

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5809	1	11

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT**

**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY YADKIN
PROJECT DESCRIPTION US 601 FROM SR 1742
(SHARON DRIVE) TO SR 1146 (LEE AVENUE)
SITE DESCRIPTION RETAINING WALL #1 FROM
-L- STA. 40+50, 42.75 RT TO -Y5- STA. 11+12, 87.58 RT

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2, 2A	LEGEND (SOIL & ROCK)
3	BORING LOCATION PLAN
4-II	BORE LOGS & DCP RESULTS

PERSONNEL
P. TOMASIC, G.I.T

INVESTIGATED BY CG2, PLLC
DRAWN BY M. BREWER, P.E.
CHECKED BY R. KRAL, P.E.
SUBMITTED BY CG2, PLLC
DATE JANUARY 2024

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 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

Prepared in the Office of:



**CAROLINAS
GEOTECHNICAL
GROUP**
2400 CROWNPOINT EXECUTIVE DRIVE
SUITE 800
CHARLOTTE, NC 28227
(980) 339-8684



DocuSigned by:
D. Matthew Brewer 1/5/2024
386129C0A4C1462...
SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

REFERENCE: U-5809

PROJECT: 44382

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS
(PAGE 1 OF 2)

SOIL DESCRIPTION										GRADATION									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS									
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS										MINERALOGICAL COMPOSITION									
GROUP CLASS. A-1, A-3, A-2, A-4, A-5, A-6, A-7, A-1, A-2, A-3, A-4, A-5, A-6, A-7										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.									
SYMBOL										COMPRESSIBILITY									
% PASSING #10, #40, #200										SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50									
MATERIAL PASSING #40 LL, PI										PERCENTAGE OF MATERIAL									
GROUP INDEX										ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL									
USUAL TYPES OF MAJOR MATERIALS										TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE									
GEN. RATING AS SUBGRADE										GROUND WATER									
EXCELLENT TO GOOD FAIR TO POOR FAIR TO POOR POOR UNSUITABLE										▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ▽ STATIC WATER LEVEL AFTER 24 HOURS ▽PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA ○ SPRING OR SEEP									
CONSISTENCY OR DENSENESS										MISCELLANEOUS SYMBOLS									
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION 25/825 DIP & DIP DIRECTION OF ROCK STRUCTURES SOIL SYMBOL SPT DMT VST PMT TEST BORING ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING INFERRED SOIL BOUNDARY CORE BORING INFERRED ROCK LINE MONITORING WELL ALLUVIAL SOIL BOUNDARY PIEZOMETER INSTALLATION									
TEXTURE OR GRAIN SIZE										RECOMMENDATION SYMBOLS									
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.00 0.42 0.25 0.075 0.053										UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK									
GRAIN SIZE MM 305 75 2.0 0.25 0.05 0.005 IN. 12 3										ABBREVIATIONS									
SOIL MOISTURE - CORRELATION OF TERMS										AR - AUGER REFUSAL MED. - MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA - MICACEOUS WEA. - WEATHERED CL. - CLAY MOD. - MODERATELY ? - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7/2 - DRY UNIT WEIGHT CSE. - COARSE ORG. - ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP. - SAPROLITIC S - BULK e - VOID RATIO SD. - SAND, SANDY SD. - SAND, SANDY SS - SAND, SANDY F - FINE SL. - SILT, SILTY SL. - SLIGHTLY ST - SHELBY TUBE FOSS. - FOSSILIFEROUS TCR - TRICONE REFUSAL RS - ROCK FRAC. - FRACTURED, FRACTURES W - MOISTURE CONTENT RT - RECOMPACTED TRIAXIAL FRAGS. - FRAGMENTS HI. - HIGHLY V - VERY CBR - CALIFORNIA BEARING RATIO									
PLASTICITY										EQUIPMENT USED ON SUBJECT PROJECT									
PLASTICITY INDEX (PI) DRY STRENGTH										DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:									
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH										<input type="checkbox"/> CME-45C <input type="checkbox"/> CLAY BITS <input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL <input type="checkbox"/> CME-55 <input type="checkbox"/> 6' CONTINUOUS FLIGHT AUGER <input type="checkbox"/> CME-550 <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> CORE BIT									
COLOR										CORE SIZE: HAND TOOLS:									
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.										<input type="checkbox"/> -B _____ <input type="checkbox"/> -H _____ <input type="checkbox"/> -N _____ <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input checked="" type="checkbox"/> DCP									





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SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS (PAGE 2 OF 2)

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)		NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)		FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)		FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)		COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SL.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SL.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <u>IF TESTED, WOULD YIELD SPT REFUSAL</u>
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</u>
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

BEDDING

TERM	SPACING	TERM	THICKNESS
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET
		THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

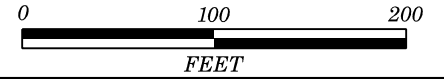
ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.	AQUIFER - A WATER BEARING FORMATION OR STRATA.
ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: N/A

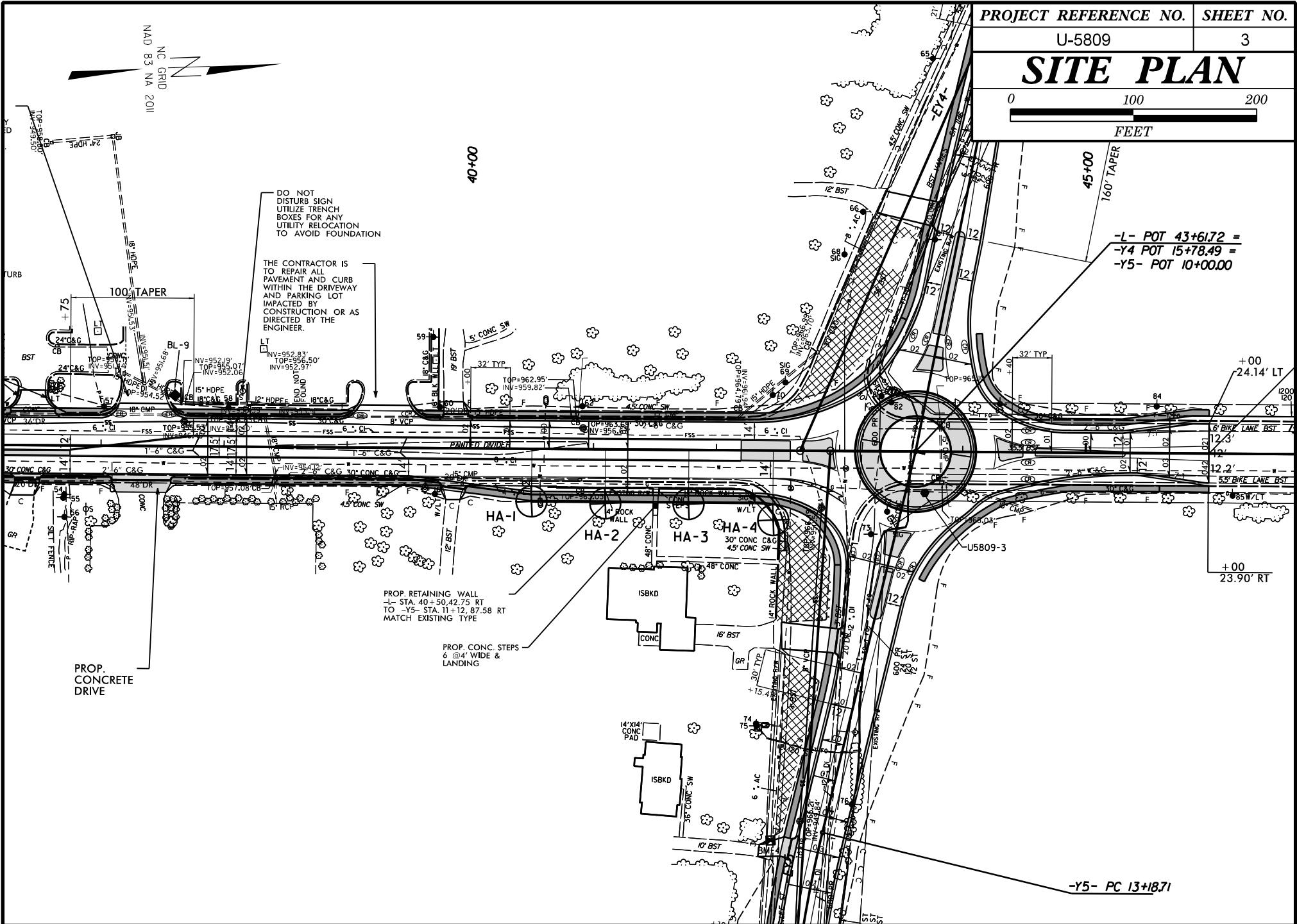
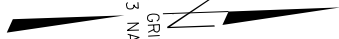
ELEVATION: FEET

NOTES:

SITE PLAN



NAD 83 NA 2011



DO NOT DISTURB SIGN UTILIZE TRENCH BOXES FOR ANY UTILITY RELOCATION TO AVOID FOUNDATION

THE CONTRACTOR IS TO REPAIR ALL PAVEMENT AND CURB WITHIN THE DRIVEWAY AND PARKING LOT IMPACTED BY CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.

-L- POT 43+61.72 =
-Y4 POT 15+78.49 =
-Y5- POT 10+00.00

PROP. RETAINING WALL
1- STA. 40+50.42.75 RT
TO -Y5- STA. 11+12.87.58 RT
MATCH EXISTING TYPE

PROP. CONC. STEPS
6 @ 4' WIDE &
LANDING

PROP. CONCRETE DRIVE

-Y5- PC 13+18.71

GEOTECHNICAL BORING REPORT BORE LOG

WBS 44382.1.1		TIP U-5809		COUNTY YADKIN		GEOLOGIST P. Tomasic, G.I.T.										
SITE DESCRIPTION US 601 from SR 1742 (Sharon Drive) to SR 1146 (Lee Avenue)							GROUND WTR (ft)									
BORING NO. HA-1		STATION 40+50		OFFSET 43 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 965.3 ft		TOTAL DEPTH 10.0 ft		NORTHING 868,587		EASTING 1,509,806										
DRILL RIG/HAMMER EFF/DATE NA				DRILL METHOD Hand Auger		HAMMER TYPE NA										
DRILLER P. Tomasic		START DATE 10/31/23		COMP. DATE 10/31/23		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
970																
965														965.3	TOPSOIL = 3 INCHES	0.0
960												M			ARTIFICIAL FILL Stiff to Very Stiff, Tan-Orange-Red-White, Clayey, Fine Sandy SILT (A-4), with trace mica	
												M				
												M		958.3	RESIDUAL	7.0
												M		955.3	Loose to Medium Dense, Orange-Tan-White-Black, Silty Fine SAND (A-2-4), with trace mica Boring Terminated at Elevation 955.3 ft In Residual Silty SAND (A-2-4)	10.0



Project Name:	U-5809 - Retaining Wall	BORING NO. HA-1
Project Number:	240023203	
Client:	TGS Engineers	
City/County/State:	Yadkinville, Yadkin County, NC	

Drilling Equipment Utilized		Ground Cover Type	
Hammer Type:	Manual - DCP		Thickness (inches)
Classification System	<u>AASHTO</u> <u>USCS</u>	Top Soil:	3
Sample Method:	Hand Auger Cuttings	Asphalt:	N/A
Drill Method:	Hand Auger	ABC/Gravel:	N/A
Location:	See Boring Location Plan	Concrete:	N/A
Date:	10/31/2023	Other:	N/A

From:	To:	Fill?	1st (1-3/4 in)	2nd (1-3/4 in)	3rd (1-3/4 in)	Nc	Sample Description:
0.0	1.0	Y					0.0-1.0 ft: Fill, Moist, Tan, Fine Sandy SILT (A-4), with trace organics
1.0	2.0	Y	25+			25+	1.0-4.0 ft: Fill, Moist, Orange-Red, Clayey, Fine Sandy SILT (A-4)
2.0	3.0						
3.0	4.0	Y	25+			25+	4.0-7.0 ft: Fill, Moist, Red-Orange-White, Fine Sandy SILT (A-4), with trace mica
4.0	5.0						
5.0	6.0	Y	8	25+		25+	
6.0	7.0						7.0-10.0 ft: Residual, Moist, Orange-Tan-White-Black, Silty Fine SAND (A-2-4), with trace mica
7.0	8.0	N	25+			25+	
8.0	9.0						
9.0	10.0	N	10	10	25+	25+	Terminated at 10.0 ft

H/A Termination Depth:	10.0 ft.	Notes:
Auger Refusal:	Yes <u>No</u>	
End of Drilling Water Level:	DRY	
Initial Cave-in Depth:	9.0 ft.	
Final Water Level:	Dry	
Final Cave-in Depth:	8.9 ft.	

Please note that depths and listed measurements are field measured and should be considered approximate.
Water level and cave-in depth measured below the existing ground surface at the boring location.

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 44382.1.1		TIP U-5809		COUNTY YADKIN		GEOLOGIST P. Tomasic, G.I.T.					
SITE DESCRIPTION US 601 from SR 1742 (Sharon Drive) to SR 1146 (Lee Avenue)							GROUND WTR (ft)				
BORING NO. HA-2		STATION 41+10		OFFSET 44 ft RT		ALIGNMENT -L-					
COLLAR ELEV. 967.8 ft		TOTAL DEPTH 10.0 ft		NORTHING 868,646		EASTING 1,509,810					
DRILL RIG/HAMMER EFF/DATE NA				DRILL METHOD Hand Auger		HAMMER TYPE NA					
DRILLER P. Tomasic		START DATE 10/31/23		COMP. DATE 10/31/23		SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25				
970											
965									M	TOPSOIL = 3 INCHES	0.0
									M	ARTIFICIAL FILL Medium Stiff, Tan-Red-Orange, Clayey, Fine Sandy SILT (A-4), with trace organics	
960									M		6.0
									M	RESIDUAL Medium Stiff to Stiff, Orange-Tan, Fine Sandy SILT (A-4)	8.0
									M	Stiff to Very Stiff, Brown-Orange-Pink, SILT (A-5), with little mica	10.0
										Boring Terminated at Elevation 957.8 ft In Residual SILT (A-5)	



Project Name:	U-5809 - Retaining Wall	BORING NO. HA-2
Project Number:	240023203	
Client:	TGS Engineers	
City/County/State:	Yadkinville, Yadkin County, NC	

Drilling Equipment Utilized		Ground Cover Type	
Hammer Type:	Manual - DCP		Thickness (inches)
Classification System	<u>AASHTO</u> <u>USCS</u>	Top Soil:	3
Sample Method:	Hand Auger Cuttings	Asphalt:	N/A
Drill Method:	Hand Auger	ABC/Gravel:	N/A
Location:	See Boring Location Plan	Concrete:	N/A
Date:	10/31/2023	Other:	N/A

From:	To:	Fill?	1st (1-3/4 in)	2nd (1-3/4 in)	3rd (1-3/4 in)	Nc	Sample Description:
0.0	1.0						0.0-1.0 ft: Fill, Moist, Tan, Fine Sandy SILT (A-4), with trace organics
1.0	2.0	Y	11	16	12	13	
2.0	3.0						
3.0	4.0	Y	10	14	15	13	1.0-6.0 ft: Fill, Moist, Red-Orange, Clayey, Fine Sandy SILT (A-4)
4.0	5.0						
5.0	6.0	Y	6	10	9	8	
6.0	7.0						6.0-8.0 ft: Residual, Moist, Orange-Tan, Fine Sandy SILT (A-4)
7.0	8.0	N	7	25+		25+	
8.0	9.0						
9.0	10.0	N	25+			25+	8.0-10.0 ft: Residual, Brown-Orange-Pink, SILT (A-5), with little mica
							Terminated at 10.0 ft.

H/A Termination Depth:	10.0 ft.	Notes:
Auger Refusal:	Yes <u>No</u>	
End of Drilling Water Level:	DRY	
Initial Cave-in Depth:	8.9 ft.	
Final Water Level:	Dry	
Final Cave-in Depth:	8.9 ft.	

Please note that depths and listed measurements are field measured and should be considered approximate.
Water level and cave-in depth measured below the existing ground surface at the boring location.

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 44382.1.1		TIP U-5809		COUNTY YADKIN		GEOLOGIST P. Tomasic, G.I.T.											
SITE DESCRIPTION US 601 from SR 1742 (Sharon Drive) to SR 1146 (Lee Avenue)							GROUND WTR (ft)										
BORING NO. HA-3		STATION 41+78		OFFSET 44 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 968.7 ft		TOTAL DEPTH 10.0 ft		NORTHING 868,715		EASTING 1,509,813											
DRILL RIG/HAMMER EFF/DATE NA				DRILL METHOD Hand Auger		HAMMER TYPE NA											
DRILLER P. Tomasic		START DATE 10/31/23		COMP. DATE 10/31/23		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
970															968.7	TOPSOIL = 3 INCHES	0.0
965											M	⊗		965.7	ARTIFICIAL FILL Medium Stiff to Stiff, Tan-Orange, Clayey, Fine Sandy SILT (A-4), with trace mica and organics	3.0	
960											M	⊗			RESIDUAL Stiff to Very Stiff, Tan-Gray-Orange-White, SILT (A-5), with trace mica		
											M	⊗		958.7	Boring Terminated at Elevation 958.7 ft In Residual SILT (A-5)	10.0	



Project Name:	U-5809 - Retaining Wall	BORING NO. HA-3
Project Number:	240023203	
Client:	TGS Engineers	
City/County/State:	Yadkinville, Yadkin County, NC	

Drilling Equipment Utilized		Ground Cover Type	
Hammer Type:	Manual - DCP		Thickness (inches)
Classification System	<u>AASHTO</u> <u>USCS</u>	Top Soil:	3
Sample Method:	Hand Auger Cuttings	Asphalt:	N/A
Drill Method:	Hand Auger	ABC/Gravel:	N/A
Location:	See Boring Location Plan	Concrete:	N/A
Date:	10/31/2023	Other:	N/A

From:	To:	Fill?	1st (1-3/4 in)	2nd (1-3/4 in)	3rd (1-3/4 in)	Nc	Sample Description:
0.0	1.0						0.0-1.0 ft: Fill, Moist, Tan, Fine Sandy SILT (A-4), with trace organics
1.0	2.0	Y	6	10	11	9	1.0-3.0 ft: Fill, Moist, Orange-Tan, Clayey, Fine Sandy SILT (A-4), with trace mica
2.0	3.0						
3.0	4.0	N	16	10	17	14	3.0-10.0 ft: Residual, Moist, Tan-Gray-Orange-White, SILT (A-5), with trace mica
4.0	5.0						
5.0	6.0	N	25+			25+	
6.0	7.0						
7.0	8.0	N	8	10	16	11	
8.0	9.0						
9.0	10.0	N	10	25+		25+	
							Terminated at 10.0 ft

H/A Termination Depth:	10.0 ft.	Notes:
Auger Refusal:	Yes <u>No</u>	
End of Drilling Water Level:	DRY	
Initial Cave-in Depth:	9.5 ft.	
Final Water Level:	Dry	
Final Cave-in Depth:	9.5 ft.	

Please note that depths and listed measurements are field measured and should be considered approximate.
Water level and cave-in depth measured below the existing ground surface at the boring location.

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 44382.1.1		TIP U-5809		COUNTY YADKIN		GEOLOGIST P. Tomasic, G.I.T.											
SITE DESCRIPTION US 601 from SR 1742 (Sharon Drive) to SR 1146 (Lee Avenue)							GROUND WTR (ft)										
BORING NO. HA-4		STATION 42+46		OFFSET 56 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 968.3 ft		TOTAL DEPTH 10.0 ft		NORTHING 868,783		EASTING 1,509,828											
DRILL RIG/HAMMER EFF/DATE NA				DRILL METHOD Hand Auger		HAMMER TYPE NA											
DRILLER P. Tomasic		START DATE 10/31/23		COMP. DATE 10/31/23		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
970															968.3	TOPSOIL = 3 INCHES	0.0
965											M				964.3	ARTIFICIAL FILL Soft to Medium Stiff, Red-Tan, Clayey, Fine Sandy SILT (A-4), with trace mica and organics	4.0
960											M					RESIDUAL Soft to Medium Stiff, Orange-Black-White, SILT (A-5), with trace mica	
											M				958.3	Boring Terminated at Elevation 958.3 ft In Residual SILT (A-5)	10.0

NCDOT BORE SINGLE U-5809_PLAN UPDATE_GEO.GPJ_NC_DOT.GDT 1/3/24



Project Name:	U-5809 - Retaining Wall	BORING NO. HA-4
Project Number:	240023203	
Client:	TGS Engineers	
City/County/State:	Yadkinville, Yadkin County, NC	

Drilling Equipment Utilized		Ground Cover Type	
Hammer Type:	Manual - DCP		Thickness (inches)
Classification System	<u>AASHTO</u> <u>USCS</u>	Top Soil:	3
Sample Method:	Hand Auger Cuttings	Asphalt:	N/A
Drill Method:	Hand Auger	ABC/Gravel:	N/A
Location:	See Boring Location Plan	Concrete:	N/A
Date:	10/31/2023	Other:	N/A

From:	To:	Fill?	1st (1-3/4 in)	2nd (1-3/4 in)	3rd (1-3/4 in)	Nc	Sample Description:
0.0	1.0						0.0-1.0 ft: Fill, Moist, Red, Fine Sandy SILT (A-4), with trace organics
1.0	2.0	Y	5	6	6	6	1.0-4.0 ft: Fill, Moist, Red-Tan, Clayey, Fine Sandy SILT (A-4), with trace mica and organics
2.0	3.0						
3.0	4.0	Y	5	7	6	6	4.0-10.0 ft: Residual, Moist, Orange-Black-White, SILT (A-5), with trace mica
4.0	5.0						
5.0	6.0	N	6	4	4	5	
6.0	7.0						
7.0	8.0	N	6	6	8	7	Terminated at 10.0 ft
8.0	9.0						
9.0	10.0	N	8	7	5	7	

H/A Termination Depth:	10.0 ft.	Notes:
Auger Refusal:	Yes <u>No</u>	
End of Drilling Water Level:	DRY	
Initial Cave-in Depth:	9.0 ft.	
Final Water Level:	Dry	
Final Cave-in Depth:	8.9 ft.	

Please note that depths and listed measurements are field measured and should be considered approximate.
Water level and cave-in depth measured below the existing ground surface at the boring location.