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CONTENTS <u>SHEET NO.</u> 1 2 3 4 5	DESCRIPTION TITLE SHEET LEGEND (SOIL & ROCK) SITE PLAN PROFILE BORING LOGS	STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT STRUCTURE SUBSURFACE INVESTIGATION COUNTY					
		SR 1309 (WESTBROOK AVENUE) IN BURLINGTON SITE DESCRIPTION CULVERT AT STA. 19+84 -L- ON US 70 (SOUTH CHURCH STREET) OVER MICHAELS BRANCH BETWEEN SR 2748 (SPRINGWOOD CHURCH ROAD) AND SR 1311 (UNIVERSITY DRIVE)					

STATE PROJECT REFERENCE NO. STATE NO. SHEETS 5 N.CU-6010]

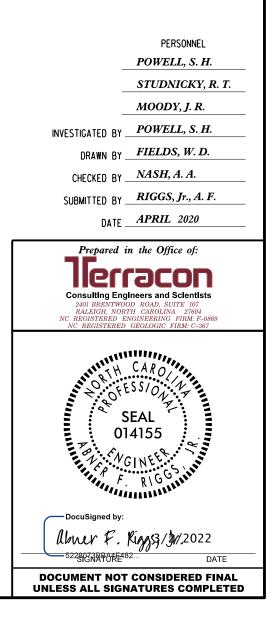
CAUTION NOTICE

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 SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1919) TOT-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAIL

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARES 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 UNPELACED TEST DATA CAN BE RELED ON ONLY TO THE DECREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOLL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOL MOISTIGE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OF CONTRACTOR IS CALIFONED THAT AND WHICH AS HELE AS SHOWN ON THE BUBSURFACE 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 WARRANT OR GUARANTICE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPNION 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 NECESSART 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 CONDENS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES: I. 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. 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.



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

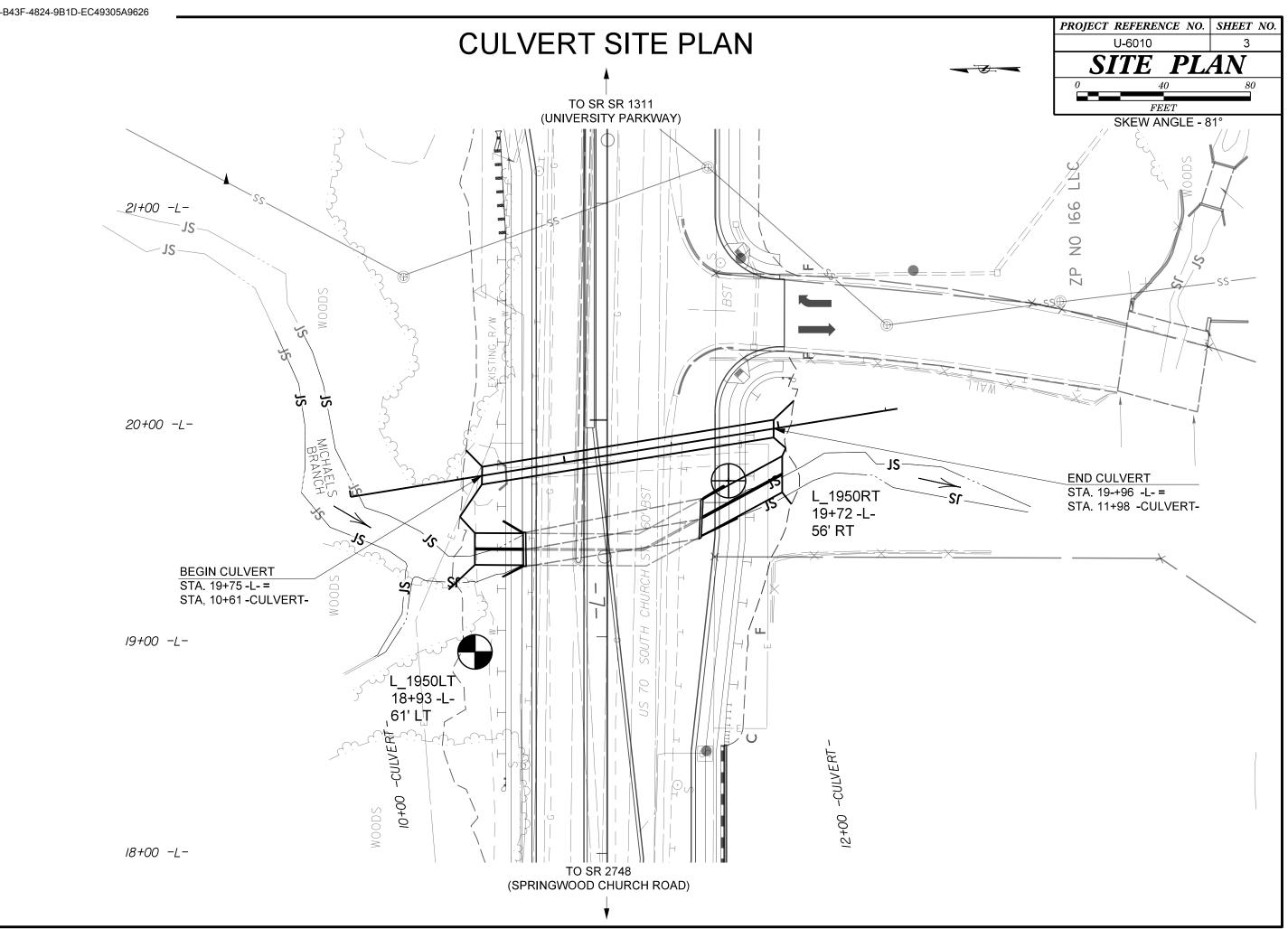
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

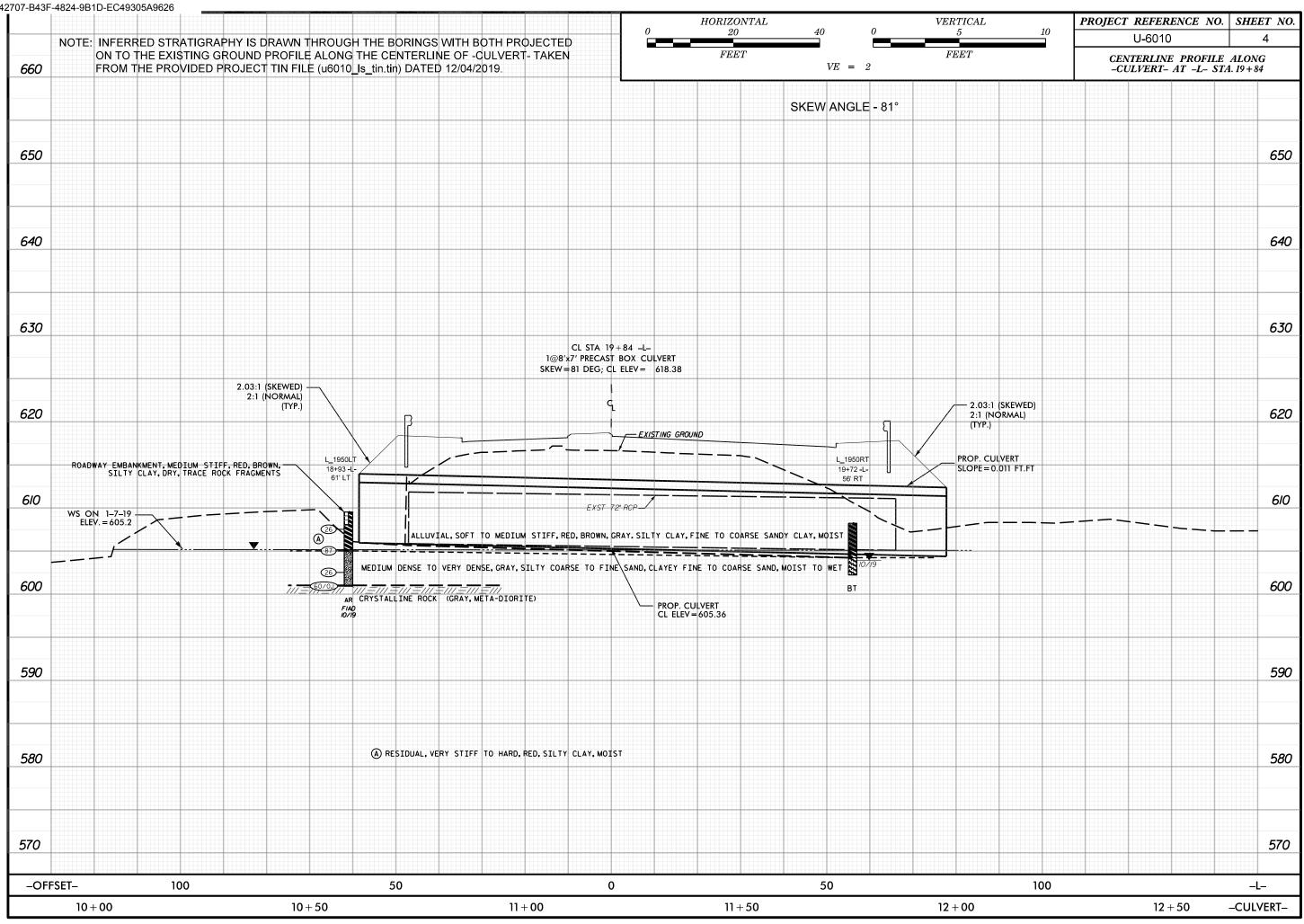
	SOIL DESCRIPTION		GRADATION	ROCK DESCRIPTION			
	DATED, SEMI-CONSOLIDATED, OR WEATHERE		WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD			
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 DI586). 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.	NOCK EINE MOUGHTES THAT ELTER IN WILL NOT NOT CONSINE IERMAIN HATCHING MOUGHTER SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER COULT TO OR LESS THAN 0.1 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK I REPRESENTED BY A ZONE OF WEATHERED ROCK.			
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				
AS MINERALOGICAL COMP	SITION, ANGULARITY, STRUCTURE, PLASTIC	ITY,ETC. FOR EXAMPLE,	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:			
VERY STIFF.GRAY.SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6			ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT ROCK (WR) 100 BLOWS PER FOOT IF TESTED.			
GENERAL GRANULAR MA			MINERALOGICAL COMPOSITION	EINE TO COORSE CRAIN ICNEOUS AND METAMORPHIC R			
CLASS. (≤ 35% PASSIN		ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	ROCK (CP) WOULD YIELD SPT REFUSAL IF TESTED, ROCK TYPE INC			
GROUP A-1 A-3	A-2 A-4 A-5 A-6 A-3	A-1, A-2 A-4, A-5	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL			
CLASS. A-1-a A-1-b A-2-4	A-2-5 A-2-6 A-2-7 A-7 A-7	A-3 A-6, A-7	COMPRESSIBILITY	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL I ROCK (NCR) ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC			
SYMBOL OCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCOCO			MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT			
% PASSING		SILT-	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK STREFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDS			
*10 50 MX *40 30 MX 50 MX 51 MN		GRANULAR CLAY MULK,	PERCENTAGE OF MATERIAL	WEATHERING			
*200 15 MX 25 MX 10 MX 35 MX	35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 M	N SOILS SOILS	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK			
MATERIAL			TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	HAMMER IF CRYSTALLINE.			
PASSING *40 LL 40 MX	41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 M	SOILS WITH	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY CO (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HA			
PI 6 MX NP 10 MX	10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 M		HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	OF A CRYSTALLINE NATURE.			
GROUP INDEX Ø Ø	1 4 MX 8 MX 12 MX 16 MX NO 1	X AMOUNTS OF SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROC			
USUAL TYPES STONE FRAGS. FINE S	LTY OR CLAYEY SILTY CLAYEY	MATTER	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER			
OF MAJOR GRAVEL, AND SAND G	AVEL AND SAND SOILS SOILS		STATIC WATER LEVEL AFTER <u>24</u> HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS			
GEN. RATING EXCELLENT TO	GOOD FAIR TO POOR	FAIR TO POOR UNSUITABLE	$\overline{igstyle perched}$ 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 SUBGRADE		PUUR		WITH FRESH ROCK.			
	JBGROUP IS ≤ LL - 30 ;PI OF A-7-6 SUBGROUP			MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FI			
Ľ	DNSISTENCY OR DENSENES		MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LC (MOD.SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND W			
	CTNESS OR RANGE OF STANDARD PENETRATION RESISTEN	RANGE OF UNCONFINED COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	IF TESTED, WOULD YIELD SPT REFUSAL			
	(N=VHLOE)	(TONS/FT ²)	WITH SOIL DESCRIPTION → OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EX			
	Y LOOSE < 4 OOSE 4 TO 10		SOIL SYMBOL	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS AN TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.			
MATERIAL MEDI	JM DENSE 10 TO 30	N/A		IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF			
(NON-COHESIVE)	ENSE 30 TO 50 Y DENSE > 50		THAN ROADWAY EMBANKMENT CHAUGER BORING	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS AR			
	Y SOFT < 2	< 0.25	→ INFERRED SOIL BOUNDARY → CORE BORING ● SOUNDING ROD	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			
GENERALLY	SOFT 2 TO 4	0.25 TO 0.5		VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N V</u>			
	JM STIFF 4 TO 8 STIFF 8 TO 15	0.5 TO 1.0 1 TO 2	INFERRED ROCK LINE MONITORING WELL WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY I SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS.			
(COHESIVE) VEF	Y STIFF 15 TO 30	2 TO 4	TTTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER - SPT N-VALUE	ALSO AN EXAMPLE.			
	TEXTURE OR GRAIN SIZE	> 4	RECOMMENDATION SYMBOLS	ROCK HARDNESS			
				VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS			
U.S. STD. SIEVE SIZE OPENING (MM)	4 10 40 60 2 4.76 2.00 0.42 0.25 0.0		UNDERCUT INSUITABLE WASTE	HARD BLOWS OF THE GEOLOGIST'S PICK.			
		IF	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF UNDERCUT ACCEPTABLE DEGRADABLE ROCK USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.			
BOULDER COBBLE (BLDR.) (COB.)	GRAVEL SAND SA (GR.) (CSE. SD.) (F	ND SILT CLAY ND (SL.) (CL.)		MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DE			
			ABBRE VIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DE BY MODERATE BLOWS.			
GRAIN MM 305 75 SIZE IN 12 3	2.0 0.25	0.05 0.005	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OF			
SOTI MO	STURE - CORRELATION OF	TERMS	CL CLAY MOD MODERATELY γ - UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD			
SOIL MOISTURE SCALE			CPT - CONE PENETRATION TEST NP - NON PLASTIC $\gamma_{\rm d}$ - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC	POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR COUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN			
(ATTERBERG LIMITS)	DESCRIPTION GUIDE FU	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			
	- 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.			
	(SAT.) FROM BEL	OW THE GROUND WATER TABLE	F - FINE SL SILT, SILTY ST - SHELBY TUBE	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 SCRATCHE			
PLASTIC		REQUIRES DRYING TO	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.			
RANGE < (PI) PL PLASTIC LIMIT	- WFI - (W)	TIMUM MOISTURE	FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING			
" " PLL + PLASTIC LIMIT			HI HIGHLY V - VERY RATIO	TERM SPACING TERM VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED			
OM _ OPTIMUM MOISTUR	- MOIST - (M) SOLID; AT	OR NEAR OPTIMUM MOISTURE	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE 3 TO 10 FEET THICKLY BEDDED 1.			
SL 📕 SHRINKAGE LIMIT			DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: CME-45C CLAY BITS X AUTOMATIC MANUAL	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.10 CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.02			
		ADDITIONAL WATER TO		VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.00			
ATTAIN OPTIMUM MOISTURE		TIMUM MUISTURE	CME-55	THINLY LAMINATED <			
	PLASTICITY			INDURATION			
PLASTICITY INDEX (PI) DRY STRENGTH			CME-550 HARD FACED FINGER BITS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAR RUBBING WITH FINGER FREES NUMEROUS GRAINS;			
NON PLASTIC Ø-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT		VERY LOW SLIGHT	VANE SHEAR TEST	FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.			
MODERATELY PLASTIC	16-25	MEDIUM	CASING W/ ADVANCER POST HOLE DIGGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH ST			
HIGHLY PLASTIC	26 OR MORE	HICH	PORTABLE HOIST	BREAKS EASILY WHEN HIT WITH HAMMER.			
	COLOR		CME-45B TRICONE TUNG,-CARB. SOUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL F			
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).			CORE BIT				
MODIFIERS SUCH AS LIG	IT, DARK, STREAKED, ETC. ARE USED TO	DESCRIBE APPEARANCE.	X 3¼" HOLLOW STEM AUGERS	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE SAMPLE BREAKS ACROSS GRAINS.			

PROJECT REFERENCE NO.



	TERMS AND DEFINITIONS					
ED. AN INFERRED) SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.					
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.					
ОСК ТНАТ	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					
CLUDES GRANITE,	SURFACE.					
AL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.					
IF TESTED. C.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.					
MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED					
STONE, CEMENTED	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.					
	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.					
RINGS UNDER	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE					
	HORIZONTAL.					
COATINGS IF OPEN. AMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.					
OCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE					
E FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.					
R BLOWS. S. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM					
AY. ROCK HAS	PARENT MATERIAL.					
H AS COMPARED	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.					
FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.					
OSS OF STRENGTH WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.					
WILLIN STROCK.	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO					
EVIDENT BUT	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 NF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE					
T ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.					
VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.					
IN SMALL AND S. SAPROLITE IS	ROCK DUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EDUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.					
IS REQUIRES	$\underline{SAPROLITE}$ (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.					
BLOWS REQUIRED	SILL - AN INTRUSIVE BODY OF IGREOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT. THAT HAS BEEN EMPLACED PARALLEL TO THE BEODING OR SCHISTOSITY OF THE INTRUDED ROCKS.					
EEP CAN BE	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.					
DETACHED	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF					
DR PICK POINT. BLOWS OF THE	A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.					
I 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.					
	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL					
PIECES 1 INCH HED READILY BY	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: BORINGS PROJECTED USING NCDOT PROVIDED TIN FILE:					
4 FEET	U6010_ls_tin.tin; DATED 12/04/2019 ELEVATION: FEET					
1.5 - 4 FEET 16 - 1.5 FEET						
03 - 0.16 FEET						
08 - 0.03 FEET < 0.008 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING					
EAT, PRESSURE, ETC.						
TEEL PROBE;						
PROBE;						
E:	DATE:04-22-2020					





GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG								
		GEOLOGIST POWELL, S. H.		WBS 47145.1.1	TIP U-6010 COUN	TY ALAMANCE	GEOLOGIST POWELL, S. H.	4
SITE DESCRIPTION CULVERT AT STA. 19+84 -L- ON US 70 OVER			GROUND WTR (ft)	SITE DESCRIPTION CULVERT A				GROUND WTR (ft)
BORING NO. L_1950LT STATION 18+93	1 1	ALIGNMENT -L-	0 HR. Caved	BORING NO. L_1950RT	STATION 19+72	OFFSET 56 ft RT	ALIGNMENT -L-	0 HR. 5.4
COLLAR ELEV. 609.6 ft TOTAL DEPTH 8.6 ft	1		24 HR. FIAD	COLLAR ELEV. 608.3 ft	TOTAL DEPTH 6.0 ft	NORTHING 848,562	EASTING 1,843,986	24 HR. 4.3
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 85% 02/15/2019	DRILL METHOD N/A	HAMM	ER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE N/A		DRILL METHOD N/A		MER TYPE N/A
DRILLER STUDNICKY, R. T. START DATE 10/10/19	COMP. DATE 10/10/19	SURFACE WATER DEPTH N/	Ά	DRILLER N/A	START DATE 10/17/19	COMP. DATE 10/17/19	SURFACE WATER DEPTH	N/A
ELEV (ft) DRIVE ELEV (ft) DEPTH BLOW COUNT BLOWS PER FOO 0 25 50		SOIL AND ROCK DES		ELEV (ft) (ft) DEPTH BLOW COUNT			SOIL AND ROCK DE	ESCRIPTION
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	D MOI O C	109.6 GROUND SURF. 108.1 RED, BROWN, SILTY CL 105.1 RED, BROWN, SILTY CL 105.1 RESIDUAL GRAY, SILTY COARSE TO 101.0 CRYSTALLINE R (GRAY, META-DIO Boring Terminated WITH PENETRATION TEST R Elevation 601.0 ft IN CRYST (META-DIORIT	KMENT LAY, TRACE NTS AY O FINE SAND BRITE STANDARD SEFUSAL at IALLINE ROCK			· · · · · · · · · · · · · · · · · · ·	608.3 GROUND SUR ALLUVIAL RED, BROWN, FINE TO C 605.3 CLAY 602.3 GRAY, CLAYEY FINE TO Boring Terminated at Elev RESIDUAL SILTY	L COARSE SANDY CLAY COARSE SAND COARSE SAND 6.0 evation 602.3 ft IN
NCDOT BORE DOUBLE U6010_GE0_CULV GP1 NC_DOT GD1 1								