260000

OECT: ITBP.I.R.69

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

CONTENTS

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE(S)
5-6	BORE LOGS

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. <u>17BP.1.R.69 (SF-260006)</u> F.A. PROJ. <u>N/A</u>							
COUNTY CURRITUC	K						
	BRIDGE NO. 6 ON SR	1228 OVER MOYOCK					
RUN AT -L- STATE	ON 13 + 90.7						

 STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	SHPETS
N.C.	SF-260006	1	6

CAUTION NOTICE

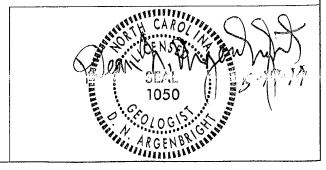
THE SUBSURFACE DEPRHATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FIRST THE PURPOSE OF STUDY, PLANNING, AND DESIGN AND NOT FOR CONSTRUCTION OR PLY PURPOSES. THE VARIOUS PELIC DORNING LOOS, ROCK ORDES, AND SOUT TEST DATA ANALYSEE MAY BE THE FEBRUAR WASHESTED IN RELEGION BY CONTACTING THE N. C. DEPARTMENT OF TRANSFORTATION, CELTECHNICAL ENGINEERING UNIT AT 1999 TOT-6850, NEITHER THE SUBSURFACE PLANS AND REPORTS, N.T. THE PIELD BORNING LOOS, ROCK CORES, OR SOUL TEST DATA ARE PART OF THE CONTRACT.

CENERAL SOC AND ROCK STRATA DESCRIPTIONS AND INDICATED BILINGARES ARE BASED ON A CETTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT RECESSARILY REFLECT THE ACTUAL SUBSURFACE COUNTRONS BETAEREN BARROS OR BETAERN SUBMEDS STRATA A THIN THE ADDRESS OF A LABORATORY SAMPLE DATA AND THE MISTOR WHITE MEST DATA CAN BE FELLED ON DOLLY TO THE DEGREE OF RELIABBLITH INFERENT IN THE STANDARD TEST METHOD. THE DESCRIPTION WHITE LEVELS OR SOLI MISTURE CONDITIONS ALCOARD IN THE SUBSURFACE AVAISTMENTED AT THE TIME OF THE MISTORY WHITE MEST ACTION TO THE DESCRIPTION AND AND CONDITIONS AND CO

THE PODDER OR CONTRACTOR IS CAUTIONED THAT CETALS SHOWN ON THE SUBSURFACE PLANS ARE DIFFERENT FOR BODING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PERFORMANT CALLY AND BY MAINT CASES THE FIRML DESIGN ESTAILS AND DROUMENTS FOR FRAIL DESIGN REPORTED ON THAT PRODUCT, THE DEPARTMENT DOES NOT NETRAIN OR OLDARATE THE SUFFICIENCY OF ACCURACY OF THE INVESTIGATION MADE, NOT THE BUTCHEST ATOMS MODE, OR OPINION OF THE CHARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BUDCH OR CITY AND ADDITIONS OF THE STATE INVESTIGATIONS AS HE DEEMS CLESSARY OF SLATES HAWEST AS TO CONDITIONS TO BE ENCOUNTEDED ON THIS FROMET. THE CONTRACTOR SHALL HAVE NO CLAMA FOR ADDITIONAL CONFENSATION OF FOR AN EXTENSION OF TIME FOR AN EXCESSION FOR SUBSTITUTE OF THE ACTION OF FOR AN EXTENSION OF TIME FOR AN EXCESSION FROM THE ACTION, CONDITIONS ENCOUNTERS OF THE SITE DEFERRING FROM THESE REPORTS OF THE SITE DEFERRING FROM THE SITE OF THE ACTION.

INVESTIGATED BY D.N. ARGENBRIGHT
CHECKED BY D.N. ARGENBRIGHT
SUBMITTED BY D.N. ARGENBRIGHT
DATE MAY 2014

PERSONNEL



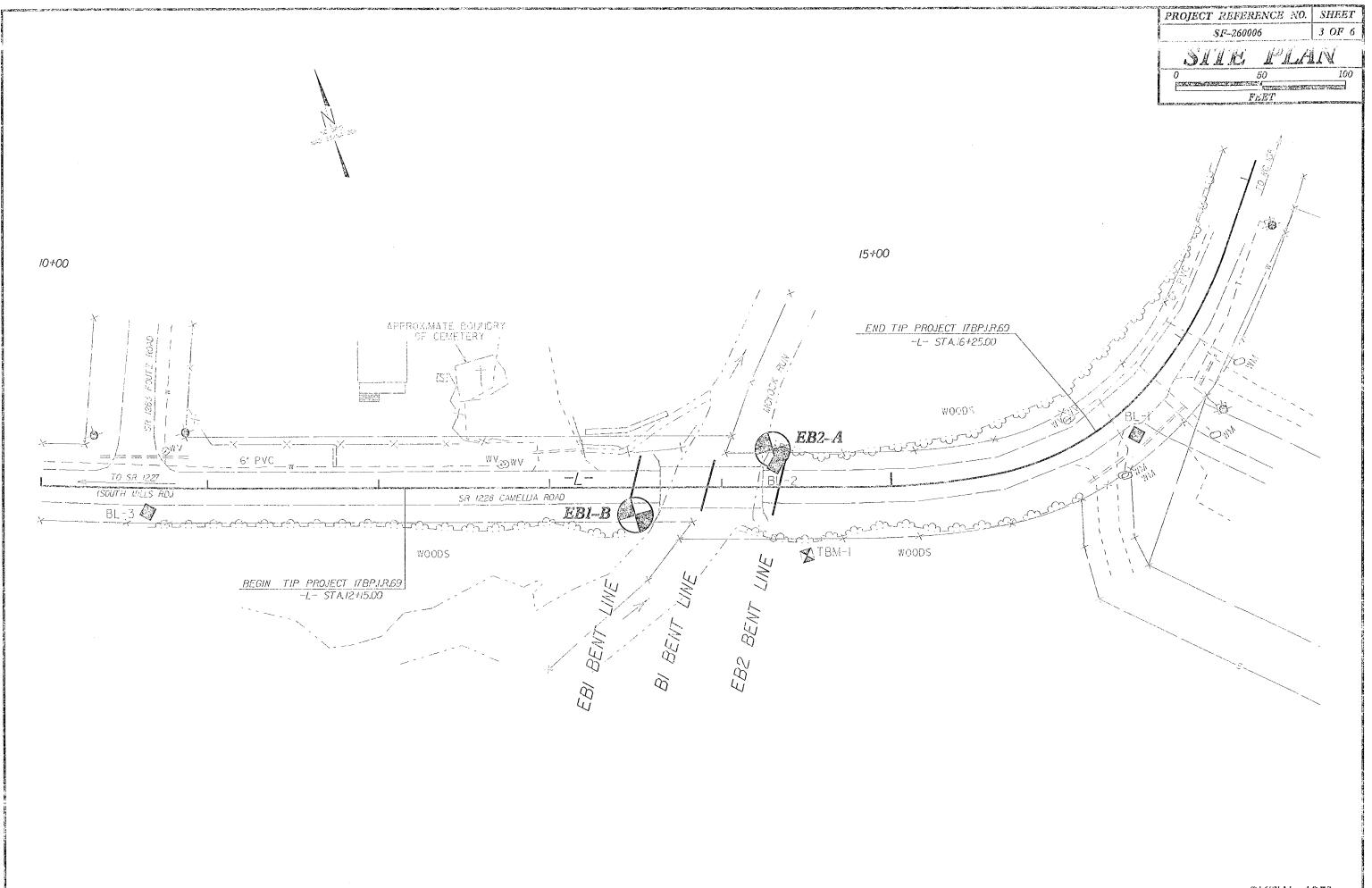
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

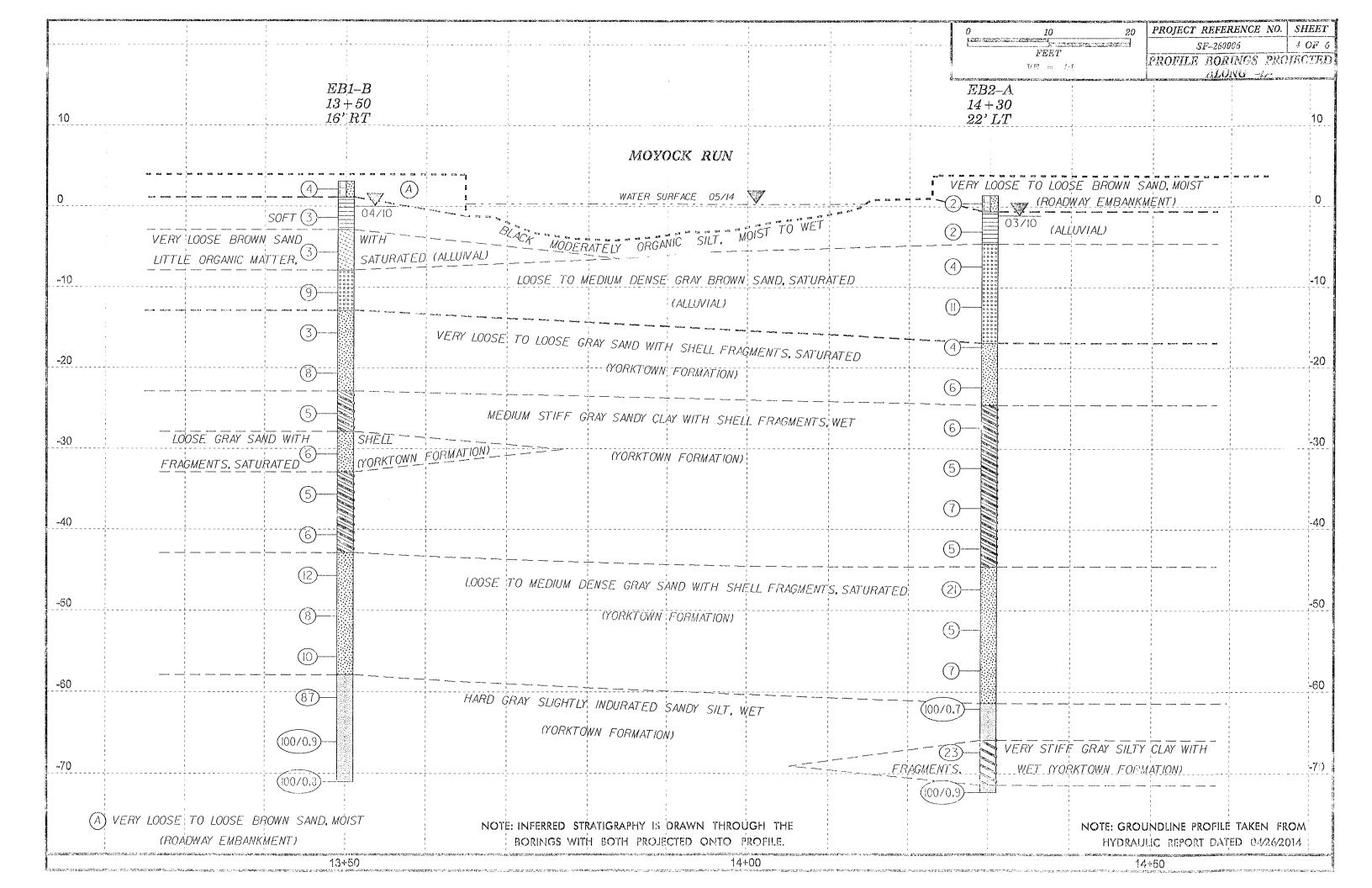
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

	SOIL AND ROCK LEGEND, TERM	IS, 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 GRACED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE, WASFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE, (ALSO	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL 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 128 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO 1225, ASTM 0-1585), SOIL	POORLY GRADED: SAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.	SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 68 BLOWS. IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE	AGUIFER - A WATER BEARING FORMATION OR STRATA.
CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	AREMOCEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. 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: ANSULAR, SUBANGULAR, SUBANGULAR	WEATHERED WISH-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 128	OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.
VERT STAFF, SHATS STATE OF AND ANGULATION OF ASSESSMENT PASTE AT 3	MINERALOGICAL COMPOSITION	ROCK (WR) 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 DR ABOVE THE
SOIL LEGEND AND AASHTO CLASSIFICATION GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS COMMUNICATIONS GENERAL GRANULAR MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAGLIM, ETC. ARE USED IN DESCRIPTIONS	CRYSTALLINE ROCK (CR) FINE TO COARSE GRAIN ISNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE,	GROUND SURFACE.
CLASS. (≤ 35% PASSING *200) (> 35% PASSING *200) ORGANIC MATERIALS	WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.	GNEISS, GABBRO, SCHIST, ETC.	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
CROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-0 A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-1-6 A-3-6 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE ROCK (NCR) NON-CRYSTALLINE ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YELLD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SANDSTONE, ETC.	COLLUVIL 4 - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT SOTTOM OF SLOPE.
CLASS. (A-1-a) A-1-b	SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-58	COASTAL PLAIN LOASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL CIVIDED BY TOTAL
poococpooc History and the poococpooc History	HIGHLY COMPRESSIBLE LIDUID LIMIT GREATER THAN 50 FERCENTAGE OF MATERIAL	SEBIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
X PASSING STATE SILT- MUCK, CLAY MUCK,	DECAME MATERIAL GRANULAR SILT - CLAY	- WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
" 40 38 MX 58 MX 51 MN	DRGANIC MATERIAL SOILS SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEV 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
LICON LINIT	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	HAMMEN IF CHYSTALLINE. VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN.	HORIZONTAL.
PLASTIC INDEX 6 MX NP 13 MX 13 MX 11 MN 13 MX 13 MX 11 MN 11 MN 11 MN LITTLE OR HIGHEY	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	(V SLIJ CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION GIP AZIMUTHI - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF GIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 8 8 8 4 MX 8 MX 12 MX 16 MX NO MX MODERATE DRIGANIC	GROUND WATER	OF A CRYSTALLIME 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 FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY ORGANIC	✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	INCH. OPEN JOINTS MAY CONTAIN CLAY, IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SAND GRAVEL AND SHIPD SOILS SOILS	STATIC WATER LEVEL AFTER 24 HOURS	CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR CHIGANAL POSITION AND DISLODGED FROM
GEN. RATING AS A EXCELLENT TO GOOD FAIR TO POOR FAIR TO POOR UNSUITABLE	∇ PW. PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY, ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED	PARENT MATERIAL.
SUBGRADE	O-MAr SPRING OR SEEP	WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30 CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION, ROCK SHOWS SEVERE LOSS OF STRENGTH	THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN
COMPASTANTES OF RANGE OF STANDARD RANGE OF UNCONFINED	CEN	(MOD.SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK.	THE FIELD.
PRIMARY SOIL TYPE CONSISTENCY PENETRATION RESISTENCE COMPRESSIVE STRENGTH (TONS/FT?)	ROADWAY EMBANKMENT (RE) OF OUT TEST BORING TEST BORING W/ CORE	IF TESTED, WOULD YIELD SPI REFUSAL	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
GENERALLY VERY LOOSE 4	SOIL SYMBOL AUGER BORING — SPT N-VALUE	SEVERE ALL ROCK EXCEPT GUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENDTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
GRANULAR LOUSE 4 TO 10 N/A	ARTIFICIAL FILL (AF) OTHER CORE BORING (REF) - SPT REFUSAL	EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, YIELDS SPI N VALUES > 100 BPF	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
MATERIAL DENSE 30 TO 50	THAN ROADWAY EMBANKMENT	VERY SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN
	INFERRED SOIL BOUNDARY MONITORING WELL	(V SEV.) THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR	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
GENERALLY SOFT 2 TO 4 8.25 TO 8.50	INFERRED ROCK LINE A PIEZOMETER	VESTIGES OF THE ORIGINAL ROCK FAORIC REMAIN. IF TESTED, YIELDS SPT N VALUES (100 BPF	INTERVENING IMPERVIOUS STRATUM.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	INSTALLATION TENNAL ALLUVIAL SOIL BOUNDARY SLOPE INDICATOR	COMPLETE ROCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS, OWARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE MEATHERING OF ROCK.
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD 230 24	25/225 DIP & DIP DIRECTION OF	ALSO AN EXAMPLE.	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND
TEXTURE OR GRAIN SIZE	ADCK STRUCTURES CONE PENETROMETER TEST	ROCK HARDNESS	EXPRESSED AS A PERCENTAGE.
	SOUNDING ROD	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES	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 DPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.253		SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	ABBREVIATIONS AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	TO DETACH HAND SPECIMEN.	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
(BLDR.) (COB.) (GR.) (GSE. SO.) (F SO.) (SL.) (CL.)	BT - BORING TERMINATED MICA MICACEOUS WEA VEATHERED	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	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR
GRAIN MM 305 75 2.0 0.25 2.05 0.005	CL CLAY MOD MODERATELY 7 - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7 - DRY UNIT WEIGHT	BY MODERATE BLOWS.	SLIP PLANE. STANDARD PENETRATION TEST IPENETRATION RESISTANCE (SPT) - NUMBER OF BLOWS (N OR BPF) OF
SIZE IN. 12 3	CSE CDARSE ORG DRGANIC	MEDIUM CAN BE GROOVED OR COUGED 0.25 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
SOIL MOISTURE - CORRELATION OF TERMS	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBSEVIATIONS DPT - DYNAMIC PENETRATION TEST SAP, - SAPROLITIC S - BULK	POINT OF A GEOLOGIST'S PICK.	A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
SOIL MOISTURE SCALE FIELD MOISTURE GUIDE FOR FIELD MOISTURE DESCRIPTION	6 - VOID RATIO SD, - SAND, SANDY SS - SPLIT SPOON F - FINE SL, - SILT, SILTY ST - SHELBY TUBE	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVEDAL 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
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY	FGSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	PIECES CAN BE BROKEN BY FINGER PRESSURE.	OF STRATUM AND EXPRESSED AS A PERCENTAGE.
(SAT.) FROM BELOW THE GROUND WATER TABLE	FRAC FRACTURED, FRACTURES TOR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	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	STRATA ROCK QUALITY DESIGNATION (SROOD—A MEASURE OF ROCK QUALITY SESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE
PLASTIC SEMISOLIO, PEDIURES DRYING TO	HI HIGHLY V - VERY RATIO	FINGERNAIL.	TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
ATTAIN OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	FRACTURE SPACING BEDDING	<u>IOPSOIL (IS.)</u> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
PLL PLASTIC CIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	IERM SPACING IERM IHICKNESS VERY THICKLY BEDDED > 4 FEET	BENCH MARK: TBM-IRR SPIKE IN 36' CYPRESS 38.4' RT OF -L-
OM CPTIMUM MOISTURE - MOIST - (M) SOLID: AT OR NEAR OPTIMUM MOISTURE	CLAY BITS WANUAL MANUAL	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	STATION 14+51.14 ELEVATION: 3.79' FT.
SL SHRINKAGE LIMIT	MOBILE B- CLAY BITS 6' CONTINUOUS FLIGHT AUGER CORE SIZE:	CLOSE 1 10 3 FEET VERY THINLY BEDDED 0.03 - 2.16 FEET	
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	BK-51	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED (0.008 FEET	NOTES;
PLASTICITY		INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
NONPLASTIC 0-5 VERY LOW	TUNGCARBIDE INSERTS -H CASING W/ ADVANCER	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS;	
LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM	HAND 100LS:	GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE,	
HIGH PLASTICITY 26 OR MORE HIGH		MODERATELY INDUCATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TRICONE TUNG,-CARB. HAND AUGER SOUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROSE;	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).	CORE BIT SOUNDING FOED	DIFFICULT TO BREAK WITH HAMMER.	
MODIFIERS SUCH AS LIGHT, CARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS,	
		<u> </u>	





WBS	17BP	.1.R.69			TI	P SF-260006	COUNT	Y CURRITU	JCK			GEOLOGIST Contract Geolo	gist	
SITE	DESCR	RIPTION	BRI	DGE 1	10 6 C	ON -L- (SR 1228) OV	ER MOY	OCK RUN					GROUN	D WTR (ft)
BOR	ING NO	. EB1-	В		Si	FATION 13+50		OFFSET	16 ft RT			ALIGNMENT -L-	0 HR.	N/A
COL	LAR EL	EV. 3.	1 ft		TO	OTAL DEPTH 74.1	ft	NORTHING	1,021	,037		EASTING 2,828,370	24 HR.	3.1
	. RIG/HA			TE C	l			<u> </u>					L MER TYPE	Automatic
	LER C					ART DATE 04/01/	10	COMP. DA				SURFACE WATER DEPTH N	/A	-,
	DDIVE	DEPTH	1	ow col			PER FOOT	l	SAMP.	harcons /	L			
ELEV (ft)	ELEV (ft)	(ft)	0.5ft	1	r	0 25	50	75 100	NO.	MOI	O G	SOIL AND ROCK DES	CRIPTION	DEPTH (
	1 (19									VIVIOI	3	ecev. (i)		OCT (1) (i
5	· 	ł				•						- 0001000000000000000000000000000000000	105	
	3.1	_0.1_	1	2	2	J			-	<u> </u>		3.1 GROUND SURF		0
0		Ŧ				Y				V	- 5	BROWN SAND, M BROWN SAND, M	MOIST	<u> </u>
	0.4	3.5	2	1	2	63	1					BLACK MODERATELY O		Т,
		‡					: : : :					-2.9 MOIST TO W	=T 	6.
-5	-4.7	7_8	1		2		1::::::					BROWN SAND WITH LIT		liC
		1	' '	'	_	@3	1 : : : :					_ MATTER, SA	Τ.	
		Ŧ				1					0 0 0 0	ALLUVIAI.		11
-10_	-9.7	12.8	6	5	4	1,7					0000	GRAY BROWN SAM	ID, SAT.	
		‡				1.					100	- -12.9		16
	447	+ 470				1:::	: : : :					COASTAL PLA		
15	14.7_	1-17.8	2	2	1	63	- 					GRAY SAND WITH SHELL SAT.	FRAGMEN	18,
		Ŧ				1						. (YORKTOWN FORM	MATION)	
-20	19.7	† † 22.8				1						• •		
20_		1	3	5	3	. φ8	† : : : : :					•		
		‡										-22.9		26
-25	-24.7	27.8	ļ								ST. F.	COASTAL PLA GRAY SANDY CLAY W	ITH SHELL	
		Ŧ	2	2	3	φ ₅					i Branci	FRAGMENTS, V (YORKTOWN FORM		
		‡										-27.9 COASTAL PL		31
-30	-29.7	32.8_	3	3	3							GRAY SAND WITH SHELL SAT.		TS,
		‡				Ģ 5						YORKTOWN FORM	MATION)	26
		İ				 	1 : : : :				988	-32.9 COASTAL PLA		
-35	34.7	37.8	2	2	3	<u> </u>					200	GRAY SANDY CLAY W FRAGMENTS, V		
		‡				1					Walls .	(YORKTOWN FORM		
40	-39.7	† + 42.8		l.		1					2752.70	<u>.</u>		
40	-33.1	J.42.0	2	3	3	Ø6					1805	_ -		
		ł				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					100	-42.9		46
-45	-44.7	47.8	<u> </u>			- \						COASTAL PLA GRAY SAND WITH SHELL		TS,
		Ŧ	3	4	3	. 312						SAT. (YORKTOWN FORM	AATUON)	
		‡										- (10////07///10///	m/ (11011)	
-50	-49.7	52.8	4	3	5	.	<u> </u>		İ			-		
		+	7	ľ		. ģ8			İ			-		
		Ţ					1					- -		
-55	-54.7	57_8_	5	5	5	040	ļ					• -		
		‡				010						- 57.9		61
		‡					+	.				COASTAL PL		
-60	59.7_	T_62.8_	24	39	48			3 37				GRAY SLIGHTLY INDUR SILT, WET	ATED SANE	YΥ
		Ŧ										(YORKTOWN FOR	MATION)	
e r	-64.7	67.8		1								- -		
-65	-04./	1 01.0	40	50	50/0.4				,			-		
		+						100/0.9						
-70	-69.7_	72.8										_		
_, 0			35	60	40/0.3			100/0.8	\vdash			-71.0	otion 71.01	74,
		+	1	1	1			10010.0		1		Boring Terminated at Elev Hard Silt	auon -71.01	L 111

BORELOG REPORT									
W39 17BP.1.R.69 TIP \$5.000000	GEOLOGIST Contract Cool	legist	WPS 17BP 1.R.69	kio e	SE-300000 COUNT.	A CABBLINCK	OTOLOGIST Contract Coologist		
SITE DESCRIPTION BRIDGE NO 6 ON -L- (SR 1228) OV	ER MOYOCK RUN	GROUND WTR (ft)	SITE DESCRIPTION	SITE DESCRIPTION BRIDGE NO 6 ON -L- (SR 1228) OVER MOYOCK RUN			GROUND WTR (ft)		
BORING NO. EB2-A STATION 14+30	OFFSET 22 ft RT	ALIGNMENT -L-	0 HR. N/A	BORING NO. EB2-/	A STATIC	ION 14+30	OFFSET 22 ft RT	ALIGNMENT -L- 0 HR. N/A	
COLLAR ELEV. 1.4 ft TOTAL DEPTH 73.7	NORTHING 1,021,023	EASTING 2,828,282	24 HR. 2.5	COLLAR ELEV. 1.4	ft TOTAL	L DEPTH 73.7 ft	NORTHING 1,021,023	EASTING 2,828,282 24 HR. 2.5	
DRILL RIG/HAMMER EFF./DATE CME-550	DRILL METHOD	Mud Rotary HAN	MMER TYPE Automatic	DRILL RIG/HAMMER EF	F./DATE CME-550		DRILL METHOD A	Mud Rotary HAMMER TYPE Automatic	
DRILLER Contract Driller START DATE 03/31/		SURFACE WATER DEPTH	N/A	DRILLER Contract		TDATE 03/31/10	COMP. DATE 03/31/10	GURFACE WATER DEPTH N/A	
ELEV CONTRACTOR OF	PER FOOT SAMP. V L O O O O O O O O O O O O O O O O O O			ELEV DRIVE DEPTH	0.5ft 0.5ft 0.5ft 0	BLOWS PER FOOT 25 50		SOIL AND ROCK DESCRIPTION	
(ft) (ft) (ft) 0.5ft 0.5ft 0.5ft 0	50 75 100 NO. MOI G	ELEV. (ft)	DEPTH (ft)	(ft) (ft)	0.511 0.511 0.511 0		75 100 NO. MOI G		
						Match Line			
5		-		-75		iviator Line		(YORKTOWN FORMATION)	
1.4 + 0.0		- 1.4 GROUND SUR	RFACE 0.0	†				Boring Terminated at Elevation -72.3 ft in Hard Silt	
0 1 1 1 2	V	ROADWAY EMBA BROWN SAND,						-	
_2.1 _ 3.5 _ 1 _ 1 _ 1	· · · · · · · ·	ALLUVIA BLACK MODERATELY	, <u> </u>					- -	
-5		MOIST TO V	νετ _{6.0}					-	
-6.4 . 7.8 3 1 3	000	ALLUVIA GRAY BROWN SA							
1	0000			$\begin{bmatrix} 1 & 1 \end{bmatrix}$					
-10	000			1					
5 6 5	0.00							-	
	000	c 		<u> </u>				-	
-16.4 - 17.8 2 2 2 2 1 1	000	-16.9 COASTAL PI	18.3					-	
\\ \qq		GRAY SAND WITH SHEL						-	
20		SAT. (YORKTOWN FOR	RMATION)					- -	
5 3 3 96								-	
-25		COASTAL P		1 1				-	
26.4 + 27.8 2 3 3 4 56		GRAY SANDY CLAY FRAGMENTS	, WET	$\left \cdot \right = \frac{1}{2} \left \cdot \right $					
-30		(YORKTOWN FOR	RMATION)						
31.4 + 32.8 4 3 2		#	1					- -	
55		<u></u>		+				- -	
35		-						-	
3 3 4 3 7		d -							
-40		-		1 1				- -	
2 2 3		-							
-45		COASTAL P	46.0	<u> </u>				-	
46.4 - 47.8 5 7 14		GRAY SAND WITH SHEL							
		SAT. (YORKTOWN FOR	RMATION)	1 1					
-50 -51.4 + 52.8	 	-		+				 -	
2 2 3 05								-	
9 -55				<u> </u>				- 	
56.4 + 57.8 5 3 4								-	
0 -60				+				 -	
61.4 62.8 60 40/0.2		61.4	62.8						
80 40/0.2	100/0.7	COASTAL P GRAY SLIGHTLY INDU	RATED SANDY						
-65		SILT, WE a5.9 (YORKTOWN FOR	RMATION) 67.3	$\parallel \parallel \parallel \parallel \parallel \parallel$					
66.4 67.8 18 12 11 0.023		GRAY SILTY CLAY	WITH SHELL						
70		FRAGMENTS (YORKTOWN FOR							
9 -71.4 - 72.8		- 71.4 - 72.3 COASTAL P	72.8 FLAIN 73.7						
	100/0 9	- GRAY SLIGHTLY INDU - SILT, WE	JRATED SANDY					- -	
z <u> </u>		J		·					