CONTENTS SHEET NO.

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8-14

R 579A N Ú. REFERENCE

DESCRIPTION TITLE SHEET LEGEND (SOIL & ROCK) PLAN & PROFILE SHEETS BORELOGS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY FORSYTH

PROJECT DESCRIPTION WINSTON-SALEM BELTWAY FROM US 421/I-40 BUS TO I-40

SITE DESCRIPTION SOUND WALL 17/18/19

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2579AB	1	14

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOLT TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEICH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICL ENGINEERING UNIT AT (1991) 707-6805. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU UN-PLACED TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOL MOISTURE CONDITIONS. MOICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOL MOISTURE CONDITIONS MAY YARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPHION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISTY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OF FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDENSATIONS FOR ANY THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

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PERSONNEL A. SUTTLE, G.I.T. TOTAL DEPTH DRILLING J. GARRICK, G.I.T. E. SUSANTO P. DONNELLY INVESTIGATED BY ECS SOUTHEAST, LLP DRAWN BY <u>K. DE</u> MONTBRUN, P.E. CHECKED BY <u>M. WALKO, P.E.</u> SUBMITTED BY ______ ECS _SOUTHEAST, LLP DATE JULY 2021 Prepared in the Office of: ECS SOUTHEAST, LLP 1812 CENTER PARK DRIVE, SUITE D CHARLOTTE, NC 28217 (704) 525-5152 (PHONE] (704) 357-0023 [FAX] NC REGISTERED ENGINEPING ENGINERING FIRM # F-1078 TH CAROUN CAROL H SEAL 045542 DE MO MALLE MONIN kelly de Montbrun 7/13/2021 -7BDD9975E22C480... SIGNATURE DATE DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

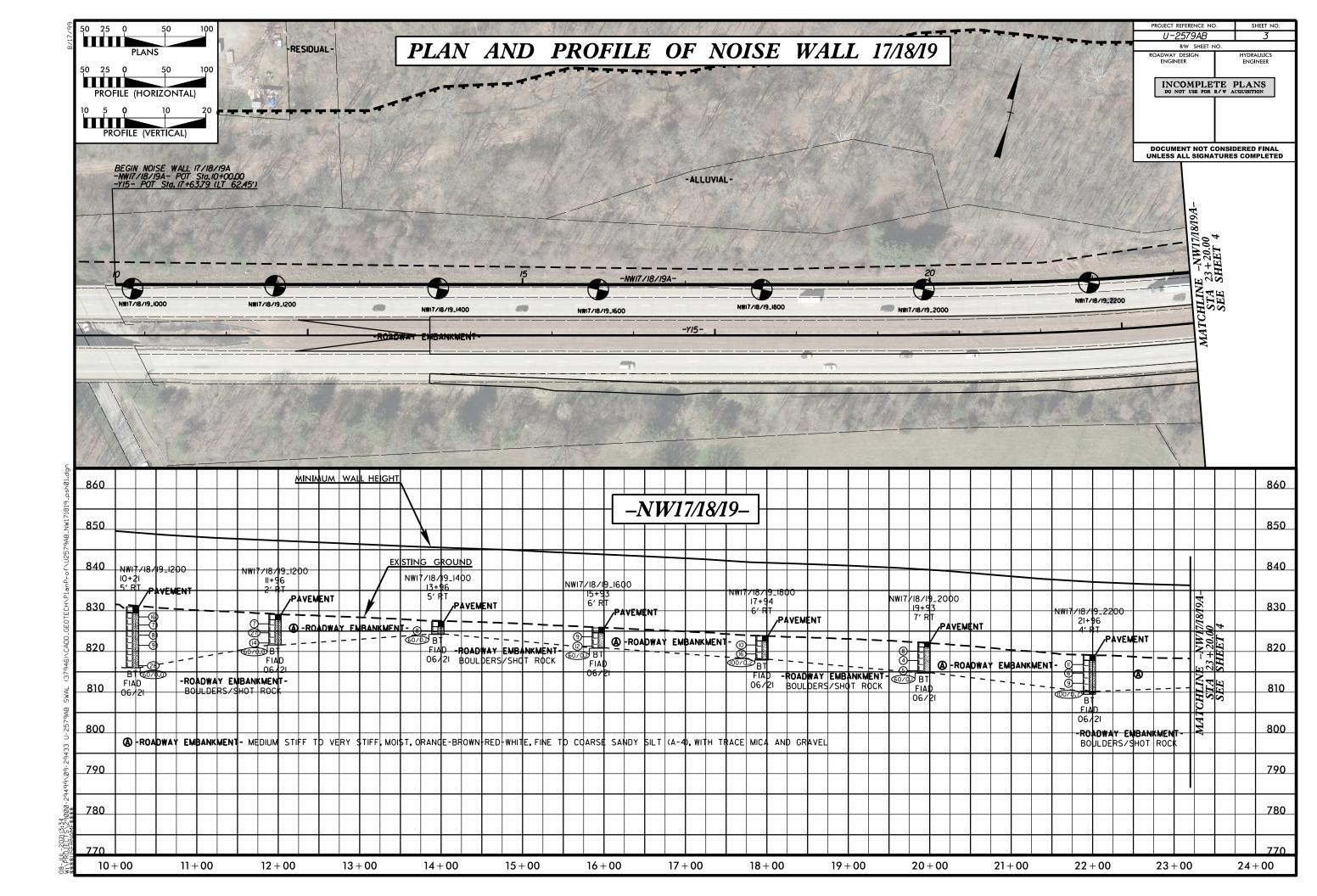
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

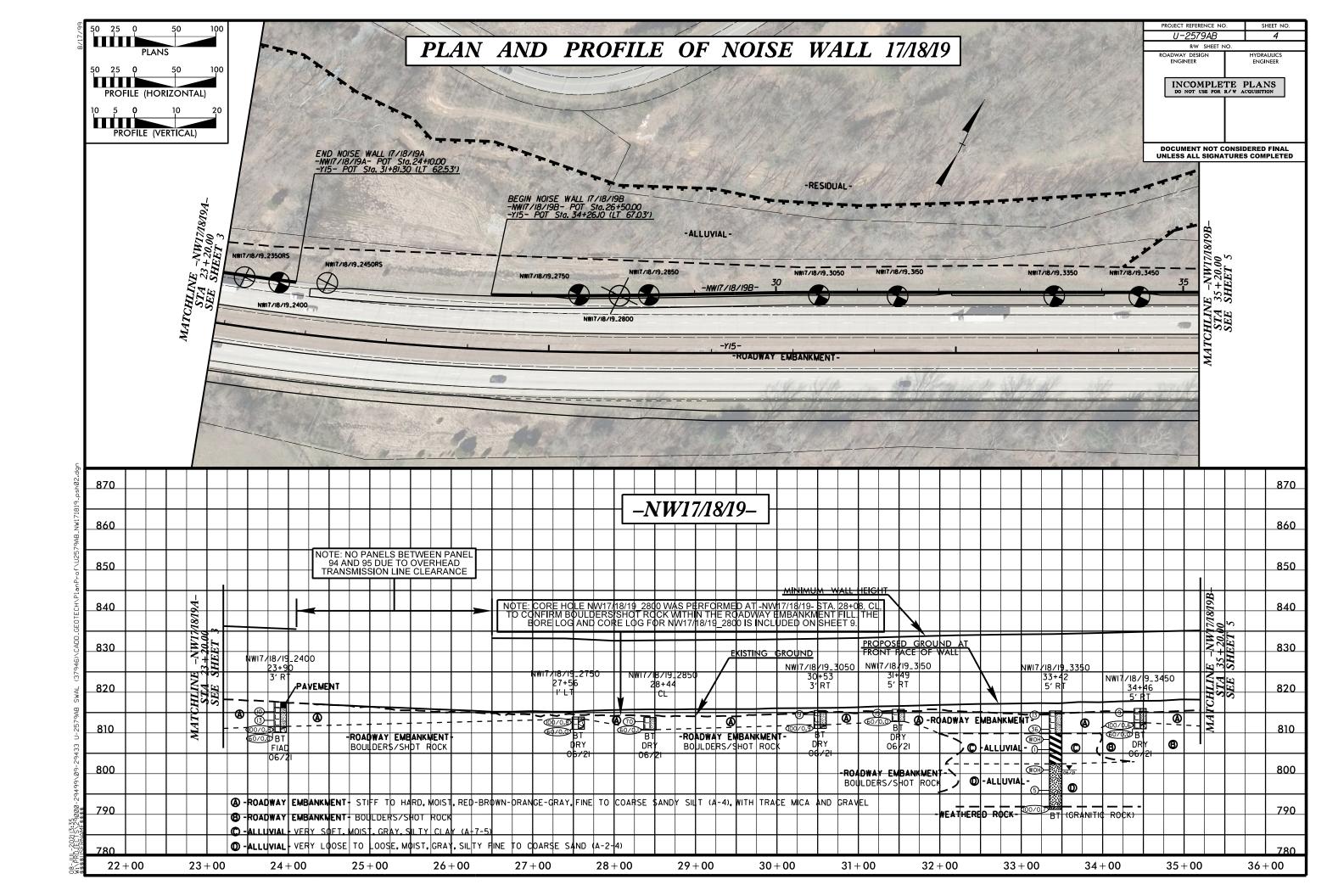
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
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	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.	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	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING
VERY STIFF.GRAY.SULTY CLAY.MOIST WITH INTERBEDDED FINE SAND LAYERS,HIGHLY PLASTIC,A-7-6 SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	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
GENERAL GRANILLAR MATERIALS SLIT-CLAY MATERIALS	MINERALOGICAL COMPOSITION	THE TO COARSE GRAIN IGNEOUS AND METAMORPHIC POCK THAT	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE LEVEL HI
CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	CRYSTALLINE WOULD VIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, ROCK (CR) GNEISS, GABBRO, SCHIST, ETC.	SURFACE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-7, A-1, A-2 A-4, A-5	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
	SLIGHTLY COMPRESSIBLE LL < 31	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED.	<u>COLLUVIUM</u> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
SYMBOL 000000000000000000000000000000000000	MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
7. PASSING *10 50 MX GRANULAR SILT-	PERCENTAGE OF MATERIAL	(CP) SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*40 30 MX 50 MX 51 MN SOILS SOILS SOILS SOILS SOILS	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
*200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN	ORGANIC MATERIAL SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
PASSING #40 SOULS WITH	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,	HORIZONTAL.
LL – – – 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN LITTLE OR HTCH Y	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	(V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	<u>DIP DIRECTION (DIP AZIMUTH)</u> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
International Internat	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STONE FRAGS, FINE SUITY OR CLAYEY SUITY CLAYEY MATTER	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS	▼ STATIC WATER LEVEL AFTER <u>24</u> HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
CEN BATING	✓ PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS	PARENT MATERIAL.
AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE	O→MG→ SPRING OR SEEP	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS < LL - 30 ;PI OF A-7-6 SUBGROUP IS > LL - 30		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD.SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTNESS OR CONSTRUCT PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	IF TESTED, WOULD YIELD SPT REFUSAL	 LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
		SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GENERALLY VERY LOOSE < 4 GRANULAR LOOSE 4 TO 10	SOIL SYMBOL SYMBOL SIDE SUPE INDICATOR INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
ORHNOLAR MEDIUM DENSE 10 TO 30 N/A MATERIAL DENSE 30 TO 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT OF AUGER BORING CONE PENETROMETER TEST	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.)- IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) VERY DENSE > 50		VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	INFERRED SOIL BOUNDARY - CORE BORING • SOUNDING ROD	(V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0		COMPLETE ROCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
MATERIAL STIFF 8 T0 15 1 T0 2 (COHESIVE) VERY STIFF 15 T0 30 2 T0 4		SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	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
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	TTTTTT ALLUVIAL SOIL BOUNDARY A PLEZUMEIER - SPT N-VALUE	ALSO AN EXAMPLE. ROCK HARDNESS	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REDUIRES	<u>SAPROLITE (SAP.)</u> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - CONTINUATED EXCAVATION - CONTINUAT	SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	SHALLOW USED IN THE TOP 3 FEET OF	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY (BLDR,) (COB,) (GR,) SAND SAND (SL,) (CL,)	UNDERCUT ACCEPTABLE DEGRADABLE ROCK EMBANKMENT OR BACKFILL	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
(BLDR.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.)	ABBREVIATIONS	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED	BY MODERATE BLOWS. MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	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
	CLCLAY MODMODERATELY γ -UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC $\gamma_{ m d}$ - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC	POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
(ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u>	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON	PIECES CAN BE BROKEN BY FINGER PRESSURE.	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
(SAT.) FROM BELOW THE GROUND WATER TABLE	F - FINE SL SILT, SILTY ST - SHELBY TUBE F0SS F0SSILIFEROUS SLI SLIGHTLY RS - ROCK	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC SEMISOLIDE REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE - WET - (W) SEMISOLIDI REGUIRES ON THE TO (P) PL PLASTIC LIMIT	FRAGS FRAGMENTS w - MOISTURE CONTENT CBR - CALIFORNIA BEARING HI HIGHLY V - VERY RATIO	FRACTURE SPACING BEDDING	BENCH MARK: N/A
	EQUIPMENT USED ON SUBJECT PROJECT	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	ELEVATION: N/A FEET
OM _ OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	
SL SHRINKAGE LIMIT	CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	6' CONTINUOUS FLIGHT AUGER CORE SIZE:	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET	ROADWAY DESIGN FILES, TIN, AND GPK FILE PROVIDED BY NCDOT
PLASTICITY	CME-55 X 8" HOLLOW AUGERS H H	INDURATION	NORTHING AND EASTING OBTAINED USING A TRIMBLE GEO7X.
PLASTICITY INDEX (PI) DRY STRENGTH	X CME-550 HARD FACED FINGER BITS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	ELEVATIONS OBTAINED USING PROVIDED SURVEY INFORMATION.
NON PLASTIC 0-5 VERY LOW	TUNGCARBIDE INSERTS	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	LELYATIONS OBTAINED USING FROVIDED SURVET INFORMATION.
SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM	VANE SHEAR TEST	CRAINE CAN BE SERADATED FROM SAMPLE WITH STEEL PRODE.	FIAD=FILLED IN AFTER DRILLING
HIGHLY PLASTIC 26 OR MORE HIGH		MODERATELY INDURATED BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR		INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE;	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).	X CME-75 CORE BIT VANE SHEAR TEST	DIFFICULI TO BREAK WITH HAMMER.	
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14

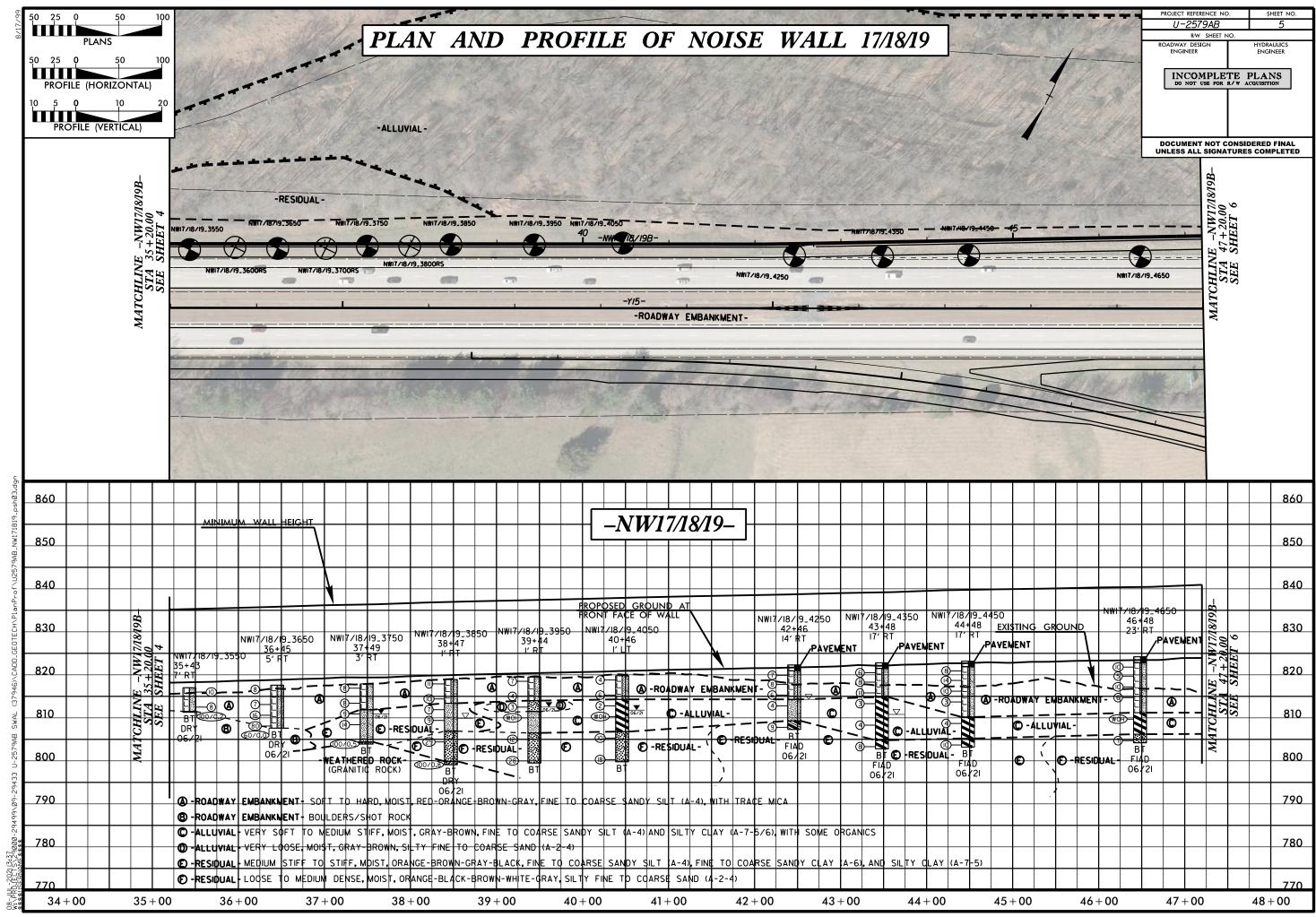
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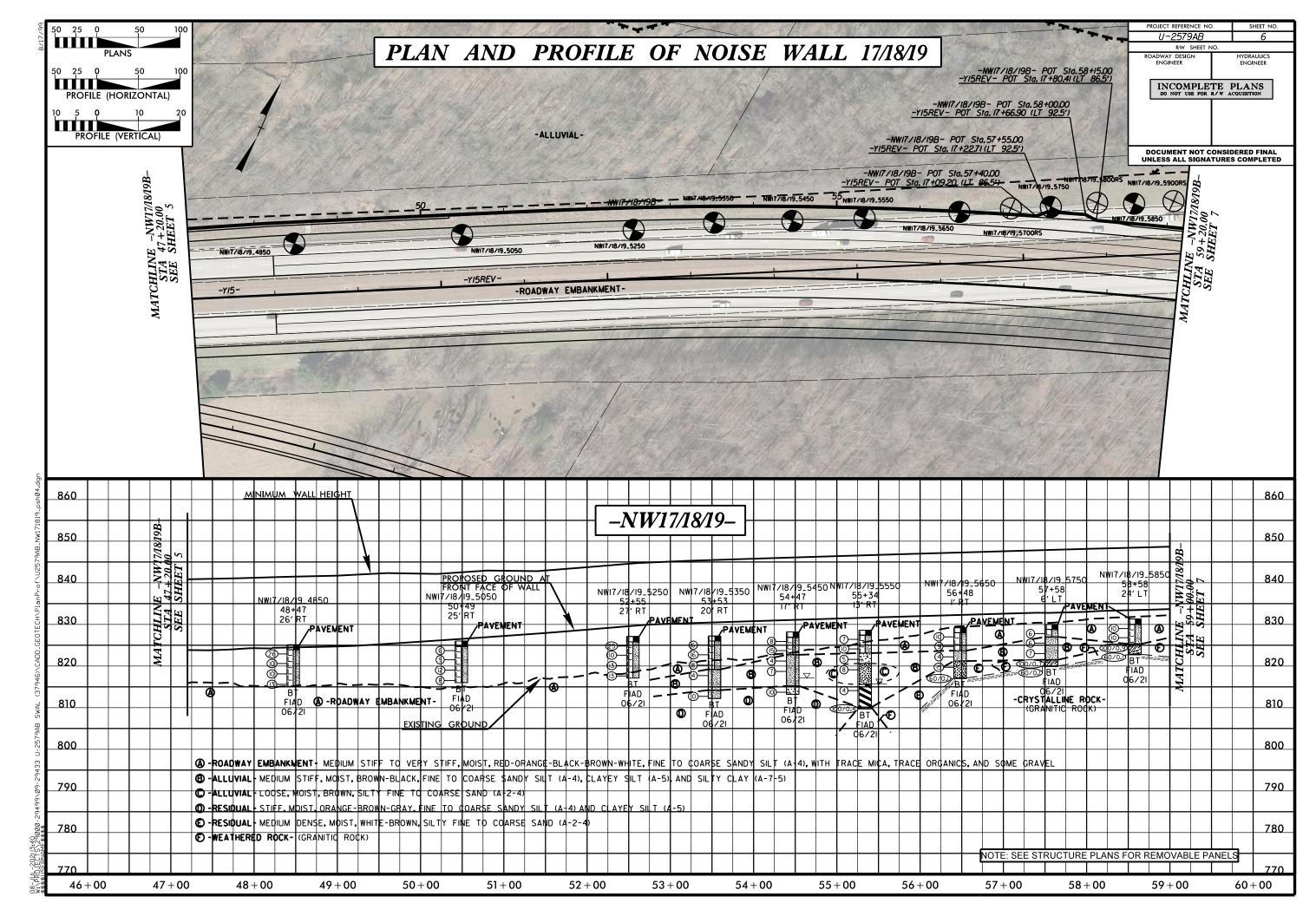
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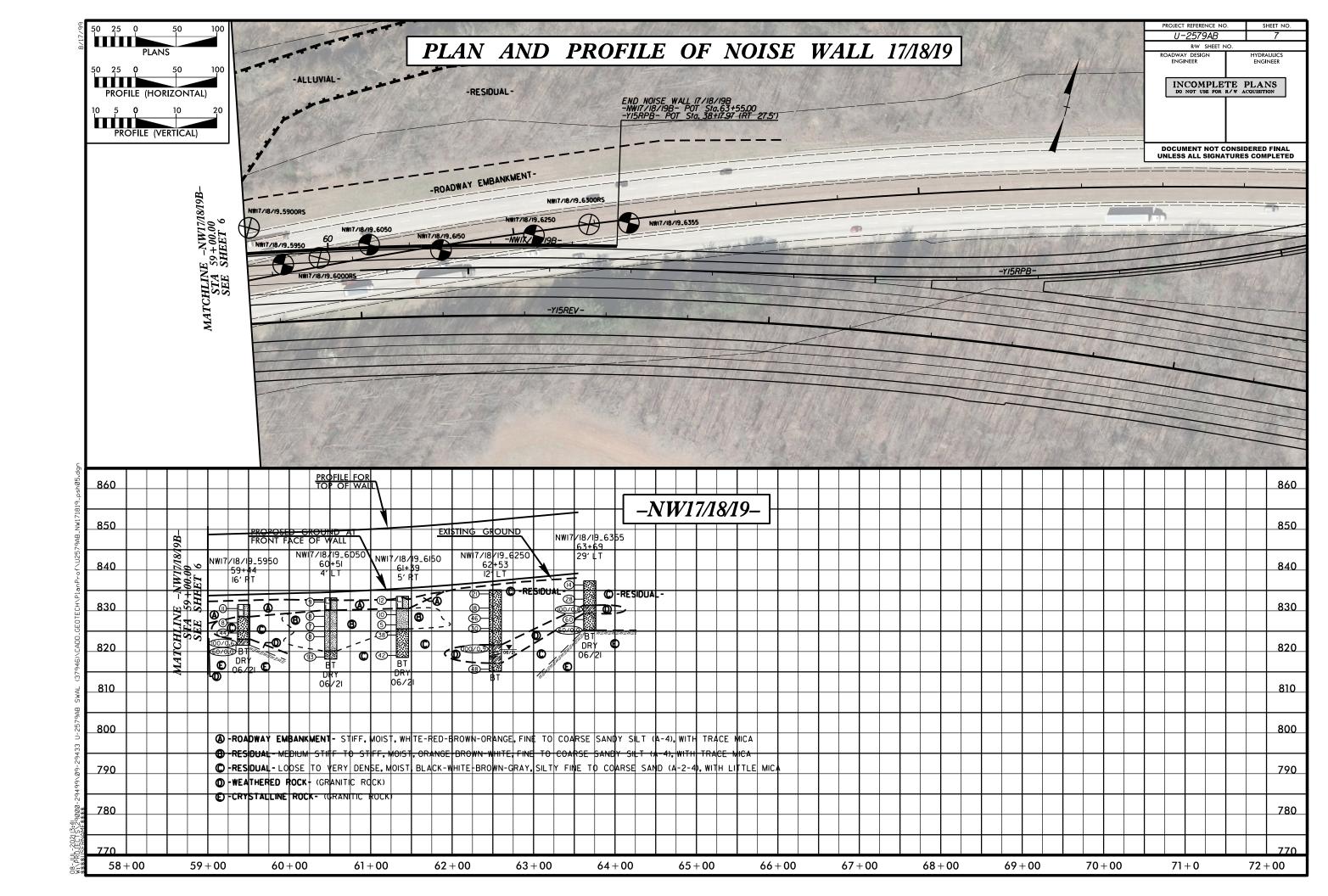
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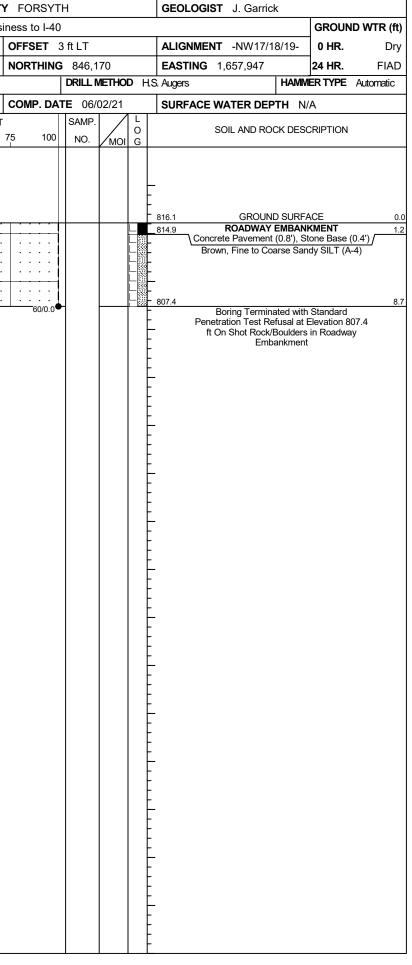








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BO	RIN	g NO.	NW1	7/18/1	9_235	0R 351	ΓΑΤΙΟ	DN 23-	+47		0	FFSET	2 ft RT			ALI	GNMEN	T -NW17/	18/19-	0 HR.	Dry	BO	RING	10 . NW	17/18/	19_245	50R 351	ATION	24+48	3	
со	LLA		EV. 81	8.0 ft		т	DTAL	DEPTH	H 7.6 f	t	N	ORTHING	6 846,	131		EAS	STING	1,657,853		24 HR.	FIAD	CO	LAR I	ELEV. 8	816.1 ft		т	DTAL DE	PTH	8.7 ft	
DR	LLR	RIG/HAI	VIMER E	FF./DA	ΤΕΤΟ	D5417	CME-7	75 83% (06/15/202	21			DRILL	METHO	DD	I.S. Aug	ers		HAMM	ER TYPE	Automatic	DRI	L RIG/	HAMMER	EFF./D/	ATE TI	DD5417	CME-758	3%06/1	5/2021	
DR			. Hamil	ton		ST	FART	DATE	06/02/	/21	C	OMP. DA	TE 06	/02/21		SUI	RFACE \	NATER DE	PTH N/	Ά		DR		D. Harr	ilton		S	ART DA	TE 06	6/02/21	
ELE		DRIVE ELEV	DEPTH		W COL				BLOWS	S PER FC			SAMP	. 🔻	L		ş	SOIL AND RO	OCK DESC	CRIPTION		ELE	/ DRI\ ELE	/E V DEPT	· · ·	ow co	-		BL		ER FOOT
(ft)		(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50	75	100	NO.	Имо	I G	ELEV.					DEPTH ((ft)	(ft)	v (ft)	0.5ft	0.5ft	0.5ft	0	25	50)
820)		_													L						820		_							
		-														818.0					0			‡							
815	-	-	-					· · ·				· · · · ·				- 816.6 -	- Concr	ROADWAY	nt (0.9'), St	one Base	(0.5')			<u>+</u>				<u> </u>		••••	
01	,	-	-													 -	Oran	ge-Brown, Fir	ne to Coar: (A-4)	se Sandy	SILT	815		‡							
		-	-					· · ·				· · · · ·				-								ţ				· · · ·	· ·	· · ·	· · · ·
	_{	810.5 -	- 7.5 -	60/0.1					• • •			60/0.1	Ч			- 810.5 - 810.4	_/	Boulde	ers/Shot Ro	ock	7	5 6/ 810		‡					· ·	· · ·	
		-	-													-	Donoi	Boring Termir tration Test R	nated with	Standard	210.4		807	4 + 8.7				· · · ·		· · ·	· · · · ·
		-	-													-	ft (On Shot Rock	k/Boulders	in Roadwa	ay			<u> </u>	60/0.0	2					
		-	-													-		Em	idankment					÷							
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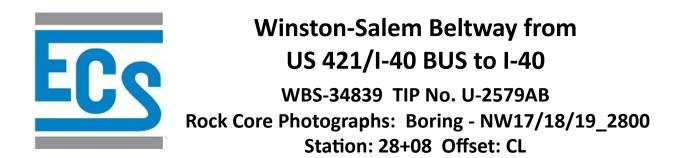


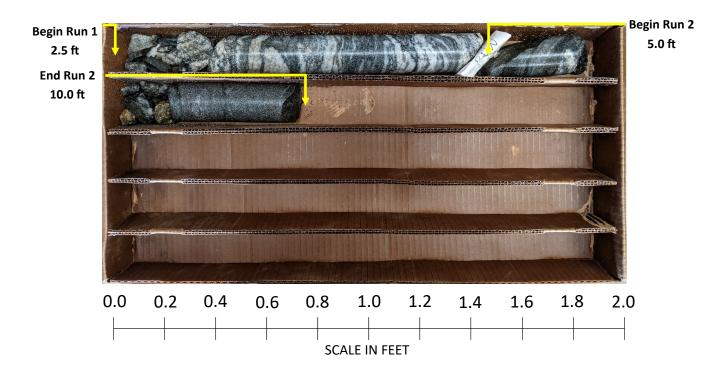
						GE (OTEC	HNIC	CAL B	ORIN	IG I	RE	EPORT										GE	OTE	СН	NI
								В	ORE L	.0G																C
WBS	34839	9.1.8			ТІ	P U-2579)AB	COUNT	Y FORSY	ГН			GEOLOGIST J. Garric	k			WBS	34839	9.1.8			TIP	U-257	'9AB	C	OUN
SITE	DESCR		Win	ston-8	Salem	Beltway fro	om US 421	/I-40 Bus	iness to I-4	C					GROUN	D WTR (ft)	SITE	DESCR	RIPTION	Win	ston-Sale	em Bel	ltway f	rom US 4	421/I-4	10 Bu
BOR	ING NO	. NW1	7/18/1	9_280	00 S T	TATION 2	28+08		OFFSET	CL			ALIGNMENT -NW17/1	8/19-	0 HR.	3.2	BOR	ING NO	. NW1	7/18/1	9_2800	STAT	TION	28+08		
COL	LAR EL	EV. 81	14.0 ft		т	OTAL DEP	TH 11.5 f	t	NORTHIN	G 846,3	316		EASTING 1,658,275		24 HR.	Dry	COLI	AR EL	EV. 81	14.0 ft		TOT	AL DEI	PTH 11.	.5 ft	
DRIL	RIG/HA	MMER E	FF./DA	ΤΕ ΤΙ	DD5417	CME-75 83%	606/15/2021		1	DRILL	METHO	DD (Core Boring	HAMIN	IER TYPE	Automatic	DRILL	RIG/HA	MMER E	FF./DA	TE TODE	417 CM	E-75 83	3% 06/15/2	.021	
DRIL	LER D	. Hami	lton		S	TART DAT	E 06/10/2	1	COMP. DA	TE 06/	10/21		SURFACE WATER DEP	TH N	/A		DRIL	LER D). Hamil	lton		STAF	RT DA	TE 06/1	0/21	
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	JNT		BLOWS	PER FOOT		SAMP.	V	L	SOIL AND RO				COR	E SIZE	NQ-2			TOTA	AL RUI	N 7.5 ft		
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	мо	I G			CRIFTION	DEPTH (ft)	ELEV	RUN ELEV	DEPTH		DRILL RATE	REC. (ft) %	JN RQD	SAMP.	STR REC. (ft) %	
																	(ft)	(ft)	(ft)	(ft)	(Min/ft)	(II) %	(IL) %	NO.	(II) %	(II) %
815		+											B14.0 GROUN	D SURE	ACE	0.0	811.5	811.5	- 2.5	2.5	1.51/0.5	(1.5)	(1.1)		──	
		ł				<u>.</u>							ROADWAY	EMBAN	KMENT		810	809.0		2.5	1:51/0.5 2:19/1.0 3:03/1.0	60%	44%			
810	· ·	ŧ									\Box		- 811.5 Red-Brown, Fine to C Boulders / Sh			<u>A-4) 2.5</u>			ł	5.0	2:15/1.0 1:31/1.0	(1.2) 24%	(0.5) 10%			
010		ŧ											F				805	804.0	I 10.0		0:54/1.0 0:32/1.0 0:31/1.0					
		Ŧ										LÉ	Ŧ					004.0	+ 10.0		N=2					
805	804.0	T 10.0					+					LÉ	804.0			10.0			ţ							
		- 10.0	1	1	1						М					11.5		-	ŧ							
		t											- Boring Terminated Alluvial Cla	at Eleva	tion 802.5 f			-	ŧ							
		ŧ												JUJ OIL	(, (°))			-	‡							
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	-	ŧ																	‡							

						велиау			1/1-40 Dus	-													iston-Sal	1	-	
BOR	NG NO.	. <u>N</u> W	17/18/	19_28	00 S	TATION	28+	-08		OFF	SET	CL			ALIC	ENMENT -NW17/18/19-	0 HR.	3.2	BOR	ING NO	. <u>N</u> W1	7/18/1	19_2800	STAT	ΓΙΟΝ	28-
COLL	AR ELE	EV. 8 ²	14.0 ft		Т	OTAL DE	EPTH	11.5	ft	NOR	THING	3 846,3	316		EAS	TING 1,658,275	24 HR.	Dry	COL	LAR EL	EV. 8 ²	14.0 ft		TOT	AL DE	PTH
DRILL	. RIG/HA	MMER E	FF./DA	TE T	DD5417	'CME-758	33%06	6/15/2021		1		DRILLI	METHO	OD (Core Borin	g HAMN	JIER TYPE Auto		DRIL	L RIG/HA	MMER E	FF./DA	TE TODE	417 CM	1E-758	3%0
DRII	LER D	Hami	lton		s	TART DA	ATF	06/10/2	21	СОМ		TE 06/	/10/21		SUR	FACE WATER DEPTH N	/Α		DRII	LER D) Hami	lton		STAF	RT DA	TF
ELEV	DRIVE		1	OW CC					PER FOOT			SAMP.		ΓL										TOT		INI .
ELEV (ft)	ELEV (ft)	(ft)	· — —	_	0.5ft	0	25		50	75	100	NO.	Имс	O DI G		SOIL AND ROCK DES					1		DRILL	RL		<u> </u>
	(11)		0.010	0.010	0.010		- I		1	Ĩ		110.		л G	ELEV.	π)	Di	EPTH (ft)	ELEV (ft)	RUN ELEV	DEPTH (ft)	RUN (ft)	RATE	REC. (ft) %	RQD (ft)	SA
																				(ft)	. ,	()	(Min/ft)	%	%	+
815	_	ł													814.0	GROUND SURF	ACE	0.0	811.5	811.5	- 2.5	2.5	1:51/0.5	(1.5)	(1.1)	–
	-	ł					•				• • •				F	ROADWAY EMBAN Red-Brown, Fine to Coarse S			810	809.0	5.0	_	2:19/1.0 3:03/1.0	60%	44%	
810	-	‡						· · · · · · · ·			•••		\Box		- 811.5 -	Boulders / Shot Rock		2.5			Ŧ	5.0	1:51/0.5 2:19/1.0 3:03/1.0 2:15/1.0 1:31/1.0	(1.2) 24%	(0.5) 10%	
510	-	ŧ																	805		Ŧ		0:54/1.0 0:32/1.0			
	-	ŧ				 : :::		· · · ·		.					Ł					804.0	10.0		0:31/1.0 N=2			⊢
305	-	Ŧ													F						+	_	N=2			<u> </u>
	804.0	10.0	1	1	1													<u>10.0</u>			Ŧ					
		<u> </u>	'		1	<u>●2 · ·</u>	•		•••	.	•••	-	M	• • • •	- 802.5	── Soft, Brown-Gray, Claye	y SILT (A-5)	11.5			Ŧ					
	-	ł													-	Boring Terminated at Eleva Alluvial Clayey SIL	ation 802.5 ft In				‡					
	-	Ŧ													F	Alluvial Clayey SIL	T (A-5)				t					
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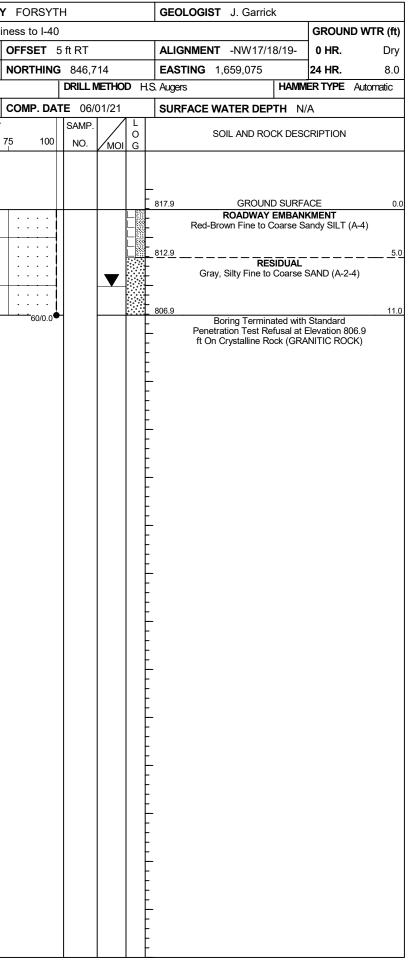
CAL BORING REPORT CORE LOG

١T	Y F	ORSY	ΉT			GEOLOGIST	J. Garric	k		
us	ines	s to I-4	40						GROUN	D WTR (ft)
	OF	FSET	CL	·		ALIGNMENT	-NW17/1	8/19-	0 HR.	3.2
	NO	RTHIN		846,316		EASTING 1	1,658,275		24 HR.	Dry
				RILL METHOD	Cor	e Boring		HAMM	ER TYPE	Automatic
	со	MP. D	ATE	06/10/21		SURFACE W	ATER DEP	TH N/	A	
D	LO				D	ESCRIPTION A	ND REMARK	s		
)	Ğ	ELEV	. (ft)							DEPTH (ft)
		- 811.5				Begin Coring Boulders / Shot	g @ 2.5 ft			2.5
						Boulders / Shot				2.5
		_								
		-								
		804.0			· — -					<u>10.0</u>
	<u> </u>	- 802.5 -		Boring Termi	nated	d at Elevation 80		al Clayey	SILT (A-5)
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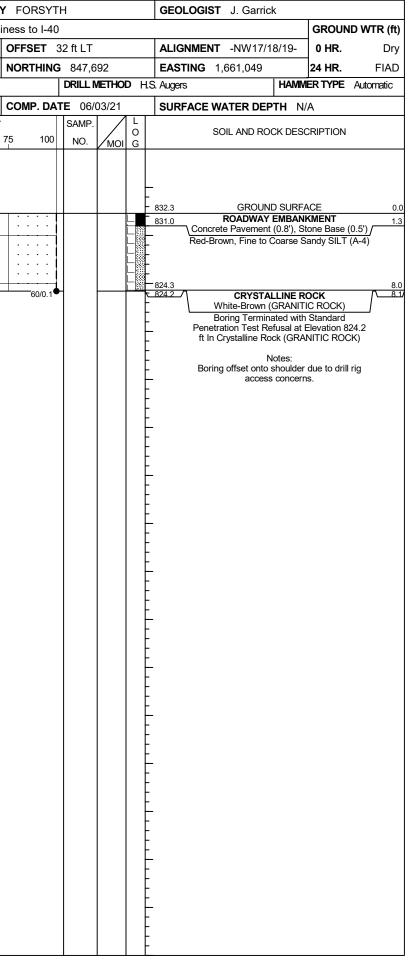


W	BS	34839	9.1.8			Т	I P U-2	579AE	3	COL	JNTY	FORSY	ΤН				GEOLOGIST J. Garr	ick			WBS	3483	9.1.8			ТІ	P U-257	9AB	COUNT
S	TEC	DESCR		l Win	iston-S	-Salem Beltway from US 421/I-40 Business to I-40 GROUND V										WTR (ft)	SITE	DESCR	RIPTION	Wir	nston-S	Salem I	Beltway fi	om US 4	21/I-40 Bus				
В	ORIN	IG NO.	. NW1	7/18/1	9_360	08 55	TATION	I 35+	96			OFFSET	4 ft RT	-			ALIGNMENT -NW17	/18/19-	0 HR.	Dry	BOR	ING NO	. NW1	7/18/	19_370	008 551	ATION	37+01	
С) DLL/	AR ELI	EV. 8′	6.6 ft		т	OTAL D	EPTH	5.0 ft			NORTHIN	G 846	,668			EASTING 1,658,980		24 HR.	Dry	COL	LAR EL	EV. 81	17.9 ft		тс	TAL DE	PTH 11.0) ft
D	NLL I	rig/Ha	MMER E	FF./DA	ΤΕ ΤΙ	DD5417	'CME-75	83%06	6/15/202 ⁻	1	I		DRILL	MET	HOD	H.S	I.S. Augers	HAM	MERTYPE AL	utomatic	DRIL	L RIG/HA	MMER E	FF./DA	ΤΕ ΤΙ	DD5417	CME-75 83	% 06/15/20	21
D	RILL	ER D	. Hami	ton		S	TART D	ATE	06/02/	21		COMP. D	ATE 0	6/02/2	21		SURFACE WATER DE		I/A		DRIL	LER [). Hami	lton		ST	ART DA	FE 06/01	/21
EL	EV		DEPTH	BLC	w col	JNT			BLOWS	PER F	ООТ		SAM	P. 🔻	\square						ELEV	DRIVE	DEPTH	BLO	ow co	JNT		BLOW	S PER FOOT
(1	t)	ELEV (ft)	(ft)		0.5ft	0.5ft	0	25		50	7	75 100	NO.		101 0	G	SOIL AND R ELEV. (ft)	OCK DES		DEPTH (ft)	(ft)	ELEV (ft)	(ft)		0.5ft	0.5ft	0	25	50
DRE DOUBLE U2579AB_SWAL_GEO.GPU NC_DOT.GDT 6/23/21	20	DRIVE ELEV (ft) 			0.5ft			25 		50		7 <u>5</u> 100	0 NO.		<pre>/ (</pre>			IND SURF Y EMBAN o Coarse S inated with Refusal at	ACE IKMENT Sandy SILT (A- h Standard Elevation 811.6 s in Roadway	0.0 4) 5.0	ELEV (ft) 815 810	(ft)		·	0.5ft		0	25	50



W	3S 34	4839.1.8			TI	P U-2579	9AB	со	UNTY	FORSYI	ГН			GEOLO	DGIST J.	Garrick			WBS	S 34	4839.1.8	3			TIP	U-2579	9AB		COUNT	Y FORS	YTH			GE	EOLOG	IST J.G	arrick			
SI	e de:	SCRIPTIC	DN Wi	/inston-Salem Beltway from US 421/I-40 Business to I-40												GROUN	ID WTR (ft)	SITE	E DE	SCRIPTI	ION \	Winsto	on-Sal	lem Be	eltway fr	om U	S 421/I	-40 Bus	siness to I	-40							GROU	ND WTR (ft	t)	
BC	RING	NO. NV	/17/18/	19_38	00R 35T	TATION 3	37+99		0	FFSET	3 ft RT			ALIGN	MENT -N	W17/18/19-	- 0 HR.	9.1	BOF	ring	NO. N	IW17/1	18/19_	_5700F	RSSTA	ATION :	57+09)		OFFSET	7 ft L	Т		AL	IGNME	N T -NV	17/18/19-	0 HR.	8.2	2
CC	ILLAR	ELEV.	818.5 ft		тс	DTAL DEP	TH 16	.9 ft	N	ORTHING	G 846,7	760		EASTI	NG 1,659	,161	24 HR.	7.0	COL	LAR	R ELEV.	829.4	4 ft		ТОТ	TAL DEP	тн ′	15.0 ft		NORTH	NG 84	17,605		EA	ASTING	1,660,8	74	24 HR.	FIAD	С
DR	ILL RIC	HAMMER	EFF./D/	TE T	DD5417	CME-75 839	%06/15/2	021			DRILL	METHO	DHS	S. Augers		HAI	MMER TYPE	Automatic	DRIL	L RIC	g/Hamme	R EFF.	./DATE	TDD	5417 C	ME-75 839	%06/15	5/2021			DRI	LL MET	HOD	H.S. Au	gers		HAN	MER TYPE	Automatic	
		R D. Har			ST	ART DAT	E 06/0)1/21	C	omp. Da	TE 06/	/01/21		SURFA	CE WATE	R DEPTH	N/A		DRI		R D. Ha		n		STA	ART DAT	TE 06	6/07/21		COMP. I	DATE	06/07/	21	SL	JRFAC	E WATER	DEPTH	N/A		
ELE		IVE DEPT		ow co				NS PER F			SAMP.				SOIL A	ND ROCK DI	ESCRIPTION		ELEV			ртн		COUN					ER FOOT		SA					SOIL AN	D ROCK DE	SCRIPTION	l	
(ft) (ft) (ft)	0.5ft	0.5ft	0.5ft	0	25	50	75	100	NO.	ИОІ	G	ELEV. (ft)				DEPTH (ft	(ft)	((ft) (f	0.	.5ft 0).5ft 0	0.5ft	0	25	50)	75 1	00 N	<u>o. / n</u>	101 G							_
82	0													-	r				830															- 829.4			OUND SUR		0	0.0
		+									!			818.5	ROA	BROUND SUF	ANKMENT				Ŧ					· · · · ·			· · · ·					- 828.0	<u> </u>		NAY EMBA rete Paveme		<u> </u>	0.8
81	5	Ŧ								· · · ·				ŀ	Red-Brown, F	ine to Coarse	e Sandy SILT	(A-4)	825		Ŧ								· · · ·					F		l-Brown, Fir	e to Coarse	Sandy SILT	(A-4)	_
		Ŧ											L -	-							Ŧ													824.4			ALLUVIA		<u> </u>	<u>י.0</u>
		Ŧ						.					Ľ	810.5				8 (Ŧ									.	•			821.4	4	rown, ⊦ine — — — —		andy SILT (#	4-4) <u> </u>	<u>3.0</u>
81	0	Ŧ														RESIDUA	AL se SAND (A-2-	<u>0.</u>	820	-	Ŧ														V	Vhite-Browr		Coarse SA	ND	
		ł													Gray, Silly	Fine to Coars	Se Sand (A-2-	-4)			ł																(A-2-4)			
80	5	Ŧ						.						_					815		Ŧ													- 					15	- 0
		ŧ																			ŧ														B	oring Termi	nated at Eler al Silty SAN	vation 814.4	ft In	<u></u>
	80	<u>1.6 + 16.9</u> +	60/0.0)						60/0.0	•			801.6	Boring	Terminated w	vith Standard	16.9			‡													Ł		T CSIU	Notes:	D (A-2-4)		
		+													Penetration -	Test Refusal	at Elevation 8 RANITIC RO				+													F	В		onto should	er due to dri	ll rig	
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WBS 34839.1.8	TIP U-2579AB COUN	NTY FORSYTH	GEOLOGIST J. Garrick	V	VBS 348	39.1.8		TIP U	J-2579AB CO	OUNT
SITE DESCRIPTION Winston-Sal	lem Beltway from US 421/I-40 B	usiness to I-40	GROUND WT	(ft) S	ITE DES	CRIPTION	Winston-Sa	alem Beltv	vay from US 421/I-4	0 Busi
BORING NO. NW17/18/19_5800F	RSSTATION 58+06	OFFSET 19 ft LT	ALIGNMENT -NW17/18/19- 0 HR.	Dry E		IO. NW	17/18/19_5900	ORSSTATI	ON 59+05	
COLLAR ELEV. 830.6 ft	TOTAL DEPTH 5.8 ft	NORTHING 847,653	EASTING 1,660,966 24 HR. F	AD		ELEV. 8	32.3 ft	TOTAL	DEPTH 8.1 ft	
DRILL RIG/HAMMER EFF./DATE TDD:	5417 CME-75 83% 06/15/2021	DRILL METHOD	I.S. Augers HAMMER TYPE Autom	tic C	RILL RIG/	HAMMER B	FF./DATE TD	D5417 CME-	-75 83% 06/15/2021	
DRILLER D. Hamilton	START DATE 06/03/21	COMP. DATE 06/03/21	SURFACE WATER DEPTH N/A	C	RILLER	D. Hami	lton	START	DATE 06/03/21	
ELEV DRIVE DEPTH BLOW COUN			SOIL AND ROCK DESCRIPTION	E					BLOWS PER	R FOOT
(ft) (ft) (ft) 0.5ft 0.5ft 0	0.5ft 0 25 50	75 100 NO. MOI G	ELEV. (ft) DEF	'H (ft)	(ft) (ft)	• (ft)	0.5ft 0.5ft	0.5ft 0	25 50	
835			_		35	_				
			-			ţ				
			- 830.6 GROUND SURFACE	0.0	20	Ţ			· · · · · · · · · · · ·	· · ·
830	· · · · · · · · · · · · · · ·		-829.3 ROADWAY EMBANKMENT Concrete Pavement (0.8'), Stone Base (0.5')	1.3	30	+			· · · · · · · · · · · ·	
			Red-Brown, Fine to Coarse Sandy SILT (A-4)			‡			· · · · · · · ·	· · · · · ·
825 824.8 5.8			824.8	5.8 8	825	3 + 8.0			· · · · · · · ·	•••
- 60/0.0		00/0.0 -	Boring Terminated with Standard Penetration Test Refusal at Elevation 824.8			<u> </u>	60/0.1			
			 ft On Crystalline Rock (GRANITIC ROCK) 			‡				
			Notes: Boring offset onto shoulder due to drill rig			+				
			access concerns.			‡				
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WBS 3	34839.1	.8		٦	TIP U-2579AB COUNTY FORSYTH GEOLOGIST J. Garrick											WBS	3 348	39.1.8			TIF	P U-257	79AB	(COUNT	Y FORSY	ТΗ			GEOL	ogist J. (Garrick		
SITE D	ESCRIP	TION W	/instor	ton-Salem Beltway from US 421/I-40 Business to I-40										GROUND W	/TR (ft)	SITE	DESC	RIPTIO	N Win	ston-S	Salem E	Beltway f	from US	S 421/I	-40 Busi	iness to I-4	10						GROUN	ID WTR (ft)
BORIN	g no.	NW17/18	8/19_6	000RS	STATION 5	59+89		OFFSET	10 ft RT		ALIC	GNMENT -NW17/	18/19-	0 HR.	Dry	BOR	RING NO	O. NW	17/18/1	19_630	008 951	ATION	63+20			OFFSET	26 ft L	Т		ALIGN	IMENT -N	V17/18/19-	0 HR.	Dry
COLLA	R ELEV	. 832.0	ft	1	OTAL DEP	TH 15.0 f	ft	NORTHING	G 847,6	78	EAS	STING 1,661,142		24 HR.	Dry			LEV . 8				DTAL DE				NORTHIN	IG 847	,801		EAST	NG 1,661,		24 HR.	Dry
DRILL R	rig/Hamin	ier eff./[DATE	TDD541	7 CME-75 839	%06/15/2021			DRILL M	IETHOD	H.S. Auge	rs	HAMM	ER TYPE Auto	omatic	DRIL	l rig/H	AMMER	EFF./DA	TE TD	DD5417 (CME-758	3%06/15	5/2021			DRILL	_ METH	OD H.	.S. Augers		HAM	MER TYPE	Automatic
		lamilton			TART DAT			COMP. DA			SUR	RFACE WATER DEI	PTH N/	/A		DRIL		D. Ham				ART DA	TE 06	6/08/21		COMP. D	ATE 0	6/08/21	 	SURF	ACE WATE		I/A	
	DRIVE D			OUNT			PER FOOT		SAMP.			SOIL AND RC	OCK DESC	CRIPTION		ELEV	DRIVE								ER FOOT		SAM				SOIL AI	ND ROCK DE	CRIPTION	
(ft) -	(ft)	(ft) 0.5	5ft 0.5	ift 0.5fl	0	25	50	75 100	NO.	MOI G	ELEV.	<u>(ft)</u>		[DEPTH (ft)	(ft)	(ft)	(11)	0.5ft	0.5ft	0.5ft	0	25	50)	75 100	NO.	. /мс	DI G					
835											F					840		+												_				
	Ŧ										832.0	GROU	ND SURFA	ACE	0.0			Ŧ											F	-				
830	Ŧ											ROADWAY White-Red-Brown	n. Fine to 0			835		<u> </u>								· · · · ·		_		835.8	G	ROUND SUR		0.0
	Ŧ										829.0		ĹΤ (A-4) ESIDUAL		<u>3.0</u>			Ŧ												-	Black-Whit	e-Brown, Silty SAND (A-2-	Fie to Coars	se
	Ŧ										E	Orange-Brown-Whi	ite, Fine to LT (A-4)	o Coarse Sandy				Ŧ												-		0/110 (//2	•)	
825	+						<u> </u>				<u></u>		LI (/)			830	829.8	<u> </u>	60/0.0		-				<u> </u>	60/0.0	,			_ 829.8	Boring	Ferminated wi	h Standard	6.0
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	817.0	15.0 60/0	0.0		<u> </u>		I	60/0.0	▶		817.0	Boring Termir Penetration Test R	nated with	Standard	15.0			‡												-				
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