
		5	~						
	591.00								
Very Stiff			3						
Brown, Moist			4	5.6	18				
SILTY CLAY, trace sand and gravel, A-6			6	В					
gravel, A-0									
			3						
			5	3.5	14				
	507.00			B					
End of Boring	587.00	-10							
		-15							
		-15							
]						
			1						
		-20							
		-20							

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Date <u>11/19/15</u>

ROUTE FAU 2857 - Wood Stree	<u>et</u> DESC	RIPTION	l	Prop	osed Wood Street Imp	<u>rovements</u>	LC	DGGED BY	JP
(145,146 & 146S-2)	NRS &								
SECTION B-1		LOCA	TION	Wood	Street, SEC. , TWP. , R	NG.			
		-		Latitu	ide 41.6445408, Longi	tude -87.6603	3722		
COUNTY Cook D		FTHOD			HSA		YPF		
					IIGA				
	-			NA.					
STRUCT. NO. NA	[U	M	Surface Water Elev.	NA	ft		
STRUCT. NO. NA Station NA	E		С	0	Stream Bed Elev.	NA	ft		
	P	-	S	1					
BORING NO. SGB-58	1	• W		S	Groundwater Elev.:				
Station 286+00		I S	Qu	T		None	ft		
Station 286+00 Offset 45.17ft LT					Upon Completion	NA	ft		
Ground Surface Elev. 597.00		t) (/6")	(tsf)	(%)	Upon Completion After Hrs.	ΝΔ	ff		
	" ``	7 (7	()	()		11/7			
8 inches of Asphalt									
7 inches of Sand and Gravel									
-	595.70	6							
Gray, Moist		16		10	1				
FILL: Concrete Fragments		22							
	593.50								
Stiff		4							
Black and Greenish Gray, Very		10	1.5	26	1				
Moist	502.00	- 4	Р						
CLAY, A-7-6	592.00	-5 4	•						
Auger Refusal at 5 ft due to an		_							
obstruction									
End of Boring									
		_							
		_							
	-	10							
		-							
		_							
		_							
		_							
		15							
		_							
		_							
		_							
		_							
	-	20	1	1	11				

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Division of Highways GSG Consultants, Inc.		-						Date	11/19/15
ROUTE FAU 2857 - Wood Stre	et DE	SCRI	PTION	I	Prop	oosed Wood Street Imp	rovements	LOGGED BY	JP
(145,146 & 146S-2) SECTION	WRS &		OCAT		Wood	Street SEC TWD	NG		
					Latitu	ide 41.6453517, Long	itude -87.6601108		
COUNTY Cook D	RILLING	S ME	THOD			HSA	_ HAMMER TYPE	AUT0	2
STRUCT. NO. NA Station NA		D	В	U	M	Surface Water Elev.	NAft		
Station NA		E P	L O	C S	0	Stream Bed Elev.	<u>NA</u> ft		
BORING NO. SGB-59		T H	W S	0	S T	Groundwater Elev.:			
Station 288+93 Offset 34.58ft RT			3	Qu	'	First Encounter	<u>None</u> ft NAft		
Ground Surface Elev. 597.50) ft	(ft)	(/6")	(tsf)	(%)	Upon Completion After Hrs.	NA ft		
8 inches of Asphalt 8 inches of Sand and Gravel									
	596.10		5						
Medium Stiff Brown and Gray, Moist to Very			3						
Moist CLAY, A-7-6			-			-			
		_							
			1	1.0	27				
	592.50	-5	2	Р					
Hard Brown and Gray, Moist									
SILTY CLAY, A-6			2						
			4	4.2 B	12				
				D					
Noted trace sand and gravel at 8.5 ft		_							
0.0 11			3 6	4.6	15	-			
	587.50	-10	5	В		-			
End of Boring									
		-15							
		-20							

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Date 12/1/15

ROUTE FAU 2857 - Wood Stree	t DE	SCRI	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY	JP
(145,146 & 146S-2)V	VRS &								
(145,146 & 146S-2)V SECTION		L	.OCAT	ION _	Thornt	on Road, SEC., TWP.	, RNG. ,	7050	
					Lautu	ue 41.0370002, Longi	uue -07.059		
COUNTY Cook DF	VILLING		THOD			HSA			0
		D	в	U	м		N 1 A		
STRUCT. NO. NA Station NA		E	Ľ	c	Ö	Surface Water Elev. Stream Bed Elev.	<u> </u>	_π #	
		P	ō	S	I	Stream Ded Elev.	NA	_ 11	
BORING NOSGB-60		Т	w		S	Groundwater Elev.:			
Station 97+25		н	S	Qu	Т	First Encounter		ft	
Offset						Upon Completion	NA	ft	
Ground Surface Elev. 596.00	ft	(ft)	(/6")	(tsf)	(%)	After Hrs.	NA	ft	
7 inches of Asphalt		1							
6 inches of Concrete									
3 inches of Sand and Gravel	594.60	_	7						
Very Stiff to Hard			5		4				
Brown and Gray, Dry to Moist SILTY CLAY, A-6			9						
		_							
			4		10				
			7 8	5.4	18				
		5	0	S					
		_							
			5						
			7	2.4	17				
Noted a sand seam at 6.8 ft			10	2. 4 B					
			r						
		_	5						
			7	4.4	18				
	586.00	-10	11	В					
End of Boring									
		_							
		-15							
		_							
		-20							

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ROUTE FAU 2857 - Wood Stre			PTION	l	Prop	osed Wood Street Imp	rovements	LOG	GED BY	JR	
(145,146 & 146S-2)	WRS &		00 47		Thorn		PNC				
SECTIONB-1LOCATION _						Latitude 41.6370773, Longitude -87.6592355					
COUNTY Cook D	RILLIN	G ME	THOD						AUTO		
			-		1	1	_				
STRUCT. NO. NA		D	В	U	М	Surface Water Elev.	NA	ft			
STRUCT. NO. NA Station NA		E	L	С	0	Surface Water Elev. Stream Bed Elev.	NA	ft			
		P	0	S	I			-			
BORING NO. SGB-61		T	W	~	S	Groundwater Elev.:					
Station 95+00		H	S	Qu	Т	First Encounter	None	ft			
Offset Ground Surface Elev596.00		(ft)	(/6'')	(tsf)	(%)	Upon Completion After Hrs.	NA NA	π.			
4 inches of Asphalt	<u> </u>	(,		()	(///		INA	. 11			
8 inches of Sand and Gravel			-								
Stiff	595.00		2								
Black and Gray, Very Moist			2	1.3	28						
CLAY, A-7-6			2	P	20						
				•							
	592.00		6								
Loose	002.00		6		21	-					
Brown and Gray, Moist		-5	2								
SAND, with gravel, A-1-b											
	590.00]								
Very Stiff			5								
Gray, Moist to Very Moist CLAY, trace gravel, A-7-6			7	2.0	31						
			8	Р		-					
			-								
			^								
			6 12	2.0	25	-					
		_	11	2.0 P	25						
End of Boring	586.00	-10	17	Г							
			-								
			1								
			1								
		-15									
		_									
			ļ								
			-								
			-								
			ł								
			-								
			-								
			-								
		-20	1	1	1	11					
SOIL BORING LOG

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ROUTE FAU 2857 - Wood Stree	t DE	SCRI	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY	JP
(145,146 & 146S-2)V	VRS &								
SECTIONB-1		_ L	LOCAT	ION _	Thornt	on Road, SEC. , TWP.	<u>, RNG. ,</u>	4004	
						de 41.6386429, Long			~
COUNTY Cook DF	RILLING	5 ME	THOD			HSA	_ HAMMER	TYPEAUT	0
			Р					_	
STRUCT. NO. NA Station NA		D E	B	U C	M O	Surface Water Elev.	NA	ft	
StationNA		P	0	S	1	Stream Bed Elev.	NA	ft	
		T	w	3	S				
BORING NO. SGB-62		н	S	Qu	T	Groundwater Elev.:		e.	
Station 102+75			0	QU	•	First Encounter			
Offset	#	(ft)	(/6'')	(tsf)	(%)	Upon Completion	NA	_π	
Ground Surface Elev. 595.75	IL	(14)	(, , ,	(101)	(/0)	After Hrs.		_ n	
11 inches of Asphalt 4 inches of Sand and Gravel									
	594.45		4-						
Medium Dense	394.43		15						
Brown, Moist			11		8				
SAND, trace gravel, A-2-4			9						
Very Stiff	592.25		_						
Very Stiff			3						
Brown and Gray, Moist SILTY CLAY, A-6			3	2.5	21				
OIETT OEAT, A-0		5	5	S					
	589.75								
Very Loose			1						
Dark Brown, Moist SAND, trace gravel, A-2-4	F00 4F		1		14				
Very Stiff	588.45		1						
Brown and Gray, Moist									
SILTY CLAY, trace sand and									
gravel, A-6			4						ľ
			3	3.0	21				
	585.75	-10	4	Р					
End of Boring		_							
		_							
		_							
		-15							
									ľ
									ľ
		_							ľ
									ľ
		_							
		_							
		-20							ľ

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

SOIL BORING LOG

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Date 12/1/15

ROUTE FAU 2857 - Wood St	reet DE	SCRI	PTION	I	Prop	osed Wood Street Imp	rovements	LOGGED BY	JP
(145,146 & 146S-	2)WRS &								
SECTION B-1		_ L	LOCAT	ION _	Thornt	on Road, SEC. , TWP.	<u>, RNG. ,</u>		
						de 41.6388303, Longi			
COUNTY Cook	DRILLING	5 ME	THOD			HSA	HAMMER	TYPE AUT	0
		_	Б						
STRUCT. NO. NA Station NA		D E	B	U C	M O	Surface Water Elev.	<u>NA</u>	ft	
Station NA		P	Ō	S	I	Stream Bed Elev.	NA	_ ft	
		T	w		s	Crownshutter Flow			
BORING NO. SGB-63 Station 104+50		Ĥ	S	Qu	T	Groundwater Elev.: First Encounter		#	
Offset						Upon Completion			
Ground Surface Elev. 595.	75 ft	(ft)	(/6'')	(tsf)	(%)	After Hrs.	NA	ft	
11 inches of Asphalt									
4 inches of Sand and Gravel		_							
	594.45		9						
Very Stiff to Hard			5	4.3	20				
Brown and Gray, Moist			6	S					
SILTY CLAY, A-6		_		-					
		_	5						
			7	3.3	17				
		-5	10	S					
		5	_						
	589.75								
Hard	509.75		5						
Brown, Moist		_	10	7.3	17				
SILTY CLAY, trace sand and			11	S					
gravel, A-6									
			4						
			6	4.1	18				
	585.75	-10	10	S					
End of Boring									
		-15							
		-20							

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

APPENDIX C

LABORATORY TESTING RESULTS



SRADE SUPPORT RATINGS 173-01 WOOD STREET GINT LOGS.GPJ IL_DOT.GDT 1/15/16



EXTURAL CLASSIFICATION 173-01 WOOD STREET GINT LOGS.GPJ IL_DOT.GDT 1/15/16





APPENDIX D

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Approximate Elevation Range (MSL)		In-situ Unit	Undrained Shear Strength (psf)			Drained Friction	Active Earth	At-Rest Pressure Coefficient	Passive Earth	Subgrade Modulus	Horizontal Strain	OSHA Soil Type
	New Engineered Granular Fill	130	n/a	30	n/a	30	0.33	0.50	3.00	90	n/a	
604 – 601	Stiff Black and Gray Clay A-7-6	125	1,500	0	0	26	0.39	0.56	2.56	1,000	0.007	В
601 –597	Very Stiff Brown and Gray Silty Clay A-6	128	3,500	0	100	28	0.36	0.53	2.78	1,750	0.005	A
597 - 592	Hard Brown and Gray or Gray Silty Clay A-6	139	8,000	0	250	30	0.33	0.50	3.00	4,000	0.004	A
592 - 584	Stiff Gray Silt A-4	141	1,000	12	250	25	0.41	0.58	2.46	100	0.01	В

Table D-1 - Lateral Resistance Soil Parameters – Station 128+00 to Station 160+00 (SGB 6 to SGB 16)



Approximate Elevation Range (MSL)	Soil Description	Unit	Undrained Shear Strength (psf)	Friction	Drained Shear Strength (psf)	Friction	Earth	At-Rest Pressure Coefficient (K _o)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus	Stram	OSHA Soil Type
591 - 586 SGB(13 & 15)	Very Hard Gray Silt A- 4	145	1,500	15	500	30	0.33	0.50	3.00	500	0.007	В

The initial p-y modulus, E_{py} , varies linearly with depth. To obtain E_{py} use the equation

$$E_{py} = k_{py} * \mathbf{z}$$



Approximate Elevation Range (MSL)		In-situ Unit Weight (pcf)	Undrained Shear Strength (psf)			Drained Friction	Active	At-Rest Pressure Coefficient (K _o)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus	Horizontal Strain Factor e50	OSHA Soil Type
	New Engineered Granular Fill	130	n/a	30	n/a	30	0.33	0.50	3.00	90	n/a	
602 - 599	Very Stiff Black and Gray Clay A-7-6	128	2,000	0	0	26	0.39	0.56	2.56	1,000	0.007	A
599 – 595	Hard Brown and Gray Silty Clay A-6	133	4,000	0	100	28	0.36	0.53	2.78	2,000	0.004	A
595 – 589	Hard Brown and Gray or Gray Silty Clay A-6	142	8,500	0	250	30	0.33	0.50	3.00	4,000	0.004	А
589 - 584	Stiff Gray Silt A-4	138	1,000	12	250	25	0.41	0.58	2.46	100	0.01	В

Table D-2 - Lateral Resistance Soil Parameters – Station 160+00 to Station 200+00 (SGB 17 to SGB 29)



Approximate Elevation Range (MSL)	Soil Description	In-situ Unit Weight (pcf)	Undrained Shear Strength (psf)	Undrained Friction Angle (phi)	Drained Shear Strength (psf)	Drained Friction Angle (phi)	Editii	At-Rest Pressure Coefficient (K₀)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus	Juan	OSHA Soil Type
585 – 578 SGB (19,20 & 25)	Stiff Gray Silt A-4	145	1,500	15	500	30	0.33	0.50	3.00	500	0.007	В
580 - 573 SGB (20 & 24)	Stiff Gray Silt A-4	141	1,000	12	250	25	0.41	0.58	2.46	100	0.01	В
578 - 574 SGB (19,20 & 25)	Dense Gray Sand A-3	145	n/a	38.5	n/a	38.5	0.23	0.38	4.29	125	n/a	С

The initial p-y modulus, E_{py} , varies linearly with depth. To obtain E_{py} use the equation

 $E_{py} = k_{py} * \mathbf{z}$



Approximate Elevation Range (MSL)		In-situ Unit	Undrained Shear			Drained Friction	Active	At-Rest Pressure Coefficient (K _o)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus	Horizontal Strain Factor e50	OSHA Soil Type
	New Engineered Granular Fill	130	n/a	30	n/a	30	0.33	0.50	3.00	90	n/a	
600 – 597	Stiff Black and Gray Clay A-7-6	117	1,500	0	0	26	0.39	0.56	2.56	500	0.007	В
598– 596	Soft to Medium Stiff Gray Clay A-7-6	125	500	0	0	26	0.39	0.56	2.56	100	0.01	С
597 – 593	Very Stiff Brown and Gray Silty Clay A-6	131	4,000	0	100	28	0.36	0.53	2.78	2,000	0.005	A
593 – 585	Hard Brown and Gray or Gray Silty Clay A-6	135	7,000	0	250	30	0.33	0.50	3.00	3,500	0.004	A

Table D-3 - Lateral Resistance Soil Parameters – Station 200+00 to Station 236+00 (SGB 30 to SGB 41)



Approximate Elevation Range (MSL)	Soil Description	In-situ Unit Weight (pcf)	Undrained Shear Strength (psf)	Undrained Friction Angle (phi)	Drained Shear Strength (psf)	Drained Friction Angle (phi)	Active Earth Pressure Coefficient (K _a)	At-Rest Pressure Coefficient (K₀)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus (pci) k_{py}	Horizontal Strain Factor e50	OSHA Soil Type
585 – 582	Very Hard Gray Silt A- 4	145	1,500	15	500	30	0.33	0.50	3.00	500	0.007	В
582 – 581 SGB (41,40 & 38)	Medium Dense to Dense Gray Sand A-3	135	n/a	38	n/a	38	0.24	0.38	4.20	90	n/a	С
584 - 581 SGB (30,31,40 & 41)	Very Hard Gray Silt A- 4	140	1,000	12	250	25	0.41	0.58	2.46	100	0.01	В

The initial p-y modulus, E_{py} , varies linearly with depth. To obtain E_{py} use the equation

$$E_{py} = k_{py} * \mathbf{z}$$



Approximate Elevation Range (MSL)		In-situ Unit Weight (pcf)	Undrained Shear Strength (psf)			Drained Friction	Active Earth Pressure Coefficient (K _a)	At-Rest Pressure Coefficient (K _o)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus		OSHA Soil Type
	New Engineered Granular Fill	130	n/a	30	n/a	30	0.33	0.50	3.00	90	n/a	
595 – 592	Medium Black and Gray Clay A-7-6	123	1,800	0	0	26	0.39	0.56	2.56	900	0.01	A
592 – 584	Very Stiff Brown and Gray Silty Clay A-6	125	3,300	0	75	28	0.36	0.53	2.78	1,650	0.007	A
584 – 572	Hard Brown and Gray or Gray Silty Clay A-6	138	8,000	0	250	30	0.33	0.50	3.00	4000	0.004	A
572 – 566 SGB (48 - 52)	Very Stiff to Very Hard Silty Clay A-6	138	8,000	0	250	30	0.33	0.50	3.00	4000	0.004	A

Table D-4 - Lateral Resistance Soil Parameters – Station 236+00 to Station 267+00 (SGB 42 to SGB 51)



Approximate Elevation Range (MSL)	Soil Description	In-situ Unit Weight (pcf)	Undrained Shear Strength (psf)	Undrained Friction Angle (phi)	Drained Shear Strength (psf)	Friction	Active Earth Pressure Coefficient (K₃)	At-Rest Pressure Coefficient (K _o)	Passive Earth Pressure Coefficient (K _p)	Subgrade Modulus (pci) k_{py}		OSHA Soil Type
580 – 567 SGB (42,44,45 & 47)	Medium Dense to Extremely Dense Gray Sand A-3	140	n/a	38	n/a	38	0.24	0.38	4.20	90	n/a	С
574 – 572 SGB (49 - 51)	Stiff Brown and Gray or Gray Silt A-6	138	1,000	12	250	25	0.41	0.58	2.46	100	0.01	В

The initial p-y modulus, E_{py} , varies linearly with depth. To obtain E_{py} use the equation

 $E_{py} = k_{py} * \mathbf{z}$



APPENDIX E

LATERAL EARTH PRESSURE DIAGRAMS

GSG CONSULTANTS, INC. Engineers, Scientists & Construction Managers



Notes:

- 1. All pressures are additive
- 2. No safety factors included
- 3. For use only during short term construction

GSG CONSULTANTS, INC. Engineers, Scientists & Construction Managers



Notes:

- 1. All pressures are additive
- 2. No safety factors included
- 3. For use only during short term construction

GSG CONSULTANTS, INC. Engineers, Scientists & Construction Managers



Notes:

- 1. All pressures are additive
- 2. No safety factors included
- 3. For use only during long term construction