GEOTECHNICAL INVESTIGATION

IL-56 Noise Abatement Walls (Walls 1 thru 5)

IDOT Project No. P-91-439-01, Contract No 60P75

DuPage County, Illinois

Prepared for:

Mr. Joel Ihde, P.E., S.E.
Bollinger, Lach and Associates, Inc.
333 Pierce Road, Suite 200
Itasca, IL. 60143

Prepared by:

Geo Services, Inc.
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(630) 305-9186

GSI Job No. 12195
June, 2013
Revised September, 2021

Geo Services, Inc.
Geotechnical, Environmental and Civil Engineering

June 28, 2013
Revised September 29, 2021

Bollinger, Lach and Associates, Inc.
333 Pierce Road, Suite 200
Itasca, IL 60143

Attn: Mr. Joel Ihde, P.E., S.E.

GSI Project 12195

Re: Geotechnical Report
IL-56 Noise Abatement Walls 1 and 2
IDOT Project No. P-91-439-01, Contract No. 60P75
DuPage County, IL

Dear Mr. Ihde:

The following report presents the geotechnical analysis and recommendations for the construction of the proposed noise abatement walls included for the IL-56 Improvements Project, IDOT Project Number: P-91-439-01 (Contract No. 60P75). A total of twenty-four (24) borings (NW-01 thru NW-21 and NW-24) were completed at the site by Geo Services, Inc. (GSI). Copies of the location diagram, along with the boring logs, are included in this report.

If there are any questions regarding the information submitted herein, please do not hesitate to contact us.

Very truly yours,

GEO SERVICES, Inc.

Sean Kirwan

Sean Kirwan, E.I.T.
Assistant Project Engineer

Andrew J. Ptak, P.E.
Principal Engineer

ANDREW J. PTAK
062-052031
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS

expires 11/30/21

enc.

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PROJECT DESCRIPTION

The following report presents the results of the geotechnical investigation performed for the proposed noise abatement walls along IL-56 from near East Branch DuPage River to Lloyd Avenue located in Downers Grove, DuPage County, Illinois. The noise abatement walls proposed for this report are based upon information regarding the proposed improvements and subsurface information obtained from the twenty-four (24) soil borings.

Table 1 contains a summary of each noise abatement wall, station limits, and the corresponding borings that were drilled for each of the walls along IL-56 project limits.

Table 1- Noise Abatement Wall Boring Summary

Noise Abatement Wall #	Approximate Station Limits	Wall Length (feet)	Borings used for the Wall
1	205+30 to 218+50 (IL-56 Alignment, Left)	1,320	NW-01, NW-04, NW-06 to NW-14
2	218+50 to 220+45 (IL-56 Alignment, Left)	195	NW-13 and NW-15

The soil boring locations were selected by Geo Services based on the criteria in the IDOT Geotechnical Manual and submitted to and approved by Bollinger, Lach and Associates, Inc. (BLA) and IDOT. Soil borings were laid out by Geo Services, Inc. field personnel. Surveyed elevations were estimated by GSI based on the provided topographic drawings and are shown on the boring logs. The as-drilled locations for the borings are shown on the Boring Location Diagram found in the Appendix section of this report. The project improvement limits is shown on the site map on the following page.

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED

IL. 56 IMPROVEMENTS
EAST BRANCH DUPAGE RIVER TO LLOYD AVENUE, DOWNERS GROVE
DUPAGE COUNTY

BEGIN APPROX. STA. 189+00

R10E

T39N

END APPROX. STA. 234+00

SUBSURFACE INVESTIGATION PROCEDURES

Borings NW-04, NW-07, NW-11, NW-14, NW-17, NW-21 and NW-24 were performed during the month of September, 2012, and borings NW-1, NW-2, NW-5, NW-6, NW-8, NW-9, NW-10, NW-12, NW-13, NW-15, NW-16, NW-18, NW-19, and NW-20 were drilled during the month of May, 2013 with a truck mounted drill rig and the borings were advanced by means of hollow stem augers. In addition, selected borings (NW-19A and NW-20A) were hand-augered at off-shoulder/near top of the ditch areas where drilling rig cannot access. The hand-auger borings provide supplemental information to the full-depth offset borings. Disturbed soil samples were obtained from the bucket of the hand-auger. Representative samples from the drill rig were obtained employing split spoon sampling procedures in accordance with AASHTO T-206. Cohesive samples were tested for unconfined compressive strength using an IDOT modified RIMAC test device and/or calibrated penetrometer in the field.

LAB TESTING PROGRAM

The test procedures were performed in accordance with test procedures discussed in the IDOT Geotechnical Manual. All split-spoon samples obtained from the drilling operation were visually classified in the field. Cohesive samples were tested for unconfined compressive strength using an IDOT modified RIMAC test device and/or calibrated penetrometer in the field.

The soil testing program included performing water content, density and either unconfined compression and/or calibrated penetrometer tests on the cohesive samples recovered. Water content tests were performed on the non-cohesive samples recovered. These tests were performed upon representative portions of the samples obtained in the field. The results of the above testing, along with a visual classification of the material based upon both the Illinois textural classification and the AASHTO Soil Classification System, are indicated on the logs.

SUBSURFACE CONDITIONS

Specific soil conditions encountered in the borings are indicated on the soil boring logs. The stratification lines shown on the boring logs represent the approximate boundary between soil types, and the actual transition may be gradual.

Noise Abatement Wall 1 – Station 205+30 to 218+50

Soil conditions for Noise Abatement Wall 1 were represented by borings NW-01, NW-04 and NW-06 to NW-14. At borings drilled at off-pavement locations, surficial sections consist of 10 to 12 inches of topsoil underlain with stiff clay to clay loam soils. Surficial section of borings drilled at pavement areas consisted of 9 to 12 inches of asphalt overlying 8 to 12 inches aggregate subbase and stiff to very stiff clay to clay loam fill. Layers of buried topsoil were also encountered below the fill strata at borings NW-01, NW-06 and NW-10 at depths ranging from 5 to 8 feet below ground surface (elevation ranges of 682 to 685 feet). Beneath the surficial and fill materials, soil conditions consist of loose to dense loam to sand, silt and gravel soils at NW-01, NW-04, and NW-06 to NW-09, or stiff to very stiff clay loam soils at NW-09 to NW-14 to termination of borings at approximate depth of 25 feet below ground surface (approximate elevation of 657 feet). Moisture contents were generally in the high teens to mid-twenties for cohesive soils and low teens for granular soils.

Noise Abatement Wall 2 – Station 218+50 to 220+45

Soil conditions for Noise Abatement Wall 2 were represented by borings NW-13 and NW-15. Surficial materials consisted of 14 inches of asphalt overlying 8 to 12 inches aggregate subbase at boring NW-15, which was drilled at pavement areas, or 10 inches of topsoil at boring NW-13, which was drilled at off-pavement location. The surficial materials were underlain with 2 to 3.5 feet of stiff to very stiff clay loam fill to approximate elevation of 722 feet. Beneath the fill soils, soil conditions typically consist of stiff to hard clay loams to termination of borings at approximate depth of 25 feet below ground surface (approximate elevation of 703 feet). Moisture contents were generally in the high teens to mid-twenties for cohesive soils and low teens for granular soils.

GROUNDWATER CONDITIONS

Groundwater was estimated from water levels encountered while drilling in conjunction with soil coloration change from brown and gray to gray between the strata.

When groundwater was encountered, water levels were within the elevation ranges of 668 to 730 feet. Due to the stratum change from brown and gray to gray, we estimate the long-term groundwater table at depths of 8 to 12 feet below existing grade. Fluctuations in the amount of water accumulated and in the hydrostatic water table can be anticipated depending upon variations in precipitation, evaporation, and surface runoff.

ANALYSIS AND RECOMMENDATIONS

Site Seismic Considerations

For LFRD design, according to the AASHTO LRFD Bridge Design Specification 2020, the project site has a horizontal Response Spectral Acceleration of 0.034 at a period of 1.0 second and 5% critical dampening (S_1). The site also has a horizontal Response Spectral Acceleration of 0.091 at a period of 0.2 seconds and 5% critical dampening (S_s). The following table shows recommended seismic design data in accordance to the AASHTO LRFD Bridge Design Specification 2020.

Table 2 – Seismic Design (Approximately 1000-Year Return Period)

Seismic Performance Zone (SPZ)	1
Spectral Acceleration at 1 second (S_{D1})	0.058
Design Spectral Acceleration at 0.2 seconds (S_{Ds})	0.109
Soil Site Class	C

The project site is considered to be in a low seismic area and is considered a non-extreme event. Liquefiable layers are not expected to impact the design of the new bridge.

Settlement Analysis

Based on the fact that little to no new fill is proposed and a review of the soil conditions at each of the walls, no settlement concerns are noted on the noise abatement walls. Total settlement of foundations for the walls situated on approved natural soils is estimated to be on the order of 1/4 inch or less.

Noise Wall Foundation Recommendations

The proposed noise walls may be based on deep foundations consisting of straight-shaft drilled caissons. A summary of recommended using a maximum net factored soil bearing pressure for caissons are tabulated in the following table.

Table 3 – Recommended Bearing Capacity for the Noise Abatement Walls

Noise Abatement Wall #	Station Limits, (Estimated Wall Height Ranges)	Bearing Soil Stratum Description (Elevation [2], feet)	Net Factored Bearing Capacity (psf)[1]
1	205+30 to 218+50 (10 to 12 feet)	Medium Dense Sandy Loam, Sand and Gravel to Very Stiff Clay Loam (698 to 710 feet)	4,000
2	218+50 to 220+45 (10 to 13 feet)	Stiff to Hard Clay Loam (715 to 720 feet)	4,500

Notes: 1. Net factored bearing capacity is computed for a resistance factor of 0.45.
2. Denotes approximate bottom of the caisson tip elevation at 10 to 18 below grade.

Caisson concrete may be placed by the free fall method into the clean and dry shaft excavations as long as concrete does not hit the sides of the shaft or the rebar cage during placement. Construction of the noise wall foundations should be in accordance with current IDOT Standard Specifications for Road and Bridge Construction (SSRBC), Adopted April 1, 2016 as well as current IDOT Geotechnical Manual (December 4, 2020).

For construction of caissons extending deeper than 10 to 18 feet in depth at the majority of the noise abatement wall borings, it is expected that caissons will need to be drilled using temporary casing and possibly a polymer or slurry due to potential water infiltration from the water table and/or to prevent cave-ins caused by granular soils during construction. The use of temporary casing may be required to prevent sloughing prior to concrete placement.

During excavation for the proposed improvements, movement of adjacent soils into the excavation should be prevented. All excavations should be performed in accordance with the latest Occupational Safety and Health Administration (OSHA) requirements.

Lateral Earth Pressure Recommendations

The soil parameters on the following Tables 4 and 5 should be used for the lateral resistance design of the noise walls. Adhesion values are also shown in the Lateral Soil Pressure Recommendations on the following tables.

Table 4 – Lateral Soil Pressure Parameters for Noise Abatement Wall 1

Material Description (Approx. Elevation, feet)	Unit Weight (pcf)	Undrained Friction Angle (°)	Undrained Cohesion (pcf)	Drained Friction Angle (°)	Drained Cohesion (psf)	Adhesion (psf)	Lateral Modulus of Subgrade Reaction[1] (pci)	Strain (ε_{50})[1]
Stiff to Stiff Clay/ Clay Loam Fill (688 to 681)	120	0	2,000	28	0	600	700	0.006
Buried Topsoil [2] (681 to 678)	90	0	0	10	0	0	0	--
Medium Dense to Dense Silty/ Sandy Loam (681 to 675)	125	32	n/a	32	0	n/a	100	0.002
Stiff to Very Stiff to Clay/ Clay Loam [3] (675 to 653)	125	0	3,000	30	0	800	1,000	0.005
Loose to Dense Sand and Gravel[4] (675 to 653)	125	32	n/a	32	0	n/a	100	0.002

Notes: 1. Values recommended for use in design from COM624 software manual
2. Buried topsoil encountered at borings NW-01, NW-06 and NW-10 only.
3. Stiff to Very Stiff Clay to Clay Loam soils encountered at the near termination of borings at NW-10 thru NW-13 only.
4. Loose to Dense Sand & Gravel soils encountered at the near termination of borings at NW-04 thru NW-09 only.

Table 5 – Lateral Soil Pressure Parameters for Noise Abatement Wall 2

Material Description (Approx. Elevation, feet)	Unit Weight (pcf)	Undrained Friction Angle (°)	Undrained Cohesion (pcf)	Drained Friction Angle (°)	Drained Cohesion (psf)	Adhesion (psf)	Lateral Modulus of Subgrade Reaction[1] (pci)	Strain (ε_{50})[1]
Medium Stiff to Stiff Clay/ Clay Loam Fill (724 to 722)	120	0	1,500	28	0	500	400	0.006
Very Stiff to Hard Clay/ Clay Loam (722 to 700)	125	0	4,000	30	0	1,000	1,000	0.005

Note: 1. Values recommended for use in design from COM624 software manual

GENERAL QUALIFICATIONS

The analysis and recommendations presented in this report are based upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations that may occur between borings or across the site. In addition, the soil samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of the report. In addition, it is recommended that Geo Services Inc. be retained to perform construction observation and thereby provide a complete professional geotechnical engineering service through the observational method.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranties, either expressed or implied, are intended or made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer. Also note that Geo Services Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of the report's subsurface data or engineering analyses without the express written authorization of Geo Services Inc.

Attachments:

- General Notes
- Boring Location Diagram
- Boring Logs

ATTACHMENTS

GENERAL NOTES

CLASSIFICATION

American Association of State Highway & Transportation Officials (AASHTO) System used for soil classification.

Cohesionless Soils

Relative Density	No. of Blows per foot N
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	Over 50

Cohesive Soils

Consistency	Unconfined Compressive Strength - qu (tsf)
Very Soft	Less than 0.25
Soft	0.25 - 0.5
Medium Stiff	0.5 - 1.0
Stiff	1.0 - 2.0
Very Stiff	2.0 - 4.0
Hard	Over 4.0

TERMINOLOGY

Streaks are considered to be paper thick. **Lenses** are considered to be less than 2 inches thick. **Layers** are considered to be less than 6 inches thick. **Stratum** are considered to be greater than 6 inches thick.

DRILLING AND SAMPLING SYMBOLS

SS:	Split Spoon 1-3/8" I.D., 2" O.D.	HS:	Housel Sampler
ST:	Shelby Tube 2" O.D., except where noted	WS:	Wash Sample
AS:	Auger Sample	FT:	Fish Tail
DB:	Diamond Bit - NX: BX: AX	RB:	Rock Bit
CB:	Carboloy Bit - NX: BX: AX	WO:	Wash Out
OS:	Osterberg Sampler		

Standard "N" Penetration: Blows per foot of a 140 lb. hammer falling 30" on a 2" O.D. Split Spoon

WATER LEVEL MEASUREMENT SYMBOLS

WL:	Water	WD:	While Drilling
WCI:	Wet Cave In	BCR:	Before Casing Removal
DCI:	Dry Cave In	ACR:	After Casing Removal
WS:	While sampling	AB:	After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils, the accurate determination of ground water elevations is not possible in even several days observation, and additional evidence on ground water elevations must be sought.

PLAN

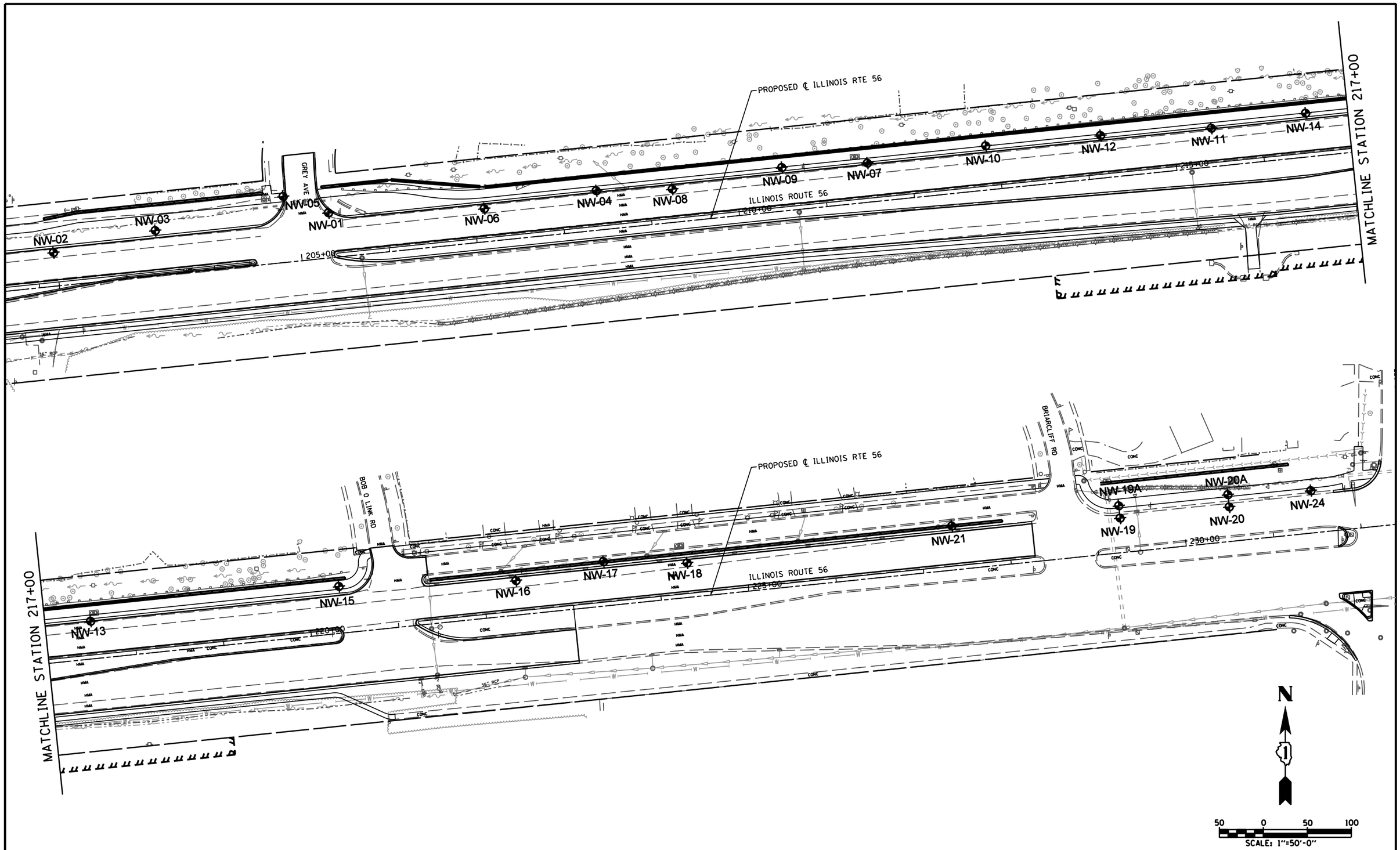
DATE	BY	
		SURVEYED
		PLOTTED
		ALIGNMENT CHECKED
		RT. OF WAY CHECKED
		CADD FILE NAME

NOTE BOOK
NO.

PROFILE

DATE	BY	
		SURVEYED
		PLOTTED
		GRADES CHECKED
		BAL. NOTED
		STRUCTURE NOTATNS CHKD

NOTE BOOK
NO.



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USER NAME =	DESIGNED - RWC	REVISED -	
	DRAWN - RWC	REVISED -	
PLOT SCALE =	CHECKED - AJP	REVISED -	
PLOT DATE =	DATE - 6/26/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL ROUTE 56 (BUTTERFIELD ROAD)
NOISE ABATEMENT WALLS 1 THRU 5
SOIL BORING PLAN

SCALE: 1"=50' | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.U RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
365	634X-N-3	DuPAGE	1	1
		CONTRACT NO. 60P75		
	ILLINOIS FED. AID PROJECT			

Geo Services, Inc.
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805 Amherst Court, Suite 204
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SOIL BORING LOG

DATE 9/24/2012

LOGGED BY DR

GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-01**
Station 205+30
Offset 61.0' Left
Ground Surface Elev. *682.1*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *668.6* ▼
Upon Completion *670.6* ▽
After ____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				10.0" CLAYEY TOPSOIL–dark brown
681.2	AS	–	35	
	2			
	2			CLAY LOAM–brown–stiff
	3	1.0P	16	
678.1	3			
	4			TOPSOIL–black
–5	5	1.5P	32	
676.1	2			
	2			SILTY CLAY–brown & gray– stiff (A–6)
	5	1.0P	23	
674.1	4			
	9			SILTY SAND–brown– medium dense (A–2)
–10	9	NP	8	
▽*670.6*	4			
	8			SILTY LOAM–brown & gray– medium dense (A–4)
	12	NP	17	
▼*668.6*	5			
	12			
–15	12	NP	9	
	8			SAND & GRAVEL–gray– medium dense to dense (A–1)
	11			
	12	NP	8	
	10			
	27			
–20	20	NP	7	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
	7			SAND & GRAVEL–gray– medium dense to dense (A–1)
	17			
	20	NP	5	
	4			
	11			
657.1 –25	10	NP	8	
				End Of Boring @ –25.0' Hollow Stem Augers CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

Geo Services, Inc.
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(630) 355-2838

SOIL BORING LOG

DATE 5/29/2013

LOGGED BY DR

GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-02**
Station 202+20
Offset 38.3 Left
Ground Surface Elev. *678.3*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *Dry to 5.0'*
Upon Completion *n/a*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				9.0" ASPHALT *677.6*
	6			CRUSHED STONE-medium dense (Fill) *676.3*
	4 6	2.54P	28	TOPSOIL-black *675.3*
	2			SANDY CLAY LOAM-gray-stiff (A-6)
-5	3 3	1.5P	16	*672.8*
	6			SAND & GRAVEL-brown-medium dense (A-1)
	8 8	NP	13	
	10			
-10	15 14	NP	11	*667.8*
	12			SAND & GRAVEL-gray-medium dense to dense (A-1)
	15 17	NP	13	
	19			
-15	17 23	NP	11	
	9			
	12 13	NP	9	
	10			
-20	12 12	NP	12	
	14			SAND & GRAVEL-gray-medium dense to dense (A-1)
	16 17	NP	8	
	12			
-25	15 17	NP	8	*653.3*
				End Of Boring @ -25.0'
				Hollow Stem Augers to 5.0'
				Rotary Drilling To Completion
				CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-03**
Station 203+37
Offset 51.2' Left
Ground Surface Elev. 678.2

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry to 5.0'
Upon Completion n/a
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL—black			
677.2	AS	–	26
	2		
CLAY to CLAY LOAM—brown & gray spotted black—very stiff (A-6) Fill	4		
	4	3.0P	19
675.2			
	2		***96***
SILTY CLAY—brown & gray—medium stiff (A-6)	2		
–5	2	0.8B	23
672.7			
	4		
SANDY CLAY LOAM with Gravel—brown & gray—medium stiff (Possible Fill)	5		
	7	0.5P	18
670.2			
	6		
SANDY LOAM—gray—medium dense (A-2)	6		
–10	8	NP	21
667.7			
	10		
	10		
	7	NP	10
	9		
SAND & GRAVEL—gray—medium dense to dense (A-1)	9		
–15	10	NP	12
	14		
	14		
	11	NP	9
	10		
	11		
–20	12	NP	11

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	12		
SAND & GRAVEL—gray—medium dense to dense (A-1)	15		
	16	NP	9
	15		
	16		
653.2 –25	18	NP	10
End Of Boring @ –25.0'			
Hollow Stem Augers			
CME Automatic Hammer			
–30			
–35			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B—Bulge, S—Shear, P—Penetrometer) ST—Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR—No Recovery

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SOIL BORING LOG

DATE 9/24/2012

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-04**
Station 208+33
Offset 62.0' Left
Ground Surface Elev. 693.1

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	AS	–	14	10.0" CLAYEY TOPSOIL–dark brown
692.2				
	7			
	11			
	8	4.5+P	10	
	3		*108*	
	3			
–5	4	1.4B	21	CLAY to CLAY LOAM–brown & gray spotted black–stiff to hard (A–6) Fill
	3			
	4			
	5	2.0P	22	
	2		*107*	
	5			
–10	6	2.5B	21	
	2		*105*	
	6			
	8	4.4B	22	
680.1				
	1			
	3			SILTY CLAY–dark brown to black–very stiff (A–6)
–15	5	3.75P	23	
677.6				
	3			
	3			SANDY CLAY LOAM–brown–stiff (A–2/A–6)
	4	1.75P	19	
675.1				
	5			SAND–brown–medium dense (A–3)
	7			
–20	9	NP	9	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	7			SAND–brown–medium dense (A–3)
	9			
	8	NP	9	
670.1				
	4			SAND with Gravel–brown & gray–medium dense (A–1)
	7			
668.1 –25	8	NP	17	
				End Of Boring @ –25.0'
				Hollow Stem Augers
				CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

DATE 5/29/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-05**
Station 204+14
Offset 74.9' Left
Ground Surface Elev. *681.0*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *672.0* ▼
Upon Completion *672.0* ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SANDY TOPSOIL with Gravel—black
680.0	AS	–	22	
	3		***101***	
	4			CLAY LOAM—dark brown, gray & black—stiff (A-6) Fill
	4	1.9B	21	
678.0				
	2		***93***	CLAY—dark brown & gray spotted black—stiff (CL)
–5	4	1.7B	25	
675.5				
	3			SANDY LOAM—brown—loose (A-2)
	4			
	4	NP	14	
673.0				
	3			CLAYEY SAND & GRAVEL—brown—loose (A-2) ▽▼
	5			
–10	4	NP	15	
670.5				
	10			SAND & GRAVEL—gray—medium dense to dense (A-1)
	6			
	6	NP	8	
	10			
	8			
–15	13	NP	15	
	6			
	7			
	10	NP	15	
	5			
	6			
–20	7	NP	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	11			SAND & GRAVEL—gray—medium dense to dense (A-1)
	17			
	21	NP	8	
	9			
	21			
656.0 –25	17	NP	6	
				End Of Boring @ –25.0'
				Hollow Stem Augers
				CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B—Bulge, S—Shear, P—Penetrometer) ST—Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR—No Recovery

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SOIL BORING LOG

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls
SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM
COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX
BORING NO. **NW-06**
Station 207+12
Offset 37.6' Left
Ground Surface Elev. *690.4*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *674.4* ▼
Upon Completion *674.4* ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				9.0" ASPHALT
689.7				
	2		***105***	CLAYEY SAND & GRAVEL–brown (Fill)
688.9				
	3			
	3	2.3B	19	
				CLAY LOAM–brown–
	2		***100***	stiff to very stiff (A–6) Fill
	3			
–5	3	1.2B	24	
	4		***101***	
	6			
	6	2.4B	18	
681.9				
	3			
	5			
–10	5	3.0P	36	TOPSOIL–black
678.9	3		***100***	
	4			SANDY CLAY LOAM–brown–
	5	1.7B	20	stiff (A–6)
677.4				
	5			
	4			
–15	4	NP	13	
				SILTY SAND–brown–
▽▼	4			loose to medium dense (A–2)
	5			
	5	NP	18	
672.4				
	3			
	6			SAND & GRAVEL–gray–
–20	9	NP	10	medium dense (A–1)

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	13			
	16			
	16	NP	7	SAND & GRAVEL–gray–
				medium dense (A–1)
	16			
	25			
665.4 –25	15	NP	9	
				End Of Boring @ –25.0'
				Hollow Stem Augers
				CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-07**
Station 211+38
Offset 62.0' Left
Ground Surface Elev. 706.8

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
706.0				10.0" TOPSOIL-black
	AS	–	19	
	3			
	3			CLAY-dark brown & black-
	4	–	20	very loose to loose (A-6) Fill
	1			
–5	2			
	2	–	24	
701.3				
	3		102	CLAY LOAM-brown-
	5			very stiff to hard (A-6)
	6	2.3B	24	
	4		112	
	7			
–10	10	6.3B	18	
696.3				
	4			SILTY CLAY LOAM-brown-
	5			loose (A-4/A-6)
	4	–	14	
693.8				
	9			SILTY SAND & GRAVEL-brown-
	12			medium dense (A-2)
–15	15	NP	9	
691.3				
	4			
	4			
	5	–	13	SILTY CLAY LOAM-brown-
	6			loose to dense (A-4/A-6)
	12			
–20	15	–	10	
	7			SILTY CLAY LOAM-brown-
	14			loose to dense (A-4/A-6)
	17	–	9	
	10			
	13			
681.8 –25	17	–	9	
				End Of Boring @ –25.0'
				Hollow Stem Augers
				CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-08**
Station 209+27
Offset 37.7' Left
Ground Surface Elev. 700.7

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
700.0				9.0" ASPHALT
699.2	4		112	SAND & GRAVEL-brown (Fill)
	7 8	6.6S@ 12.7%	 13	
	4			
−5	6 6	21.5P	19	
	5		113	CLAY LOAM-brown & gray-very stiff to hard (A-6) Fill
	7 7	4.25B	14	
	2			
−10	6 6	3.75P	16	
	4		109	
	6 7	3.3B	15	
687.7				
	4		101	SANDY CLAY LOAM-brown-stiff (A-6)
−15	5 6	1.25B	16	
685.2				
	4		84	
	5 7	3.4S@ 12.7%	 32	SILTY CLAY-brown-very stiff (A-6)
	2		923	
−20	3 4	3.2B	26	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
680.2				SILTY CLAY-brown-very stiff (A-6)
	5			
	23 10	NP	13	SAND & GRAVEL-brown-medium dense to dense (A-1)
	7			
675.7 −25	10 11	NP	10	
				End Of Boring @ −25.0' Hollow Stem Augers CME Automatic Hammer
−30				
−35				
−40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-09**
Station 210+54
Offset 49.4' Left
Ground Surface Elev. *705.5*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *Dry*
Upon Completion *Dry*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	6			12.0" ASPHALT, 12.0" SAND & GRAVEL-dark brown
703.5	9			
	9	4.5+P	12	
	4		***111***	CLAY LOAM-brown- very stiff to hard (A-6) Fill
-5	6 7	4.2B	17	
	3		***97***	
	5 6	2.0B	22	
697.5	4			SANDY CLAY LOAM-dark brown- hard (A-6)
-10	7 8	4.5P	20	
695.0	5			SILTY CLAY LOAM with Gravel-brown- medium dense (A-4/A-6)
	6 8	4.0P	13	
	4			
-15	7 10	3.0P	14	
690.0	14			SILTY SAND & GRAVEL-brown- medium dense to dense (A-2)
	30 27	NP	8	
	6			
-20	6 9	NP	11	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SILTY SAND & GRAVEL-brown (A-2) *685.0*
	5			
	7 10	NP	11	SANDY SILT-brown- medium dense to dense (A-2/A-4)
	7			
680.0 -25	14 17	NP	10	
-30				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-10**
Station 212+87
Offset 50.2' Left
Ground Surface Elev. *715.0*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *Dry*
Upon Completion *Dry*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				8.0" ASPHALT, 4.0" CLAYEY SAND, GRAVEL & STONE *714.0*
	4			
	4			
	3	3.75P	17	
				CLAY LOAM-brown- very stiff (A-6) Fill
	2			
	3			
-5	4	2.25P	18	
	2			
708.0	3			
	3	1.5P	36	
				TOPSOIL-black
	1			
705.5	3			
-10	6	1.5P	28	
				SANDY CLAY LOAM-dark brown- stiff (A-6)
703.5	2		***111***	
	3			
	4	1.3B	18	
	2		***115***	
	5			
-15	6	2.3B	16	
				CLAY LOAM-brown- stiff to very stiff (A-6)
	4		***119***	
	5			
	5	1.8B	16	
	3		***120***	
	4			
-20	6	1.6B	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY LOAM-brown (A-6) *694.0*
	10			
	9			
	8	NP	12	
				SILTY LOAM-brown- medium dense (A-4)
	10			
	15			
690.0 -25	12	NP	13	
				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
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SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-11**
Station 215+45
Offset 62.0' Left
Ground Surface Elev. *722.4*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*

Groundwater Elevation:
First Encounter *Dry*
Upon Completion *Dry*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				10.0" TOPSOIL-black
721.6	AS	–	12	
	2			
	3			
	3	1.25P	24	CLAY-gray- very stiff to hard (A-6)
				CLAY-dark brown & black- stiff (A-6) Fill
	3		***121***	
	5			
-5	6	2.7B	15	
	2		***122***	
	4			
	5	2.4B	14	
714.4				
	3		***121***	
	4			
-10	5	3.3B	14	
	3			CLAY to CLAY LOAM-brown- very stiff (A-6)
	7			
	10	4.5P	11	
	3		***112***	
	5			
-15	8	4.8B	19	
706.9				
	3		***119***	SILTY LOAM-brown- medium dense (A-4)
	5			
	8	2.1B	15	
704.4				
	4		***119***	CLAY-gray- very stiff to hard (A-6)
	6			
-20	14	4.0B	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	15		***122***	CLAY-gray- very stiff to hard (A-6)
	7			
	9	2.4B	14	
	5			
	8			
697.4 -25	13	–	15	
				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-12**
Station 214+18
Offset 48.4' Left
Ground Surface Elev. 719.7

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
718.7				9.0" ASPHALT, 3.0" CLAYEY SAND & GRAVEL
	2			CLAY LOAM with Stone– dark brown & black–loose (Fill)
717.2	3			
	3	1.5P	20	
	2		*114*	CLAY LOAM–brown–stiff (A–6)
	7			
–5	6	1.9B	17	
714.2				
	4			SILTY LOAM–brown–loose (A–4)
	4			
	5	NP	16	
711.7				
	2		*114*	CLAY LOAM–brown– stiff to very stiff (A–6)
	3			
–10	3	1.3B	16	
	3		*116*	
	6			
	6	2.1B	17	
	2		*113*	
	3			
–15	6	1.9B	18	
704.2				
	21			SAND & GRAVEL–brown–dense (A–1)
	25			
	23	NP	6	
701.7				
	3		*122*	CLAY LOAM–brown–very stiff (A–6)
	7			
–20	12	2.9B	14	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
699.2				CLAY LOAM–brown–very stiff (A–6)
	3		*120*	
	5			CLAY LOAM–gray–very stiff (A–6)
	7	3.0B	14	
696.7				
	10			SILTY LOAM–gray–medium dense (A–4)
	9			
694.7 –25	8	NP	15	
				End Of Boring @ –25.0' Hollow Stem Augers CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-13**
Station 217+48
Offset 62.0' Left
Ground Surface Elev. 725.0

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
0	AS	–	13
	3		
	5		
	5	1.75P	18
			102
	3		
-5	3	1.2B	24
	3		
	5		
	5	1.75P	25
			99
	2		
	4		
-10	6	3.0B	26
			115
	3		
	4		
	5	3.0B	17
			121
	4		
	4		
-15	6	2.1B	15
	10		
	10		
	10	NP	15
			117
	4		
	6		
-20	9	4.2B	16
	4		
	7		
	10	2.25B	17
			122
	5		
	7		
-25	9	3.4B	14
-30			
-35			
-40			

10.0" TOPSOIL-black
724.2

CLAY LOAM-dark brown & black-stiff (A-6) Fill
722.0

CLAY LOAM-brown-very stiff to hard (A-6)
712.0

CLAY to CLAY LOAM-gray-very stiff to hard (A-6)

CLAY to CLAY LOAM-gray-very stiff to hard (A-6)

700.0

End Of Boring @ -25.0'
Hollow Stem Augers
CME Automatic Hammer

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-14**
Station 216+52
Offset 49.7' Left
Ground Surface Elev. 726.2

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
725.5				8.0" ASPHALT
	5			CRUSHED STONE & GRAVEL-loose (Fill)
724.2	4			
	3	1.5P	24	CLAY LOAM-dark brown & black-stiff (Fill)
723.2				
	2			SILTY CLAY-dark brown-
	3			stiff (A-6) Wet
-5	4	1.75P	27	
720.7				
	4			
	6			
	6	4.5P	14	
	4		*117*	CLAY LOAM-brown-
				stiff to hard (A-6)
	4			
-10	5	1.2B	15	
	4		*122*	
	7			
	9	3.5B	12	
713.2				
	4			
	6			
-15	7	3.0P	16	
	3		*117*	CLAY to CLAY LOAM-gray-
				stiff to very stiff (A-6)
	5			
	6	2.0B	16	
	3		*115*	
	5			
-20	6	2.2B	17	
	5		*121*	
	8			
	9	1.9B	14	CLAY to CLAY LOAM-gray-
				stiff to very stiff (A-6)
	5			
	12			
701.2 -25	11	3.0P	12	
				End Of Boring @ -25.0'
				Hollow Stem Augers
				CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

Geo Services, Inc.
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805 Amherst Court, Suite 204
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(630) 355-2838

SOIL BORING LOG

DATE 5/24/2013

LOGGED BY DR

GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-15**
Station 220+37
Offset 53.2' Left
Ground Surface Elev. *731.4*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *727.9* ▼
Upon Completion *Dry* ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				14.0" ASPHALT
730.2				
	3			SAND, GRAVEL & STONE (Fill)
729.4	3			
	4	2.5P	24	
				CLAY LOAM-dark brown & gray spotted black-very stiff (A-6) Fill ▼
	3		***105***	
	4			
-5	4	2.1B	22	
725.9				
	4		***100***	
	5			
	6	2.4B	25	
	4			
	9			
-10	10	2.75P	19	CLAY LOAM-brown- stiff to very stiff (A-6)
	3		***117***	
	6			
	6	1.1B	16	
	2			
	6			
-15	6	2.25P	17	
715.9				
	2		***108***	
	6			
	9	2.9B	20	
				CLAY to CLAY LOAM-gray- stiff to very stiff (A-6)
	3		***119***	
	6			
-20	7	1.5B	14	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	4		***123***	
	7			
	6	2.25P	12	CLAY to CLAY LOAM-gray- stiff to very stiff (A-6)
	6		***118***	
	9			
706.4 -25	9	3.0B	16	
				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 5/28/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-16**
Station 222+38
Offset 39.2' Left
Ground Surface Elev. 734.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 717.5 ▼
Upon Completion 720.0 ▽
After _____ Hrs. ▼

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				15.0" ASPHALT
732.7				
	4			SAND & GRAVEL-medium dense (Fill)
732.0	6			
	7	4.5+P	17	
	6		*121*	
	6			
-5	8	3.9B	15	
				CLAY LOAM-brown-
				very stiff to hard (A-6) Fill
	6		*114*	
	8			
	11	5.8B	18	
	5			
	10			
-10	7	2.5P	17	
723.5				
	5			
				CLAY LOAM-gray-very stiff (A-6)
	7			
	9	2.75P	18	
721.0				
	2			
				SILTY LOAM-gray-
	6			medium dense (A-4)
-15	7	NP	18	
718.5				
▽ ▼				
	18			
	39			
	14	3.0P	13	
				CLAY LOAM-gray-
				stiff to very stiff (A-6)
	4		*124*	
	7			
-20	8	1.9B	13	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY LOAM-stiff to very stiff (A-6)
713.5				
	3		*113*	
	5			
	10	1.4B	18	CLAY-gray-stiff (A-6)
	3			
	5			
709.0 -25	6	1.0P	20	
				End Of Boring @ -25.0'
				Hollow Stem Augers
				CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 9/21/2012

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-17**
Station 223+50
Offset 50.0' Left
Ground Surface Elev. 734.5

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				15.0" ASPHALT
733.3				
	5		*116*	
	4			
	3	3.8B	17	CLAY to CLAY LOAM-gray- very stiff to hard (A-6)
	4		*114*	
	5			
-5	7	5.1B	18	CLAY-brown & gray- very stiff to hard (A-6)
	5		*111*	
	9			
	12	7.3B	19	
	8		*116*	
	13			
-10	17	7.6B	17	
724.0				
	4		*111*	
	8			
	11	4.9B	19	
	3		*114*	
	5			
-15	9	4.4B	18	CLAY to CLAY LOAM-gray- very stiff to hard (A-6)
	3			
	5			
	7	2.0P	14	
	4		*128*	
	8			
-20	10	3.6B	12	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3		*123*	
	6			
	9	2.0B	14	
	4			
	7			
709.5 -25	6	-	12	
				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 5/28/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SE1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-18**
Station 224+34
Offset 39.2' Left
Ground Surface Elev. *735.8*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *711.8* ▼
Upon Completion *711.8* ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12.0" ASPHALT
				734.8
	12			SAND & GRAVEL—medium dense (Fill)
	9			*733.8*
	7	4.5+P	18	CLAY LOAM—brown & black—hard (Fill)
				732.8
	6			SANDY LOAM—brown—
	6			medium dense (A-2) Apparent Fill
-5	8	NP	14	
				730.3
	3			
	5			
	7	3.25P	19	
	2		***116***	CLAY—gray—very stiff to hard (A-6)
	8			
-10	12	5.3B	17	
	4		***123***	
	8			
	9	2.4B	14	
				722.8
	3			
	5			SILTY LOAM—gray—loose (A-4)
-15	4	NP	11	
				720.3
	3		***127***	
	5			
	10	2.75B	12	CLAY LOAM—gray—very stiff (A-6)
	5		***126***	
	8			
-20	10	3.3B	12	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	5		***127***	CLAY LOAM—gray—very stiff (A-6)
	11			
	18	3.8B	11	
				712.8
	5			SILTY CLAY LOAM—gray— ▽▼
	6			medium dense (A-4/A-6)
-25	8	2.0P	17	*710.8*
				End Of Boring @ -25.0'
				Hollow Stem Augers
				CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 5/29/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-19**
Station 229+25
Offset 39.3' Left
Ground Surface Elev. 742.1

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter 728.1 ▼
Upon Completion 728.1 ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12.0" ASPHALT
				741.1
	4			SAND & GRAVEL—medium dense (Fill)
	12			740.1
	7	NP	3	
				TOPSOIL—black
	2			
	3			
-5	4	3.0P	33	
				736.6
	2		89	SILTY CLAY—brown & gray spotted
	2			black—medium stiff (A-6) Wet
	3	0.5B	33	
				734.1
	2		113	
	4			
-10	6	3.3B	17	
				CLAY LOAM—brown & gray—
	5		118	stiff to very stiff (A-6)
	8			
	9	3.7B	15	
▽▼	4		122	
	2			
-15	5	1.7B	14	
				726.6
	3		110	
	6			
	8	1.8B	20	
				CLAY—gray—
	2		111	stiff to very stiff (A-6)
	6			
-20	18	2.1B	19	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY—gray—stiff to very stiff (A-6) 721.6
	4			
	5			
	6	NP	12	SILTY LOAM—gray—medium dense
	4			
	11			
-25	9	NP	11	717.1
				End Of Boring @ -25.0'
				Hollow Stem Augers
				CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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(630) 355-2838

SOIL BORING LOG

DATE 5/30/2013

LOGGED BY TZ

GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-19A**
Station 229+28
Offset 53.4' Left
Ground Surface Elev. *741.0*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*

Groundwater Elevation:
First Encounter *736.0* ▼
Upon Completion *n/a* ▽
After _____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material Description
740.0	AS	–	35	TOPSOIL–black (Fill)
738.5	AS	1.25P	25	CLAY LOAM–brown & gray–stiff (A–6) Fill
▼736.0 –5	AS	0.75P	36	TOPSOIL–black
734.0	AS	1.0P	30	SILTY CLAY–dark brown & gray spotted black–stiff (A–6) Wet
731.0 –10	AS	1.5P	22	CLAY–brown & gray–stiff (A–6)
–15				End Of Boring @ –10.0' Hand Auger
–20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
–25			
–30			
–35			
–40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

DATE 5/29/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-20**
Station 230+52
Offset 39.2' Left
Ground Surface Elev. 743.8

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 727.8 ▼
Upon Completion 725.8 ▽
After ____ Hrs. ▽

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				13.0" ASPHALT
742.7				
	8			CRUSHED STONE—medium dense (Fill)
741.8	6			
	6	4.5+P	22	CLAY LOAM—brown & gray spotted black—hard (A-6) Fill
740.8				
	2			
	2			
-5	2	2.75P	27	
	2			SILTY CLAY—dark brown, gray & black—stiff to very stiff (A-6) Wet
			85	
	3			
	4	1.2B	29	
735.3				
	2		101	
	2			
-10	5	1.3B	25	
	2		112	
	3			CLAY—brown & gray— stiff to very stiff (A-6)
	5	1.5B	19	
	3		107	
	6			
-15	7	2.5B	22	
728.3				
	5			SAND & GRAVEL—gray— medium dense (A-1)
	7			
	6	NP	7	
725.8				
	4		129	CLAY LOAM—gray—very stiff (A-6)
	6			
-20	8	2.9B	11	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY LOAM—gray—very stiff (A-6) 723.3
	2			
	4			
	8	NP	13	SILTY LOAM—gray— medium dense (A-4)
	10			
	10			
718.8 -25	6	NP	12	
				End Of Boring @ -25.0' Hollow Stem Augers CME Automatic Hammer
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 5/30/2013

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-20A**
Station 230+53
Offset 53.2' Left
Ground Surface Elev. *742.2*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*

Groundwater Elevation:
First Encounter *Dry*
Upon Completion *Dry*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6.0" TOPSOIL-black (Fill) *741.7*	AS	–	15				
	AS	2.5P	20				
CLAY LOAM-brown-stiff to very stiff (A-6) Fill							
-5	AS	1.0P	21	-25			
736.7 TOPSOIL-black							
735.2	AS	0.75P	24				
CLAY-brown-stiff (A-6)							
732.2 -10	AS	1.0P	23	-30			
End Of Boring @ -10.0' Hand Auger							
-15				-35			
-20				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

DATE 9/21/2012

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GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-21**
Station 227+27
Offset 50.1' Left
Ground Surface Elev. *739.2*

Surface Water Elev. *n/a*
Stream Bed Elev. *n/a*
Groundwater Elevation:
First Encounter *Dry*
Upon Completion *Dry*
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				10.0" TOPSOIL-black
				738.4
	AS	–	13	
	8			
	9			CLAY LOAM with Stone-brown & gray-
	10	–	13	medium dense (Fill)
				736.2
	6			
	11			
–5	15	–	12	
	5		***116***	
	8			CLAY-brown & gray-
	13	7.4B	17	hard (A-6)
	5		***102***	
	8			
–10	10	4.4B	24	
	4		***117***	
	6			
	10	4.9B	16	
				726.2
	4		***123***	
	7			
–15	7	2.2B	14	
	3		***119***	CLAY to CLAY LOAM-gray-
	6			stiff to very stiff (A-6)
	7	1.7B	15	
	1			
	1			
–20	2	1.0P	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	2		***122***	
	3			
	4	1.3B	14	CLAY to CLAY LOAM-gray-
				stiff to very stiff (A-6)
	3			
	6			
714.2 –25	7	1.5P	14	
				End Of Boring @ -25.0'
				Hollow Stem Augers
				CME Automatic Hammer
–30				
–35				
–40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

SOIL BORING LOG

DATE 9/24/2012

LOGGED BY DR

GSI JOB No. 12195

ROUTE F.A.P. RTE. 365 DESCRIPTION Pedestrian Bridge over East Branch DuPage River & Retaining Walls

SECTION 634X-N-3 LOCATION SEC 25, T39N, R10E, SW1/4, 3RD PM

COUNTY DuPage County DRILLING METHOD 3.25" Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. XX
Station XX

BORING NO. **NW-24**
Station 231+35
Offset 80.5' Left
Ground Surface Elev. 745.3

Surface Water Elev. n/a
Stream Bed Elev. n/a

Groundwater Elevation:
First Encounter Dry
Upon Completion Dry
After _____ Hrs.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				3.0" ASPHALT, 7.0" CONCRETE
				744.3
	3			
	4			CLAY—dark brown & black—
	7	4.5+P	21	very stiff to hard (A-6) Fill
	3			
	6			
−5	8	3.5P	25	
				739.8
	3		*100*	SILTY CLAY—brown & gray—
	5			very stiff (A-6)
	6	2.8B	25	
				737.3
	2			
	2			SANDY CLAY LOAM—brown & gray—
−10	4	–	17	loose (A-2/A-6)
				734.8
	2		*123*	
	5			
	6	2.7B	14	
	2		*123*	CLAY LOAM—gray—
	4			stiff to very stiff (A-6)
−15	8	3.4B	13	
	5		*126*	
	7			
	8	3.9B	12	
	4		*121*	
	5			
−20	5	1.7B	15	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	4		*113*	CLAY LOAM—gray—
	8			stiff to very stiff (A-6)
	9	1.6B	18	
				722.3
	5			SILTY CLAY LOAM—gray—
	4			very stiff (A-4/A-6)
−25	6	2.25P	11	
				720.3
				End Of Boring @ −25.0'
				Hollow Stem Augers
				CME Automatic Hammer
−30				
−35				
−40				

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