513A

N

REFERENCE

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<u>Г NO.</u> **DESCRIPTION** TITLE SHEET LEGEND SITE PLAN PROFILE BORE LOGS

### STATE OF NORTH CAROLINA

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

# **STRUCTURE** SUBSURFACE INVESTIGATION

COUNTY BUNCOMBE

PROJECT DESCRIPTION <u>I-40 FROM</u> EAST OF SR 1224 (MONTE VISTA RD) TO PAVEMENT JOINT WEST OF SR 3412 (SAND HILL RD). INCLUDES INITIAL IMPROVEMENTS AT I-40EB TO I-26EB AT US 19/23 (SMOKEY PARK HIGHWAY) SITE DESCRIPTION NOISEWALL 5A, FROM -Y- STA.

63+46.57, 86.50' RT TO -Y- STA. 77+80.27, 86.50' RT

NOISEWALL 5B, FROM -Y- STA. 77 + 14.17, 99.00'RT

TO -Y EB- STA. 13 + 66.36, 51.50' RT

NOISEWALL 5C, FROM -Y EB- STA. 13 + 39.81, 57.30'RT TO -Y EB- STA. 14 + 13.75, 65.92'RT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I–2513AA	1	15

#### **CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOLT TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (1991) 707-8050. THE SUBSURFACE 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 SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN STIU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DECREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOL MOISTURE CONDITIONS MAY YARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT, FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR CUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR POINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO 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 CONDITIONS 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. 2.

PERSONNEL	
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CG2
GOODNIGHT, D.J.
ECS
NCDOT
INVESTIGATED BY <b>FALCON ENG</b> .
DRAWN BYCROCKETT, S.C.
CHECKED BY
SUBMITTED BY <b>FALCON ENG.</b>
DATE SEPTEMBER 2023



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

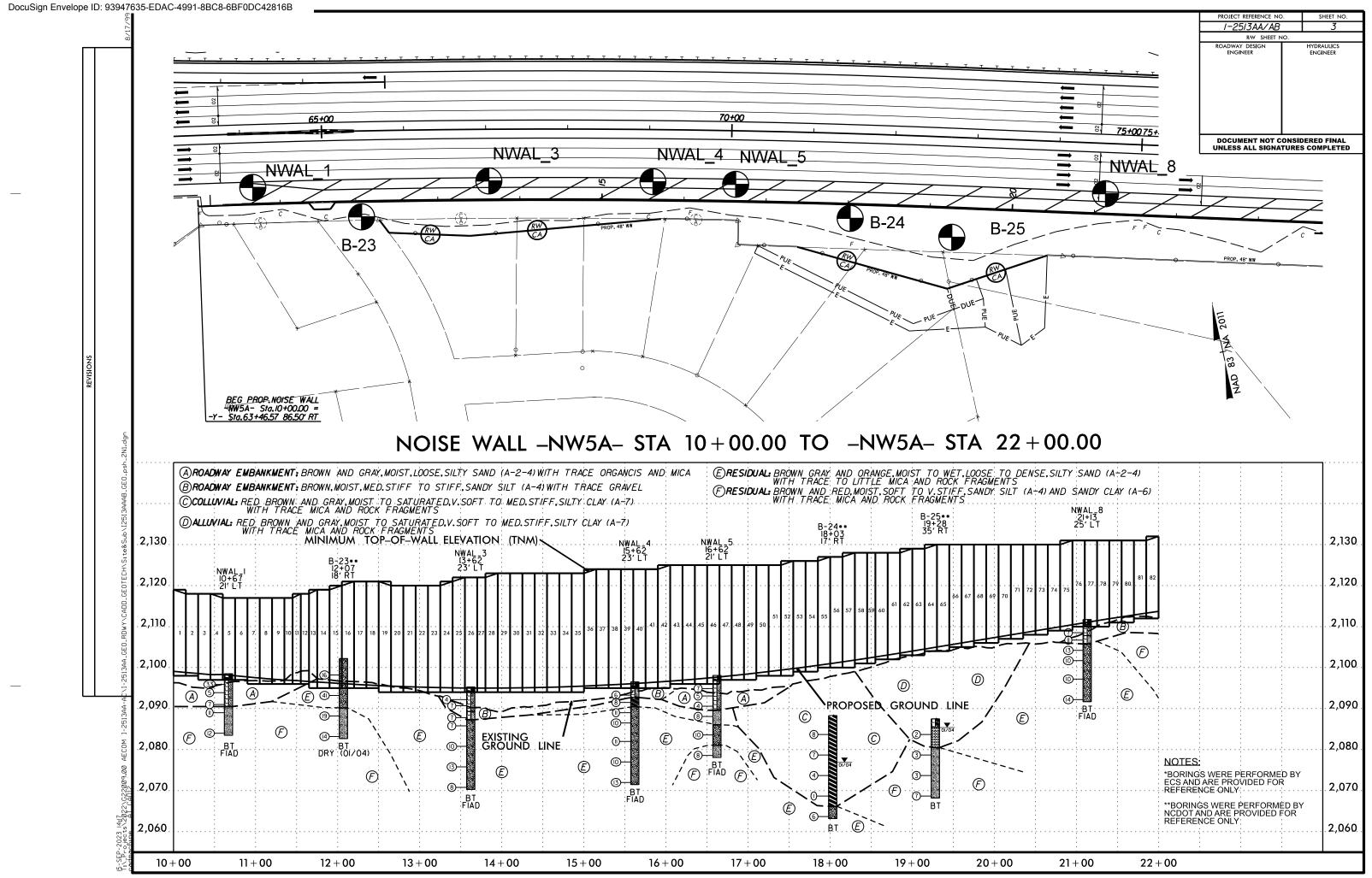
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

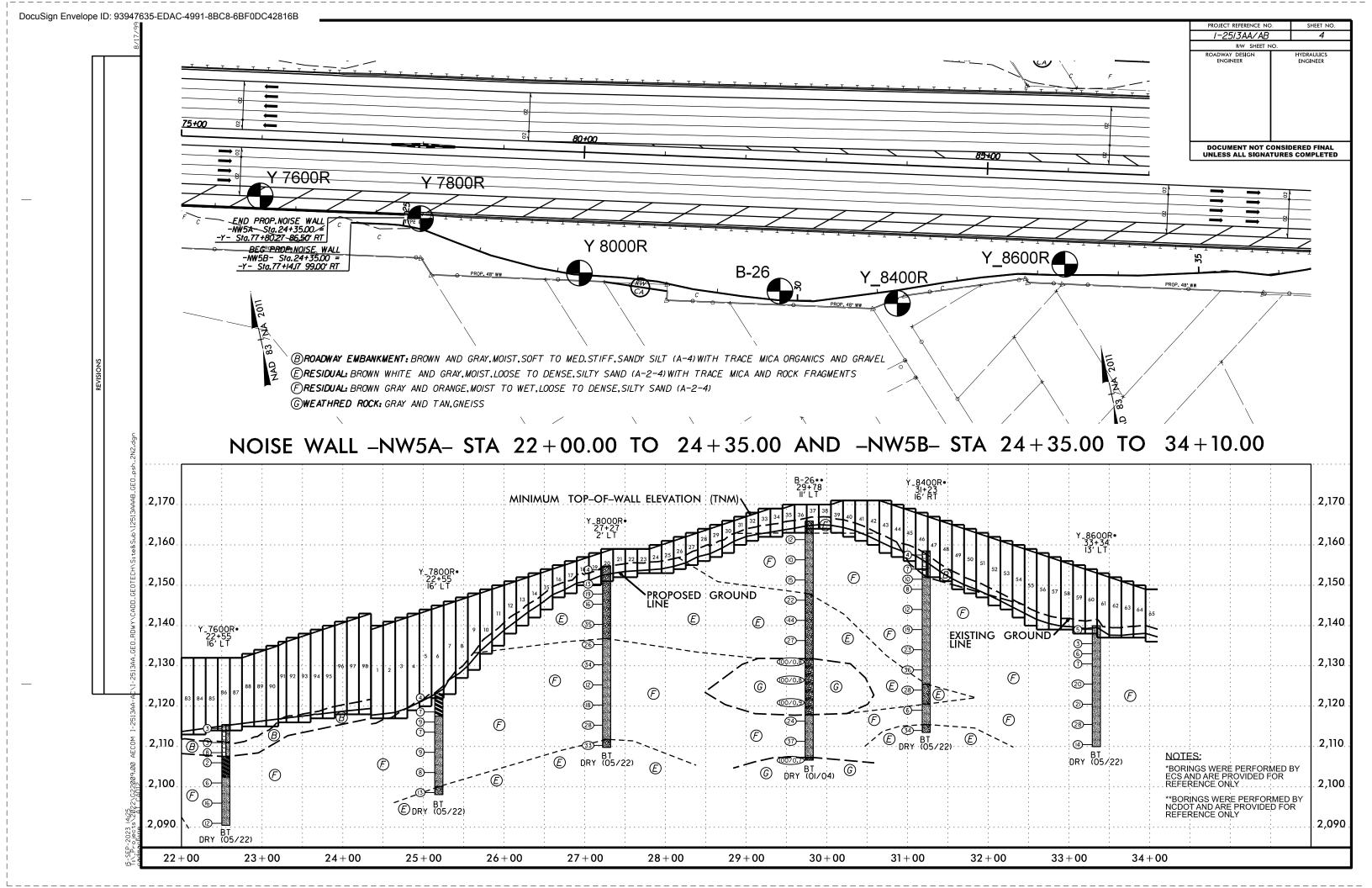
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL DESCRIPTION SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION	UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.	ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
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:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING
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 N VALUES >	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS OPENING MATERIALS	MINERALOGICAL COMPOSITION	ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	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
CLASS. (≤ 35% PASSING ■200) (> 35% PASSING ■200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE,	SURFACE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.		CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CLASS. A-1-0 A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-76 A-3 A-6, A-7 000000000000000000000000000000000000	COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LL < 31	NON-CRYSTALLINE SEDIMENTARY ROCK THAT WOULD SPT REFUSAL IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
SYMBOL DOCOGROOOD	MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
7. PASSING *10 50 MX GRANULAR SILT- MUCK,	HIGHLY COMPRESSIBLE LL > 50 PERCENTAGE OF MATERIAL	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*40 30 MX 50 MX 51 MN SOILS SOILS SOILS FOR PEAT		WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
אויו סב אויו כל שטבי	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
MATERIAL PASSING +40	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN.	HORIZONTAL.
LL – – 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 11 MN 10 MX 11 MN 11 MN L11TLE OR HIGHLY	MODERATELY         ORGANIC         5         - 10%         12         - 20%         SOME         20         - 35%           HIGHLY         ORGANIC         > 10%         > 20%         HIGHLY         35%         AND ABOVE	(V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
	GROUND WATER	OF A CRYSTALLINE NATURE. SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STORE EDADE DOCUMENT	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(SLI,) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
DF MAJOR GRAVEL, AND FINE SILIT UK LAYEY SILIT LLAYEY MATTER	STATIC WATER LEVEL AFTER <u>24</u> HOURS	CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SHID ON THE AND SHID SUILS SUILS	$\nabla PW$ PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN (MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
GEN.RATING EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE		DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ;PI OF A-7-6 SUBGROUP IS > LL - 30	O-M- Spring or SEEP	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	FIELD.
PRIMARY SOIL TYPE COMPACTNESS OR PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	(MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. IF TESTED, WOULD YIELD SPT REFUSAL	<u>JOINT</u> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
CONSISTENCY (N-VALUE) (TONS/FT <sup>2</sup> )	WITH SOIL DESCRIPTION - OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT	ITS LATERAL EXTENT.
GENERALLY VERY LOOSE < 4 DEVICE 4 TO 10	SOIL SYMBOL	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
MATERIAL MEDIUM DENSE 10 TO 30 N/A		IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS
(NON-COHESIVE) DENSE 30 TO 50 VERY DENSE > 50		VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	I INFERRED SOIL BOUNDARY	(V SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY         SOFT         2 TO 4         0.25 TO 0.5           SILT-CLAY         MEDIUM STIFF         4 TO 8         0.5 TO 1.0		VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
MATERIAL STIFF 8 TO 15 1 TO 2		COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	<u>ROCK QUALITY DESIGNATION (ROD)</u> - 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
(COHESIVE)         VERY STIFF         15 TO 30         2 TO 4           HARD         > 30         > 4	TTTTT ALLUVIAL SOIL BOUNDARY A PIEZUMETER SPT N-VALUE	ALSO AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
OPENING (MM)         4.76         2.00         0.42         0.25         0.075         0.053	I INDERCOTI III UNSUITABLE WASTE IIII ACCEPTABLE, BUT NOT TO BE	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
(BLDR.) (COB.) (GR.) (CSE. SD.) (F SD.) (SL.) (CL.)	ABBREVIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED	<u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	BY MODERATE BLOWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY $\gamma$ - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD 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
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC $\dot{\gamma}_{ m d}$ - DRY UNIT WEIGHT	POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE (ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT, SMALL, THIN	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	PIECES CAN BE BROKEN BY FINGER PRESSURE.	STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL
(SAT.) FROM BELOW THE GROUND WATER TABLE	e - VOID RATIO         SD SAND, SANDY         SS - SPLIT SPOON           F - FINE         SL SILT, SILTY         ST - SHELBY TUBE	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK, PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY	LENGTH OF ROCK SECMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE C - WET - (W) SEMISOLIDI, REQUIRES DAYING TO	FRAC FRACTURED, FRACTURES         TCR - TRICONE REFUSAL         RT - RECOMPACTED TRIAXIAL           FRAGS FRAGMENTS         w - MOISTURE CONTENT         CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: ELEVATIONS TAKEN FROM 12513_LS_TNL.TIN
	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	DATE: 04/15/2022
OM _ OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: FEET
SL _ SHRINKAGE LIMIT	DRILL UNITS:         ADVANCING TOOLS:         HAMMER TYPE;           CME-45C         CLAY BITS         X AUTOMATIC         MANUAL	MODERATELY CLOSE         1 TO 3 FEET         THINLY BEDDED         0.16 - 1.5 FEET           CLOSE         0.16 TO 1 FOOT         VERY THINLY BEDDED         0.03 - 0.16 FEET	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO		VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
	CORE-55	THINLY LAMINATED < 0.008 FEET	
PLASTICITY		INDUCH I ION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
PLASTICITY INDEX (PI)         DRY STRENGTH           NON PLASTIC         Ø-5         VERY LOW	CME-550 HARD FACED FINGER BITS	DUBRING WITH EINGER EDEES NUMEROUS CRAINS.	
SLIGHTLY PLASTIC 6-15 SLIGHT		FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY         PLASTIC         16-25         MEDIUM           HIGHLY         PLASTIC         26 OR         MORE         HIGH		MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
COLOR		BREAKS EASILY WHEN HIT WITH HAMMER.	
	X     DIEDRICH     D50     TRICONE     TUNGCARB.     SOUNDING ROD	INDURATED ORAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE;	
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.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;	
A SER LENG SOUTH AS EXAMPLE STREAKED, ETC. HAE OSED TO DESCRIBE HIT CHANNES.	X         GEOPROBE         7822	SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14

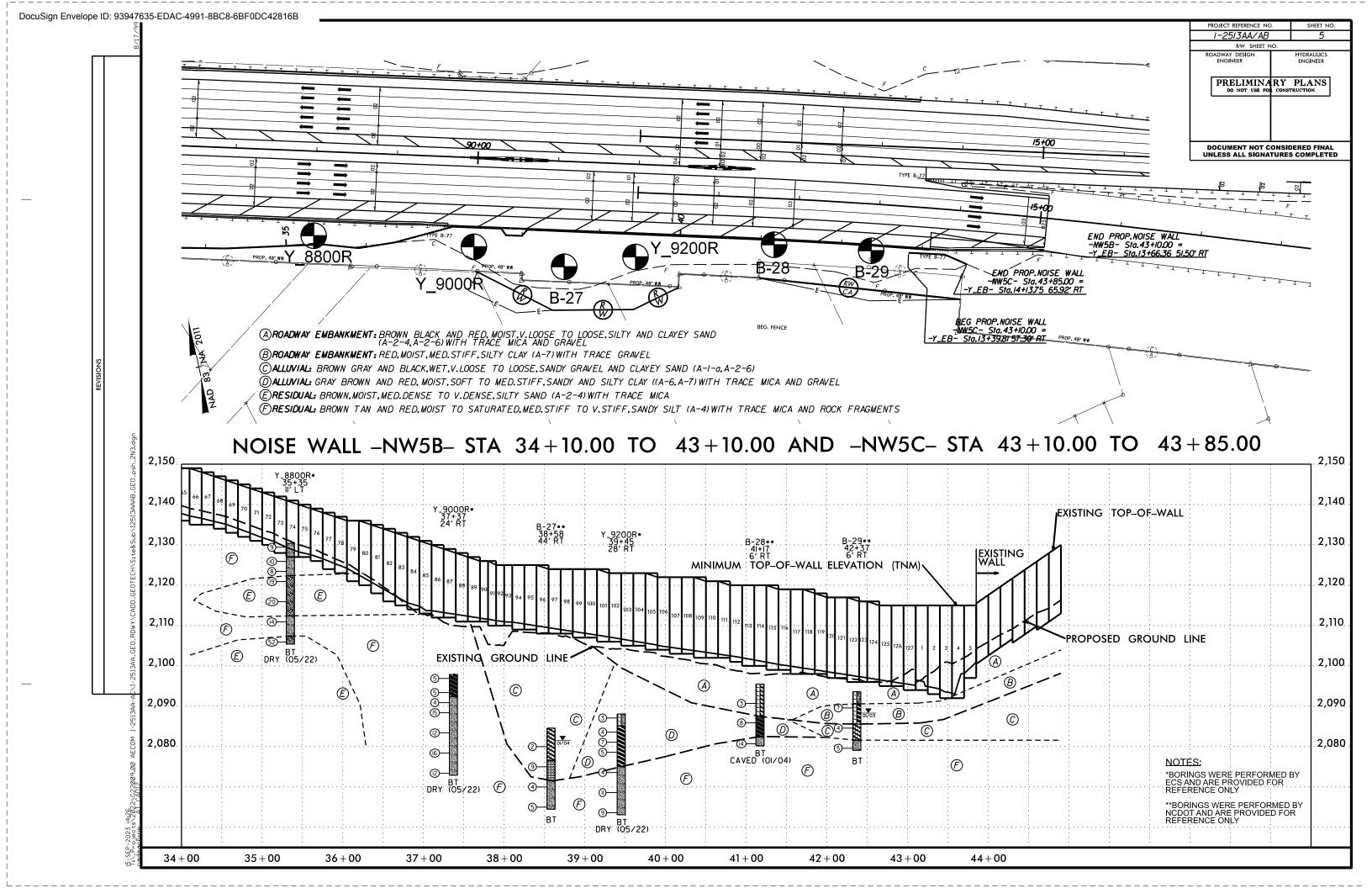
#### PROJECT REFERENCE NO.



2







## GEOTECHNICAL BORING REPORT BORE LOG

WBS	34165	.1.2			Т	I <b>P</b> 1-2513	3AA	С	OUNT	BUNCON	IBE			GEOL	<b>DGIST</b> Goodnight, D.J.		WBS	<b>S</b> 34165	5.1.2			TIF	<b>•</b> 1-2513A	A	COUNT	ΥE
SITE	DESCR	IPTION	Nois	ewall 5	A fron	n -Y- Sta. 6	63+46.5	7, 86.5	0' RT to	o -Y- Sta. 77	+80.27,	86.50	' RT			GROUND WTR (ft)	SITE	DESCR	IPTION	Noise	ewall 5	5A from	-Y- Sta. 63	+46.57, 86	6.50' RT t	0 -Y
BORI	NG NO.	NWA	L_1		S	TATION	10+67			OFFSET	21 ft LT			ALIGN	MENT -NW5A-	0 HR. Dry	BOR	ring no.	B-23			ST	ATION 12	2+07		OF
COLL	AR ELE	<b>EV.</b> 2,	098.5	ft	Т	OTAL DEF	<b>PTH</b> 15	5.0 ft		NORTHING	677,9	37		EASTI	<b>NG</b> 919,842	24 HR. FIAD	COL	LAR ELI	<b>EV.</b> 2,	102.2 f	ť	тс	TAL DEPT	H 19.5 ft		NO
DRILL	RIG/HAN	IMER EF	F./DAT	E CG2	0446 D	iedrich D50	87% 05/1	0/2022	1		DRILL N	IETHO	DD H.	S. Augers	НАММ	IER TYPE Automatic	DRIL	L RIG/HAN	IMER EF	F./DATE	E N/A					
DRILL	ER O	dom, C			S	TART DAT	TE 08/*	16/23		COMP. DA	TE 08/	16/23		SURF		/Α	DRIL	LER N	/A			ST	ART DATE	01/06/0	4	cc
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	UNT		BLO\	WS PEF	R FOOT		SAMP.	▼/			SOIL AND ROCK DES		ELEV		DEPTH	BLO	W CO	UNT		BLOWS I	PER FOO	r
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50		75 100	NO.	Имо	) G	ELEV. (ft)		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	25 !	50	75
2100																	2105									
	-	F	<u> </u>							I				2,098.5	GROUND SURF	ACE 0.0 1.0		-	Ŧ							
	2,096.9		7	19	14		·   · i·					м		- 2,097.5 - 2,097.3	ASPHALT AGGREGATE BASE			-	<u> </u>				· · · · ·			··
2095	2,094.9	3.6	7	3	2		• • • • • • • • • • • • • • • • • • • •					м		-	ROADWAY EMBAN BROWN AND GRAY, LC		2100	2,099.2	3.0							+-
	2,092.0	F 65	'		-	<b>1 1 1 1 1 1</b>		.						F	SAND (A-2-4), WITH SOME TRACE MICA	E GRAVEL AND		-,	-	3	6	10	•16			.   .
	2,092.0		2	3	4	<b>                                     </b>			· · · · ·			м		2,090.5		8.0	2095	-	ŧ							.   .
2000	2,090.0_	- 0.5	4	5	6	• • 11						м		-	BROWN, STIFF, SAND		2000	2,094.2	8.0	16	21	20				
	-	ŧ				:i::								-				-	ŧ					· · • • 41		
2085	2,085.0	13.5		F	7		·   · ·	-						-  -			2090	2 000 0	+ 12.0				· · · ·	<i>j</i>		<u> </u>
ŀ		<u>+</u>	4	5	7	• • 12		•••			-	M		- 2,083.5	Boring Terminated at Eleva	15.0 tion 2 083 5 ft In		2,089.2	+ 13.0	6	9	10	· · · · ·	 ]	· · · ·	:   :
	-	ŧ												E	Residual Sandy SIL	_T (A-4)			ł						· · ·	
	-	ŧ												-			2085	2,084.2	18.0				<u> </u>			+
	-	Ł												Ł					<u> </u>	5	6	8	•14			<u> </u>
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T١	BU	NCON	ЛE	BE				GEOLOGIST	D. Cheek			
to	) -Y- S	ta. 77	+	80.27, 8	36.50'	RT					GROUN	ID WTR (ft)
	OFFS	SET	18	8 ft RT				ALIGNMENT	-NW5A-		0 HR.	Dry
	NOR		}	677,87	74			EASTING 91	9,964		24 HR.	Dry
			-	DRILL M		н	S	Augers				Automatic
	COM	אם פ	_	E 01/0				SURFACE WA				
ТС				SAMP.	/0/04	L		JUNFAUE WA		III IN/F	<b>`</b>	
וע	75	100		NO.		0		SO	IL AND ROC	K DESC	RIPTION	
	<u> </u>			110.	<u>/ MOI</u>	G						
							L					
							È.	2,102.2	GROUND		CE	0.0
							E	2,102.2	RES	IDUAL		0.0
							┝	Black-	Medium De Orange-Red			rse
					D		F		(A-2-4), with			
	: :						F					
	<u>.</u> .						F					
•		•••			м		F					
-	: :						Ē	2,090.2				
	1		1		N.4		F	Stiff to V	ery Stiff, Bla Coarse Sand	ck-Red-E	Brown-Ora	ange,
:	: :	· · · ·			М		F			y Si∟i (/ nica	<del>-</del> , wiu⊺	
•	···	• •					F					
	· ·	• •			м		F	2,082.7				19.5
•		• •					F	Boring T	erminated a	t Elevatio	on 2,082.	7 ft In
							E		Residual Sa	ndy SILT	(A-4)	
							F	Boring I	Drilled by NC	DOT an	d provide	d for
							╞		Telefel	ice only.		
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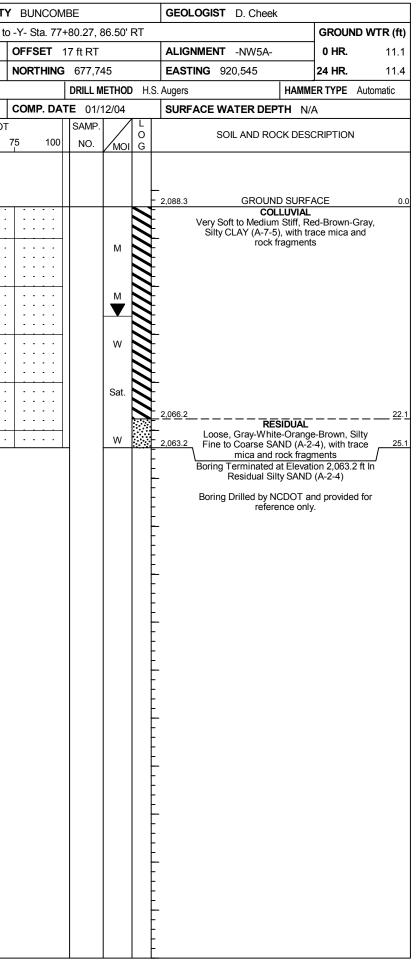
### GEOTECHNICAL BORING REPORT BORE LOG

WBS	34165	.1.2			Т	<b>P</b> 1-2513	BAA	COUN	ITY BU	JNCOM	BE			GEOL	OGIST Goodnigh	t, D.J.		WB	<b>S</b> 3416	5.1.2			ТІ	<b>P</b> 1-2513	BAA	COUN	ITY B
SITE	DESCRI	PTION	Nois	ewall 5	A fron	n -Y- Sta. 6	3+46.57,	36.50' R	Γto-Y-	Sta. 77+	80.27, 8	36.50'	RT				GROUND WTR (f	SIT		IPTION	Nois	ewall {	5A from	n -Y- Sta. (	63+46.57,	86.50' R1	Γto -Y-
BOR	NG NO.	NWA	L_3		S	TATION	13+62		OFF	SET 2	3 ft LT			ALIGN	MENT -NW5A-		0 HR. Dr	BO	RING NO.	NWA	\L_4		S	TATION	15+62		OF
COL	LAR ELE	<b>V.</b> 2,0	095.3 f	t	т	OTAL DEP	<b>TH</b> 25.0	ft	NOF	RTHING	677,88	34		EASTI	NG 920,125		24 HR. FIAI	co	LAR EL	<b>EV.</b> 2,	,096.5 f	ft	т	OTAL DEI	<b>PTH</b> 25.0	ft	NO
DRILL	. RIG/HAM	MER EF	F./DATE	CG2	0446 D	edrich D50	87% 05/10/2	022			DRILL M	ETHO	DH.	.S. Augers			R TYPE Automatic	DRI	L RIG/HAN	MMER EF	FF./DATI	E CG	 20446 D	iedrich D50	87% 05/10/2	2022	
DRIL	LER O	dom C			S	TART DAT	E 08/17/	23	CON	IP. DAT					CE WATER DEP				LLER C						<b>FE</b> 08/17		со
ELEV	<b>DD</b> (5	DEPTH		W CO				PER FO			SAMP.		1 L					ELE			1	w co				S PER FO	
(ft)	ELEV (ft)	(ft)	·	0.5ft		0	25	50	75	100	NO.	мо	O I G	ELEV. (ft)	SOIL AND RO	CK DESC	RIPTION DEPTH	(ft)	/ ELEV (ft)	(ft)	' <b></b>		0.5ft	0	25	50 I	75
2100		_																2100	)	ļ							
	-	- -												-						+							
2095	-	-												2,095.3	GROUNI ASI	D SURFA	CE (	0 2098	2.094.3	+ 22						· · · ·	
	2,093.2	-	4	2	2								L	2,094.0	AGGREGATE	BASE C	OURSE /	3/	2,092.5	+	2	2	4	<b>4</b> 6		· · · · ·	
2090	2,091.7-	- 3.6 -	2	3	4			·   · · ·		:::		M M		₩- <b>-</b>	ROADWAY BROWN, LOOSE,	SILTY SA	and (a-2-4)	2090		t	4	4	4	<b>•</b> 8		·   · · · .	
2090	2,088.8-	- 6.5												2,089.3	WITH SO ROADWAY			0 2090	) 2,090.0	6.5	5	6	5	• •11			
	2,086.8-	- - 8.5	2	3	4	• 7 : :						M		2,087.3	BROWN, MED. STI	FF, SAND	DY SILT (A-4)8	<u>o</u>	2,087.5	<u>+ 9.0</u>	3	5	5			:	
2085		-	2	3	4	•7 • •			.			м		₽ \ ₽		SIDUAL	/	2085	5 _	‡				• 1 <u>0</u>	.		
		-				:\:::								1 1	BROWN, LOOSE T SAND (A-2-4) V				2,083.0	13.5	<u> </u>					·   · · ·	
	2,081.8-	- 13.5	4	4	6				.			м								ŧ	4	5	6	• •11		· · · · ·	
2080	_	-			-	• 10												2080		ł							
	2.076.8-	18.5							.										2,078.0	18.5	3	5	5	·   -			.
2075	- 2,070.0-	-	5	6	7	13						м		÷				2075	5	Ŧ				- 1 -			
		-																	2,073.0	T 23.5							
	2,071.8-	23.5	2	4	4				.			w		2,070.3			25		_,0,0.0	+	3	6	7	· · •		· · · · ·	

IT۱	BUNCON	/IBE			GEOL	OGIST	Goodnight	, D.J.		
Γto	-Y- Sta. 77	+80.27	, 86.50'	RT					GROUN	D WTR (ft)
	OFFSET	23 ft LT	-		ALIG	MENT	-NW5A-		0 HR.	Dry
	NORTHING	<b>6</b> 77,	840		EAST	<b>ING</b> 92	0,320		24 HR.	FIAD
		DRILL	METHOD	) H.S	S. Augers			HAMME	RTYPE	Automatic
	COMP. DA	TE 08	8/17/23		SURF	ACE WA	TER DEP	TH N/A	۱	
ОТ		SAMF	P. /	L	1	50				
	75 100	NO.	мо	G		50	IL AND ROC	K DESC	RIPTION	I
					. 2,096.5		GROUNE		CE	0.0
					2,095.5 -2,095.3	A	ASF GGREGATE	PHALT BASE C	OURSE	1.0
			М		. 2,092.8	BROWI	ROADWAY E	EMBANK		A-4) 3.7
			M		2,090.5	BROW	WITH TRA	CE GRA	AVEL	6.0
		11	м			RED-E	BROWN, ME			FF,
			м			RED-	SANDY TAN, LOOS			E,
	+ • • • •						SAND (A-2-4			
•										
			M	-						
					<u> </u>					
			м							
					_					
•			M		2,071.5	Boring T	erminated a	t Elevatio	on 2 071	25.0 5 ft In
					<u> </u>	F	Residual Silt	y SAND	(A-2-4)	
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### GEOTECHNICAL BORING REPORT BORE LOG

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	3416					IP 1-2513			Y BUNCO				GEOI	.OGIST Goodnight, D.J.	1		<b>3</b> 34165.					<b>P</b> 1-2513		COUNTY
				ewall 5				6.50' RT t	to -Y- Sta. 77		86.50'	' RT			GROUND WTR (ft)				Nois	ewall 5			3+46.57, 8	6.50' RT to
BOR	ing no	<b>).</b> NW/	AL_5		S	TATION	16+62		OFFSET	21 ft LT			ALIG	MENT -NW5A-	0 HR. Dry	BOR	NG NO.	B-24			SI	TATION 1	8+03	
COL	LAR EI	<b>_EV.</b> 2	,098.1	ft	Т	OTAL DEP	<b>TH</b> 20.0 ft	t	NORTHIN	<b>G</b> 677,8	15		EAST	<b>ING</b> 920,418	24 HR. FIAD	COL	LAR ELE	<b>V.</b> 2,0	088.3 f	ť	т	OTAL DEP	<b>TH</b> 25.1 fl	t
DRILL	. RIG/HA	MMER E	FF./DAT	E CG2	0446 D	iedrich D50 8	87% 05/10/202	22		DRILL	/ETHO	DDH.	S. Augers	НАММ	ER TYPE Automatic	DRIL	L RIG/HAM	MER EF	F./DATE	E N/A				
DRIL	LER	Odom, C	<b>)</b> .		S	TART DAT	<b>E</b> 08/17/2	3	COMP. DA	<b>TE</b> 08/	17/23		SURF	ACE WATER DEPTH N/	Ά	DRI	LER N/	A			SI	FART DAT	E 01/12/0	4
ELEV			H BLC	w co	JNT		BLOWS	PER FOO	Т	SAMP.		L		SOIL AND ROCK DES	CRIPTION	ELEV	DRIVE	DEPTH	BLO	W CO	UNT		BLOWS	PER FOOT
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	Имо	I G	ELEV. (f		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50 7
2100																2090		_						
		<u>†</u>											2,098.1	GROUND SURF.			1					· · · · · ·		· · · · ·
	2,095.	$\frac{1}{22}$											2,097.0 2,096.9⁄	ASPHALT	1.1 COURSE / 1.3		1							
2095		1 4.0	3	3	4	]  •				-	м		_	ROADWAY EMBAN	KMENT	2085	2,084.7	- 3.6	3	4	4			
		Ŧ	2	2	3	<b>•</b> 5					м		F	TAN-BROWN, LOOSE, S (A-2-4) WITH TRACE OR	GANICS AND		Ŧ			-	-	. <b>•</b> 8		
2090	2,091.	6 <u>+ 6.5</u> +	1	2	2						м			TRACE MICA		2080	1							
	2,089.	1 9.0	+ 1	2	6	<u> </u>					м		2,089.6_ _	RESIDUAL	8.5		2,079.7	- 8.6	2	3	4			
		‡			-	- <b>●</b> 8    - <b> </b>							2,086.1	TAN-BROWN, MED. STIF SANDY SILT (A			‡							
2085	2.084	+ 6+ 13.5				•  • • •			·   · · · · ·			0.000.00		BROWN, LOOSE TO MED.	DENSE, SILTY	2075	2,074.7	- 13.6						
	,	+	2	4	6	10			 		м		-	SAND (A-2-4) WITH TR			1		1	2	2	<b>•</b> 4	· · · · ·	· · · · ·
		t				.       .							2,081.1		17.0		1							
2080	2,079.	6+ 18.5	2	3	5					-	м		-	BROWN, MED. STIFF TO S SILT (A-4) WITH LITT	LE MICA	2070	2,069.7	- 18.6	WOH	WOH	1	j		
		<u>+</u>		-	-	<u>•</u> 8				4		- <u>8080</u>	2,078.1	Boring Terminated at Elevat			1						· · · ·	
		ł											-	Residual Sandy SIL	.T (A-4)	2065	2.064.7							
		Ŧ											F				2,004.7	. 23.0	3	2	4	<b>♦</b> 6 <sup>°</sup> • •		
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### GEOTECHNICAL BORING REPORT BORE LOG

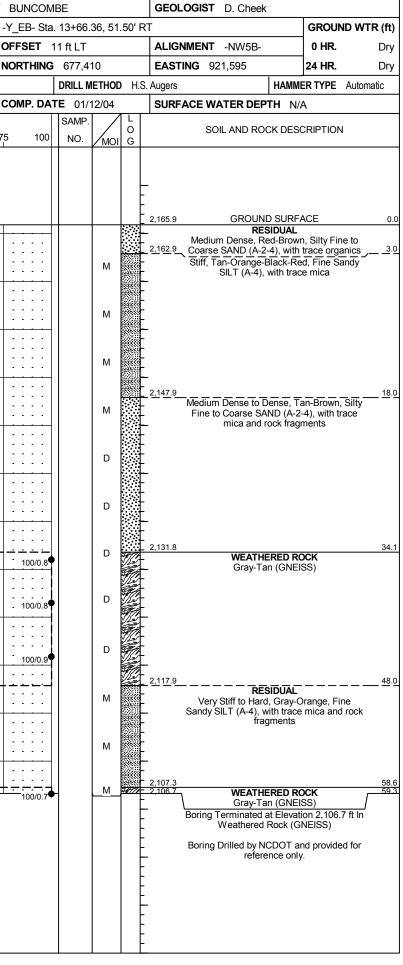
BORING NO.         B-25         STATION         19+28         OFFSET         35 ft RT         ALIGNMENT -NW5A-         0 HR.         5.3           COLLAR ELEV.         2,087.5 ft         TOTAL DEPTH         19.3 ft         NORTHING         677,696         EASTING         920,661         24 HR.         2.1           DRILL RIGHAMMER EFF./DATE         NA         DRILL METHOD         H.S. Augers         HAMMER TYPE         Automatic         DRILL RIGHAMMER EFF./DATE         COLLAR ELEV.         2,111.7 ft         TOTAL DEPTH         20.0 ft         NORTHING 677,708         EASTING 920,855         24 HR.         2.1           DRILL RIGHAMMER EFF./DATE         N/A         START DATE         01/12/04         SURFACE WATER DEPTH         N/A         DRILL RIGHAMMER EFF./DATE         C620446 Diedrich D50 87% 05/10/2022         DRILL METHOD         H.S. Augers         HAMMER TYPE           DRILL RIGHAMMER EFF./DATE         01/12/04         SURFACE WATER DEPTH         N/A         DRILL RIGHAMMER EFF./DATE         C620446 Diedrich D50 87% 05/10/2022         DRILL METHOD         H.S. Augers         HAMMER TYPE           Q000         DEPTH         BLOW COUNT         BLOW SPER FOOT         SAMP.         N/A         D         SAMP.         N/A         D         SAMP.         N/A         D         SOIL AND ROCK DESCRIPTION	D WTR (ft)
COLLAR ELEV.         2,087.5 ft         TOTAL DEPTH         19.3 ft         NORTHING         677,696         EASTING         920,661         24 HR.         2.1           DRILL RIGHAMMER EFF./DATE         N/A         DRILL METHOD         H.S. Augers         HAMMER TYPE         Automatic         DRILL RIGHAMMER EFF./DATE         CG204/4         Died ich         DS08/70/2022         DRILL METHOD         H.S. Augers         HAMMER TYPE         Automatic         DRILL RIGHAMMER EFF./DATE         CG204/4         Died ich         DS08/70/2022         DRILL RIGHAMMER EFF./DATE         DS08/70/2022         DRILL RIGHAMMER EFF./DATE         DS08/70/2022         DRILL RIGHAMMER EFF./DATE         DS08/70/2022         DRILL RIGHAMER EFF./DATE         DS08/70/2022         DS08/70/2023         DS08/70/2023         DRILL RIGHAMER EFF./DATE         DS08/70/2024/20000         DRILL RIGHAMER EFF./DATE         DS08/70/2024/20000         DRILL RIGHAMER EFF./DATE         DS08/70/2024/20000 <td< th=""><th></th></td<>	
DRILL RIG/HAMMER EFF.JATE       N/A       DRILL METHOD       H.S. Augers       HAMMER TYPE       Automatic         DRILL RG/HAMMER EFF.JATE       N/A       START DATE       01/12/04       COMP. DATE       01/12/04       SURFACE WATER DEPT H       N/A         DRILL RG/HAMMER EFF.JATE       N/A       START DATE       01/12/04       COMP. DATE       01/12/04       SURFACE WATER DEPT H       N/A         ELEV       DRILL RIG/HAMMER EFF.JATE       0.5ft	Dry
DRILLER         N/A         START DATE         01/12/04         COMP. DATE         01/12/04         SURFACE WATER DEPTH         N/A           ELEV         DRIVE (ft)         DEPTH (ft)         BLOWS PER FOOT (ft)         BLOWS PER FOOT (ft)         BLOWS PER FOOT (ft)         SAMP.         L 0         SOIL AND ROCK DESCRIPTION (ft)         DEPTH (ft)         BLOWS PER FOOT (ft)         BLOWS PER FOOT 0.5ft         SAMP.         L 0         SOIL AND ROCK DESCRIPTION (ft)         DEPTH (ft)         BLOWS PER FOOT 0.5ft         SAMP.         L 0         SOIL AND ROCK DESCRIPTION (ft)         DEPTH (ft)         BLOWS PER FOOT 0.5ft         SAMP.         L 0         SOIL AND ROCK DESCRIPTION (ft)           2090         -	FIAD
ELEV       DEPTH       BLOW COUNT       BLOWS PER FOOT       SAMP.       L       SOIL AND ROCK DESCRIPTION         (ft)       0.5ft	Automatic
(ii)       (ii)       0.5ft       0	
(ii)       (ii)       0.5ft       0	
2,087.5     GROUND SURFACE     0.0       2,087.5     GROUND SURFACE     0.0       2,087.5     GROUND SURFACE       2,087.5     GROUND SURFACE	
2,087.5     GROUND SURFACE     0.0       2,087.5     GROUND SURFACE     0.0       2,087.5     GROUND SURFACE	
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2075 2,074.7+ 12.8 1 1 1 2 0 1 1 1 2 0 1 1 1 2 0 1 1 1 2 0 1 1 1 1	-4)
Boring Terminated at Elevation 2,068.2 ft In Boring Terminated at Elev	20.0
- Domy reminated at Elevation 2, 20 -	ft In
Boring Drilled by NCDOT and provided for reference only.	

### GEOTECHNICAL BORING REPORT BORE LOG

<b>WBS</b> 34165.1.2	TIP 1-2513AA COUN	TY BUNCOMBE	GEOLOGIST A. Blackmore		WBS 34165	.1.2	Т	TIP 1-2513AA COUN	TY BUNCOMB	E	GEOLOGIST A. Blackmore	
SITE DESCRIPTION Noisewall 54	- i	to -Y- Sta. 77+80.27, 86.50' RT	- [	GROUND WTR (ft)	SITE DESCRI	PTION Noise	wall 5B from	om -Y- Sta. 77+14.17, 99.00' RT			i	GROUND WTR (ft)
BORING NO. Y_7600R	STATION 22+55	OFFSET 16 ft LT	ALIGNMENT -NW5A-	0 HR. Dry	BORING NO.			STATION 25+19	OFFSET 13		ALIGNMENT -NW5B-	0 HR. Dry
COLLAR ELEV. 2,115.5 ft	TOTAL DEPTH 25.0 ft	NORTHING 677,663	EASTING 920,991	24 HR. Dry	COLLAR ELE			TOTAL DEPTH 25.0 ft	NORTHING		EASTING 921,179	24 HR. Dry
DRILL RIG/HAMMER EFF./DATE M&W				MER TYPE Automatic				2 GeoProbe 7822 DT 88% 04/18/2022		DRILL METHOD H.S	_ <b>*</b>	IMER TYPE Automatic
			SURFACE WATER DEPTH	N/A							SURFACE WATER DEPTH	N/A
ELEV ELEV (ft) (ft) (ft) 0.5ft 0.5ft			SOIL AND ROCK DE		ELEV ELEV (ft) (ft)	(ft) 0.5ft					SOIL AND ROCK DE	SCRIPTION
DRILLER         B. Lumpkin           ELEV (ft)         DRIVE ELEV (ft)         DEPTH (ft)         BLOW COU 0.5ft           2120         0         0.5ft         0.5ft           2115         2,115.5         0.0         -           2115         2,115.5         0.0         -           2110         2,115.5         0.0         -           2110         2,109.5         6.0         1         1           2105         -         1         1         1           2105         -         1         1         1           2,102.0         13.5         -         -         2           2,097.0         18.5         -         -         -           2,092.0         23.5         4         7         -           2,092.0         23.5         4         5         -		75     100     NO.     MOI     G       .     .     .     .     .       .     .     .     <	ELEV. (ft)	SCRIPTION         DEPTH (ft)           RFACE         0.0           NKMENT         wm-Gray, Fine to           4(2)), with trace         a           12 = 4.5%         8.0           L	2125 2,123.1 2120 2,119.6 2,117.1 2115 2,114.6 2,110 2,109.6	DEPTH BLOV (ft) 0.5ft 0.0 0.0 0.0 1 - 3.5 - 3.5 - 3 6.0 4 - - - - - - - - - - - - -	Y COUNT       0.5ft     0.5ft       1     3       3     4       4     5       3     4       4     5       3     5       6     7	• • • • • • • • • • • • • •	75 100	SAMP. NO. MOI G SS-317 24% M M M M M	SURFACE WATER DEPTH SOIL AND ROCK DE 2,123.1 GROUND SUF RESIDUA Soft to Medium Stiff, Rec Plastic Silty CLAY 2,117.6 Medium Stiff to Stiff, Br Fine to Coarse Sandy SIL mica 2,100.1 Medium Dense, Brown, S 2,098.1 SAND (A-2 Boring Terminated at Elec Residual Silty SAN Surficial Organic Soil fr Boring Drilled by ECS a reference of	ESCRIPTION  RFACE 0.0  L J-Brown, Slightly (A-7-5(4))  Down-Tan-White, T (A-4), with trace  LITY Fine to Coarse 25.0  ration 2,098.1 ft In D (A-2-4)  Dom 0.0 - 0.3 feet and provided for

### GEOTECHNICAL BORING REPORT BORE LOG

	BORE LOG				
TIP 1-2513AA COUN	TY BUNCOMBE	GEOLOGIST A. Blackmore	WBS 34165.1.2	TIP 1-2513AA COUNTY	E
from -Y- Sta. 77+14.17, 99.00' RT	to -Y_EB- Sta. 13+66.36, 51.50	GROUND WTR (ft)	SITE DESCRIPTION Noisewall 5	B from -Y- Sta. 77+14.17, 99.00' RT to	-Y_
STATION 27+27	OFFSET 2 ft LT	ALIGNMENT -NW5B- 0 HR. Dry	BORING NO. B-26	STATION 29+78	OF
TOTAL DEPTH 45.0 ft	<b>NORTHING</b> 677,485	<b>EASTING</b> 921,357 <b>24 HR.</b> Dry	COLLAR ELEV. 2,165.9 ft	TOTAL DEPTH 59.3 ft	NO
032 GeoProbe 7822 DT 88% 04/18/2022	DRILL METHOD H.	Augers HAMMER TYPE Automatic	DRILL RIG/HAMMER EFF./DATE N/A		
<b>START DATE</b> 05/13/22	COMP. DATE 05/13/22	SURFACE WATER DEPTH N/A	DRILLER N/A	<b>START DATE</b> 01/12/04	со
	0T SAMP. ↓ C 75 100 NO. MOI G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft			75 
1 1 1 1 1 1			2170		
		Very Loose to Dense, Brown-Gray, Silty Fine to Coarse SAND (A-2-4(0)), with trace mica and rock fragments	2165		
9	· · · · · · M		2,162.3 3.6 3 5	7	-   -
	M	_	2160		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		-	2155		
13	· · · · · · · · · · · · · · · · · · ·	Stiff to Very Stiff, Brown-Gray-White-Tan, Fine to Coarse Sandy SILT (A-4), with trace	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	9 · · · · · · · · · · · · · · · · · · ·	
18              34	   М		2,147.3 <sup>+</sup> 18.6 7 8 2145	14 · · · · · · · · · · · · · · · · · · ·	
7	· · · · · · · · · · · · · · · · · · ·		2,142.3 23.6 2140 12 18	26	·   ·   ·
			2,137.3 28.6	16	·   ·
		-	2 132 3 33 6		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	·   · · · ·	2111.8 43.	2130		-
	м	Dense, Brown, Silty Fine to Coarse SAND <u>2,109.8</u> (A-2-4) 45.1 Boring Terminated at Elevation 2,109.8 ft In		····· ··· ····	-
		Surficial Organic Soil from 0.0 - 0.2 feet	2120 43.6 29 45	55/0.4	.   .   .
		reference only.	2,117.3 48.6 6 9 2115 6 9	15	
		-	2,112.3 53.6 2110 11 15	22	.   .   .
			2,107.3 58.6 50 50/0.2		
	STATION       27+27         TOTAL DEPTH       45.0 ft         I032 GeoProbe       7         1       4       05/13/22         NT       BLOWS PER FOC         0       25       50         1       4           8       13           9             1       4             1       4             9        13            17              13              18              9              13              14              9 <td>STATION         27+27         OFFSET         2 ft LT           TOTAL DEPTH         45.0 ft         NORTHING         677,485           1032 GeoProbe         7822 DT 88% 04/18/2022         DRILL METHOD         H.S           START DATE         05/13/22         COMP. DATE         05/13/22           NO.         MOI         G         G         MOI         C           0         25         50         75         100         NO.         MOI         G           1         4             M         M           8              M         M           9              M         M           11         4            M         M           9             M         M           12%                 13             &lt;</td> <td>STATION         27+27         OFFSET         2 ft LT         ALIGNMENT         Image: Constraint of the state of the st</td> <td>STATION         27+27         OFFSET         2 I.T.T         ALIGNMENT -NV56- EASTING 921,357         0 HR. 2 HR. DV         DV           TOTAL DEFTH         45.0 ft         NORTHING 677,485         EASTING 921,357         2 HR. DV         DV         EORING NO. 5-26         COLLAR ELEV. 2,165.9 ft           STATE OF 7282 DT SIN UNISO222         DBRU. BEHOO NS. Augers         HAMBER TYPE         Automatic         DRUL REGNAMERE FF.DATE NA           STATE OF 7282 DT SIN UNISO22         COMP. DATE         COMP.</td> <td>STATION 27+27         OPFSET 2 RLT         ALGAMENT -NVGE         0 HR. Dry           TOTAL DEPTH 45.01         NORTHING 67,485         EASTING 221:37         24 HR. Dry         DOL         COLLAR ELEV. 2165 9 It         TOTAL DEPTH 45.01           START DATE 0011922         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA           START DATE 0011922         COMP DATE 0011922         SURFACE WATER DEPTH NA         SURFACE WATER DEPTH NA         DRUL DEVIDENCE NA           1         25         50         75         00         NO         SURFACE WATER DEPTH NA           2010         25         50         75         00         NO         SURFACE WATER DEPTH NA           1         2156.8         GROUND SURFACE         Col         RESIDUAL         SURFACE WATER DEPTH NA           1         2156.8         GROUND SURFACE         Col         RESIDUAL         RESIDUAL           100         9         100         100         2156.8         GROUND SURFACE         Col           11         100         100         100         100         100         100         100           1200         100         100         100         100         100         100         100</td>	STATION         27+27         OFFSET         2 ft LT           TOTAL DEPTH         45.0 ft         NORTHING         677,485           1032 GeoProbe         7822 DT 88% 04/18/2022         DRILL METHOD         H.S           START DATE         05/13/22         COMP. DATE         05/13/22           NO.         MOI         G         G         MOI         C           0         25         50         75         100         NO.         MOI         G           1         4             M         M           8              M         M           9              M         M           11         4            M         M           9             M         M           12%                 13             <	STATION         27+27         OFFSET         2 ft LT         ALIGNMENT         Image: Constraint of the state of the st	STATION         27+27         OFFSET         2 I.T.T         ALIGNMENT -NV56- EASTING 921,357         0 HR. 2 HR. DV         DV           TOTAL DEFTH         45.0 ft         NORTHING 677,485         EASTING 921,357         2 HR. DV         DV         EORING NO. 5-26         COLLAR ELEV. 2,165.9 ft           STATE OF 7282 DT SIN UNISO222         DBRU. BEHOO NS. Augers         HAMBER TYPE         Automatic         DRUL REGNAMERE FF.DATE NA           STATE OF 7282 DT SIN UNISO22         COMP. DATE         COMP.	STATION 27+27         OPFSET 2 RLT         ALGAMENT -NVGE         0 HR. Dry           TOTAL DEPTH 45.01         NORTHING 67,485         EASTING 221:37         24 HR. Dry         DOL         COLLAR ELEV. 2165 9 It         TOTAL DEPTH 45.01           START DATE 0011922         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA         DOLL DEVIDENCE NA           START DATE 0011922         COMP DATE 0011922         SURFACE WATER DEPTH NA         SURFACE WATER DEPTH NA         DRUL DEVIDENCE NA           1         25         50         75         00         NO         SURFACE WATER DEPTH NA           2010         25         50         75         00         NO         SURFACE WATER DEPTH NA           1         2156.8         GROUND SURFACE         Col         RESIDUAL         SURFACE WATER DEPTH NA           1         2156.8         GROUND SURFACE         Col         RESIDUAL         RESIDUAL           100         9         100         100         2156.8         GROUND SURFACE         Col           11         100         100         100         100         100         100         100           1200         100         100         100         100         100         100         100



### GEOTECHNICAL BORING REPORT BORE LOG

WBS	34165.1	.2			TI	<b>&gt;</b> 1-3	2513A	Ą	(	COUN	TY E	BUNCO	MBE			GE	EOLO	GIST	A. Black	kmore				WBS	<b>S</b> 3416	65.1.2				TIP	<b>P</b> 1-25	13AA		СО	UNTY	BUNCC	MBE			0	GEOLO	ogis	<b>Г</b> А. Е	Blackm	ore			
				vall 5					7, 99.0	00' RT					51.50'						GRO		R (ft)						/all 5B	_				99.00'		-Y_EB- S			51.50							GROL	JND W	/TR (ft)
											FFSET				_			-NW5B	-	0 HI		Dry		ring no					_	ATION					OFFSET					ALIGNI					0 HR		Dry	
		,									ORTHIN		,				<b>IG</b> 92	1,734		24 H		Dry		LAR E					_	TAL DI			-		NORTHIN	,				EASTIN	NG	921,94	7		24 HR		Dry	
		AMMER EFF./DATE         M&W1032 GeoProbe 7822 DT 88% 04/18/2022           B. Lumpkin         START DATE         05/12/22         COMP.													I.S. Aug						E Automa	tic						M&W1	-	eoProbe						DRILL				-					ER TYPE	Autor	matic	
DRILL	.ER B.L	umpkin	ו			ART	DATE					OMP. D				SU	JRFAC	CE WA	TER DE	PTH	N/A				LLER						ART D					COMP. D			2	_ <u> </u> s	SURFA	ACE V	VATE	R DEP	TH N/	۹		
ELEV (ft)	DRIVE ELEV	EPTH (ft)	BLOW			0	2		NS PE 50	R FOC	DT 75	100		IP.	/   0			SOI	L AND R	OCK DE	SCRIPTI			ELEV (ft)				BLOW		NT	0	E 25	BLOWS	50 PER	<sup>:</sup> ООТ 7	5 10	SAMP	1 /				S			K DES	CRIPTIC	DN	
(,	(ft)	(14)	0.511 1	J.5IL	0.51	0	2	5	50		13	100	D NC	<sup>.</sup> / N	<u>101</u> G	ELE	V. (ft)					DEP	TH (ft)	()	(ft)		0.	.511 0	J.511 1	0.511	0	25		50	,	5 10 I	NO.	<u></u> Μ	OI G	+								
2160	2.158.5															2,15	8 5		GROU	IND SUF	REACE		0.0	2140		.0 0.	.0	3	2	3	5.						SS-28	0 19	%	2,1	140.0		G		SURF	ACE		0.0
	2,158.5		2	2	2	<b>4</b>		•••	•••					N	л L 🛛	8 			ROADWA	Y EMBA	NKMENT		0.0		0.126	 .5 <del></del> 3.	_				T <sup>°</sup>			.   .						Ł		Soft to Fine	o Very S to Coai	Stiff, Br rse Sar	own-Wi Idy SILT	ite-Tan- (A-4(0)	-Black, ), with	
2155	2.155.0	3.5				1		• •	•••							E			e Sandy S	SILŤ (A-4	а-втоwп, 4(0)), with			2135	;	+		5	2	1	<b>J</b> :							M		£					little mi		,,	ľ
	2.152.5		2	2	5		·	•••		· · ·			SS-2	89 15	» L					gravel					2,134.	.06.	.0	3	2	4				.   .		· · · ·	SS-28	2 20'	%	ł								ľ
	<i>'</i> †		5	5	5		10	•••			-			N	1	2,15				ESIDUA			6.5			. <u>5 8</u> .	.5	3	4	3	1°			.   .				М		ł								
2150	2,150.0	8.5	3	3	5		8 • •	<u> </u>				 			Л						ed-Brown- T (A-4), w			2130	)	+				Ĭ	<b>Q</b> 7		 	<u> </u>						ł								
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2145	2,145.0	13.5		_	_	·										L								2125		. <u></u>	5.5	6	9	11		<b>0</b> 20		·   ·				M		Ł								
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2140	2,140.0	18.5	6	9	10	<u>.</u>								N	1									2120		+			Ĵ		· · · ·	• <u></u> 21		·   -						1								
	+						t t	•••	•••	· · ·	:														2 1 1 6	+ .5+ 23	2.5						· · ·	·   ·		· · · ·												
2135	2,135.0	23.5	_	10		·					•					<u> </u>								2115				6	11	17		· · )	28	·   ·				M		Ł								
	1		5	10	13	:		23	: :	· · ·	:			N	Λ	-										ŧ							 	.   .		· · · ·				ł								
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2130	2,130.0	28.5	10	17	19	<u>.</u>			36 •					N	1									2110	)	+			-			14								2,1	<u>110.0</u> E	Boring				on 2,11	0.0 ft In	30.0
	1					:		:/·	•••	· · ·						-										ŧ														Ł					ndy SIL			
2125	2,125.0	33.5	-10			Ŀ		<u>;':</u>			•					2,12	5.5N	Medium	Dense F	Brown-W	/hite, Silty	Fine to	<u>33.0</u>			1														Ł						0.0 - 0.4		
	1		13	14	14			•28-		· · ·	•			N	Λ						with trace					ŧ														Ł		Bori	ng Drill		ECS and nce only	provide	d for	
	1					1:		· ·		: : :						- 2,12	0.5						38.0			ŧ														Ł								
2120	2,120.0	38.5	4	3	3		· · ·							N	л	E	N	Medium Sar	Stiff, Gra	ay-White	e, Fine to th little m	Coarse				+														F								
	‡					-				· · ·						- -		oui		(, t i ), <b>u</b>						ŧ														F								
2115	2,115.0	43.5	11	10	-10	Ŀ		· · ·			•					2,11	<u>5.5</u>	Dense	Brown-W	/hite_Sil	ty Fine to	Coarse	<u>43.0</u>			1														F								
	‡		11	16	18			- 🍋 34	4 •		•			N	/	2,11	3.5	SA	AND (A-2-	-4), with	trace mic	a _	45.0			ŧ														Ę								
	1															F	В	F	Residual S	d at Elev Silty SAN	ation 2,1 ND (A-2-4	) )				ŧ														Ę								
	+															F		Surficia	al Organio	c Soil fro	om 0.0 - 0	.2 feet				+														F								
27/GL	‡															ļ.		Boring			ind provid	ed for				‡														F								
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### GEOTECHNICAL BORING REPORT BORE LOG

									<u>ORE L</u>	00																	
WBS	34165.	1.2			TI	<b>P</b> 1-2513AA	4	COUNTY	Y BUNCON	1BE				GEOLOGIST A. Blackmore		v	/BS (	34165.1	1.2			ТІ	<b>P</b> 1-2	513A/	4	COUN	TY E
SITE	DESCRI	PTION	Nois	ewall 5	B from	-Y- Sta. 77+	-14.17, 99	9.00' RT to	o -Y_EB- Sta	. 13+66.	36, 51	1.50'	RT		GROUND WTR (	ft) S	ITE DE	ESCRIF	PTION	Noise	ewall 5	B from	ו -Y- St	a. 77+	+14.17, 9	99.00' RT	to -Y
BOR	NG NO.	Y_88	00R		ST	ATION 354	+35		OFFSET	11 ft LT				ALIGNMENT -NW5B-	0 HR. D	ry E	ORING	g no.	Y_900	00R		S		<b>1</b> 37·	+37		OF
COL	AR ELE	<b>V.</b> 2,7	130.4 1	ft	тс		<b>-1</b> 25.0 ft		NORTHING	677,32	26		1	EASTING 922,143	24 HR. D	ry C	OLLA	R ELE	<b>V.</b> 2,0	97.9 ft	t	т	OTAL C	DEPTH	<b>1</b> 25.0	ft	NO
DRILL	RIG/HAMI	MER EF	F./DAT	E M&V	V1032 G	GeoProbe 7822	DT 88% 04	/18/2022	•	DRILL M	IETHO	DH.	I.S. A	ugers HAMM	IER TYPE Automatic		RILL RI	G/HAMN	IER EFF	F./DATE	M&\	V1032 (	GeoProb	e 7822	DT 88% (	04/18/2022	
DRIL	LER B.	Lumpk	kin		ST	ART DATE	05/12/22	2	COMP. DA	TE 05/*	12/22			SURFACE WATER DEPTH N	/Α		RILLE	<b>R</b> B. I	Lumpki	in		S		DATE	05/12/2	22	cc
ELEV	DRIVE ELEV			w co		-		PER FOOT	Г	SAMP.	<b>V</b>	L							· · ·		w co					PER FOO	т
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	5 5	50	75 100	NO.	мо	0   G	EI	SOIL AND ROCK DES	CRIPTION			ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	5	50	75
2135		-											-			2	100	097.9									
2130	2,130.4	0.0	2	4	5	   <b> </b>					м		- 2,	,130.4 GROUND SURF RESIDUAL		0.0 2	195	097.9		2	2	3	•5·	 			
	2,126.9	25				· • • • •	· · · · ·						-	Medium Stiff to Stiff, Brow Coarse Sandy SIL	n-Tan, Fine to			091.9		2	3	2	<b>•</b> 5	::	· · · · ·		
2125	· +		4	4	6	10					м		-	,		2	90	+		3	2	2	•	::			
	2,124.4		3	3	5						м		E.	400.4			2,	089.4 <del>1</del> I	8.5	4	7	8		<b>)</b> 15			
	2,121.9	8.5	6	10	9	10					м			122.4 Medium Dense, Brown-Ta Coarse SAND (A-2-4), wi	in, Silty Fine to	<u>8.0</u>		Ŧ						[] []			
2120	-	<u>-</u>											+	Coarse Sand (A-2-4), w	ith trace mica	2	) <u>85</u> _2,	084.4	13.5	2	5	7		 			
	2,116.9	13.5					· · · · ·	· · · ·					+					‡		2	Ū	,	· · •	12 . 	· · · ·	.	
2115	+		9	9	11						M		L			2	2 080	079.4	18.5					<u>i</u> .			·   ·
		10.5				· · · /·	· · · · · · · ·		·   · · · · ·				2,	,112.4	1	8.0				3	5	11		•16	· · · · ·		·   ·
2110	2,111.9	18.5	7	7	7	<b>1</b> 14					м		F	Stiff, Brown-Tan, Fine to ( SILT (A-4)	Coarse Sandy		)75	074.4	23.5					† :   	· · · · ·		
	+							· · · ·					- - 2,	,107.4	2	3.0	<u> </u>		20.0	8	6	6		12	· · · ·		· · ·
	2,106.9	23.5	16	26	26			••••••••••••••••••••••••••••••••••••••	· · · · · ·		м		:F -	Very Dense, Brown, Silty F ,105.4 SAND (A-2-4	ine to Coarse	5.0		‡									
	+												F	Boring Terminated at Eleva Residual Silty SAND	tion 2,105.4 ft In			+									
	ļ												F	Surficial Organic Soil from	. ,			Ŧ									
	-	-											F	Boring Drilled by ECS and				Ŧ									
	Ŧ												F	reference onl	y.			Ŧ									
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NODOI BORE DOUBLE IZOIS NOISEWALLS.GFU NO_DOI.GFUI 8/19/23	+	-											F					+									
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٢١	' E	UN	C	SN	۱B	E				GEOL	ogis	Т	A. Blac	kmore				
tc	) -Y_	_EE	3- 3	Sta	. 1	13+66.	36, 51	.50' I	RT	-						GROU	ND W	TR (ft)
	OF	FS	ET		24	ft RT				ALIGN	MEN	т	-NW5B	-		0 HR.		Dry
	NC	RT	HII	NG	i	677,27	70			EASTI	NG	92	2,334			24 HR.		Dry
						ORILL M	ETHOD	н.	S	Augers				HAI	MME	R TYPE	Autor	natic
	СС	MF	P. C	)A	TE	05/1	12/22			SURFA		NA	TER DE	PTH	N/A	4		
т						SAMP.	$\left  \right $	L O					IL AND R				.1	
	75 I		1	00		NO.	моі	G				501	IL AND R		ESC		N	
									- :	2,097.9				ND SU		CE		0.0
•		•	•	÷			М		Ľ		Medi	ium	n Stiff, Re	ESIDU/		ine to Co	arse	
-	+			-					F				Sand	y CLAY	′ (A-	6)		
•	-	:	:	:			М		Ŀ	2,092.4				to Very	Ctif			5.5
•	-	•	•	•			м		Ŀ		Re	ed-l	Brown-Ta	an-Whit	e-G	ray, Fine	to	
•		•	:	:			м		F		Cuar	36	Sandy SI and re	CT (A-4 ock frag	ime	nts	muCd	
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•		•	•	.	-		М			2,072.9	Boring	gТ	erminate	d at Ele	vati	on 2,072.	9 ft In	25.0
									_				Residual	-				
									-		Sur	ficia	al Organi	c Soil fr	om	0.0 - 0.4	feet	
									F		Bor	ring	g Drilled b refe	erence of	and only	provided	for	
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### GEOTECHNICAL BORING REPORT BORE LOG

										-																		_	
	34165					<b>P</b> 1-2						UNCON					OGIST D. Cheek		-	<b>3</b> 3416						-2513A		COUN	
SITE	DESCR	IPTION	Nois	ewall 5					7, 99	.00' RT	_	_EB- Sta			1.50'			GROUND WTR (ft)	SITE	DESCR	IPTION	Nois	ewall	5B fro	m -Y- 3	Sta. 77	7+14.17,	99.00' R1	Γ to -Y
BORI	NG NO.	B-27			S	ΓΑΤΙΟ	<b>N</b> 38	8+58			OF	FSET 4	4 ft RT			ALIG	NMENT -NW5B-	<b>0 HR.</b> 10.1	BOR	ing no.	Y_92	00R		5	STATIC	<b>ON</b> 39	9+45		OF
COLI	AR ELE	<b>EV.</b> 2,	084.6 f	t	т	DTAL	DEPT	<b>H</b> 20	).1 ft		NO	RTHING	677,2	222		EAS	' <b>ING</b> 922,438	<b>24 HR.</b> 3.1	COL	LAR EL	<b>EV.</b> 2,	088.1	ft	ר	TOTAL	DEPT	<b>FH</b> 25.0	ft	NO
DRILL	RIG/HAN	IMER EF	F./DATE	E N/A									DRILL I	METHO	)D ⊦	I.S. Augers	HAN	IMER TYPE Automatic	DRILI	RIG/HAN	/MER EF	F./DAT	E M&	W1032	2 GeoPro	obe 782	2 DT 88%	04/18/2022	2
DRIL	LER N	/A			ST	TART	DATE	01/	13/04		co	MP. DA	<b>FE</b> 01/	13/04	ŀ	SURF	ACE WATER DEPTH	N/A	DRIL	LER B	. Lumpl	kin		5	START	DATE	<b>E</b> 05/12/	22	CC
ELEV	DRIVE ELEV	DEPTH	·	w col				BLO		ER FOC	DT		SAMP	· 🔨			SOIL AND ROCK DE	SCRIPTION	ELEV	DRIVE ELEV	DEPTH	· — —	W CC	1				S PER FO	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	25	5	0	75	100	NO.	И	DI G			DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	t 0	2	25	50	75
2085		<u> </u>				1.									~~~	2,084.6	GROUND SUF ALLUVIA		2090		÷								
	-	t					· · ·	· ·		· · ·		· · ·				, l , l	Very Loose, Brown-Gray- to Coarse SAND (A-2	Black, Clayey Fine		2,088.1	<u> </u>	2	2	1	<b>1</b>	<del></del>			
2080	2,081.0	3.6	WOH	1	1									Ŵ	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		organics and rock	fragments	2085	2,084.6	1 25				II.				.
	-	ŧ				۲. ۱				· · ·		· · · ·			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~						t	3	1	3	┨╽┥			.	.
	2.076.0	8.6				i i						· · ·			~~~	2,076.6	Loose, Brown-Gray-Blac	k Fine to Coarse8.0		2,082.1	6.0	4	3	4		7		.	
2075	-	+	1	5	4	•	9		• •					W	000		Sandy Gravel	(A-1-a)	2080	2,079.6	8.5	3	2	3	<u></u> ⊣ ∔	· · · ·			
	-	Ŧ																10.0			Ŧ		2		<b>∳</b> 5	; ; ; ;		.	.
2070	2,071.0	13.6	2	2	2	ļ Ē				· · · ·				Sot	ŏŏ	2 <u>2,071.6</u>	RESIDUA	L <u>13.0</u>	2075		Ŧ				Ì			.	
		ŧ	-	-	-	- <b>4</b> 4       ·							1	Sat.		F	Soft to Mediun Red-Brown-Orange-Black	, Fine Sandy SILT	2010	2,074.6	<del>†</del> 13.5 †	2	1	3		· · ·			
	-	‡				ן <u>ו</u>	· · ·			· · · · · ·	-   -	· · · · · ·					(A-4), with trac	e mica			ŧ					· · ·		.	
2065	2,066.0	- 18.0	1	2	3	_ <b>∳</b> 5-			•••					Sat.		2,064.5		20.1	2070	2.069.6	+ 18.5				/·	\		·   · · ·	
	-	ţ														Ē	Boring Terminated at Elev Residual Sandy S	vation 2,064.5 ft In		,	‡	2	5	6		<b>•</b> 11	· · · ·	·   · · · ·   · · ·	
	-	ŧ														F	Boring Drilled by NCDOT		2005		‡				:	į::		·   · · · ·	
	-	ŧ														F	reference o	nly.	2065	2,064.6	23.5	3	3	6		↓ ↓			
	-	ł														E					<u>+</u>			-	+	9			

١T	BUNCON	1B	E			GEOLO	GIST	A. Blackm	ore		
T to	o -Y_EB- Sta	a. 1	13+66.3	36, 51	.50' R	Т				GROUN	ID WTR (ft)
	OFFSET	28	ft RT			ALIGN	IENT	-NW5B-		0 HR.	Dry
	NORTHING	;	677,21	5		EASTIN	<b>IG</b> 92	2,527		24 HR.	Dry
2		C	ORILL M	ETHOD	H.S.	Augers			HAMME	R TYPE	Automatic
	COMP. DA	TE	<b>05/1</b>	2/22		SURFA	CE WA	ATER DEPT	TH N/A	1	
ОТ	-		SAMP.		L	1					
	75 100		NO.	моі	O G		50	IL AND ROC	K DESC	RIPTION	
					F	2,088.1		GROUNE	SURFA	CE	0.0
				М				ROADWAY E Brown, Fine to			шт
						2,085.1		(/	<del>\</del> -4)		<u>3.0</u>
			SS-260	22%	N		Sof	t to Medium	UVIAL Stiff, Gra	ay-Brown	
				М			Modera	ately Plastic with tra	Silty CLA ace mica	NY (A-7-6 I	(9)),
				М		-					
						2,075.1					13.0
				W	Ŀ		Soft to	Stiff, Gray-B	IDUAL Frown, Fi	ne to Coa	arse
• •					8		Sandy	SILT (A-4), v	vith trace	e to little r	nica
	+ • • • •										
				М	F						
					₩F.						
				w		2,063.1					25.0
	•				F	E		erminated a Residual Sa			
									-		foot
							Sunici	al Organic S Wet Spoor	n at 23.5	feet	ieet
							Boring	g Drilled by E	CS and	provided	for
								referei	nce only.		
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### GEOTECHNICAL BORING REPORT BORE LOG

١	NBS	34165	.1.2			T	<b>P</b> 1-25	13AA	١	COUN	TY BUNC	OMBE				0	EOLOGIST D. Cheek			WB	<b>S</b> 3416	5.1.2			TI	<b>P</b> 1-2	513AA	C	OUNT
;	SITE I	DESCR	IPTION	Nois	ewall 5	B fron	n -Y- Sta	ı. 77+	14.17, 9	9.00' RT	to -Y_EB-	Sta. 13	8+66.	36, 51	1.50'	RT		GROUN	D WTR (ft)	SITE	DESC	RIPTION	I Nois	sewall 5	B from	ı -Y- St	a. 77+14.	17, 99.0	0' RT to
1	BORIN	ig no.	B-28			S	TATION	41+	-17		OFFSE	۲6ft	RT			4	LIGNMENT -NW5B-	0 HR.	Caved	BOF	RING NC	<b>).</b> B-29			SI		<b>4</b> 2+37		
•	COLL	AR ELE	<b>EV.</b> 2,0	095.5 f	ft	Т	OTAL D	EPTH	l 15.3 f	t	NORTH	<b>NG</b> 6	577,19	93		E	ASTING 922,698	24 HR.	Caved	COL	LAR EL	<b>.EV.</b> 2,	093.6	ft	т		EPTH <sup>·</sup>	14.5 ft	
1	ORILL	rig/ham	IMER EF	F./DATI	E N/A									IETHO	DH.	.S. Aı	gers HAN	MER TYPE	Automatic	DRIL	l Rig/Ha	MMER EI	FF./DAT	E N/A					
I		.ER N					TART D	ATE	01/13/0	4	COMP.				4.	_   s	URFACE WATER DEPTH	N/A		DRI	LER						ATE 0	1/13/03	
	LEV	DRIVE ELEV	DEPTH	BLC	W CO				BLOWS				AMP.				SOIL AND ROCK DE	SCRIPTION		ELE\			·					OWS PE	R F001
_	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50	75 1 I	1 00	NO.	/моі	I G	EL	EV. (ft)		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	
2	2100		-																	2095		- 						· · ·	
2	2095	- - - 2,091.7-	- 3.8					  	· · · · ·	· · · · · · · · · · · · · · · · · · ·					\_   _   _   _	- 2,0	95.5 GROUND SUF ROADWAY EMBA Very Loose, Red-Brown Coarse SAND (A-2-6),	NKMENT . Clavev Fine	0.0 to ca	2090		6 <u>- 3.0</u>	2	3	4	•   • •   • •   •		· · · ·	· · · · ·
		-  - 2,086.9-	- 8.6	3	2	5	<b>∮</b> 3         	· · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · ·			м		2,(	8 <u>7.5</u>		<u>8.0</u>	2085		6+ 8.0 + - - - 6+ 13.0	2	1	3	• • • • • • • • • • • • • •	· · · · · · · · · · · · · · · · · · ·	· · ·	· · · · ·
	2085	 - 2,081.7- -	- - - <u>13.8</u>	3	7	7		  			· · · · ·	·		w		F	Sandy CLAY (A-6), wi fragment 82.5 <b>RESIDUA</b> 80.2 Stiff, Red-Tan-Black, F	th trace rocks s L Ine Sandy SIL	s <u>13.0</u>	2080			2	3	2	<b>\$</b> 5	<u> </u>	•••+	
		-	- - - -								·					-	(A-4), with trac Boring Terminated at Elev Residual Sandy S Boring Drilled by NCDOT	ation 2,080.2 ILT (A-4)											
		-	-														reference o												
		-	- - -													-													
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		-	- - - -																										
DT 9/15/23		-	- - - -													-													
NC_DOT.G			- - - -																										
EWALLS.GP.		-	- - - -																										
E 12513 NOIS		-	-																										
DOUBLE		-	-																										
NCDOT BC		-																				‡ +							

