

DESCRIPTION TITLE SHEET LEGEND (SOIL & ROCK) SITE PLAN PROFILE BORE LOGS SOIL TEST RESULTS

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STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY COLUMBUS

PROJECT DESCRIPTION SR 1740 (OLD LAKE RD.) CONVERT AT-GRADE INTERSECTION TO GRADE SEPARATION AND SR 1735 (CHAUNCEY TOWN ROAD) CONVERT AT-GRADE INTERSECTION TO INTERCHANGE

SITE DESCRIPTION CULVERT ON -Y7- (SR 1738) OVER CREEK BRANCH NORTH AT STA. 65+70

Ι	STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
	N.C.	R-5819/R-5820	1	8

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 (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAIL

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

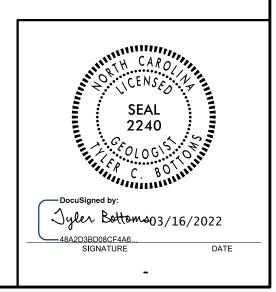
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT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

NOTES:

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

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N.O. MOORE
D.G. PINTER
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INVESTIGATED BY
DRAWN BY
CHECKED BY D.N. ARGENBRIGHT
SUBMITTED BY D.N. ARGENBRIGHT
DATE MARCH 2022



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

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

			SOIL D	ESCRIPT	ION						G	RADATION						ROCK DE	SCRIPTION
BE PENET ACCORDI IS B CONSISTE	RATED WITH NG TO THE BASED ON THE NCY, COLOR,	A CONTINUC STANDARD PE HE AASHTO S' TEXTURE, MO	ATED, SEMI-CON US FLIGHT POW INETRATION TE ISTEM, BASIC D ISTURE, AASHTO	VER AUGER AN ST (AASHTO 1 DESCRIPTIONS CLASSIFICA1	ND YIELD LESS 206, ASTM DI GENERALLY IN ION, AND OTHE	5 THAN 100 1586), SOIO NCLUDE TH R PERTINE	Ø BLOWS PI L CLASSIFI HE FOLLOWI ENT FACTOF	ER FOOT CATION NG: RS SUCH	<u>WELL GRADED</u> - INDICAT <u>UNIFORMLY GRADED</u> - IN <u>GAP-GRADED</u> - INDICATE	NDICATE	S THAT SOIL XTURE OF UN	PARTICLES ARE AL	LL APPROXIM IZES OF TWO	ATELY THE SAME SIZE.	ROCK LINE I SPT REFUSAI BLOWS IN N REPRESENTED	INDICATE L IS PEI ION-COAS D BY A	ES THE LEVE ENETRATION E STAL PLAIN ZONE OF WE	EL AT WHICH NON-CO BY A SPLIT SPOON S MATERIAL, THE TR EATHERED ROCK.	WOULD YIELD SPT REFUSAL IF TEST ASTAL PLAIN MATERIAL WOULD YIELD SAMPLER EQUAL TO OR LESS THAN Ø. ANSITION BETWEEN SOIL AND ROCK
			SITION, ANGULAR MOIST WITH INT					•				F SOIL GRAINS IS D	JESIGNATED /	BY THE TERMS:	WEATHERED	IALS AR	FICALL	Y DIVIDED AS FOLLO	IWS: AIN MATERIAL THAT WOULD YIELD SP
			END AND						ANGULAR, SUBAN						ROCK (WR)			100 BLOWS PER F	
GENERAL CLASS.		GRANULAR MATE ≤ 35% PASSING			MATERIALS	OR	GANIC MATER	IALS	MINERAL NAT			Z. FELDSPAR, MICA, 1		.ETC.	CRYSTALLINE	-	I.I.		GRAIN IGNEOUS AND METAMORPHIC RC REFUSAL IF TESTED. ROCK TYPE IN
GROUP		A-3	A-2	_	A-6 A-7	A-1, A-2	A-4, A-5				RIPTIONS WHE	IN THEY ARE CONSID			ROCK (CR)			GNEISS, GABBRO, S	
CLASS.	A-1-a A-1-b	A-2-4	-2-5 A-2-6 A-2-		A-7-5. A-7-6	A-3	A-6, A-7		C 10		COMP OMPRESSIBLE	RESSIBILITY	LL < 31		NON-CRYSTAL ROCK (NCR)	LINE		SEDIMENTARY ROO	CK THAT WOULD YEILD SPT REFUSAL
SYMBOL	000000000000000000000000000000000000000			2					MODE	ERATELY	COMPRESSIBLE COMPRESSIB PRESSIBLE		LL = 31 LL > 50	- 50	COASTAL PLA			COASTAL PLAIN S	SEDIMENTS CEMENTED INTO ROCK, BUT
% PASSING 10 5	50 MX					GRANULAR	SILT-	MUCK.	HIGH			AGE OF MATER			(CP)			SHELL BEDS, ETC.	•
*40 3	30 MX 50 MX		5 MX 35 MX 35 M	1X 36 MN 36 MI	136 MN 36 MN	SOILS	CLAY SOILS	PEAT	ORGANIC MATERIAL		GRANULAR	SILT - CLAY SOILS		R MATERIAL	-				HERING
MATERIAL PASSING #40 LL	-	- 40 MX	11 MN 40 MX 41 M				I S WITH LE OR		TRACE OF ORGANIC M LITTLE ORGANIC MATI MODERATELY ORGANIC	ATTER TER	<u>SOILS</u> 2 - 3% 3 - 5% 5 - 10%	3 - 5% 5 - 12% 12 - 20%	TRACE LITTLE SOME	1 - 10% 10 - 20% 20 - 35%	FRESH VERY SLIGHT (V SLI.)	HAMMEI ROCK (ER IF CRYSTA GENERALLY F	LLINE. RESH, JOINTS STAINED	NTS MAY SHOW SLIGHT STAINING. ROCK D, SOME JOINTS MAY SHOW THIN CLAY C SHINE BRIGHTLY. ROCK RINGS UNDER H
PI	6 MX		0 MX 11 MN 11 M			MODE	ERATE	HIGHLY ORGANIC	HIGHLY ORGANIC			> 20%	HIGHLY	35% AND ABOVE	4		CRYSTALLINE		
OF MAJOR	Ø STONE FRAGS. GRAVEL, AND		4 MX TY OR CLAYEY WEL AND SAND	SILTY SOILS	CLAYEY SOILS	ORC	NTS OF GANIC TTER	SOILS			ER LEVEL IN	BORE HOLE IMMEDIA		R DRILLING	SLIGHT (SLI.)	1 INCH. CRYSTA	. OPEN JOINT ALS ARE DUL	IS MAY CONTAIN CLAY L AND DISCOLORED. C) AND DISCOLORATION EXTENDS INTO RC . IN GRANITOID ROCKS SOME OCCASIONA RYSTALLINE ROCKS RING UNDER HAMMEN
MATERIALS GEN. RATING	SAND	0.110				FAIR TO			 			SATURATED ZONE, OF		RING STRATA	MODERATE (MOD.)				ISCOLORATION AND WEATHERING EFFECT DULL AND DISCOLORED, SOME SHOW CLA
AS SUBGRADE		EXCELLENT TO	GOOD	FAIR	to poor	POOR	POOR	UNSUITABLE			NG OR SEEP						SOUND UNDER FRESH ROCK.	HAMMER BLOWS AND	SHOWS SIGNIFICANT LOSS OF STRENGTH
			BGROUP IS ≤ LL			> LL - 30									MODERATELY				DR STAINED. IN GRANITOID ROCKS, ALL I
			NSISTENC		STANDARD	RAN	GE OF UNC	ONFINED	+			ANEOUS SYMBI	JLS		SEVERE (MOD. SEV.)	AND CA	AN BE EXCAV	ATED WITH A GEOLOG	KAOLINIZATION. ROCK SHOWS SEVERE L IST'S PICK. ROCK GIVES *CLUNK* SOUND
	IARY SOIL TYPE COMPACTNESS OR CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE (N-VALUE) (TONS/ ENERALLY VERY LOOSE < 4 LOOSE 4 TO 10											OF ROCK STRU OF ROCK STRU		SLOPE INDICATOR	SEVERE (SEV.)	ALL RO	OCK EXCEPT	GTH TO STRONG SOIL.	DR STAINED. ROCK FABRIC CLEAR AND E IN GRANITOID ROCKS ALL FELDSPARS (
GRANULA	NULAR LOOSE 4 TO 10								SOIL SYMBOL		-	DET DAT TEST BO		INSTALLATION				SOME FRAGMENTS OF YIELD SPT N VALUES	STRONG ROCK USUALLY REMAIN. > 100 BPF
MATERIA (NON-COM									ARTIFICIAL FI	AY EMBA		CORE BORING	۵	CONE PENETROMETER TEST SOUNDING ROD	VERY SEVERE (V SEV.)	BUT M	ASS IS EFFE	CTIVELY REDUCED TO	DR STAINED. ROCK FABRIC ELEMENTS AF SOIL STATUS, WITH ONLY FRAGMENTS O FROCK WEATHERED TO A DEGREE THAT
GENERAL SILT-CLI MATERIA	AY	S MEDIU	DFT M STIFF	2 4	TO 4 TO 8 TO 15		0.25 TO 0.5 TO 1 1 TO 2	0.5 1.0			MW	<pre></pre>	ELL 🕂	_ TEST BORING WITH CORE	COMPLETE	VESTIG ROCK F	GES OF ORIGI REDUCED TO	NAL ROCK FABRIC REN SOIL. ROCK FABRIC N	MAIN. <u>IF TESTED, WOULD YIELD SPT N N</u> OT DISCERNIBLE, OR DISCERNIBLE ONLY AY BE PRESENT AS DIKES OR STRINGERS
COHESIN	VE)		STIFF ARD		TO 30 30		2 TO 4 > 4	4	ALLUVIAL SOI	L BOUN	IDARY Z	△ PIEZOMETER INSTALLATION	\bigcirc	← SPT N-VALUE			AN EXAMPLE.		
			TEXTURE							R	RECOMMEN	NDATION SYME	30LS		VERY HARD				HARDNESS
U.S. STD. SIE			4 10	40	60 200						CLASSIFIED E SUITABLE WA			SSIFIED EXCAVATION - TABLE, BUT NOT TO BE	VENT HHND			WS OF THE GEOLOGIS	ARP PICK. BREAKING OF HAND SPECIMEN T'S PICK.
OPENING (MM BOULDEF	r co		4.76 2.00 DRAVEL	0.42 COARSE SAND	0.25 0.075 FINE SAND		SILT	CLAY	SHALLOW UNDERCUT		CLASSIFIED E	EXCAVATION - EGRADABLE ROCK	USED 1	IN THE TOP 3 FEET OF KMENT OR BACKFILL	HARD MODERATELY	TO DET	TACH HAND S	PECIMEN.	ONLY WITH DIFFICULTY. HARD HAMMER B
(BLDR.) GRAIN MM	305	75	(GR.) 2.0	(CSE. SD.)	(F SD. 0.25	.) 0.05	(SL.) 0.005	(CL.)	AR - AUGER REFUSAL		MED	REVIATIONS		- VANE SHEAR TEST	HARD	EXCAVA BY MOL	ATED BY HAR	D BLOW OF A GEOLOG VS.	SIST'S PICK. HAND SPECIMENS CAN BE D
SIZE IN.		3				TEDMO			BT - BORING TERMINATED CL CLAY		MOD	- MICACEOUS - MODERATELY	γ-	- WEATHERED UNIT WEIGHT	MEDIUM HARD	CAN BE	E EXCAVATED	IN SMALL CHIPS TO	S DEEP BY FIRM PRESSURE OF KNIFE (PEICES 1 INCH MAXIMUM SIZE BY HARD
	MOISTURE ERBERG LI	SCALE	STURE - (FIELD MC DESCRI	DISTURE	GUIDE FOR F			SCRIPTION	CPT - CONE PENETRATION CSE COARSE DMT - DILATOMETER TES	ST	ORG PMT -	NON PLASTIC - ORGANIC - PRESSUREMETER T		DRY UNIT WEIGHT	SOFT	CAN BE		GOUGED READILY BY	KNIFE OR PICK. CAN BE EXCAVATED IN E BY MODERATE BLOWS OF A PICK POIN
	- SATURATED - USUALLY LIQUID:VERY WET, USUAL (SAT.) FROM BELOW THE GROUND WATER								DPT - DYNAMIC PENETRA e - VOID RATIO F - FINE	TION TE	SD SL	- SAPROLITIC SAND, SANDY SILT, SILTY	ST -	SPLIT SPOON SHELBY TUBE	VERY SOF T	CAN BE	E CARVED WI		SURE. CAVATED READILY WITH POINT OF PICK. BY FINGER PRESSURE. CAN BE SCRATCH
PLASTIC RANGE	STIC SEMICOLID. REQUIRES DRVING TO)	 FOSS FOSSILIFEROUS FRAC FRACTURED, FRAC FRAGS FRAGMENTS 	TURES	TCR -	SLIGHTLY - TRICONE REFUSAL MOISTURE CONTENT		ROCK RECOMPACTED TRIAXIAL - CALIFORNIA BEARING		FINGER			BEDDING
(PI) PL L		C LIMIT							HI HIGHLY		V - V		T. 000 IE	RATIO	TERM VERY WID		MOR	<u>SPACING</u> E THAN 10 FEET	TERM VERY THICKLY BEDDED
		M MOISTURE AGE LIMIT	- MOIST	- (M)	SOLID; AT OF	r near oi	PTIMUM MO	DISTURE	DRILL UNITS:	ADVA	ENT USEL ANCING TOOLS: CLAY BITS	<u>) ON SUBJEC</u> : :	HAMMER	-	WIDE MODERATE CLOSE		3 DSE	3 TO 10 FEET 1 TO 3 FEET .16 TO 1 FOOT	THICKLY BEDDED 1 THINLY BEDDED 0. VERY THINLY BEDDED 0.
			- DRY -	(D)	REQUIRES AD ATTAIN OPTI			D	CME-55		6" CONTINUOL	JS FLIGHT AUGER	CORE SI	ZE:	VERY CLC	JSE		THAN 0.16 FEET	THICKLY LAMINATED 0.00 THINLY LAMINATED <
			_	STICITY							8" HOLLOW A	NUGERS	в	H					RATION NING OF MATERIAL BY CEMENTING.HE
SLIC	PLASTIC GHTLY PLAS		PLAST	0-5 6-15	<u>(PI)</u>	DI	RY STRENC VERY LOW SLIGHT		CME-550		TUNGCARBI	DE INSERTS			FUR SEDIMER		INDUK	RUBBING WITH	NING OF MATERIAL BY LEMENTING, HE I FINGER FREES NUMEROUS GRAINS; BY HAMMER DISINTEGRATES SAMPLE.
	ERATELY P HLY PLASTI			16-25 6 OR MORE			MEDIUM HIGH		PORTABLE HOIST			W/ ADVANCER		ST HOLE DIGGER ND AUGER	MODEF	RATELY	INDURATED	BREAKS EASIL	BE SEPARATED FROM SAMPLE WITH ST Y WHEN HIT WITH HAMMER.
L									·		TRICONE	TUNGCARB.		UNDING ROD	INDUR	ATED			DIFFICULT TO SEPARATE WITH STEEL BREAK WITH HAMMER.
	IONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE- IFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.										CORE BIT			NE SHEAR TEST	EXTRE	IMELY I	INDURATED		R BLOWS REQUIRED TO BREAK SAMPLI KS ACROSS GRAINS.

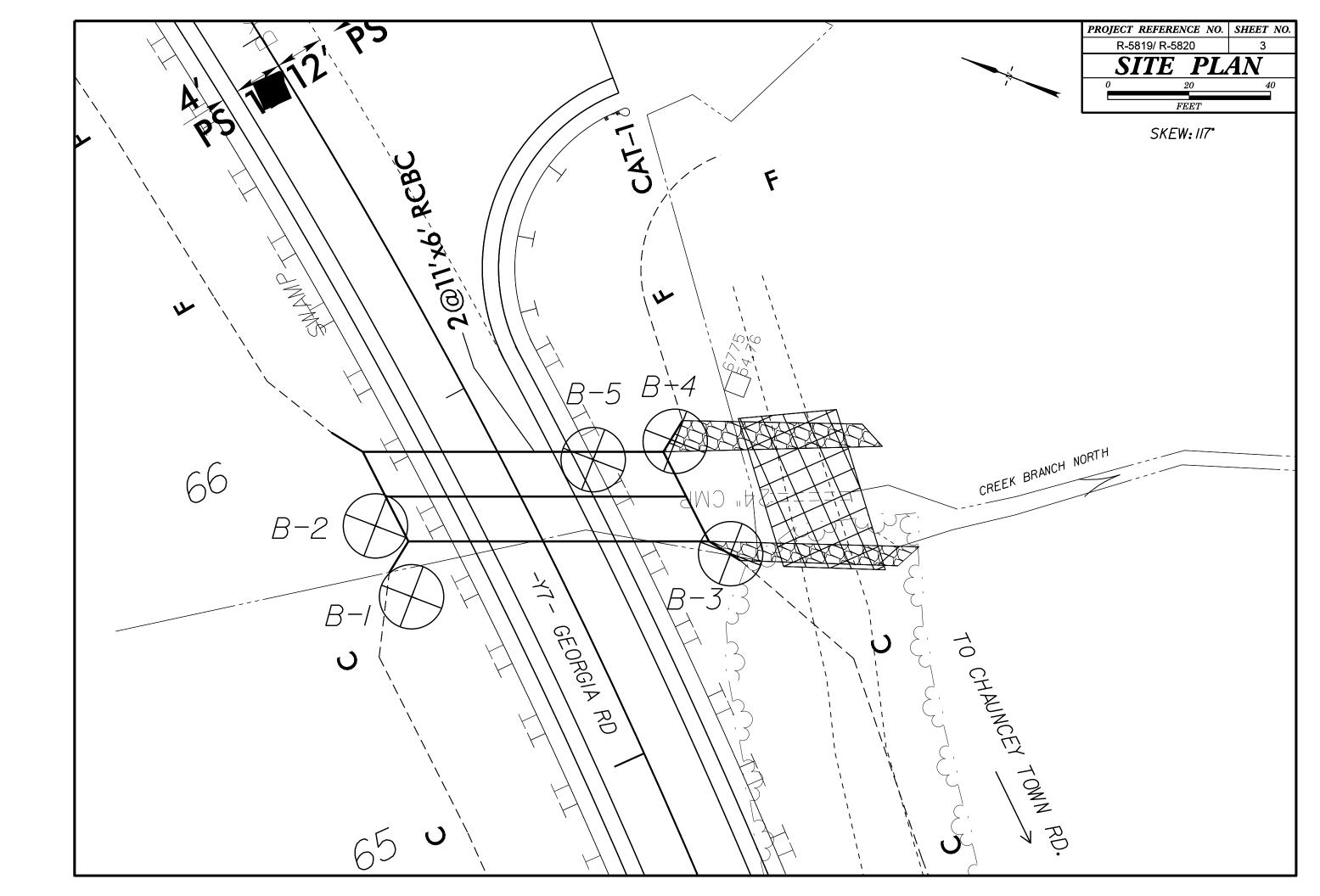
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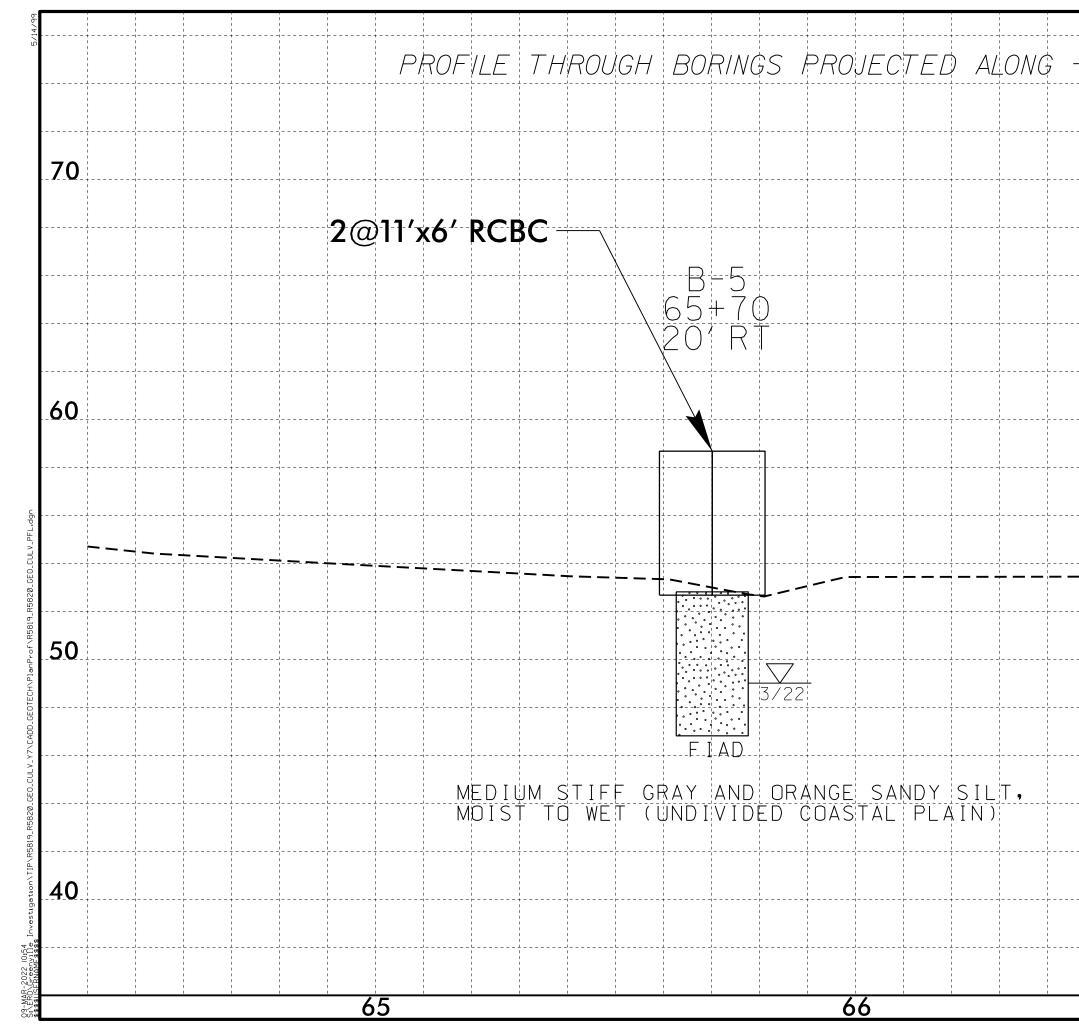
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R-5819/R-5820

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TERMS AND DEFINITIONS ED. AN INFERRED) SPT REFUSAL. 1 FOOT PER 60 IS OFTEN ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. ADUIFER - A WATER BEARING FORMATION OR STRATA. 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 A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. N VALUES > ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND CK THAT SURFACE. CLUDES GRANITE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. AL PLAIN IF TESTED. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. MAY NOT YIELD STONE, CEMENTED CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. $\underline{\text{DIKE}}$ - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. RINGS UNDER DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL . NATINGS IF OPEN. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. AMMER BLOWS IF FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE ІСК ИР ТО SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FELDSPAR FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. BLOWS. $\underline{\mathsf{FLOAT}}$ - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. Y. ROCK HAS AS COMPARED FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. ELDSPARS DULL OSS OF STRENGTH WHEN STRUCK. JOINT - 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 VIDENT 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 PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE STRONG ROCK T ONLY MINOR VALUES < 100 BPF OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK OUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SECMENTS EQUAL TO OR CREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE IN SMALL AND SAPROLITE IS RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT S REQUIRES SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO LOWS REQUIRED THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. $\underline{\text{SLICKENSIDE}}$ - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. EEP CAN BE ETACHED STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL R PICK POINT WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL BLOWS OF THE TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. $\underline{STRATA CORE RECOVERY (SREC.)}$ - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. FRAGMENTS IT. SMALL. THIN STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. PIECES 1 INCH ED READILY BY TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. BENCH MARK: r5819-r5820_ls_tin.tin dated 5/20/19 THICKNESS 4 FEET FEET ELEVATION: .5 - 4 FEET 6 - 1.5 FEET NOTES 3 - Ø.16 FEET 08 - 0.03 FEET FIAD: FILLED IMMEDIATELY AFTER DRILLING 0.008 FEET AT, PRESSURE, ETC. TEEL PROBE: PROBE; DATE: 8-15-14





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GEOTECHNICAL BORING REPORT BORE LOG

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WBS	47091	.1.1			Т	IP R-5	819/ R	-5820	COUN	TY C	OLUMB	US			GEO	LOGIST	Moore, N.	0.				4709						19/ R-5820		NTY
SITE	DESCR	IPTION	CUL	VERT	ON -Y	′7- (SR	1738) (OVER C	REEKE	RANC	CH NOR	TH AT S	TA. 65	5+70)				GROUN	ID WTR (ft)	SITE	DESCF	RIPTION		VERT	ON -Y	7- (SR 17	738) OVEF	CREEK	BRAN
BORI	NG NO.	B-3			S	TATION	1 65+3	35		OF	FSET 4	40 ft RT			ALIG	NMENT ·	-Y7-		0 HR.	3.6	BOR	ing no	. B-1			S	TATION	65+60		OF
COLI	LAR ELI	EV. 52	2.8 ft		Т		DEPTH	6.0 ft		NO	RTHING	213,5	41		EAS	FING 2,14	19,531		24 HR.	FIAD	COL	LAR EL	EV. 5	3.6 ft		т	OTAL DE	PTH 6.0	ft	NC
DRILL	. RIG/HAN	/IMER EF	F./DAT	E N/A								DRILL	/IETHO	DН	and Auger			HAMME	RTYPE	N/A	DRILL	_ RIG/HAI	MMER E	FF./DAT	E NA	\ \				
DRIL	LER P	inter, D	. G.		S	TART C	DATE	03/02/2	2	со	MP. DA	FE 03/	02/22		SUR		FER DEPT	H N/A	4		DRIL	LER F	Pinter, D). G.		S	FART DA	TE 03/02	2/22	c
ELEV		DEPTH	BLC	ow co	UNT		E	BLOWS	PER FOO	т		SAMP.	▼/	L		SOI	AND ROC				ELEV	DRIVE	DEPTI	H BLO	ow co	UNT		BLOW	'S PER FO	ют
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50	75	100	NO.	мо	I G	ELEV. (N DLGC		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75
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		ł													52.8		GROUND	SURFA	ACE	0.0			<u> </u>							<u> </u>
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SHEET 5 OF 8

)	COLUMBL	JS			GEOLOGIST Moore, N. O.		
2	ANCH NORT	H AT S	TA. 65	+70	1	GROUND W	/TR (ft)
	OFFSET 3	5 ft LT			ALIGNMENT -Y7-	0 HR.	3.3
	NORTHING				EASTING 2,149,493	24 HR.	FIAD
		DRILL M	ETHOD	Ha	nd Auger HAMM	RTYPE N/A	
	COMP. DAT)2/22		SURFACE WATER DEPTH N//	4	
Т		SAMP.	7	L O	SOIL AND ROCK DESC		
	75 100	NO.	/моі				
•		S-1	15%	200	- 53.6 GROUND SURF/ - UNDIVIDED COASTA	ACE L Plain	0.0
•			∇		- MEDIUM STIFF GRAY AN - SANDY SILT, MOIST		
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•					- 47.6 - Boring Terminated at Eleva	tion 47.6 ft in	6.0
					- Medium Stiff Si	lt	
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GEOTECHNICAL BORING REPORT BORE LOG

NUMB DEDUCT DURING NO. DEPARTING NO. DEPARTING NO. DURING NO. THE RESERVICES ID DURING NO.																_,														
BORNO NO. D-4 STATION 65+85 OFFSET 401:RT ALGAMENT 37.2 0 HR 35. COLLARELEV. 52.7 /r TOTAL DEPTH 6.0.0 NORTINKO 21.05.4 EASTING 2.149.552 24 HR FIGURATION 65+70. DRULER Print, D. 6. STATION 65+70. TOTAL DEPTH 6.0.0 TOTAL DEPTH 6.0.0 TOTAL DEPTH 6.0.0 DRULER Print, D. 6. STATION 65+70. COLLARELV. 52.9 /r TOTAL DEPTH 6.0.0 DRULER Print, D. 6. STATION 65+70. COLLARELV. 52.9 /r TOTAL DEPTH 6.0.0 Station 1.0.0.1 BLOWSOME PROVIDE 000222 SURPACE WATER DEPTH NA DRULER Print, D. 6. STATION 65+70. Station 2.0.1 BLOWSOME PROVIDE 00022 SURPACE WATER DEPTH NA SOL AND ROCKDESCRIPTION OUPHACE DEV CONT Station 3.0.1 BLOWSOME PROVIDE 00000 STATION 65+70. STATION 65+70. ELV (WV DEPTH 0.0.0 Station 3.0.1 BLOWSOME CONTACT RNA SOL AND ROCKDESCRIPTION OUPHACE SOL AND ROCKDESCRIPTION OUPHACE SOL AND ROCKDESCRIPTION OUPHACE Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 BLOWSOME CONTACT RNA Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 Station 3.0.1 BLOWSOME CONTACT RNA Station 3.0.1 Station 3.0.1 Station 3.0.1	WBS					ТІ	P R-58	19/ R-5	5820	COUNT	Y COLL	JMBL	JS			GE	OLOGIST Moore,	N. O.			WBS	4 7091	1.1.1			ТІ	P R-58	19/ R-5820	COUNT	ΤY
COLLARELEV. 52.7 /l TOTAL DEPTH 6.0 ft NORTHING 213.64 EASTING 2.140.52 24 HR FLAD TOTAL DEPTH 6.0 ft DRULER PRIME, D. G. START DATE GOU0022 COMPARENT PLANE SUBACK PREVED PTH NA TAIL DROMMERS PLANE NA ELS/ DRV 0 0.01 0.02 COMPARENT PLANE SUBACK PREVEDEPTH NA COLLAR ELEV. S2.0 ft TOTAL DEPTH 6.0 ft 10// 0.01 0.03 0.02 COMPARENT PLANE SUBACK PLANE PLANE NA ELSV DRV 0 DOI 10.02 COLLAR ELEV. S2.0 ft TOTAL DEPTH 6.0 ft 10// 0.01 0.03 0.02 ft 0.03 D.03 D.03 D.04	SITE D	DESCRI	PTION	CUL	VERT	ON -Y7	7- (SR 17	738) O	VER CF	REEK BF	RANCH N	IORT	H AT S	TA. 65	5+70				GROUND	OWTR (ft)	SITE	DESCR		CUL	VERT	ON -Y	7- (SR 17	738) OVER	CREEK B	RA
Instruction	BORIN	NG NO.	B-4			ST	TATION	65+65	5		OFFSE	T 40	0 ft RT			AL	IGNMENT -Y7-		0 HR.	3.5	BOR	ing no.	B-5			S	TATION	65+70		0
DRULLER Pinter, D. C. START DATE 0302/22 COMP. DATE 0302/22 SURFACE WATER DEPTH N/A ELEV BILOW COUNT BLCWS PER FOOT BAMP L L SOL AND ROCK DESCRIPTION DRULLER Pinter BLCWS PER FOOT	COLL	AR ELE	V . 52	.7 ft		тс	DTAL DE	PTH	6.0 ft		NORTH	IING	213,5	64		EA	STING 2,149,552		24 HR.	FIAD	COL	LAR EL	EV . 52	2.9 ft		т	OTAL DE	PTH 6.0 ft	t	N
ELEC PRVMP (R) DEPTH (R) BLOW COUNT (R) BLOW SPER FOOT (R) SAMP (R) V L b Count Count BLOW SPER FOOT (R) BLO	DRILL	rig/ham	MER EF	F./DATE	E N/A	- 1					1		DRILL N	/IETHO	DHa	and Au	jer	HAMM	ER TYPE N	VA	DRILL	RIG/HAN	VIMER EF	F./DAT	E N/A	\				_
ELEC PRVMP (R) DEPTH (R) BLOW COUNT (R) BLOW SPER FOOT (R) SAMP (R) V L b Count Count BLOW SPER FOOT (R) BLO	DRILL	.ER Pi	nter. D.	G.		ST		ATE 0)3/02/22	2	COMP.	DAT	E 03/	02/22		SL	RFACE WATER DI	EPTH N/	A		DRIL	LER P	inter. D	. G.		S	TART DA	TE 03/02/	22	C
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05 0 55 56 56 00 0 0 0 0 00 0	(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0											OCK DES	CRIPTION		(ft)	ELEV (ft)	(ft)	0.5ft			о			75
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SHEET 6 OF 8

COLUMB	JS			GEOLO	DGIST Moore, N	0.			
ANCH NORT	"H AT S	TA. 65	+70	•			GROUN	id W	TR (ft)
OFFSET 2	0 ft RT			ALIGN	MENT -Y7-		0 HR.		3.8
NORTHING	213,58	31		EASTI	NG 2,149,540		24 HR.		FIAD
	DRILL M	IETHOD) Har	nd Auger		HAMME	RTYPE	N⁄A	
COMP. DAT	E 03/0)2/22		SURFA	CE WATER DEP	TH N/A	۱		
75 100	SAMP. NO.		L O	•	SOIL AND ROO	CK DESC	RIPTION		
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				52.9		COASTAI	_ PLAIN		0.0
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	-		- 100	46.9	Boring Terminated Mediu	l at Eleva	tion 46.9	ft in	6.0
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GEOTECHNICAL BORING REPORT BORE LOG

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WBS	47091	.1.1			Т	P R-581	9/ R	-5820	со	UNT	Y C	OLUME	BUS	;			GEOLOGIST Moore, N. O.	
SITE	DESCRI	PTION	CUL	VERT	ON -Y	7- (SR 17	(38)	OVER	CREE	K BR	ANC	H NOR	RTH	AT S	TA. 65	5+70		GROUND WTR (f
	NG NO.				-	TATION						SET					ALIGNMENT -Y7-	0 HR. 3.
			0.6								<u> </u>							
	AR ELE				T	OTAL DE	ыH	6.0 f				RTHING					EASTING 2,149,493	24 HR. FIAI
JRILL	RIG/HAM	IVIER EF	F./DAII	E NA												JHar	nd Auger HAMI	MERTYPE NA
	ER Pi				S	FART DA	TE	03/02/	22		CO	NP. DA	TE	03/0)2/22		SURFACE WATER DEPTH	/A
ELEV	DRIVE ELEV	DEPTH	BLC	W COL	JNT		I	BLOWS	S PER	FOOT	Γ		s	SAMP.	▼∕		SOIL AND ROCK DE	SCRIPTION
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50		75	100		NO.	мо		ELEV. (ft)	DEPTH
55																		
	-	-															- 53.2 GROUND SUR	ACE
	-						:									1	UNDIVIDED COAST	AL PLAIN
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	-	-											11			Till the second s	-	
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SHEET 7 OF 8

						SOII	L 7	ES	ST R	ESUI	LTS					
ſ	SAMPLE ALIGNMENT OFFSET STATION DEPTH AASHTO L.L. P.L. % BY WEIGHT % PASSING (SIEVES) %															%
	NO.	ALIGNMENT	OFFSEI	STATION	INTERVAL	CLASS.	L.L.	<i>P.1</i> .	C. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTU
[S-I	-Y7-	35′ L T	65+60	0.5-1.5	A-4(I)	20	6	13.1	30.4	40.4	16.1	97	92	59	15.7



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