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REFERENCE

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SHEET NO. 27071

DESCRIPTION TITLE SHEET LEGEND SITE PLAN AND PROFILE BORE LOGS

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY CLEVELAND

PROJECT DESCRIPTION US 74, SHELBY BYPASS FROM EAST OF NC 150 TO EXISTING US 74 WEST OF SR 2238 (LONG BRANCH RD.)

SITE DESCRIPTION RETAINING WALL RWI FROM -Y4-STA. 16+00.00, 20.67'LT TO -Y4-STA. 18+54.23,79.06'LT

3449 PROJEC

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707D	1	5

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 SOLI TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1991 707-6860. THE SUBSIFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSUFFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSUFFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DECREE OF RELIBULITY INHERENT IN THE SUBSUFFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THES SUBJFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THES WATER LEVELS OR SOL MOSTUFE CONDITIONS MAY VARY CONSDERABLY WITH THE ACCOMPING OL CUMUTIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CALITORIED 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 OPHIONO OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONSTRUCTIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDENSION OR FOR AN THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:

- TES: THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT. BY HAVING REDUESTED 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.

PERSONNEL

TRIGON

GOODNIGHT, D.J.

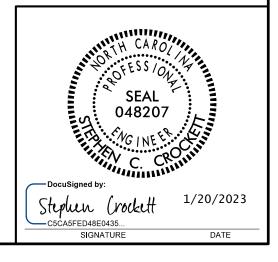
INVESTIGATED BY _____GOODNIGHT, D.J.

DRAWN BY _____CROCKETT, S.C.

CHECKED BY _______ HUNSBERGER, W.S.

SUBMITTED BY ______ FALCON ENG.

DATE JANUARY 2023



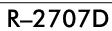
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

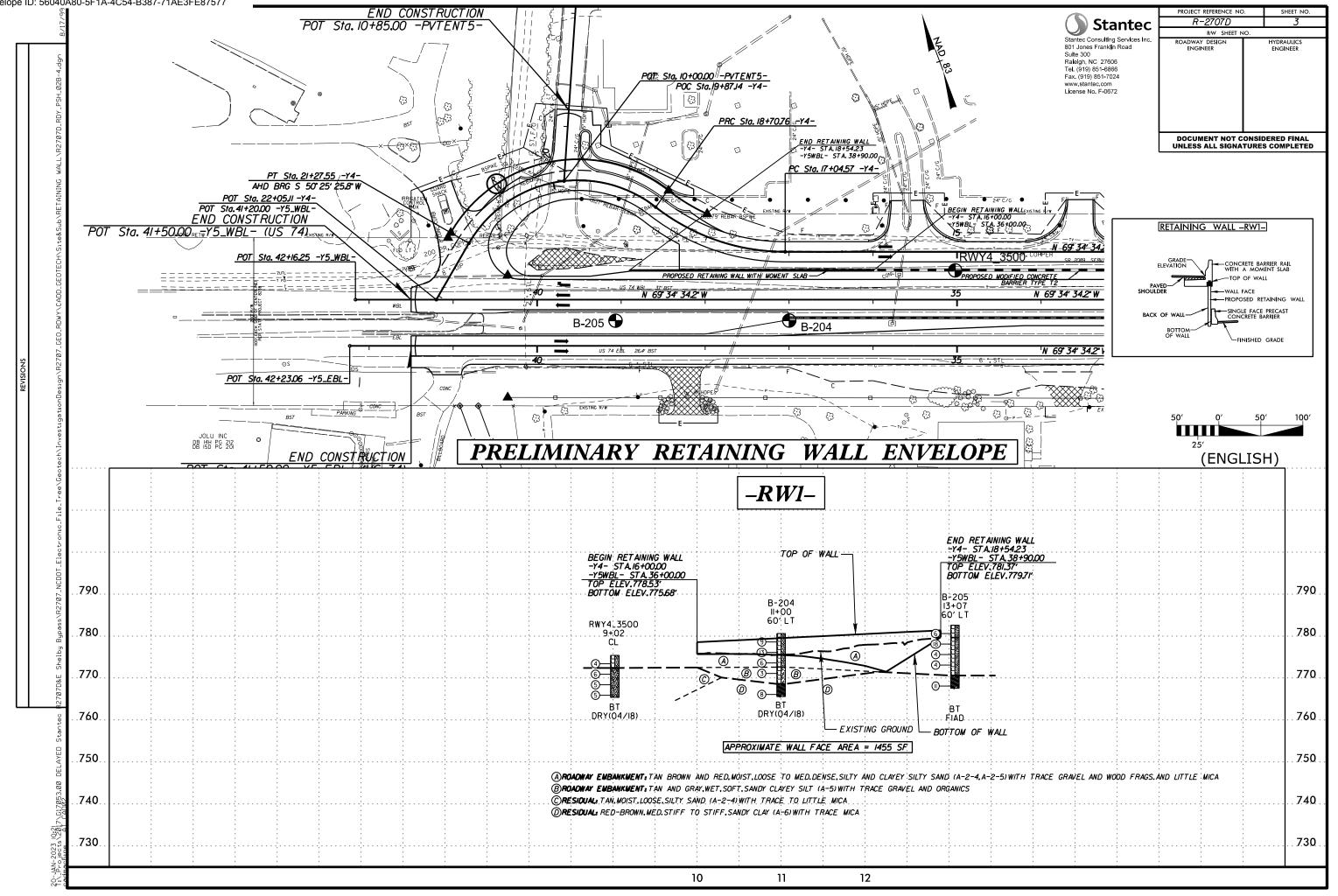
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION						
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO I 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	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.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTE ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL IS PERITARIION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK						
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,	ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:						
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 ROCK (WR) 100 BLOWS PER FOOT IF TESTED.						
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS	MINERALOGICAL COMPOSITION	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC RO						
ULASS. (\$357 HASSING \$200) (\$357 HASSING \$200)	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE IN GNEISS, GABBRO, SCHIST, ETC.						
CLASS. A-1-0 A-1-0 A-2-4 A-2-5 A-2-6 A-2-7 A-75 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTA SEDIMENTARY ROCK THAT WOULD YELLD SPT REFUSAL DOCK (NCR)						
SYMBOL DOCODOCOC SILL CONTRACTOR CONTRA	SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN						
% PASSING SILT-	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SET SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDS						
*10 50 MX 50 MX 51 MN S0 LAY PEAT		WEATHERING						
■2000 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 36 MX 36 MN 30 MN	GRANULAR SILT - CLAY ORGANIC MATERIAL SOLLS SOLLS TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK HAMMER IF CRYSTALLINE.						
PASSING *40 LL 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 50 LS WITH PI C MY NP 18 MY	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	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY C (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER H OF A CRYSTALLINE NATURE.						
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SAUS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO RO						
USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER OF MAJOR GRAVEL, AND SAND GRAVEL AND SAND SOILS SOILS SOILS	✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ✓ STATIC WATER LEVEL AFTER <u>24</u> HOURS	(SLL) I INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECT						
CEN BATING	∇PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLA DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH						
AS SUBURAUE PUUK	SPRING OR SEEP	WITH FRESH ROCK.						
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ;PI OF A-7-6 SUBGROUP IS > LL - 30 CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL F SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE L						
COMPACTNESS OF RANGE OF STANDARD RANGE OF UNCONFINED		(MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND " <u>IF TESTED, WOULD YIELD SPT REFUSAL</u>						
PRIMARY SOIL TYPE COMPRCTNESS OF CONSISTENCY PENETRATION RESISTENCE (N-VALUE) COMPRESSIVE STRENGTH (TONS/FT ²) GENERALLY VERY LOOSE < 4	ROADWAY EMBANKMENT (RE) 257025 DIP & DIP & DIP DIRECTION WITH SOIL DESCRIPTION → OF ROCK STRUCTURES SILD SYMBOL → SOIL SYMBOL SUPPE INDICATOR INSTALLATION	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND E (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS A TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.						
MATERIAL MEDIUM DENSE 10 TO 30 N/A		IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF						
(NON-COHESIVE) UENSE VERY DENSE 36 / U 50 550 VERY SOFT < 2	THAN ROADWAY EMBANKMENT + AUGER BORING + TEST	VERY ALL ROCK EXCEPT OUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS AR SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF (V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N V</u>						
GENERALLY SOFT 2 TO 4 0.25 TO 0.5 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0 MATERIAL STIFF 8 TO 15 1 TO 2 (COMESIVE) VERY STIFF 15 TO 30 2 TO 4	TIEVE INFERRED ROCK LINE MONITORING WELL TEST BORING WITH CORE TIEVE ALLUVIAL SOIL BOUNDARY A PIEZOMETER INFERRED ROCK LINE SOIL BOUNDARY	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE OR DISCERNIBLE ONLY SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS ALSO AN EXAMPLE.						
HARD > 30 > 4		ROCK HARDNESS						
TEXTURE OR GRAIN SIZE		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPEC						
U.S. STD. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIF	SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BI						
	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF UNDERCUT ACCEPTABLE DEGRADABLE ROCK EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.						
OBDELCR. Conduct SAND SAND SAND CL CL <td>ABBREVIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST</td> <td>MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE D BY MODERATE BLOWS.</td>	ABBREVIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE D BY MODERATE BLOWS.						
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY γ - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE O HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD						
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC $\hat{\gamma}_{d}$ - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC	POINT OF A GEOLOGIST'S PICK.						
(ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION - SATURATED - USUALLY LIQUID; VERY WET, USUALLY	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST <u>SAMPLE ABBREVIATIONS</u> DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POIN PIECES CAN BE BRCKEN BY FINGER PRESSURE.						
(SAT.) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO SD SAND, SANDY SS SPLIT SPOON F - FINE SL SLIT, SLITY ST SHELBY TUBE F0SS FOSSILIFEROUS SLI SLIGHTLY RS ROCK FDAGE_PROFILER INCOMP. PERFILICAL RS ROCK	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCH FINGERNAL.						
RANGE - WET - (W) SEMISULID; REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS w - MDISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING						
	HI HIGHLY V - VERY RATIO EQUIPMENT USED ON SUBJECT PROJECT	TERM SPACING TERM VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED						
OM OPTIMUM MOISTURE ' MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: CME-45C CLAY BITS IX AUTOMATIC MANUAL	WIDE 3 TO 10 FEET THICKLY BEDDED I. MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.1 CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.0						
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	6' CONTINUOUS FLIGHT AUGER	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.0 THINLY LAMINATED						
PLASTICITY	└── CME-55 └── B └── B ·── H	INDURATION						
PLASTICITY INDEX (PI) DRY STRENGTH	X CME-550X HARD FACED FINGER BITS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HE						
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.						
MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH	CASING / W/ ADVANCER POST HOLE DIGGER POSTABLE HOIST TRICONE	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH ST BREAKS EASILY WHEN HIT WITH HAMMER.						
COLOR	X MOBILE B-57 Image: sounding rod	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL DIFFICULT TO BREAK WITH HAMMER.						
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.	CORE BIT VANE SHEAR TEST	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE SAMPLE BREAKS ACROSS GRAINS.						

PROJECT REFERENCE NO.

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	TERMS AND DEFINITIONS
ED. AN INFERRED) SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
1 FOOT PER 60 IS OFTEN	ADUIFER - A WATER BEARING FORMATION OR STRATA.
10 OF TEN	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
T N VALUES >	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.
DCK THAT	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
NCLUDES GRANITE.	SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
AL PLAIN IF TESTED. C.	<u>CALLAREOUS (CHLL)</u> SUILS THAT CONTAIN APPRELIABLE AMOUNTS OF CALLOW CARBUNATE. <u>COLLUVIUM</u> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
MAY NOT YIELD STONE, CEMENTED	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.
	$\underline{\text{DIKE}}$ - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
RINGS UNDER	$\underline{\text{DIP}}$ - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
COATINGS IF OPEN, HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
DCK UP TO AL FELDSPAR	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
R BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
S. IN AY. ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
H AS COMPARED	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
FELDSPARS DULL OSS OF STRENGTH	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
EVIDENT BUT	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
ARE KAOLINIZED	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.
RE DISCERNIBLE OF STRONG ROCK	OSONELT INDICATES FOOR ACAN THAT HAVE ALL OF GOOD DAMINANCE. <u>PERCHED WATER</u> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
T ONLY MINOR VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
IN SMALL AND S. 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
	RUN AND EXPRESSED AS A PERCENTAGE. <u>SAPROLITE (SAP.)</u> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
NS REQUIRES	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
EEP CAN BE	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. <u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
DETACHED	OR SLIP PLANE. <u>STANDARD PENETRATION TEST (PENETRATION RESISTANCE)(SPT)</u> - NUMBER OF BLOWS (N OR BPF)OF
OR PICK POINT. BLOWS OF THE	A 140 LB.HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF I FOOT INTO SOL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
N FRAGMENTS NT. SMALL, THIN	<u>STRATA CORE RECOVERY (SREC.</u>) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
. PIECES 1 INCH HED READILY BY	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 THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
	BENCH MARK: ELEVATIONS OBTAINED FROM TIN FILE
THICKNESS 4 FEET	R2707_LS_TNL_180309.TIN DATED MARCH, 2018
1.5 - 4 FEET	ELEVATION: FEET
.16 - 1.5 FEET 03 - 0.16 FEET	NOTES:
08 - 0.03 FEET 08 -0.08 FEET 0.008 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
EAT, PRESSURE, ETC.	
• TEEL PROBE;	
PROBE:	
E;	
	DATE: 8-15-14



GEOTECHNICAL BORING REPORT BORE LOG

WBS 344	97.1.1			ТІ	R -2707	Ď	COL	UNTY	CLEVEL	AND			GEOL	.OGIST G	Joodnight, I	D. J.			WBS	3 3449	7.1.1			TIF	P R-270	7D	C	OUNTY	CLEVE	AND			GEOLOGIST God	dnight, D. J		
SITE DESC	RIPTION	RET	AINING	G WAL	_ RW1 FR	ROM -Y4-	STA. 1	16+00.0	0, 20.67'	LT TO - ነ	(4- STA	4. 17+	88.97, 3	8.10' LT		G	Round W	TR (ft)	SITE	DESCR	RIPTION	RET	AININ	G WALI	LRW1 F	ROM - Y	′4- STA	. 16+00.	00, 20.67	LT TO -Y	'4- ST.	A. 17+	-88.97, 38.10' LT		GROUND	WTR (ft)
BORING NO) . RWY	′4_350	C	ST	ATION 1	5+02		0	FFSET	22 ft LT			ALIGN	א אפאד - א	Y4-	0	HR.	Dry	BOR	ing no	. B-20	4		ST	ATION	17+00			OFFSET	82 ft LT			ALIGNMENT -Y4		0 HR.	Dry
COLLAR E	LEV. 77	75.4 ft		тс	TAL DEP	TH 10.0	D ft	N	ORTHING	3 559,6	519		EAST	ING 1,263	3,723	24	HR.	FIAD	COL	LAR EL	. EV. 78	30.6 ft		то	TAL DEI	PTH 1	5.0 ft		NORTHIN	G 559,63	32		EASTING 1,263,5	17	24 HR.	FIAD
DRILL RIG/H/	AMMER EF	F./DATI	E TRI8	8016 M	BILE B-57	97% 02/24	4/2017	•		DRILL	NETHOD) H.S	. Augers		н	AMMER 1	YPE Auto	matic	DRILL	RIG/HA	MMER EF	F./DAT	E HPC	2473 Cl	ME-550 85	5% 01/10/	2018			DRILL M	IETHO	D H.S	S. Augers	HAM	MER TYPE A	utomatic
DRILLER	•				ART DAT	E 08/06	6/19	С	OMP. DA	TE 08/	06/19		SURF	ACE WATI	ER DEPTH	N/A			DRIL	LER (ART DA	TE 04,	/05/18		COMP. D	ATE 04/0	05/18		SURFACE WATER	DEPTH N	I/A	
ELEV DRIV (ft) CRIV ELEV (ft)	E / DEPTH (ft)	BLC 0.5ft	W COU 0.5ft	JNT 0.5ft	0	BLOW 25	'S PER F 50	FOOT 75	5 100	SAMP. NO.	1.7		ELEV. (ft	SOIL /	AND ROCK	DESCRI		EPTH (ft)	ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	OW CO 0.5ft	UNT 0.5ft	0	BLC 25	WS PEI 50	R FOOT	75 10	SAMP. NO.	мо	L O I G	SOIL AN	D ROCK DE	SCRIPTION	
DRILLER ELEV (ft) DRIV ELEV (ft) 780	Estep, J.	E. BLC 0.5ft	W COL	JNT	ART DAT	E 08/06 BLOW 25 	5/19 'S PER F 50 	FOOT 75 75		TE 08/	06/19		SURF	SOIL # BOT TAN-BR TAN, SILT Boring Ter	ER DEPTH	SOIL SOIL BANKME YEY SILT 	PTION D TION Y SAND H TRACE		DRIL ELEV	LER (DRIVE ELEV (ft) - 779.6 - 777.1 - 774.6	Cain, J. DEPTH (ft) 	BLC 0.5ft 4 11 2 2	ow co	UNT		TE 04	/05/18 WS PEI 50 	R FOOT		ATE 04/0	05/18		SURFACE WATEF SOIL AN SOIL AN 780.6 TAN, SILTY MICA 772.6 TAN AND G (A-5) WT 768.6 RED-BROW 765.6 Boring Term	DEPTH N D ROCK DE 0.3' TOPSC WAY EMBA SAND (A-2-4 NND TRACE G ORGANIC ORGANIC TRACE MIC TRACE MIC	I/A SCRIPTION SCRIPTION UIL VITH LITTL GRAVEL AVEL AND S 	0.0 .E T
CDOT BORE DOUBLE R2707_GEO_													-								+ + + + + + + + + + + + + + + + + + +															

GEOTECHNICAL BORING REPORT BORE LOG

WBS 3														UG							
	34497.	1.1			T	IP R-	27070)		CO	UNTY	′CL	EVELA	ND			GEOLOG	IST Goodnig	ht, D. J.	1	
SITE DE	ESCRI	PTION	RET	AININ	G WAI	L RW	1 FR0	ר- MC	(4- S	TA. 1	6+00	.00, 2	0.67' L	T TO -Y	4- STA	4. 17+	88.97, 38.1	0' LT		GROUND	NTR (ft
BORING	g no.	B-205			S	TATIC	N 18	3+41				OFF	SET	139 ft LT			ALIGNME	ENT -Y4-		0 HR.	Dry
COLLA	R ELE	V. 78	2.6 ft		T	OTAL	DEPT	H 1	5.0 ft	t		NOR	THING	559,70	04		EASTING	1,263,323		24 HR.	FIAD
DRILL RI	IG/HAMI	MER EF	F./DATE	E HPC	C2473 (CME-55	50 85%	01/10/	/2018					DRILL M	ETHO) H.S	. Augers		HAMM	ER TYPE Au	tomatic
DRILLE	ER Ca	ain, J.			S	TART	DATE	04	/05/1	8		CON	P. DA	TE 04/0)5/18		SURFAC	E WATER DEI	PTH N/	A	
E	DRIVE ELEV (ft)	DEPTH (ft)		W CO 0.5ft		0	2	BLC 25		PER F 50	-00T	75	100	SAMP. NO.	моі	L O G	ELEV. (ft)	SOIL AND RO	OCK DES	CRIPTION	DEPTH (1
785		-															_				
	781.6	1.0	2	3	3							-	•••				782.6	0.4' ROADWAY TAN BROWN, S		KMENT	C
780 7	779.1	3.5													M		<u>_779.6</u>	(A-2-5) WITH	I TRACE	GRAVEL	3
7	776.6 +		10	12	6		•18	· ·	•••				•••		М			N-BROWN AN SAND (A-2-4) V	VITH TRA	ACE WOOD	Y
775			2	2	2	4				-					м		_	FRAGMENTS LIT	AND GRA		
_7	774.1	8.5	2	2	2				•••				•••		м						
	Ŧ	-								-		-				L	770.6				11
770 7	769.1	13.5	3	5	6		• • •					-	· · ·		м		770.6	RED-BROWN	SANDY	CLAY (A-6)	<u>12</u> 15
		-					r						I				Bo	ring Terminated RESIDUA	d at Eleva	tion 767.6 ft IN	N
																	-				

27071

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REFERENCE

CONTENTS

3-6

7-19

<u>SHEET</u>	NO.
1	
2	

TITLE SHEET LEGEND SITE PLAN AND PROFILE BORE LOGS

DESCRIPTION

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY CLEVELAND

PROJECT DESCRIPTION US 74, SHELBY BYPASS FROM EAST OF NC 150 TO EXISTING US 74 WEST OF SR 2238 (LONG BRANCH RD.)

SITE DESCRIPTION NOISE WALL 3a FROM -NW3a-STA. 10+00.00 (-L- STA. 692+50.00, 116.68'LT) TO -NW3a STA. 56 + 95.00 (-L STA. 739 + 81.06, 60.5' LT)

3449 PROJEC

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2707D	1	19

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 SOLI TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1991 707-6860. THE SUBSIFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSUFFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSUFFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DECREE OF RELIBULITY INHERENT IN THE SUBSUFFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THES SUBJFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THES WATER LEVELS OR SOL MOSTUFE CONDITIONS MAY VARY CONSDERABLY WITH THE ACCOMPING OL CUMUTIC 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 OPINION 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 INVESTIGATION AS HE DEEMS NECESSARY TO SATISY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONS TO DEENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONS TO BE INCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES.

- TES: THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT. BY HAVING REDUESTED 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.

PERSONNEL

TRIGON

GOODNIGHT, D.J.

INVESTIGATED BY _____GOODNIGHT, D.J.

DRAWN BY _CROCKETT, S.C.

CHECKED BY _______ HUNSBERGER, W.S.

SUBMITTED BY _____ FALCON ENG.

DATE JANUARY 2023



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

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

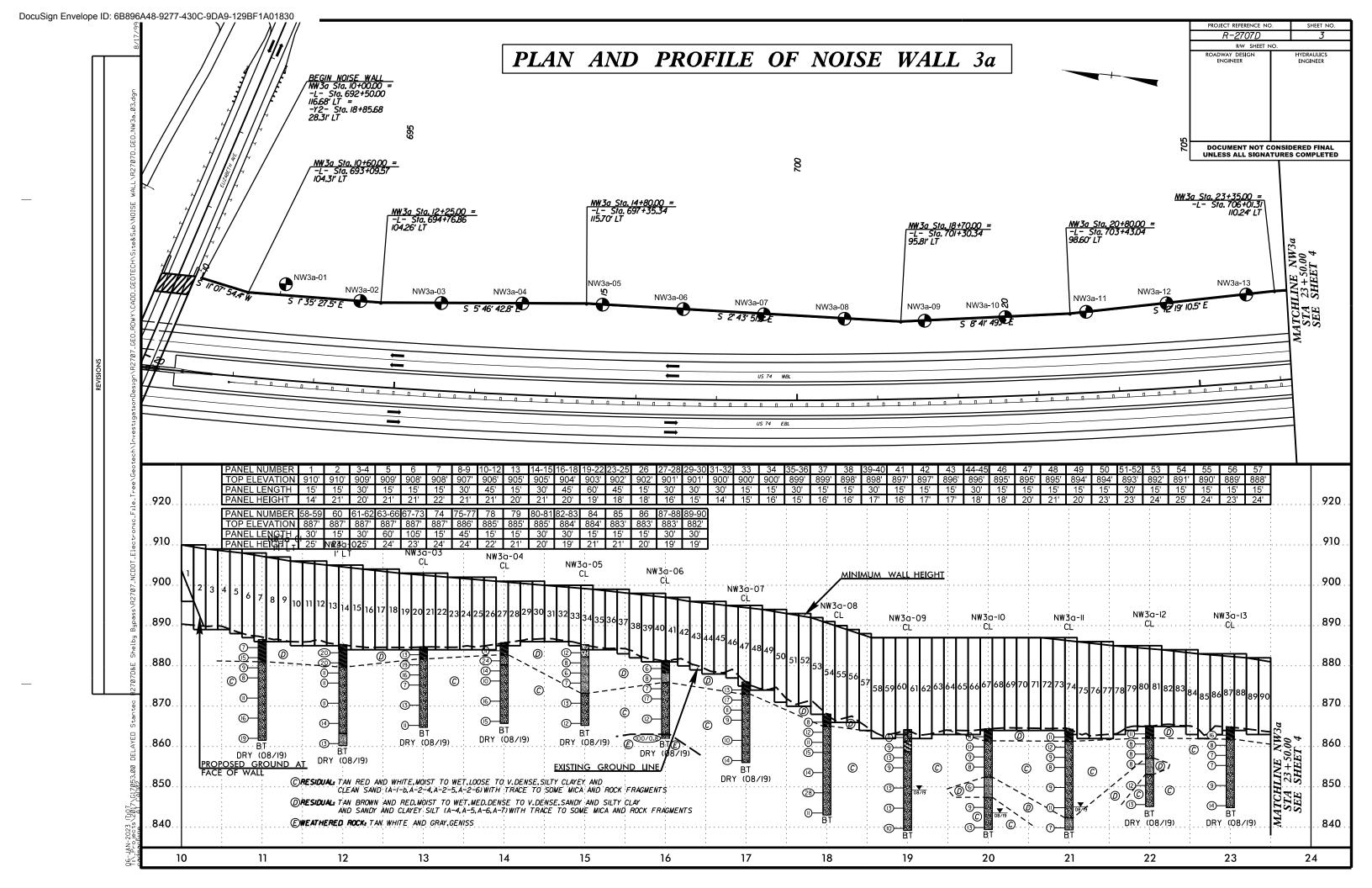
	SOIL DESCRIPTION SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THA BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PEF									1		GRADATION		ROCK DESCRIPTION						
BE PENETF ACCORDIN	RATED WITH	i a con Standa	TINUOUS FL RD PENETR	IGHT POWE	ER AUGE T (AASH	R AND YIEL	LD LESS ASTM D15		PER FOOT	WELL GRADED - INDICAT UNIFORMLY GRADED - IN GAP-GRADED - INDICATE	NDICATES THAT S	OIL PARTICLES ARE AL	LL APPROXIMA	TELY THE SAME SIZE.	ROCK LINE SPT REFUSA	INDICATES THE LE	VEL AT WHICH NON-COA BY A SPLIT SPOON SA	WOULD YIELD SPT REFUSAL IF TESTE SSTAL PLAIN MATERIAL WOULD YIELD AMPLER EOUAL TO OR LESS THAN 0.1 NNSITION BETWEEN SOIL AND ROCK		
CONSISTEN	NCY, COLOR,	TEXTUR	E, MOISTUR	E, AASHTO	CLASSIF	ICATION, AN	ND OTHER	PERTINENT FACT ETC. FOR EXAMPL	ORS SUCH			ARITY OF GRAI				ED BY A ZONE OF 1 RIALS ARE TYPICAL	WEATHERED ROCK. LY DIVIDED AS FOLLOW	NS:		
	ERY STIFF.G	RAY, SILTY	CLAY, MOIST	WITH INTER	RBEDDED) LAYERS, H	HIGHLY PLASTIC, A-7-			NGULAR, SUBROUND	_		THE TERMS:	WEATHERED ROCK (WR)		78	IN MATERIAL THAT WOULD YIELD SPT		
GENERAL			MATERIALS			-CLAY MATER		ORGANIC MAT	RIALS			OGICAL COMPOS			CRYSTALLIN	E F		GRAIN IGNEOUS AND METAMORPHIC RO		
CLASS. GROUP	A-1	≤ 35% PA	SSING =200) A-2		(> 3	5% PASSING		A-1, A-2 A-4, A-5				ARTZ,FELDSPAR,MICA.1 WHEN THEY ARE CONSI			ROCK (CR)		GNEISS, GABBRO, SC			
	-1-a A-1-b		2-4 A-2-5	A-2-6 A-2-7	,		A-7-5. A-7-6	A-3 A-6, A-3			CO!	MPRESSIBILITY			NON-CRYSTA ROCK (NCR)			GRAIN METAMORPHIC AND NON-COASTA K THAT WOULD YEILD SPT REFUSAL 1		
SYMBOL 00											HTLY COMPRESSIB		LL < 31 LL = 31 -	50	COASTAL PL	AIN		DES PHYLLITE, SLATE, SANDSTONE, ETC EDIMENTS CEMENTED INTO ROCK, BUT		
% PASSING	00000000		20-00-02-04	A	and the second second			SILT-			LY COMPRESSIBLE		LL > 50		SEDIMENTAR (CP)			CK TYPE INCLUDES LIMESTONE, SANDS		
	0 MX 0 MX 50 MX	51 MN					0	CLAY	MUCK, PEAT			TAGE OF MATER	RIAL		-			HERING		
			5 MX 35 MX 3	15 MX 35 MX	36 MN	36 MN 36 MN	1 36 MN	SOILS		ORGANIC MATERIAL	GRANULA SOILS	SOILS		MATERIAL	FRESH			TS MAY SHOW SLIGHT STAINING. ROCK		
MATERIAL PASSING 40 LL	-					41 MN 40 MX		SOILS WITH LITTLE OR		TRACE OF ORGANIC MA LITTLE ORGANIC MATT MODERATELY ORGANIC HIGHLY ORGANIC	TER 3 - 5%	% 5 - 12% 1% 12 - 20%	TRACE LITTLE SOME HIGHLY	1 - 10% 10 - 20% 20 - 35% 35% AND ABOVE	VERY SLIGHT (V SLI.)	CRYSTALS ON A E	FRESH, JOINTS STAINED, BROKEN SPECIMEN FACE	,SOME JOINTS MAY SHOW THIN CLAY CO SHINE BRIGHTLY. ROCK RINGS UNDER HA		
					+ +			MODERATE	HIGHLY ORGANIC			ROUND WATER		SSA HAD HOOVE		OF A CRYSTALLIN				
	Image: Normal background backgr					SOILS	∇	WATER LEVEL	IN BORE HOLE IMMEDIA		DRILLING	SLIGHT (SLI.)	1 INCH. OPEN JOI	NTS MAY CONTAIN CLAY.	AND DISCOLORATION EXTENDS INTO ROU IN GRANITOID ROCKS SOME OCCASIONAL RYSTALLINE ROCKS RING UNDER HAMMER					
MATERIALS	SAND	JHNU	ONAVEL N						_	 ₽₩		R LEVEL AFTER <u>24</u> ER, SATURATED ZONE, OF			MODERATE (MOD.)			SCOLORATION AND WEATHERING EFFECTS DULL AND DISCOLORED.SOME SHOW CLA		
GEN. RATING AS SUBGRADE		EXCELLEN	IT TO GOOD		F	AIR TO POOR			UNSUITABLE		SPRING OR SEE		WHIEN BEAN			DULL SOUND UNDE WITH FRESH ROCK		SHOWS SIGNIFICANT LOSS OF STRENGTH		
	1	PIOF A-7						LL - 30		000					MODERATELY			R STAINED. IN GRANITOID ROCKS, ALL F		
					_			BANGE OF U		<u> </u>	MISCEL	LANEOUS SYMB	ULS		SEVERE (MOD. SEV.)			KAOLINIZATION. ROCK SHOWS SEVERE LO ST'S PICK. ROCK GIVES "CLUNK" SOUND W		
		(CONSISTEN	CY		(N-VALUE)		COMPRESSIVE	STRENGTH		MINKMENT (NE)			SLOPE INDICATOR	SEVERE (SEV.)	ALL ROCK EXCEPT REDUCED IN STRE	NGTH TO STRONG SOIL.	R STAINED. ROCK FABRIC CLEAR AND E IN GRANITOID ROCKS ALL FELDSPARS A		
	GRANULAR LOOSE 4 TO 10						SOIL SYMBOL		OPT DMT TEST BO		INSTALLATION			. SOME FRAGMENTS OF S D YIELD SPT N VALUES 2	STRONG ROCK USUALLY REMAIN. > 100 BPF					
MATERIAL (NON-COH								ILL (AF) OTHER IY EMBANKMENT		; 🙆	CONE PENETROMETER TEST SOUNDING ROD	VERY SEVERE (V SEV.)	ALL ROCK EXCEPT BUT MASS IS EFF	T QUARTZ DISCOLORED OF ECTIVELY REDUCED TO S	R STAINED. ROCK FABRIC ELEMENTS AR SOIL STATUS, WITH ONLY FRAGMENTS OF F ROCK WEATHERED TO A DECREE THAT					
GENERALI SILT-CLA			SOFT			2 TO 4 4 TO 8		0.25 TC 0.5 TC	0.5			MW MONITORING W		TEST BORING	00101575			AIN. IF TESTED, WOULD YIELD SPT N V		
MATERIAL (COHESIV	-		STIFF VERY STIF HARD			8 TO 15 15 TO 30 > 30		1 TO 2 TO > 4	2 4	INFERRED ROC			$\overset{\Psi}{\frown}$	WITH CORE - SPT N-VALUE	COMPLETE		ENTRATIONS. QUARTZ MAY	DT DISCERNIBLE, OR DISCERNIBLE ONLY Y BE PRESENT AS DIKES OR STRINGERS		
					JR GF	RAIN SI.	ZE	/-		+	RECOMM	ENDATION SYME	30LS					ARDNESS		
U.S. STD. SIEV	VE SIZE		4	10	40	60	200	270			77 UNCLASSIFI	IED EXCAVATION -		SSIFIED EXCAVATION -	VERY HARD		TCHED BY KNIFE OR SHA LOWS OF THE GEOLOGIST	RP PICK. BREAKING OF HAND SPECIMENS		
OPENING (MM))		4.76	2.00	Ø.42 COARS	0.25	0.075 FINE	0.053		SHALLOW	UNSUITABLE	IED EXCAVATION -	USED I	ABLE, BUT NOT TO BE N THE TOP 3 FEET OF MENT OR BACKFILL	HARD		ED BY KNIFE OR PICK ON	NLY WITH DIFFICULTY. HARD HAMMER BU		
BOULDER (BLDR.)		BBLE :0B.)	GRAVE (GR.)		SAND (CSE. S)	SAND	SILT (SL.)	CLAY (CL.)			E DEGRADABLE ROCK			MODERATELY HARD			OUGES OR GROOVES TO 0.25 INCHES DE IST'S PICK. HAND SPECIMENS CAN BE DE		
GRAIN MM	305	7		2.0		0.25		0.05 0.0	95	AR - AUGER REFUSAL	MEI	D MEDIUM		VANE SHEAR TEST		BY MODERATE BL				
SIZE IN.	12	3								BT - BORING TERMINATED CL CLAY		CA MICACEOUS DD MODERATELY		WEATHERED INIT WEIGHT	MEDIUM HARD			S DEEP BY FIRM PRESSURE OF KNIFE O PEICES 1 INCH MAXIMUM SIZE BY HARD		
	-					LATION	OFT	ERMS		CPT - CONE PENETRATION	N TEST NP	- NON PLASTIC		DRY UNIT WEIGHT		POINT OF A GEOL	OGIST'S PICK.			
	MOISTURE			DESCRIP	TION			ELD MOISTURE D		CSE COARSE DMT - DILATOMETER TES DPT - DYNAMIC PENETRAT	T PM	G ORGANIC IT - PRESSUREMETER T P SAPROLITIC	S - BL		SOFT	FROM CHIPS TO S		KNIFE OR PICK. CAN BE EXCAVATED IN BY MODERATE BLOWS OF A PICK POIN SURE.		
					ER TABLE	e - VOID RATIO F - FINE FOSS FOSSILIFEROUS	SL. SLI	SAND. SANDY SILT, SILTY .I SLIGHTLY	ST - 5 RS - F		VERY SOFT			CAVATED READILY WITH POINT OF PICK. BY FINGER PRESSURE. CAN BE SCRATCH						
RANGE <	THE					0	FRAC FRACTURED, FRAC FRAGS FRAGMENTS		R - TRICONE REFUSAL - MOISTURE CONTENT		RECOMPACTED TRIAXIAL CALIFORNIA BEARING		FRACTURE S	PACING	BEDDING					
(PI) PL	PLL _ PLASTIC LIMIT						HI HIGHLY		- VERY		RATIO	TERM VERY WI		<u>SPACING</u> DRE THAN 10 FEET	TERM VERY THICKLY BEDDED					
OM _ SL _	SL SHRINKAGE LIMIT				10ISTURE	DRILL UNITS:	ADVANCING TOO		I PRUJEC HAMMER T	YPE:	WIDE 3 TO 10 FEET THICKLY BEDDED MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED									
	- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE		то			UOUS FLIGHT AUGER	CORE SIZE		VERY CL		SS THAN 0.16 FEET	VERY THINLY BEDDED 0.00 THICKLY LAMINATED 0.00 THINLY LAMINATED <								
	1			PLA	STICI	TY				CME-55	X 8" HOLLOW	AUGERS	В	 			INDUF	RATION		
				PLASTIC				DRY STRE	IGTH	CME-550X	HARD FAC	CED FINGER BITS	<u> </u>		FOR SEDIME	NTARY ROCKS, INDU		NING OF MATERIAL BY CEMENTING, HE		
SLIG	NON PLASTIC Ø-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT				VANE SHEAR TEST		RBIDE INSERTS	HAND TOOL	LS:	FRIA	BLE		FINGER FREES NUMEROUS GRAINS: BY HAMMER DISINTEGRATES SAMPLE.							
	MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH				PORTABLE HOIST		STEEL TEETH		t Hole Digger D Auger	MODE	RATELY INDURATED		E SEPARATED FROM SAMPLE WITH ST Y WHEN HIT WITH HAMMER.							
				C	OLOR					X MOBILE B-57		TUNGCARB.		NDING ROD	INDUF	RATED		IFFICULT TO SEPARATE WITH STEEL BREAK WITH HAMMER.		
	ESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.							CORE BIT			E SHEAR TEST	EXTR	EMELY INDURATED	SHARP HAMMER	BREAK WITH HAMMER. R BLOWS REQUIRED TO BREAK SAMPLE S ACROSS GRAINS.					

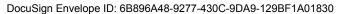
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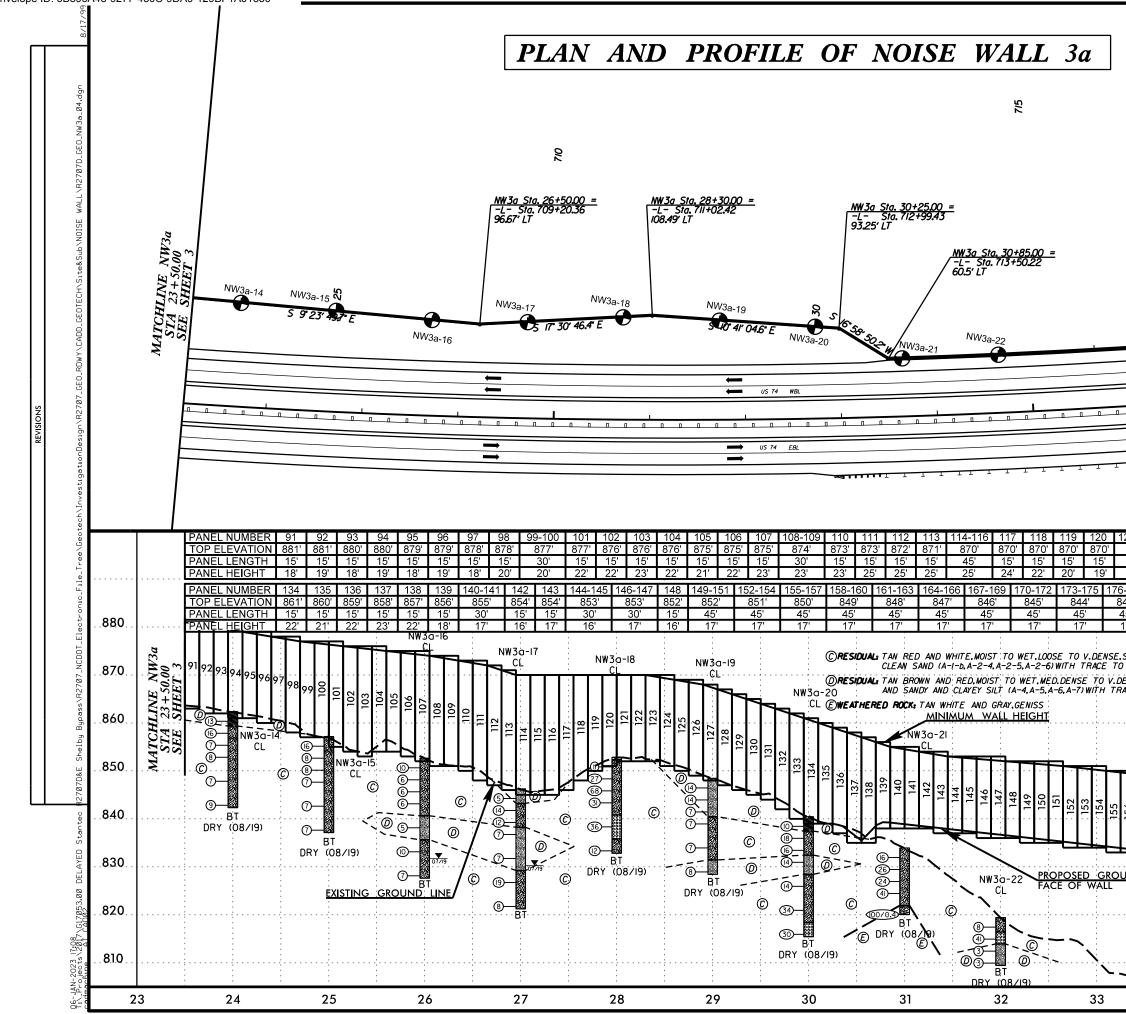


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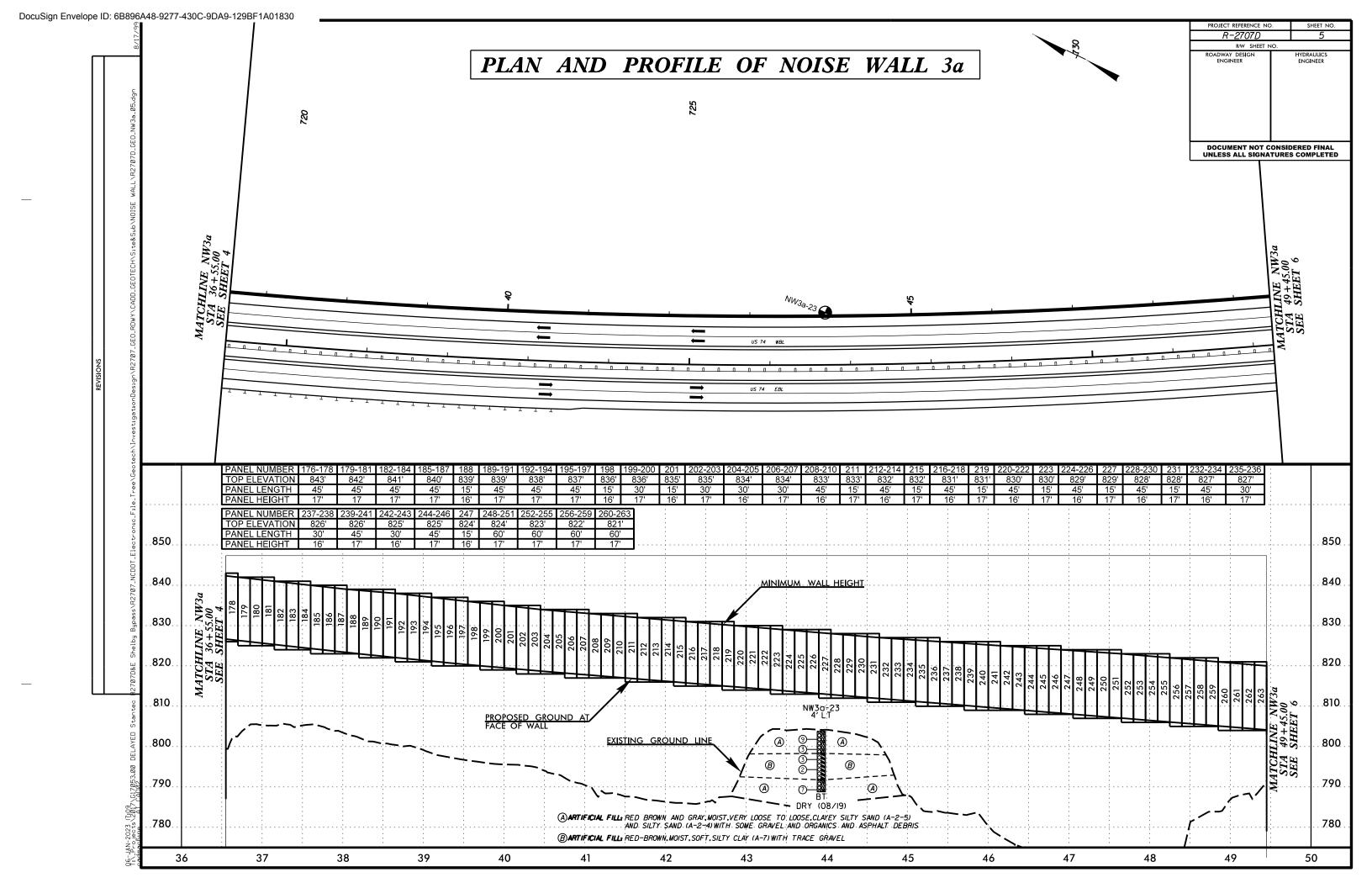
	TERMS AND DEFINITIONS
ED. AN INFERRED	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
D SPT REFUSAL. .1 FOOT PER 60	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS OFTEN	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING
T N VALUES >	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
OCK THAT NCLUDES GRANITE,	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.
AL PLAIN IF TESTED.	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <u>COLLUVIUM</u> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
TC. T MAY NOT YIELD STONE, CEMENTED	OF SLOPE. <u>CORE RECOVERY (REC.)</u> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
STONE, CEMENTED	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <u>DIKE</u> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
RINGS UNDER	ROCKS OR CUTS MASSIVE ROCK. <u>DIP</u> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
COATINGS IF OPEN, HAMMER BLOWS IF	HORIZONTAL. <u>DIP DIRECTION (DIP AZIMUTH)</u> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
OCK UP TO	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
AL FELDSPAR R BLOWS.	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
IS. IN AY. ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
h as compared	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
FELDSPARS DULL LOSS OF STRENGTH WHEN STRUCK.	FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
EVIDENT BUT	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.
ARE KAOLINIZED	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.
RE DISCERNIBLE DF STRONG ROCK T ONLY MINOR	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
IN SMALL AND IS. 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 RUN AND EXPRESSED AS A PERCENTAGE.
NS REQUIRES	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
BLOWS REQUIRED	<u>SILL</u> - 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.
DEEP CAN BE DETACHED	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
OR PICK POINT. D BLOWS OF THE	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 I 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.
N FRAGMENTS NT. SMALL, THIN	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
. PIECES 1 INCH HED READILY BY	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 THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
THICKNESS	BENCH MARK: ELEVATIONS OBTAINED FROM TIN FILE R2707_LS_TNL_180309 DATED MARCH, 2018
4 FEET 1.5 - 4 FEET	ELEVATION: FEET
.16 - 1.5 FEET	NOTES:
03 - 0.16 FEET 108 - 0.03 FEET < 0.008 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
EAT, PRESSURE, ETC.	
TEEL PROBE:	
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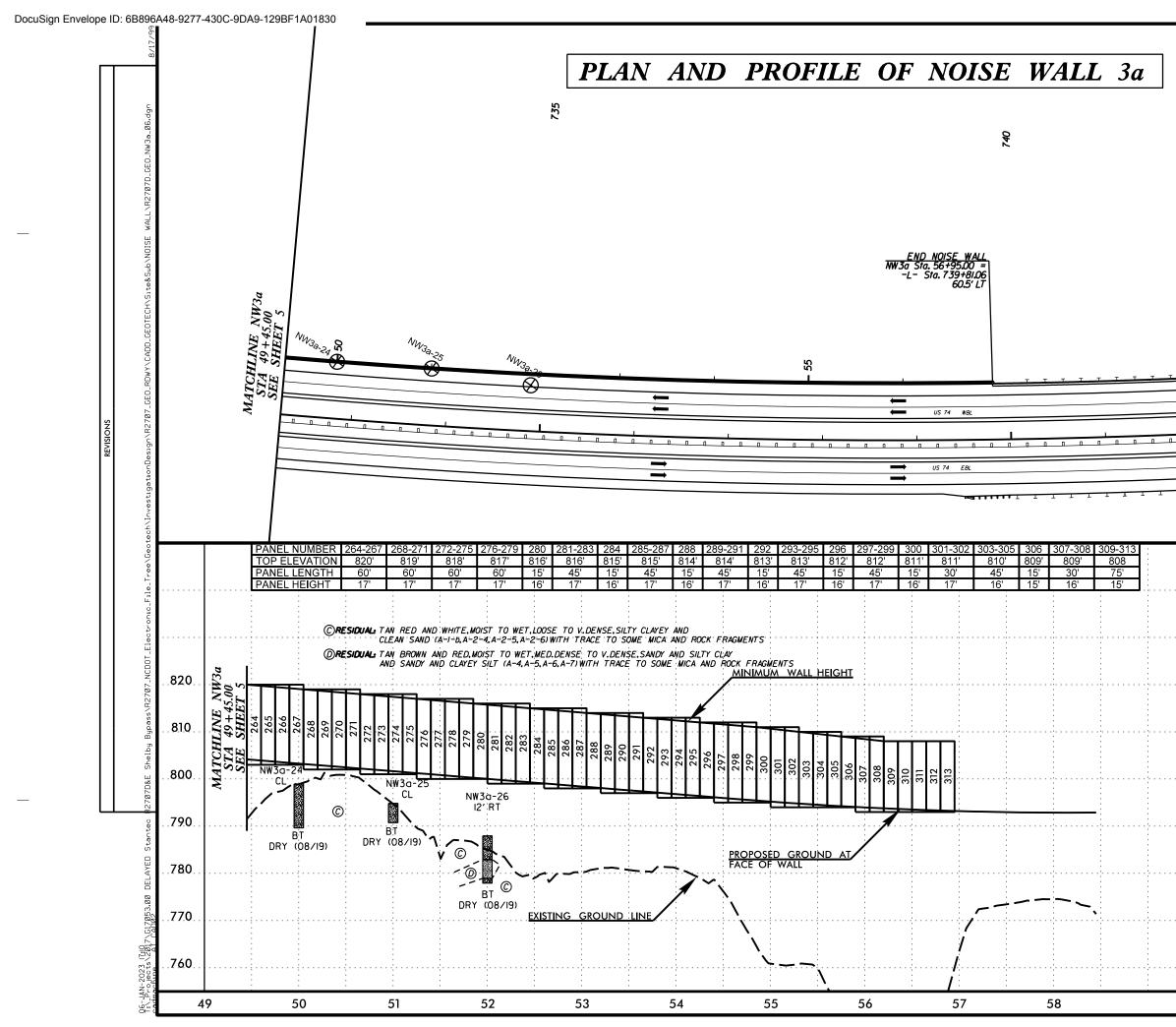






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GEOTECHNICAL BORING REPORT BORE LOG

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SITE	DESCR	PTION	Nois	e Wall	3a fro	om -L- Sta. 692	2+50.00, 1	116.68' L	T to -L- Sta.	739+81.	.06, 60	0.5' L	Т		GROUND WT	₹ (ft)	SITE	DESCRI	PTION	Noise	e Wall	3a fror	n -L- Sta. 6	692+50.00,	116.68' L	.T to
BOR	NG NO.	NW3a	a-01		s	STATION 11+	·06		OFFSET	14 ft LT			ALIGN	MENT -NW3a-	0 HR.	Dry	BORI	ing no.	NW3a	a-02		ST	TATION 1	2+00		OF
COL	LAR ELE	V. 88	36.5 ft		Т	OTAL DEPTH	25.0 ft		NORTHING	570,9	19		EASTI	NG 1,259,307	24 HR.	Dry	COLI	LAR ELE	V . 88	5.2 ft		тс	TAL DEP	TH 25.0 ft	t	NC
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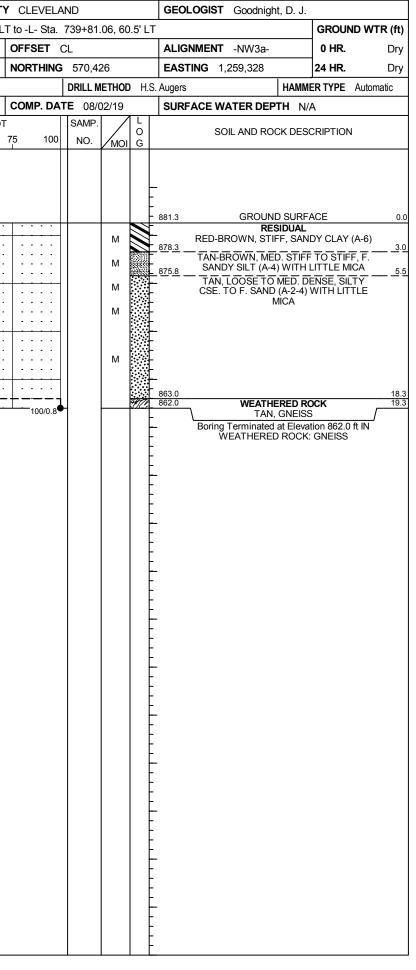
GEOTECHNICAL BORING REPORT BORE LOG

WBS 34497.1.1 TIP R-2707D COUNTY CLEVELAND GEOLOGIST Goodnight, D. J. SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68 'LT to -L- Sta. 739+81.06, 60.5' LT GROUND WTR (ft) SITE DESCRIPTION SITE DESCRIPTION D HR. Dry BORING NO. NW3a-03 STATION 13+00 OFFSET CL ALIGNMENT NW3a- 0 HR. Dry COLLAR ELEV. 884.7 ft TOTAL DEPTH 20.0 ft NORTHING 570,725 EASTING 1,259,304 24 HR. Dry DRILL RIGHAMMER EFF, DATE TRIXO16 MOBILE B-57 84% 05/09/2022 DRILL METHOD H.S. Augers HAMMER TYPE Automatic DRILL RG/HAMMER EFF, DATE TRIXO16 MOBILE B-57 84% 05/09/2022 DRILL METHOD H.S. Augers HAMMER TYPE Automatic DRILL RG/HAMMER EFF, DATE TRIXO16 MOBILE B-57 84% 05/09/2022 DRILL METHOD H.S. Augers Mammer METHON N/A DRILL RE/HAMMER EF B880 A.S.T 1.0 4.5 8 1.1 1.1 1.1	3a-04 85.7 ft FF./DATE TRI8 . E.	I 3a fror ST TC I8016 MC ST DUNT	TATION 14+00 OTAL DEPTH 20.0 OBILE B-57 84% 05/09 TART DATE 08/05 BLOWS	OF 0 ft NC 0/2022 //19 CC S PER FOOT CC CC
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-	• •				м		F 。	65.7							20.0
•						*****	- 0	00.7	Borin	g Te	erminate	d at Eleva	tion 865.7	ft IN	20.0
							È			F	RESIDUA	L: SILTY	SAND		
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GEOTECHNICAL BORING REPORT BORE LOG

	WBS	34497	' .1.1			ТІ	P R-270	07D		COUN	ITY C	LEVELA	ND			GEO	LOGIST	Goodnigh	ht, D. J.			WBS	34497	' .1.1			ТІ	P R-270	7D	COUNT
	SITE	DESCR	IPTION	Noise	e Wall	3a froi	m -L- Sta	n. 692	+50.00,	116.68	LT to	-L- Sta.	739+81	.06, 6	0.5' L	T				GROUND WTR	(ft)	SITE	DESCR	IPTION	Nois	se Wall	3a from	n -L- Sta.	692+50.0	D, 116.68' L
	Bori	ng no.	NW3	a-05		S	TATION	15+(00		OF	FSET	CL			ALIG	NMENT	-NW3a-		0 HR.	Dry	BOR	ing no.	NW3	a-06		S	ATION	16+00	
	COLL	AR EL	EV. 88	5.2 ft		т	OTAL DE	PTH	20.0 f	t	NO	RTHING	570,5	26		EAST	TING 1,2	259,323		24 HR.	Dry	COL	LAR ELI	EV. 88	31.3 ft		т	DTAL DE	PTH 19.3	ft
	DRILL	RIG/HAM	IMER EF	F./DATE	E TRI8	8016 M	OBILE B-5	7 84%	6 05/09/2	022			DRILL N	NETHO	DH.	S. Augers			HAMME	R TYPE Automati	ic	DRILL	. RIG/HAN	IMER EF	F./DAT	E TRI	3016 M	OBILE B-57	84% 05/09	/2022
	DRIL	L ER E	step, J.	E.		S	TART DA	TE	08/02/1	9	СО	MP. DA	TE 08/	02/19		SURF	ACE WA	TER DEP	TH N/A	ł		DRIL	LER E				ST	ART DA	FE 08/02	/19
E	ELEV	DRIVE ELEV	DEPTH	BLO	W COI				BLOWS				SAMP.		L		SO	L AND RO	CK DESC	RIPTION		ELEV	DRIVE ELEV	DEPTH	BLC	ow co				S PER FOO
	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50	75	100	NO.	Имо	I G	ELEV. (1				DEP1	ΓH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50
	(ft) 890 885 880 875 870	ELEV (ft) 884.2 881.7 879.2 876.7 - 876.7 - 871.7 - 871.7	(II) 1.0 3.5 6.0 8.5 13.5	0.5ft 5 4 3 3 4 4	0.5ft 5 3 2 3 5 6	0.5ft 7 5 4 4 8 8	0 	- - - - - - - - - - - - - - - - - - -					NO.	мо м м м м		ELEV. (1	TAN-BR TAN-BR STIFF, F	GROUN RE OWN, STI SOWN AND SANDY S FIN	ID SURFA SIDUAL IFF, F. SA 7 TAN, Mi SILT (A-4) IE MICA SE, SILTY SE, SILTY D (A-2-4)	DEP1		(ft) 885 880	ELEV (ft) 	(ii) 1.0 3.5 6.0 8.5 13.5	0.5ft	0.5ft 2 3 3 5 7 50/0.3	4 5 4 12 5		25 	
NCDOT BORE DOUBLE R2707_GEO_BORINGS CURRENT.GPJ NC_DOT.GDT 1/6/23			+ + + + + + + + + + + + + + + + + + +														Boiling	RESIDUAI	L: SILTY S	ion 865.2 ft IN SAND				+ + + + + + + + + + + + + + + + + + +						



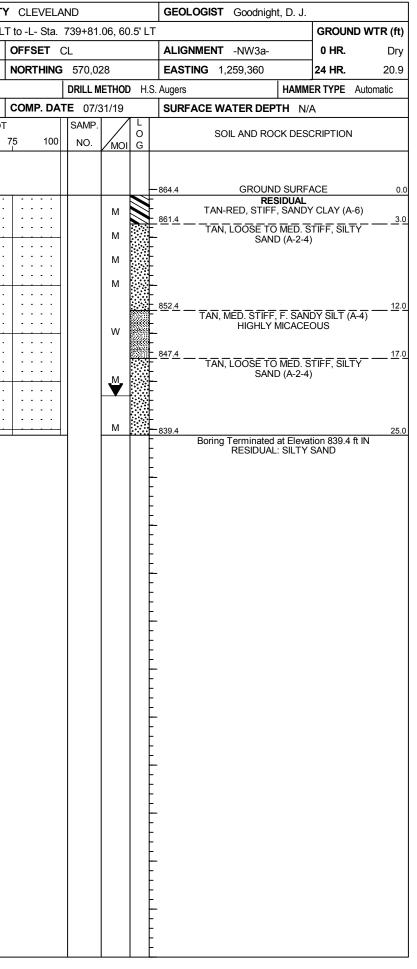
GEOTECHNICAL BORING REPORT BORE LOG

									_				UG																				
WBS	34497	.1.1			Т	I P R-270)7D		CC	DUNTY	CLI	EVELA	ND			GE	OLOGI	ST Go	odnight,	D. J.			WBS	34497	7.1.1			T	P R-270)7D		COUN	ſΤΥ
SITE	DESCR	IPTION	Noise	e Wall	3a fro	m -L- Sta	. 692	+50.00	, 116	.68' L	Γ to -L	- Sta.	739+81	.06, 6	0.5' l	LT					GROUNE	OWTR (ft)	SITE	DESCR	IPTION	Nois	e Wall	3a fro	m -L- Sta	692+5	50.00,	116.68'	' LT to
BOR	NG NO.	NW3a	a-07		s	TATION	17+(00			OFFS	SET (CL			AL	IGNME	NT -N\	W3a-		0 HR.	Dry	BOR	ing no.	NW3	a-08		S	TATION	18+00)		O
COL	AR ELE	IV. 87	6.0 ft		Т	OTAL DE	PTH	20.0	ft		NOR	THING	570,3	26		EA	STING	1,259,	,332		24 HR.	Dry	COL	LAR EL	EV. 86	68.0 ft		Т	OTAL DE	ртн 2	25.0 ft		NC
DRILL	. RIG/HAM	IMER EF	F./DATE	TRI8	016 N	IOBILE B-5	7 84%	6 05/09/	2022				DRILL N	IETHO	DН	I.S. Aug	ers			HAMME	R TYPE	Automatic	DRILL	RIG/HAN	/MER EF	F./DATI	E TRI	8016 N	OBILE B-5	7 84% 0)5/09/20)22	
DRIL	LER Es	step, J.	E.		S	TART DA	TE	08/02/	19		сом	P. DA	E 08/	02/19		SU	RFACE	WATE	R DEPT	H N/A			DRIL	LER E	step, J.	E.		S	TART DA	TE 08	8/02/19	9	C
ELEV	DRIVE ELEV			w cou				BLOWS					SAMP.		1								ELEV		DEPTH		w co					PER FO	
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50		75	100	NO.	мо	O I G	ELE	/. (ft)	SOIL AI	ND ROCH	K DESC	RIPTION	DEPTH (ft)	(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50	75
880		-														F							870		ŧ								
875	- 875.0	1.0														876.)	G		SURFA	CE	0.0	865	867.0	Ŧ	3	3	5	 . . .	· · ·	· · ·		
		-	5	5	8	1	5	 						м		<u>873.</u>)		/N, STIFF	F, SAND	Y CLAY (A	3.0	000	864.5-	t	4	5	7		: :			
870	-	t	5	7	10	::)	17	 	-	· · ·		· · ·		м		-	RE	DENSE,	AND TAN SILTY SA ACE TO 1	AND (A-	SE TO MEI 2-4) WITH MICA	D.	860	862.0	ł	4	5	6	 11		· · ·		•
	867.5	F	3	5	6	· • 11	•	· · · ·		· · ·		· · ·		м		-		110			WIIC/ (859.5-	<u>+ 8.5</u> -	5	7	8	· · · •	15	· · · ·		
865	-	-	4	4	5	.	-					· · · ·		M		-							855	954 5						· · ·			
	- 862.5	_ 		_			•			· · ·						-								854.5	+	6	7	7			· · ·		
860	-		4	5	5	•10	-	· · · ·				· · ·		M		-							850	849.5-	+ + 18.5						· · ·		
	- 857.5 -	- - 18.5	3	5	9		-	· · · · ·		· · · · · · ·		· · · · · · · · · · · · · · · · · · ·													+	6	14	14		28			
		-	Ŭ	0			14						-	M		856.		ing Term	ninated at SIDUAL:	t Elevati	on 856.0 ft	20.0 : IN	845	844.5-	23.5		_			<u>/</u> ·	 		.
	-															Ē				OILTTC					†	3	5	6	11		· · ·		·

IT۱	CLEVELA	ND			GEOLOGIST Good	lnight, D. J.	_	
' Ľ	T to -L- Sta.	739+	81.06, 60).5' L [·]	г		GROUN	D WTR (ft)
	OFFSET	CL			ALIGNMENT -NW3	За-	0 HR.	19.0
	NORTHING	570	0,226		EASTING 1,259,33	37	24 HR.	16.5
		DRIL	L METHO	о н.	S. Augers	HAMM	ER TYPE	Automatic
	COMP. DA				SURFACE WATER	DEPTH N//	Ą	
ОТ	-	SAM	ИР. /	L		ROCK DES		
	75 100	N	р. ио		SOIL AND	ROCK DES		
					_			
					868.0 GRC	OUND SURF	ACE	0.0
			м		RED-TAN, MED	RESIDUAL D. STIFF TO	STIFF, SA	ANDY
	+ · · · ·				- 865.0 - TAN, MED. DE	CLAY (A-6)	SAND (A	-2-4) <u>3.0</u>
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	<u> </u>		м		_			05.0
		-			843.0 Boring Termina	ated at Eleva	tion 843.0	25.0 ft IN
					_ RESID	UAL: SILTY	SAND	
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GEOTECHNICAL BORING REPORT BORE LOG

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WBS							TIP								CLEV							GEO	DLOG	SIST	Goo	odnigł	nt, D.					-		34497							R -2					UNTY
SITE					e Wa						0.00,	116	6.68' I	_				81.0	06, 6	0.5'											VTR (ft)							e Wa	ll 3a						, 116.	68' LT
BORI	NG N	0.	VW3a	a-09			STAT	ION	19	+00				0	FFSE	Γ	Ľ					ALIG	GNM	ENT	-NV	V3a-			0 HR	ર.	18.0	BO	RIN	g no.	. NV	V3a-	10			ST	ΑΤΙΟ	N 2	0+00			
COLI	AR I	ELEV	. 86	4.2 ft			ΤΟΤΑ	LD	EPT	H 2	25.0 f	t		N	ORTH	ING	570),12	7			EAS	TING	3 1,2	259,3	345		2	24 HR	ર.	15.0	co)LL/	AR EL	EV.	864	.4 ft			то	TAL	DEP	ГН 2	25.0 f	t	<u> </u>
DRILL	RIG/H	IAMM	ER EF	F./DAT	E TR	18016	MOBIL	E B-	57 8	4% 0	5/09/2	2022					DRIL	L ME	THO	DH	I.S. A	Augers	6				HAI	MMEF	R TYPE	E Aut	omatic	DR	ILL F	RIG/HAI	MMER	EFF.	/DAT	E TR	1801	6 MC	BILE	B-57	34% C	5/09/2	2022	
DRIL	LER	Este	ep, J.	E.			STAR	T D	ATE	08	/02/1	9		C	omp.	DAT	E 0	8/02	2/19			SUR	FAC	E W/	ATEF	R DEF	тΗ	N/A				DR	ILL	ER E	istep,	J. E				ST	ART	DAT	E 07	7/31/1	19	
ELEV	DRI\ FLF	/E V	EPTH		ow co	-				BLC	ows	PEF	FOO	Т			SAM	1P.	▼∕					SO	II AN	ID RO	CK DI	ESCE	RIPTIC	ON		ELE	V	DRIVE ELEV	DEP	тн		W CO	-	_			BL		PER F	OOT
(ft)	(ft)		(ft)	0.5ft	0.5ft	0.5	ft 0		2	5		50		75		100	NC).	мо) G		ELEV. ((ft)								DEPTH (f) (ft))	(ft)	(ft)	0.5ft	0.5ft	0.	5ft	0		25		50	7
865		\rightarrow																				64.2			GF	ROUN	D SU	RFAC	CE		0.	86	5		Ļ											
	863	2	1.0	5	6	5		: 1				1:											т			RE	SIDU/	٩L		(A-2-4)			_	863.4	1.0	-	3	5		6		1 · ·	1:			
000	860	7 ‡	3.5		Ŭ			: ¶¹	11 . 			:	· ·		· · ·				М	\sim	48	61.2								(/ 1 -2-4)	3.0			860.9	± 3.9	5						11 1	:	· · ·		· · ·
860		+	~ ^	4	4	5		. •9-				+:							М	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<u>الج</u>	58.7									5.	860		- 858.4	+ 6.0		4	5		6		11-	+:			
	858	-	6.0	4	5	8		: `	 13.				· · · ·		· · ·				М				Г	ΓΑΝ, Ι	LOOS	SE TO SAN	D (A-2	. DEN 2-4)	NSE, S	SILTY					‡		3	4		5	: 	9	:	· · ·		
855	855	7	8.5	3	5	4	ЧĽ	<u>'</u>	•••			-		-		-			М		L						`	,				85	5	855.9	<u> </u>	5	2	4		4		 8	ŀ		- · ·	. <u>.</u> . '
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	850	- †	13.5					· À	•••	• •		:	• •	-		-					Ł													850.9	+ 13.	5					·i ·		1:			
850	000	<u>+</u>	10.0	4	5	8	$\neg \vdash$	-•	13			+		-		-			▼	_	-											850	0	-	+		2	2	4	4			+ •		+	
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	0.40	ŢŦ							· ·			-		-		-					F													840.9	I 23.	5						NI I	:			· · ·
840	840	+	23.5	3	4	6	1	- 						-		-			М		-8	39.2									25.0	840			- 23	5	3	5	1	8		•13-	÷		<u> </u>	
		Ŧ																			F		Bo	oring			l at Ele L: SIL			9.2 ft IN	1				Ŧ											
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GEOTECHNICAL BORING REPORT BORE LOG

											EL																			
WBS	34497.	1.1			Т	IP R-270	7D		COUNT	Y CL	EVELA	ND			GEO	OGIST (Goodnight,				WBS	34497	.1.1			TI	P R-2707	D	COUNT	YC
SITE D	DESCRI	PTION	Nois	e Wall	3a fro	m -L- Sta.	692+	50.00,	116.68' I				.06, 6	0.5' L	-			(GROUND WT	R (ft)	SITE	DESCR	PTION	Noise	e Wall	3a fror	m -L- Sta. 6	92+50.00,	116.68' L	.T to
BORIN	ig no.	NW3a	a-11		s	TATION	21+00	C		OFF	SET (Ľ			ALIG	NMENT -	-NW3a-		0 HR.	Dry	BOR	NG NO.	NW3	a-12		S	TATION 2	2+00		OF
COLL	AR ELE	V. 86	4.3 ft		т	OTAL DEF	PTH	25.0 ft		NOR	THING	569,9	29		EAS	ING 1,25	59,377	2	4 HR.	19.3	COLI	AR ELE	EV. 86	65.1 ft		т	OTAL DEP	FH 20.0 f	t	NO
DRILL F	rig/hami	MER EF	F./DATE	E TRI8	3016 N	10BILE B-57	7 84%	05/09/20	22			DRILL N	IETHO	DH.	S. Augers			HAMMER	TYPE Autom	atic	DRILL	RIG/HAM	MER EF	F./DATE	TRI	3016 M	OBILE B-57	34% 05/09/2	022	
DRILL	ER Es	tep, J.	E.		S	TART DAT	TE 0 ⁻	7/31/19)	COM	IP. DAT	E 07/3	31/19		SURF	ACE WAT	ER DEPTI	H N/A			DRIL	LER Es	step, J.	E.		ST		E 08/01/1	9	СС
	DRIVE ELEV			w cou	JNT		BL	_OWS F	ER FOO	T		SAMP.	▼/	L	1	0.01					ELEV	DRIVE ELEV			w co	UNT		BLOWS	PER FOO	Г
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	0	75	100	NO.	мо	O I G	ELEV. (AND ROCK	K DESCR		PTH (ft)	(ft)	eLEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 I
865		-													- 864.3		GROUND		E	0.0	870		-							
-	863.3	1.0	4	4	7								м		-	RED-BRO	RESII WN, STIFF	DUAL ⁼, SANDY	(CLAY (A-6)			-	-							
860	860.8	3.5	5	5	7			· · · · · ·	· · · ·						<u>861.3</u>	RED-TA			E TO MED.	<u>3.0</u>	865	-	-							
	858.3	6.0			-	· •							M		-	DEI	NSE, SILTY	SAND (A-2-4)			864.1	1.0	4	5	6				.
	Į	8.5	2	4	5] • 9]				-			M		-							- 861.6 -	- 3.5	3	2	5	 			
855	855.8 -	- 8.5	3	3	5								м		-						860	859.1	6.0	3	3	5	. \$8			
	Ŧ						· · ·		· · · ·						-							-	-	3	3	5				. .
850	850.8	13.5	4	4	5										-						855	856.6 -	- 8.5	3	3	5				. .
	+	-				1 1 1 1 1 1 1 1 1 1	· ·		· · · ·				м		-							-	E				· • • •			
	845.8	18.5							· · · ·	-			_		-							- 851.3	- 13.8			_				. .
845	-040.0 -	- 10.5	4	5	6	11-								-	_						850	-	-	4	5	7	12			+
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840	840.8	23.5	2	3	4								W			TAN, ME	D. STIFF, F HIGHLY MI	F. SANDY ICACEOU	7 <u>SILT (A-4)</u> JS	05.0		846.6 -	- 18.5	4	6	7	• • • • • • • • • • • • • • • • • • •			
-				-										83333	- 839.3	Boring Te	erminated at RESIDUAL: \$	t Elevatio	n 839.3 ft IN	25.0		-								

٢١	/ C	LE	VEL	A	ND				GEOLOG	ST (Goodnight	, D. J.			
Ľ	T to	·L-	Sta	I	739+81	.06, 60	.5' L	Т					GROUN	ID W	TR (ft)
7	OF	FSI	ΞТ	С	Ľ			Τ	ALIGNME	NT -	NW3a-		0 HR.		Dry
╡	NO	RT	HIN	G	569,8	31		1	EASTING	1,25	9,398		24 HR.		Dry
				Τ	DRILL N) H.	S. /	Augers			HAMME		Autor	
	со	MP	. D	 AT	E 08/			Ţ	SURFACE	WAT	ER DEPT				
				T	SAMP.		L								
	75		10	0	NO.	моі	O G			SOIL	AND ROC	K DESC	RIPTION	I	
	-						Ŭ								
								F							
								F							
								- E	365.1		GROUND	SURFA	CE		0.0
•	Τ.	-				м		F	т	AN-RE	RES D, STIFF,	IDUAL SANDY	CLAY (A	-6)	
•	:	-						F	362.1						<u>3.0</u>
		-				M		F			SAND	(A-2-4)		•	
•	:	•	 			м		Ę,	<u>857.1</u>						8.0
:	:	:				м		۲	<u></u> TA	N, ME	D. STIFF,	F. SAND	OY SILT (Ā-4)	
	+:	:						F.	050.4						40.0
:	:	:	· ·					۲	<u>353.1</u> — <u>T</u> A	N, MEI	D. DENSE	, SILTY	SAND (A	-2-4)	<u> </u>
•	<u> </u> .	•				м		F							
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-	<u> </u>	-	<u> </u>		-	M		<u> </u>	845.1 Boi	ina Te	rminated a	at Flevat	ion 845 1	ft IN	20.0
								È	DO	R	ESIDUAL:	SILTY	SAND		
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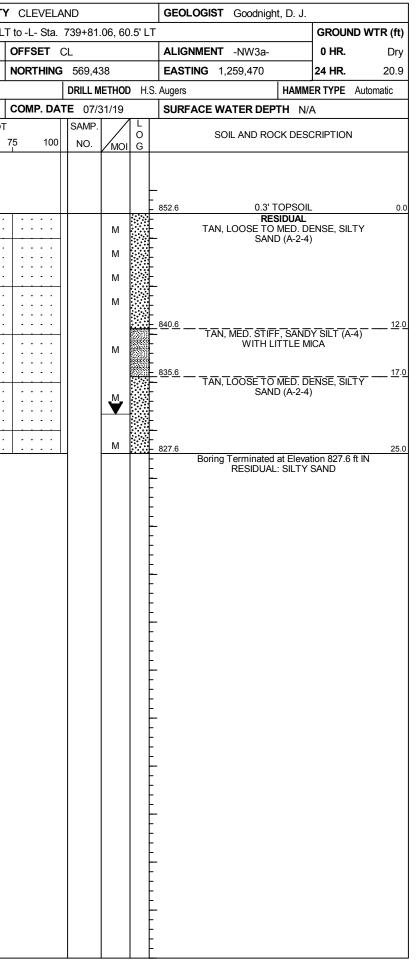
GEOTECHNICAL BORING REPORT BORE LOG

									JUR		UG																		
	34497					P R-2707			TY CL						L OGIST Goodnig	jht, D. J.	1		-	34497					P R-27			OUNT	
SITE	DESCR	PTION	Nois	e Wall		m -L- Sta. 6		, 116.68	_			.06, 60).5' L	-			GROUND W	TR (ft)	SITE	DESCR	IPTION	Nois	e Wall			a. 692+50	0.00, 11	6.68' L	<u> </u>
BORI	ng no.	NW3a	a-13		S	TATION 2	23+00		OFF	SET (CL			ALIG	NMENT -NW3a-		0 HR.	Dry	BOR	ing no.	NW3	a-14		S	TATION	24+00			OF
COLI	AR ELE	V. 86	64.8 ft		т	OTAL DEP	TH 20.0	ft	NOR	THING	569,7	34		EAS	ING 1,259,419		24 HR.	Dry	COL	LAR ELI	EV. 86	62.3 ft		т	OTAL DE	EPTH 20	0.0 ft		NC
DRILL	RIG/HAM	MER EF	F./DAT	E TRI	3016 M	OBILE B-57	84% 05/09/	2022			DRILL N	IETHO	о н.:	S. Augers		HAMMI	ER TYPE Auto	matic	DRILI	RIG/HAN	MMER EF	F./DATI	E TRI8	3016 M	OBILE B-5	57 84% 05/	5/09/2022	2	
DRIL	L ER Es	step, J.	E.		S	TART DAT	E 08/01/	19	COM	P. DAT	FE 08/	01/19		SUR	ACE WATER DE	PTH N/	A		DRIL	LER E					rart da	ATE 08/0	/01/19		c
ELEV	DRIVE ELEV	DEPTH	BLC	w co			BLOWS	PER FO	TC		SAMP.	▼⁄	L		SOIL AND R		CRIPTION		ELEV	DRIVE ELEV	DEPTH	BLC	W COL	UNT		BLO'	WS PE	R F001	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75	100	NO.	мо	Ğ	ELEV. (EPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50		75
005															0.001				005										
865	863.8 -	- 1.0												864.8	R	ND SURF/		0.0	865		ŧ								
	- 861.3	- 35	4	8	8	16 	3	· ·				M		<u>861.8</u>	TAN-RED, VER	(A-6)				- 861.3	+				 	· · · ·	• • •		—
860	_	_	3	4	4							м		-	TAN, LOOSE T	D MED. DI ND (A-2-4)	ENSE, SILTY	, 	860		I	3	5	8	<u>· · •</u>		• •		\perp
	858.8 -	- 6.0 -	2	3	4			. .				м		-	0,7	10 (772 4))			858.8 -	- 3.5	4	7	9	::}	16			
	856.3	8.5	3	3	4	: : : :								-						856.3	6.0	3	3	4					
855	-	-		3	4	.		· · · · ·				M							855	853.8 -	85		3	4	 7			<u> </u>	+
	-	-				• • • •		.						-							- 0.0	3	3	5	·•8 ·				
850	851.3	13.5	3	3	6			.				м		-					850	-	Ŧ								
	-	-												-						848.8	13.5	3	3	4	1 .1.				T
	846.3	- 18.5						.						-						-	Ŧ	ľ	Ŭ	-	.¶7 ·	· · · ·		· · · ·	
845		-	5	6	8	14_					4	М		844.8	Dening Terrein etc			20.0	845	-	+								+
	-	-												-	Boring Terminate RESIDU/	AL: SILTY	SAND			843.8 -	<u>+ 18.5</u> +	3	4	5	 . ↓ 9 .	· · · ·		· · · ·	
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TY CLEVELAND	GEOLOGIST Goodnight, D. J.	
LT to -L- Sta. 739+81.06, 60.5' LT		GROUND WTR (ft)
OFFSET CL	ALIGNMENT -NW3a-	0 HR. Dry
NORTHING 569,635	EASTING 1,259,437	24 HR. Dry
· · ·	· · · · · · · · · · · · · · · · · · ·	ER TYPE Automatic
COMP. DATE 08/01/19	SURFACE WATER DEPTH N//	
		`
	SOIL AND ROCK DESC	CRIPTION
75 100 NO. /MOI G		
	862.3 GROUND SURFA	ACE 0.0
	RESIDUAL TAN-RED, STIFF, SANDY	
	859.3	3.0
· · · · · M	TAN-RED, MED. DENSE, S 856.8 SAND (A-2-5)	LAYEY SILTY
	TAN, LOOSE, SILTY SA	
· · · · · · M		
· · · · · · M		
· · · · · M	842.3	20.0
	Boring Terminated at Elevat	ion 842.3 ft IN
	RESIDUAL: SILTY	SAND
F		
E		
F		

GEOTECHNICAL BORING REPORT BORE LOG

		BURE LUG	1	7	
VBS 34497.1.1	TIP R-2707D COUN	TY CLEVELAND	GEOLOGIST Goodnight, D. J.	WBS 34497.1.1	TIP R-2707D COUNTY
SITE DESCRIPTION Noise Wall 3	a from -L- Sta. 692+50.00, 116.68	LT to -L- Sta. 739+81.06, 60.5' L	GROUND WTR (ft)	SITE DESCRIPTION Noise Wall 3	a from -L- Sta. 692+50.00, 116.68' LT
BORING NO. NW3a-15	STATION 25+00	OFFSET CL	ALIGNMENT -NW3a- 0 HR. Dry	BORING NO. NW3a-16	STATION 26+00
OLLAR ELEV. 857.1 ft	TOTAL DEPTH 20.0 ft	NORTHING 569,537	EASTING 1,259,454 24 HR. Dry	COLLAR ELEV. 852.6 ft	TOTAL DEPTH 25.0 ft
RILL RIG/HAMMER EFF./DATE TRI80	16 MOBILE B-57 84% 05/09/2022	DRILL METHOD H.S	Augers HAMMER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE TRI80	16 MOBILE B-57 84% 05/09/2022
DRILLER Estep, J. E.	START DATE 08/01/19	COMP. DATE 08/01/19	SURFACE WATER DEPTH N/A	DRILLER Estep, J. E.	START DATE 07/31/19
LEV DRIVE DEPTH BLOW COUL				ELEV DRIVE DEPTH BLOW COUL	
(ft) ELEV (ft) 0.5ft 0.5ft		75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (f		
			-	855	
			857.1 GROUND SURFACE 0.		
856.1 1.0 5 6		м	RESIDUAL RED-TAN, MED. DENSE, CLAYEY SILTY	<u>851.6 + 1.0</u> 850 + 4 5	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $
853.6 - 3.5			854.1 SAND (A-2-5)3.		3
	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	· · · · · M	TAN, LOOSE, SILTY SAND (A-2-4)	846.6 - 6.0	
350 851.1 6.0 350 3 3	5	м	_		3
848.6 - 8.5	3	· · · · · · M		844.1 8.5 3 2	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
					{
345 +			-	840 4 13.5	
843.6 + 13.5 3 3	4 · ··· · · · · · · ·	· · · · · · M			3
		· · · · ·			$= \left \left \begin{array}{c} \lambda \\ \lambda \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$
			-	835	
838.6 + 18.5 - 3 3	$4 \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot $		837.1 20.		5 . •10
			Boring Terminated at Elevation 837.1 ft IN RESIDUAL: SILTY SAND		
				829.1 23.5 2 2	5
					• • • • • • • • • • • • • • • • • • •



GEOTECHNICAL BORING REPORT BORE LOG

WBS 34497.1.1 TIP R-2707D COUNTY CLEVELAND	GEOLOGIST Goodnight, D. J.	WBS 34497.1.1 TIP R-2707D COUNTY CLEVELAND	GEOLOGIST Goodnight, D. J.
SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT	GROUND WTR (ft)	SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81	1.06, 60.5' LT GROUND WTR (ft)
BORING NO. NW3a-17 STATION 27+00 OFFSET CL	ALIGNMENT -NW3a- 0 HR. Dry	BORING NO. NW3a-18 STATION 28+00 OFFSET CL	ALIGNMENT -NW3a- 0 HR. Dry
COLLAR ELEV. 846.2 ft TOTAL DEPTH 25.0 ft NORTHING 569,341	EASTING 1,259,493 24 HR. 16.0	COLLAR ELEV. 852.8 ft TOTAL DEPTH 20.0 ft NORTHING 569,2	EASTING 1,259,523 24 HR. Dry
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022 DRILL METHOD H.S. /	Augers HAMMER TYPE Automatic		METHOD H.S. Augers HAMMER TYPE Automatic
	SURFACE WATER DEPTH N/A	DRILLER Estep, J. E. START DATE 07/31/19 COMP. DATE 07/3	
ELEV DRIVE DEPTH BLOW COUNT BLOWS PER FOOT SAMP L O (ft) (ft) 0.5ft 0.5ft 0.5ft 0 25 50 75 100 NO. MOU G E	SOIL AND ROCK DESCRIPTION	ELEV DRIVE ELEV DEPTH BLOW COUNT BLOWS PER FOOT SAMP. (ft) (ft) 0.5ft 0.5ft 0 25 50 75 100 NO.	SOIL AND ROCK DESCRIPTION
(ft) (ft) 0.5ft 0.5ft 0.5ft 0 25 50 75 100 NO. MOI G E	ELEV. (ft) DEPTH (ft)	(ft) (ft) 0.5ft 0.5ft 0.5ft 0 25 50 75 100 NO.	MOI G
	846.2 0.5' TOPSOIL 0.0		E 852.8 GROUND SURFACE 0.0 652.3 0.5' TOPSOIL 0.5'
845 845.2 1.0 2 2 3 45 M	RESIDUAL TAN-BROWN, MED. STIFF, SANDY SILT	850 5 6 5 <u>411</u>	M RESIDUAL TAN BROWN, MED. DENSE TO V.
842.7 - 3.5	843.2		M DENSE, SILTY SAND (A-2-4) WITH ROCK FRAGMENTS
840 840 2 6.0 M	(A-2-4)	846.8 6.0 845 12 21 47 <td>м 💭 -</td>	м 💭 -
	838.2 8.0	844.3 8.5 8 13 18	M
$ 3$ 3 4 4 $ \cdots$ \cdots \cdots \cdots M	TAN AND WHITE, MED. STIFF, SANDY		
			TAN, DENSE, SILTY SAND (A-1-b) WITH
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		$ \begin{bmatrix} 1 & 1 & 1 \\ - & - & - \\ - & - & - \\ - & - & - \\ - & - &$	M 000L ROCK FRAGMENTS 000 000L 835.8 000L 835.8 TAN-BROWN, MED. DENSE, SILTY SAND
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	829.2 17.0	835 834.3 18.5	TAN-BROWN, MED. DENSE, SILTY SAND
	TAN-WHITE, LOOSE TO MED. DENSE, SILTY SAND (A-2-4) WITH LITTLE MICA	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	M (A-2-4) (A-2-4) 20.0
825 4 10 9 19 M			Boring Terminated at Elevation 832.8 ft IN RESIDUAL: SILTY SAND
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			
	Boring Terminated at Elevation 821.2 ft IN RESIDUAL: SILTY SAND		

GEOTECHNICAL BORING REPORT BORE LOG

WBS	34497	.1.1			TI	P R-2707)	COUNT	Y CLEVEL	AND			GEO	LOGIST Goodnight, D. J.			BS 344	97.1.1			Т	P R-2707)	COUNT	Y C
SITE	DESCR	IPTION	Nois	e Wall	3a fror	m -L- Sta. 6	92+50.00,	116.68' L	T to -L- Sta.	739+81	1.06, 6	0.5' L	.T		GROUND WTR	ft) S	TE DES	CRIPTION	Nois	e Wal	3a fro	m -L- Sta. 69	92+50.00,	116.68' L	T to
BOR	NG NO.	NW3a	a-19		SI	TATION 29	9+00		OFFSET	CL			ALIG	NMENT -NW3a-	0 HR. [ry B	oring N	0. NW3	3a-20		S	TATION 30)+00		OF
COLI	LAR ELI	EV. 84	8.4 ft		т	OTAL DEPT	H 20.0 ft		NORTHING	5 69,1	48		EAS	FING 1,259,545	24 HR.	ry C	OLLAR B	LEV. 8	40.4 ft		т	OTAL DEPT	H 25.0 f	t	NO
DRILL	. RIG/HAN	IMER EF	F./DATI	E TRI8	3016 M	OBILE B-57 8	4% 05/09/20)22	•	DRILL	METHO	DH.	.S. Augers	HAM	NER TYPE Automatic	D	RILL RIG/H	AMMER E	FF./DAT	E TRI	8016 M	OBILE B-57 8	4% 05/09/2	022	
DRIL	LER E	step, J.	E.		ST	TART DATE	07/31/1	9	COMP. DA	TE 07/	/31/19		SUR	ACE WATER DEPTH N	/A		RILLER	Estep, J	. E.		S	TART DATE	07/31/1	9	со
ELEV	DRIVE ELEV			w col			BLOWS		1	SAMP		L								ow co				PER FOO	
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft		0 2	25 5	50	75 100	NO.	Имо	0 I G	ELEV. (SOIL AND ROCK DES	SCRIPTION DEPTI		t) ELE (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	25	50	75
							1								<u> </u>								1		
850																	15								
000		F											- 848.4	GROUND SURF	FACE	0.0		+							
	847.4	1.0	5	6	0	· · · · ·					<u> </u>			RESIDUAL		0.0		ł							
845	844.9	3.5		6	8	<u> </u>					M		F	RED-BROWN, MED. STI SANDY SILT (A-4) WITH	LITTLE MICA	8	10	Ŧ							
	- 044.9	- 0.0	5	6	8	· · • • 14					м		-				839	4 - + 1.0	3	3	7	· • • 10			-
	842.4	6.0	3	2	5						м		-				836	9 🕇 3.5	6	9	9				. :
840	839.9	8.5											<u>840.4</u>	TAN, LOOSE, SILTY SAN	D (A-2-4) WITH	8.0 8	85 834	4 + 6.0	0	9	9	•••••••18			<u> </u>
Î	-	L I	4	4	3	• 7 • •					M			MICA AND ROCK FR				<u> </u>	7	8	8	 ∳16	· · · ·		. .
	-	Ł											-				831.	9 4 8.5	4	6	8				. .
835	834.9	13.5	3	3	4	- <u> </u>			· · · · · ·		м		-			8	30	Ŧ							
	-	F		Ŭ		$\begin{array}{c c} \bullet 7 & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot \end{array}$							-				826	9 <u> </u>							. .
830		÷											<u>831.4</u>	TAN-BROWN, MED. STI	FF TO STIFF.	<u>7.0</u>	25	9 <u>- 13.5</u> +	4	5	9	↓ · · • • 14			
030	829.9	- 18.5	4	4	4						м		- 828.4	SANDY SILT (A-4)	0.0	.5	‡				`			. † .
1						¥°		1						Boring Terminated at Elev RESIDUAL: SAND	ation 828.4 ft IN		821	9 1 18.5					N: : : :		
	-	Ł											Ł	RESIDUAL. SANL	JT SILT	8	20	Ŧ	7	13	21		•34		
	-	F											F					Ŧ					.		
	-	F											F				816.	<u>9 23.5</u>	5	7	23		$ \begin{array}{c} J \\ \downarrow \\ \downarrow$. .
																		• • • • • • •							

٢١	CLE	VELA	٩Þ	ND				GEO	OGI	ST	Good	dnigh	t, D. J.			
Ľ	T to -L-	Sta.	7	39+81.	06, 60	.5' L	Τ.							GROUN	ID WT	R (ft)
	OFFS	ET	С	L				ALIG	NME	NT	-NW	3a-		0 HR.		Dry
	NORT	HING	ì	569,05	50			EAST	ING	1,	259,56	64		24 HR.		Dry
				DRILL M	ETHOD) Н.	S.	Augers					НАММ	ER TYPE	Autom	atic
	COMF	P. DA	T	E 07/3	31/19			SURF	ACE	w	ATER	DEP	TH N//	Ą		
т				SAMP.		L O	Γ			\$0					1	
	75	100		NO.	моі	G				30		ROU	JK DES	CRIPTION	1	
							F									
							ŧ									
	+						F	840.4			GR		D SURF	ACE		0.0
:		· · · ·			м		E	837.4	RED	D-BF		, STIF	F, SAN	DY CLAY RAGMEN	(A-6)	3.0
:		•••			м		Ē	<u></u>	TA	N, M	IED. DI	ENSE	, SILTY	SAND (A	-2-5)	
-	<u> </u>						F		W	ITH	TRAC	EQU	IARTZ F	RAGMEN	ITS	
		•••			м		É	<u>832.4</u>								8.0
-					м		F		REC	D-TĀ	N, STI	IFF, F	INE SAN	NDY SILT	(A-4)	
	· ·	• •					F	828.4								12.0
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•					м		E				SIL	11.0/		2-4)		
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		•••			М		F									
:		· · · ·				000		818.4				ROW		DENSE	<u></u>	<u> 22.0</u>
:		· · ·			w		ŧ	815.4	DEN	ISE,	SILTY	' SAN	D (A-1-k GMENTS	o) WITH F	ROCK	25.0
							F	01011	Bor	ing	Termir	nated	at Eleva	tion 815.4	ft IN	
							F				RESI	DUAL	: SILTY	SAND		
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GEOTECHNICAL BORING REPORT BORE LOG

SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 739+81.06, 60.5' LT GROUND WTR (ft) SITE DESCRIPTION Noise Wall 3a from -L- Sta. 692+50.00, 116.68' LT to -L- Sta. 692+50.00, 116.6		
	8' LT to -L- Sta. 739+81.06, 60.5' I	LT GROUND WTR (ft)
BORING NO. NW3a-21 STATION 31+00 OFFSET CL ALIGNMENT -NW3a- 0 HR. Dry BORING NO. NW3a-22 STATION 32+00	OFFSET CL	ALIGNMENT -NW3a- 0 HR. Dry
COLLAR ELEV. 833.9 ft TOTAL DEPTH 13.9 ft NORTHING 568,954 EASTING 1,259,555 24 HR. Dry COLLAR ELEV. 819.4 ft TOTAL DEPTH 10.0 ft	NORTHING 568,858	EASTING 1,259,584 24 HR. Dry
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022 DRILL METHOD H.S. Augers HAMMER TYPE Automatic DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 84% 05/09/2022	DRILL METHOD H	I.S. Augers HAMMER TYPE Automatic
DRILLER Estep, J. E. START DATE 07/31/19 COMP. DATE 07/31/19 SURFACE WATER DEPTH N/A DRILLER Estep, J. E. START DATE 07/31/19	COMP. DATE 07/31/19	SURFACE WATER DEPTH N/A
ELEV DRIVE DEPTH BLOW COUNT BLOWS PER FOOT SAMP L (ft) (ft) 0.5ft		
ELEV DRIVE DEPTH BLOW COUNT BLOWS PER FOOT SAMP.	DOT SAMP. L 75 100 NO. MOI G M M M M W W	SOIL AND ROCK DESCRIPTION -819.4 GROUND SURFACE 0.0 RESIDUAL TAN, LOOSE, CLAYEY SAND (A-2-5) -816.4 TAN, LOOSE, CLAYEY SAND (A-2-5)

GEOTECHNICAL BORING REPORT BORE LOG

WE	S 34	497.1.1			Т	IP R-2	2707D		C	OUNTY	CLE	/ELAN	ID			GEOL	OGIST	Goodni	ght, D	Ι.			WBS	3 3449	97.1.1			ТІ	IP R-2	707D		COUN	TY CLE	VELAN	ND			GEO	LOGIST	Goodni	ight, D. J.		
SIT	E DES	CRIPTIO	N Noi	se Wa	ll 3a fro	om -L- \$	Sta. 69	2+50.0	00, 116	6.68' LT	T to -L-	Sta. 7	39+81.	06, 60	.5' LT					GRC	UND WT	R (ft)	SITE	DESC	RIPTION	Nois	se Wall	3a fror	m -L- St	ita. 692	+50.00,	116.68'	LT to -L-	Sta. 7	/39+81.	06, 60	0.5' LT	Г				GROUN	D WTR (ft)
во	RING I	IO . NW	3a-23		s	ΤΑΤΙΟ	N 43-	+93			OFFSE	ET 41	ft LT			ALIGN	MENT	-NW3a-		0 H	R.	Dry	BOR	RING NO	0. NW3	3a-24		SI	TATION	1 50+	00		OFFSE	ET C	L			ALIG	NMENT	-NW3a	 -	0 HR.	Dry
со	LLAR	ELEV.	303.8 ft		Т	OTAL	DEPT	H 15.0	0 ft		NORTI	HING	567,75	52		EASTI	NG 1,2	60,028		24 H	R.	Dry	COL	LAR E	LEV. 7	98.9 ft		т	OTAL D	DEPTH	9.3 ft		NORTI	HING	567,21	7		EAS	FING 1	,260,313		24 HR.	Dry
		IAMMER		TE TR									ORILL M		H.S.	<u> </u>					E Autom	atic			AMMER E	FF./DAT	E N/A								DRILL M			nd Auger			HAMN	ER TYPE	N/A
		Estep,				TART		08/06			COMP					SURF	ACE WA	TER DE	PTH N	N/A				LER					TART D				COMP			6/19	<u> </u>	SURF	FACE W	ATER D	EPTH N	A	
ELE (ft)		VE EV DEPT	H BL							FOOT			SAMP.	• /	L O		SOI	L AND R	OCK DE	SCRIPTI	ON		ELEV (ft)	DRIVI	E / DEPTI (ft)	H BLC						PER FOO			SAMP.				SC	DIL AND F	ROCK DES	CRIPTION	
(11)	(ft) (11)	0.51	0.51	0.5ft		2	5	50		75	100	NO.	<u>/ MOI</u>	G	ELEV. (ft)					DE	PTH (ft)	(11)	(ft)	(11)	0.5ft	0.5π	0.51		25		50	75	100	NO.	/моі	I G						
805	5	-+													-	803.8		GROU	ND SUR	FACE		0.0	800		+												-	798.9		GROL	JND SURF	ACE	0.0
	802	.8 - 1.0	2	5	4	<u> · </u>										000.0			FICIAL I	FILL		0.0			Ŧ														PED	F	RESIDUAL	SILTY SAN	
800	800	.3 3.5		Ŭ] :/	9	· · · · · ·		· · · · · ·				М			LOOSE	E, CLAYE	EY SILTY	' SAND (A-2-5)		795		Ŧ						· · · · ·	· · · · · ·				М	F					K FRAGME	
		Ŧ	1	1	2	• 3								М	8 E	798.3		SPHALT				5.5		1	Ŧ				· ·								F	-					
		. <u>8 + 6.0</u> +	1	2	1	- · · ·				· · · ·				М				ROWN, S WITH T			Y (A-7)				Ŧ						· · · · ·	· · ·											
795	5 795	.3 + 8.5	WOF	1 1	1									М		-							790	-	+						· · · ·		· · · ·					- 789.6					9.3
		Ŧ				 				· · · · · ·						701.9						12.0			Ŧ												ļĘ		Boring		ed at Eleva IAL: SILTY	tion 789.6 f SAND	t IN
70	790	.3 13.5	,			(:		· · · · · ·		· · · ·					X	791.8		N AND G							‡																		
130			2	4	3		· · ·							М	X	<u> </u>	(se. Sand Gravel	AND OF	GANICS		15.0			‡																		
		‡													F		Boring T AR	erminate TIFICIAL	d at Ele FILL: SI	vation 78 LTY SAN	8.8 ft IN ND				‡																		
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GEOTECHNICAL BORING REPORT BORE LOG

WB	3 44	97.1.1			TI	P R-270	7D	C	OUNT	Y CL	EVELA	AND			GEC	DLOGIST	Goodn	night, D	Ι.			WBS	34497	.1.1			TIF	P R-2	707D		COUN	TY CI	EVELA	ND			GEOLC	GIST G	oodnight	, D. J.		
SITE	DESC	RIPTIO	N Nois	se Wal	3a fror	ı -L- Sta.	692+5	0.00, 11	16.68' L	_T to -	L- Sta.	739+8	31.06, 6	60.5' L	T				GRO		FR (ft)	SITE	DESCR	IPTION	Noise	e Wall 3	3a fron	n -L- S	ta. 692-	+50.00,	116.68	LT to -	L- Sta.	739+81	06, 60.	.5' LT				G		VTR (ft)
BOF	ING N	D. NW	3a-25		ST	STATION 51+00 FOTAL DEPTH 4.1 ft START DATE 08/06/19				OFF	SET	CL			ALIC	GNMENT	-NW3;	a-	0 HF	ર.	Dry	BORI	NG NO.	NW3a	a-26		ST		52+0)6		OFF	SET	12 ft RT			ALIGN	IENT -N	W3a-) HR.	Dry
COL	LAR E	LEV.	794.8 ft		тс	TAL DE	PTH 4	.1 ft		NOF	RTHING	3 567	,131		EAS	STING 1	,260,365	5	24 HF	ર.	Dry	COLL	AR ELE	EV. 78	7.9 ft		то	OTAL C	DEPTH	10.0 ft		NOF	RTHING	567,0	35		EASTIN	G 1,260),411	24	4 HR.	Dry
DRIL	L RIG/H	AMMER I	EFF./DA1	re n/a								DRILL	METHO	DD Ha	and Auge	er		HAM	MER TYP	E N/A		DRILL	RIG/HAM	IMER EF	F./DATE	N/A	•							DRILL N	ETHOD	Hand	d Auger			HAMMER	TYPE N/A	
DRI	LER	N/A			ST	ART DA	TE 08	/06/19		CON	MP. DA	TE 0	8/06/19)	SUR	RFACE W	ATER D	EPTH N	√A				LER N				ST		DATE	08/06/1	9	CO	NP. DA	TE 08/0	06/19		SURFA	CE WATE	ER DEPT	H N/A		
ELE\ (ft)	DRIV ELE (ft)	E DEPT	H BLO	OW CC	UNT 0.5ft	0	BLC 25	DWS PE 50		T 75	100		P.	0	ELEV.		OIL AND F	ROCK DE	SCRIPTIO		EPTH (ft)	ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOV 0.5ft	W COU 0.5ft		0	8 25		PER FO	DT 75	100	SAMP. NO.	моі	L O G		SOIL A	AND ROC	K DESCR	IPTION	
795															794.8		F	UND SUR RESIDUA	L	NSF	0.0	790		-													787.9	(GROUND	SURFAC	E	0.0
							: : :	· · ·		 			M		-	RED SILTY Boring	F D-TAN, ME SAND (A-	RESIDUA ED DENS -2-4) WIT RAGMEN ed at Elev	L E TO DEI H LITTLE TS ation 790	ROCK	4.1	790										· · ·			М		782.9 778.9	RED-BRC	RESI DWN, ME SILTY SA . STIF TC (A DENSE, TH ROCK minated a	DUAL D. DENSE ND (A-2-5 STIFF, S SILTY SA FRAGME	, CLAYEY) ANDY SILT ND (A-2-4) NTS 1777.9 ft IN	<u> </u>
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