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4, 5	BORE LOG REPORTS

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO		46110.1.1	F.A. PROJ. BRSTP-1538(8)
COUNTY RUTHERFORE)		
PROJECT DESCRIPTION	REPLAC	CEMENT OF	BR. NO. 577
			SR 1538 (WHITESIDE ROAD)
	REP	LACE WITH	CULVERT

SITE DESCRIPTION _____

NOTE - THE INFORMATION CONTAINED HEREIX IS NOT IMPLIED OF SUBARINTEED BY THE N.C. DEPARTIMINT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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STATE	STATE PROJECT	REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5395	46110.1.1	1	5

CAUTION NOTICE

THE SUBCLEFACE IFORMATION AND THE SUBSURFACE INVESTIGATION ON ANDER IS BASED AFRE MADE FOR THE FUFFORE OF STUDY, FLANING, AND DESIGN, AND NOT FOR CONSTRUCTION OF PAR PURPOSES, THE VALUE FOLD BORNEL COOS, ROUT (SOES, AND SOLL FEST DATA ANALARE, MAY BE REPORT OF TRANSPORTATION, CONSTRUCTION OF AN ADDRESS, THE VALUE FOLD BORNEL COOS, ROUT (SOUTHAGE), AND SOLL FEST DATA ANALARE, MAY BE REPORT ADDRESS, DATA FOLD FOLD ADDRESS, DATA FOLD ADDRESS, DATAFOLD ADDRESS, DATAFOLD ADDRESS, DATAFOLD ADDRESS, DATAFOL

VENERAL SUL HAD FORM CIRRIA DES REPORT AND NUMBERS BOUNDARES ARE BASED ON A SOUTSCHUTH, RUTERPRETATION OF ALL AVALABLE. SUBSURFACE DATA AND MAY NOT NEGESSARIUM REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETHERN BORNDS OF BETHERN SAMPLET STRATA AUTHENTHE PREFLET THE LARGHATORY ASSAULD DATA AND THE NISTU WHELLASSITEST DATA CAN BE RELEO TO NULLY IN THE DEGREE OF RELARING AMERICAN THE NISTU WHELLASSITEST DATA CAN BE RELEO TO NULLY IN THE DEGREE OF RELARING AMERICAN THE STATUARE TEST VETHOD. THE OBSERVED MATER LEVELS OR SOLUMOSTURE CONDITIONS HIDCHTED THE SUBBURACE VUESTIONTYS ARE AS REDORDED AT THE TIME OF THE TWESTIGATION. THESE AN ALTER LEVELS OR SOLUMOSTURE CONDITIONS ALCONTONS THE LEVELS OF SOLUMOST TEMPERATURES, PRECIMIENTAL AND AND, AND AND, AS WELL AS OTHER NOTICE FACTORS.

THE BIDDER OF DONTRACTOR IS CAUTIONED THAT BETAILS SHOWN ON THE SUBSLIFACE PLANS LAR PARLYNLARY ONLY AND AL VANY LASES THE HIMAL DESIGN DITALS ARE CFFERENT. FOR FILL DISCOMPTIANT ON THIS FROMENTIC. THE CONSTRUCTION PLANS AND DOLUMENTS FOR FILL DESIGN INCOMPTIAND ON THIS FROMENTIC. THE DEPARTMENT DUES NOT WATARACT ON GUARANTEES THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MORE, NOT THE INTERPRETATIONS MADE, OR OPHION OF THE DEPARTMENT AS TO THE THE OF WATERALS AND CONTINUES TO BE DONORING OF THE CONTACTORS TO CANTURE THE OF WATERACE AND CONSTOLES THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MORE, NOT THE INTERPRETATIONS AND FUE BOORT OF DEPARTMENT STO THE THE OF WATERACE AND CONTINUES TO BE DONORING THE DEVELOPMENT OF SALES AND CONTINUES AND CONTONS TO BE DEVELOTIONS TO BE DEVELOT CONTACTOR SHALL HAVE NO CLAWN FOR ADDITIONAL CONDITIONS FOR AN EXTENSION OF THE FOR THE SECON THE RECLINE OF THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE OFFERMING PROV THUSE ADJOINTED IN THE SUBSLIFACE PROFINE ON THE PROVIDENT ON THE STRE OFFERMING PROV

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

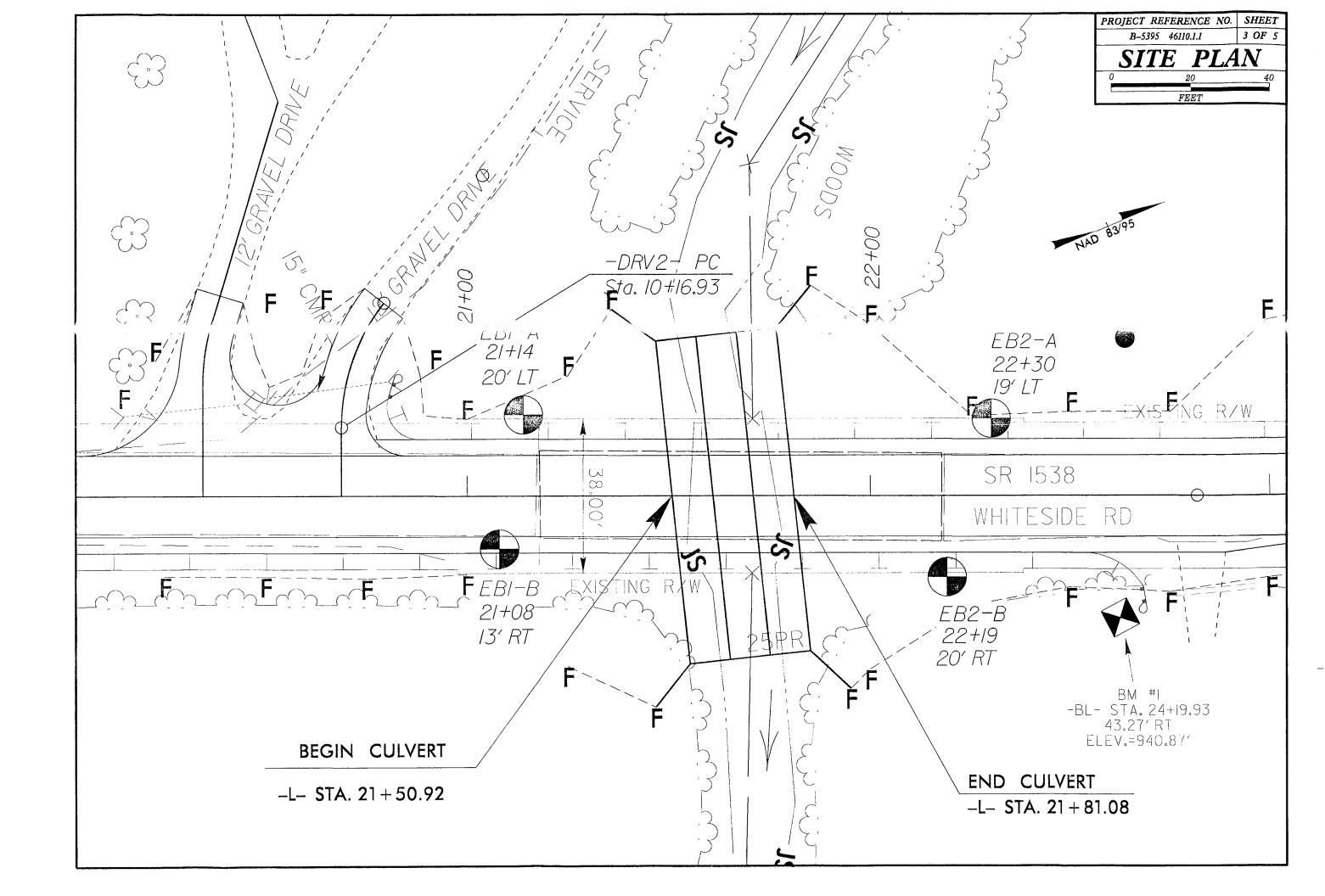
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

	SOIL AND ROO	CK LEGEND, TERM	S, SYMBOLS, AND ABBREVIATIONS		
SOIL DESCRIPTION	GRADATION	·····	ROCK DESCRIPTION		TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES F	ROM FINE TO COARSE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATE	RIAL WOULD YIELD SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 122 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T226, ASTM D-1586). SOIL	POORLY GRADED: GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR M		SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EDUAL TO IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AN	OR LESS THAN 0.1 FOOT PER 62 BLOWS. NO ROCK IS OFTEN REPRESENTED BY A ZON	ADUIFER - A WATER BEARING FORMATICN OR STRATA.
CLASSIFICATION IS BASED ON THE AASHTD SYSTEM, BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTD CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS		OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:		ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS,
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE	TERMS: ANGULAR,	WEATHERED NON-COASTAL PLAIN MATERIAL THAT	WOULD YIELD SPT N VALUES > 122	DR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.
VEB' STHT, SRR, SETT CLR, MOST WITH INTERBEDGED FIXE SAND LATERS, HIGHLY PLUSTIC, 1-7-6	SUBANGULAR, SUBROUNDED, DR ROUNDED,		hook (who		ARTESIAN - GROUND WATER THAY IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL
SOIL LEGEND AND AASHTO CLASSIFICATION	MINERAL DGICAL COMPOSITIO		CRYSTALLINE ROCK (CR)		GROUND SURFACE.
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS CLASS. (≤ 35% PASSING *282) (> 35% PASSING *282) ORGANIC MATERIALS	WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.		EINE TO COARSE GRAIN METAMORPHI	C AND NON-COASTOL PLOIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5	COMPRESSIBILITY		NON-CRYSTALLINE ROCK (NCR)	ILD SPT REFUSAL IF TESTED. ROCK TYPE	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
CLASS. A-1-0 A-1-b (3-2-4) A-2-5 (A-2-7) A-7-5 A-3 A-6, A-7		LESS THAN 31 ECUAL TO 31-52	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTE	D INTO ROCK, BUT MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL
SYMBOL DODOGODOOG	HIGHLY COMPRESSIBLE LIQUID LIMIT	GREATER THAN 52	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES	LIMESTONE, SANDSTONE, CEMENTED	LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
Z PASSING 12 52 MX GRANULAR SILT- MUCK,	PERCENTAGE OF MATERIAI		WEATHERING		DIKE - A TABULAR BODY OF IGNEDUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
* 12 52 MX1 = 42 32 MX 52 MX 51 MN SOLLAY SOLLAY SOLLAY SOLLAY SOLLAY SOLLAY	CRGANK MALERIAL SOLLS SOLLS SOLLS	OTHER MATERIAL	tough - pulk catch Dakery's south com music was show a	10m, kreivivo puuk puku, kupo	the state where we will be the state of the
	providence and the second s	1.: 1.2 e.82	Land and the second sec	NE DURNE TURN TO AN TOWNTSTIC TO TOPIN	
10.00 1001 42 MX 41 MX 42 MX 41 MX 42 MX 41 MX 42 MX 41 MX 501LS W11H PLASTIC INDEX 6 MX NP 12 MX 13 MX 11 MX 12 MX 12 MX 10 MX 11 MX 11TTLE DR	MODERATELY ORGANIC 5 - 12% 12 - 22% Som HIGHLY ORGANIC >16% >28% HIG	4: 22 - 35% HLY 35% AND ABDVE	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS ME W SLIJ CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY.	ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION OIP AZIMUTHD - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 2 2 2 4 MX B MX 12 MX 16 MX No MX MODERATE ORGANI	GROUND WATER		OF A CRYSTALLINE NATURE. SLIGHT ROCK GENERALLY FRESH, JDINTS STAINED AND DISCOLDRAT	TON EVTENDE INTO DODU 10 TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USING TARCESTING FRACE	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER D	DRILLING	(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID RC	DCKS SOME DCCASIDNAL FELDSPAR	SIDES RELATIVE TO DNE ANDTHER PARALLEL TO THE FRACTURE.
OF MAJOR GRAVEL AND FINE SILLT OR CLATET SILLT CLATET MATTER	STATIC WATER LEVEL AFTER 24 HOURS		CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCK		FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
PATERIALS SHOT	∇P_{a}	NO STRATA	(MOD) GRANITOLD ROCKS, MOST FELDSPARS ARE DULL AND DISCOL	DRED, SOME SHOW CLAY, ROCK HAS	FLOAT - ROCK FRAGMENTS ON SUMFACE NEAR THEIR DRIGHTAL POSITION AND DISLUGGED FROM
AS A EXCELLENT TO COOD FAIR TO PODR PODR UNSUITA		1997 SP1191111	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICAT	NT LOSS OF STRENGTH AS COMPARED	FLOOD PLAIN (FP) - LAND BORDERING & STREAM, BUILT OF SEDIMENTS DEPOSITED BY
PI OF A-7-5 SUBGROUP IS ≤ LL - 32 (PI OF A-7-6 SUBGROUP IS > LL - 32	SPRING OR SEEP		MODERATELY ALL BOCK EXCEPT QUARTZ DISCOLORED OR STAINED, IN OF	RANITOID ROCKS, ALL FELDSPARS DULL	THE STREAM. FORMATION SEMATE A MARPABLE GEOLODIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS		SEVERE AND DISCOLORED AND A MAJORITY DHOW KADLINIZATION. H (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK	ICUK SHOWS SEVERE LOSS OF STRENGTH GIVES ICLUNK' SOUND WHEN STRUCK,	THE FIELD.
PRIMARY SOL. TYPE COMPACTNESS OR PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE)	KG TEST BORING W/ CORE	IF_TESTED, WOULD YIELD_SPT_REFUSAL		JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS CCCURRED.
CONSISTENCE (N-VALUE) (TENS/F12)	AUGER BORING	SPT N-VALUE	SEVERE ALL ROCK EXCEPT GUARTZ DISCOLORED OR STAINED. ROCK ISEV.I IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL	FABRIC CLEAR AND EVIDENT BUT REDUCED	ELECE A GALLA ENE ABOL ON THOULD NOT A FOR A FOR
GENERALLY VERY LODSE 44 DDSE 4 TO 10	SOIL SYMBOL	- SIT IN TREDE	EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REM		ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
GRANDLAR MEDIUM DENSE 12 TD 32 N/A MATERIAL DENSE 32 TD 52	ARTIFICIAL FILL (AF) OTHER	REF - SPT REFUSAL	IF TESTED, YIELDS SPI N VALUES > 100 BPF VERY SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK	FARRIC FLEMENTS ARE DISCERNIBLE BUT	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN
(NON-COHESIVE) VERY DENSE >52	INFERRED SOIL BOUNDARY NO MONITORING WE		(V SEV.) THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WIT	H DNLY FRAGMENTS OF STRONG ROCK	SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN
VERY SOFT <2 <2.25			REMAINING, SAPROLITE IS AN EXAMPLE OF ROOK WEATHERN VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF IE	ED TO A DEGREE SUCH THAT UNLY MINUH STED, YIELDS SPT N VALUES & 100 BPF	INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.52 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.2	INFERRED ROCK LINE		COMPLETE BOCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, D	R DISCERNIBLE CNLY IN SMALL AND	RESIDUAL (RES.) SDIL - SDIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
MATERIAL STIFF B TO 15 : TO 2	SLOPE INDICATE)R	SCATTERED CONCENTRATIONS, QUARTZ MAY BE PRESENT AS ALSO AN EXAMPLE.	DIKES OR STRINGERS, SAPPOLITE IS	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
(CDHESIVE) VERY STIFF 15 10 32 2 TO 4 HARD >32 >4	25/225 DIP & DIP DIRECTION OF		ROCK HARDNESS		ROCK SEGMENTS EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	CONE PENETROM	ETER TEST		ING OF HAND SPECIMENS REQUIRES	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	 SOUNDING ROD 		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAK SEVERAL HARD BLOWS OF THE GECLOGIST'S PICK.		PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEDUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
OPENING (MM) 4.76 2.22 2.42 2.25 2.275 2.253	ABBREVIATIONS		HARD CAN BE SCRATCHED BY KNIFE OR PICK DNLY WITH DIFFIC	CULTY, HARD HAMMER BLOWS REDUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL
BCULDER COBBLE GRAVEL CORRSE FINE SILT CLAY	AR - AUGER REFUSAL MED MEDIUM	VST - VANE SHEAR TEST	TD DETACH HAND SPECIMEN. MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES DR GROD	VES TO 0.25 INCHES DEEP GAN BE	TO THE BEDDING OR SCHISTOSITY OF THE INTRUCED ROCKS.
BLORL) (COB.) (SR.) (CSE, SO.) (F SO.) (SL.) (CL.)	BT - BORING TERMINATED MICA MICACEOUS CL CLAY MOD MODERATELY	WEA WEATHERED γ - UNIT WEIGHT	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAN	D SPECIMENS CAN BE DETACHED	SLICKENSICE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MIN 325 75 2.2 2.25 2.25 2.25	CPT - CONE PENETRATION TEST NP - NON PLASTIC	7 - DRY UNIT WEIGHT	BY MODERATE BLOWS. MEDIUM CAN BE GRODVED DR GDUGED 0.25 INCHES DEEP BY FIRM	PRESSURE OF KNIFF OR PICK POINT.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST	SAMPLE_ABBREVIATIONS	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH N		A 142 LB. HAMMER FAILING 38 INCHES REDUIRED TO PRODUCE A PENETRATION OF 1 FODT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EOUAL TO OR LESS
SOIL MOISTURE - CORRELATION OF TERMS	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC	S - BULK SS - SPLIT SPOON	POINT OF A GEOLOGIST'S PICK. SDFT CAN BE GROVED OR GDUGED READILY BY KNIFE OR PICK.	CAN BE EXCAVATED IN FRAGMENTS	THAN 0.1 FODT PER 60 BLOWS.
(ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	e VOID RATIO SD SAND, SANDY F FINE SL SILT, SILTY	ST - SHELBY TUBE	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE	BLOWS OF A PICK PDINT. SMALL, THIN	STRATA CORE RECOVERY ISRECU - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY	FDSS FDSSILIFEROUS SLI SLIGHTLY	RS - ROCK RT - RECOMPOSIED TRIAXIAL	PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE, CAN BE EXCAVATED BEADLY	א איזע איזע איזע איזע איזע איזע איזע א	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY
ISATU FROM BELOW THE OBOUND WATER TABL	FRASS FRASMENTS W - MOISTURE CONTENT	CBR - CALIFORNIA BEARING	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRES	SURE, CAN BE SCRATCHED READLY BY	TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO DR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASIDU - epistenti tru persitere insystem tru	HI HIGHLY V - VERY	BATIO		BEDDING	TOPSOL (15.2 - SURFACE SOLS USUALLY CONTAINING ORGANIC MATTER.
HANGE - WE - WO ATTAIN OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT F	1	FRACTURE SPACING		BENCH MARK: -BL- STA. 24+19.93 43.27' RT
	DRILL UNITS: ADVANCING TODLS:	HAMMER TYPE:	VERY VIDE MORE THAN 12 FEET VERY THICK	LY BEDDED > 4 FEET	
DPTIMUM MOISTURE - MEIST - (M) SCLID: AT OR NEAR OPTIMUM MOISTUR		X AUTOMATIC MANUAL	WIDE 3 TO 10 FEET THICKLY BE MODERATELY CLOSE 1 TO 3 FEET THICKLY BE	DED 0.16 - 1.5 FEET	ELEVATION: 940.87 FT.
	MOBILE B 6'CONTINUOUS FLIGHT AUGER	CORE SIZE:	CLOSE 0.16 TO 1 FEET THICKLY LA		NOTES:
- DRY - (D: REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	BK-5. 8' HOLLOW AUGERS	-в	VERY CLOSE LESS THAN 2.15 FEET THINLY LAW		
PLASTICITY	HARD FACED FINGER BITS	-N	INDURATION		-
PLASTICITY INDEX (PI) DRY STRENGTH	TUNG,-CARBIDE INSERTS		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERI		
NONPLASTIC 8-5 VERY LOW	X CME-552 X CASING X W/ ADVANCER	н	FRIABLE RUBBING WITH FINGER FREE GENTLE BLOW BY HAMMER D		
LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM	PORTABLE HOIST TRICONESTEEL TEETH	HAND TODLS: POST HOLE DIGGER		FROM SAMPLE WITH STEEL PROBE:	
HIGH PLASTICITY 26 CR MORE HIGH		HAND AUGER	BREAKS EASILY WHEN HIT V	WITH HAMMER.	
COLOR		SDUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO DIFFICULT TO BREAK WITH	SEPARATE WITH STEEL PROBE:	
DESCRIPTIONS MAY INCLUDE COLOR DR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).		VANE SHEAR TEST			
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		[]	EXTREMELY INDURATED SHARP HAMMER BLOWS REU SAMPLE BREAKS ACROSS OF		
	<u></u>				REVISED 09/23/09

PROJECT REFERENCE NO.	SH	EET	NO.
B-5395 46110.1.1	2	0F	5



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

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WBS 46110.1.1	TIP B-5395 COUN	TY RUTHERFORD	GEOLOGIST Elliott, D. C.	WBS 46110.1.1	TIP B-5395 COUNT	Y RUTHERFORD	GEOLOGIST Elliott, D. C.
SITE DESCRIPTION Bridge No.	577 over Hunting Creek on SR 15	538	GROUND WTR (ft)	SITE DESCRIPTION Bridge No. 5	577 over Hunting Creek on SR 153	38	GROUND WTR (ft)
BORING NO. EB1-A	STATION 21+14	OFFSET 20 ft LT	ALIGNMENT -L- 0 HR. N/A	BORING NO. EB1-B	STATION 21+08	OFFSET 13 ft RT	ALIGNMENT -L- 0 HR. 19.3
COLLAR ELEV. 938.5 ft	TOTAL DEPTH 29.6 ft	NORTHING 623,366	EASTING 1,150,792 24 HR. 17.6	COLLAR ELEV. 939.6 ft	TOTAL DEPTH 24.8 ft	NORTHING 623,345	EASTING 1,150,819 24 HR. FIAD
DRILL RIG/HAMMER EFF./DATE AFC	D0071 CME-550X 72% 09/03/2009	DRILL METHOD NW	/ Casing w/ SPT HAMMER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE AFO	00070 CME-550X 81% 09/03/2009	DRILL METHOD N	W Casing w/ SPT HAMMER TYPE Automatic
DRILLER Coffey, Jr., C.	START DATE 05/02/11	COMP. DATE 05/02/11	SURFACE WATER DEPTH N/A	DRILLER Cheek, D. O.	START DATE 12/11/13	COMP. DATE 12/11/13	SURFACE WATER DEPTH N/A
ELEV DRIVE DEPTH BLOW COUL (ft) (ft) 0.5ft 0.5ft		DT SAMP. L 75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)	ELEV DRIVE DEPTH BLOW COUN (ft) (ft) (ft) 0.5ft 0.5ft 0		75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION
940				940			939.6 GROUND SURFACE 0.0
			938.5 GROUND SURFACE 0.0				ROADWAY EMBANKMENT Red-brown sandy silty CLAY with trace
			ROADWAY EMBANKMENT Red sandy silty CLAY				organics
935 7 934.0 4.5				935 934.8 4.8	2	м В	-
	3						
930				930 929.8 9.8			-
929.0 9.5 1 2	3				4		927.8 11.8
			926.6 11.9 SAPROLITE				- SAPROLITE Brown gray prango white fice sandy St. T
924.0 14.5			- Dark gray sandy 5.	<u>5 7</u>	8	м	with bace mica
	4						- - 921.6 18.0
920	· · · · · · · · · · · · · · · · · · ·		_	920 919.8 19.8 11 47			SAPROLITE Gray-black-red-orange fine sandy SILT with
919.0 19.5 2 3	5				21		- 918.1 trace mica 21.5 WEATHERED ROCK
		· · · · · · · · · · · · · · · · · · ·	<u>916,7</u> 21.8 SAPROLITE 21.8	915 914.8 24.8			915.8 (gneiss) 23.8 914.8 CRYSTALLINE ROCK 24.8
915 914.0 24.5 16 28	13		- Dark gray sandy SILT with weathered rock layers	914.8 - 24.8 - 60/0.0		60/0.0	- GNEISS
			912.0 26.5 WEATHERED ROCK				Boring Terminated with Standard Penetration Test Refusal at Elevation 914.8
910			-909.4 (gneiss) 29.1				ft in Crystalline Rock (Gneiss)
<u>909.0</u> <u>29.5</u> <u>60/0.1</u>	<u></u>	60/0 1	908.9 CRYSTALLINE ROCK29.6 GNEISS				-
			Boring Terminated with Standard Penetration Test Refusal at Elevation 908.9				-
			ft in Crystalline Rock (Gneiss)				-
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NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

WBS 46110.1.1 TIP B-5395 COUN SITE DESCRIPTION Bridge No. 577 over Hunting Creek on SR 15						RUI		FORD				GEOLOGIST Elliott, D. C. GROUND WTR (f							WBS 46110.1.1 SITE DESCRIPTION Bridge No. 5						IP B over		DUNTY R 1538											
	NG NO.			<u>go 110</u>	- T	TATIC						OFFSI	ET 1	9 ft LT				ALIGNMENT -L- 0 HRCaved @				1 F		NG NO			1	STATION 22+19					0					
	AR ELE			· ···		OTAL			9.7 ft			OFFSET 19 ft LT NORTHING 623,468						EASTING 1,150,847				24 ⊦		FIA	- }	COLI	AR EL	EV. 9	38.3 ft		۲	TOTAL DEPTH 34.9 ft						
	RIG/HAI			TE AF								-				OD	NW	V Casing v				HAM	MER TY	YPE A	Automatic		DRILL	RIG/HA	MMER I	FF./DA	TE A	F0007	1 CME-	550X 7	2% 09/	03/2009	 }	-1
· · · · · · · · · · · · · · · · · · ·				TART					(COMP	l	ГЕ 12				SURF		VATE	R DEP	TH N	I/A				DRIL	LER (Coffey,	Jr., C.		5	TAR	DATE	E 05/0)3/11		C		
	DRIVE	DEPTH	T	w co						ER FO				SAMP		71	-	1								╡┟	ELEV	DRIVE ELEV	DEPTH	BL	ow co	DUNT			BLO	NS PEF	R FOO	Т
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0		25	5	0	7	5	100	NO.	мс	DI G		ELEV. (ft)					GRIPT		DEPTH	(ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	25	50		75
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