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5987B

REFERENCE

<u>SHEET NO.</u>	<b>DESCRIPTION</b>
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3	SITE PLAN
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5-8	CROSS SECTIONS
9-19	BORE LOGS

### STATE OF NORTH CAROLINA

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

# **STRUCTURE** SUBSURFACE INVESTIGATION

COUNTY ROBESON

PROJECT DESCRIPTION <u>I-95 IMPROVEMENTS FROM</u> US 301 (EXIT 22) IN ROBESON COUNTY TO NC 59 (EXIT 41) IN CUMBERLAND COUNTY SITE DESCRIPTION BRIDGE ON -L- (I-95) OVER BIG MARSH SWAMP AT -L- STA. 586+14.00

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I–5987B	1	19

### 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 SOLI TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1999 107-6860. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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 BORNICS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU UN-FLACED TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE ONSERVED WATER LEVELS OR SOL MOISTURE CONDITIONS MOLATED IN THE SUBSURFACE RELIVESTIGATIONS AND REAS RECORDED AT THE TIME OF THE INVESTIGATION. THES WATER LEVELS OR SOL MOISTURE CONDITIONS MAY LARY CONSIDERABLY WITH THE ACCORDING TO CLIMATIC CONDITIONS NICLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIODER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBJURFACE 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 OPHION 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 INVESTIGATIONS TO CONTINNS TO BE ENCOUNTERED. THE GIDDER OR CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACUAL 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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	L	4NE, R.W.
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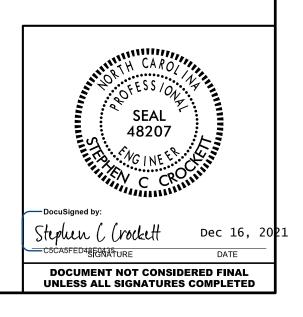
INVESTIGATE

DRAWN BY \_\_CROCKETT, S.C.

CHECKED BY <u>HAMM, J. R.</u>

SUBMITTED BY \_\_\_\_\_\_

DATE \_\_\_\_\_ DECEMBER 2021

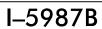


## NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

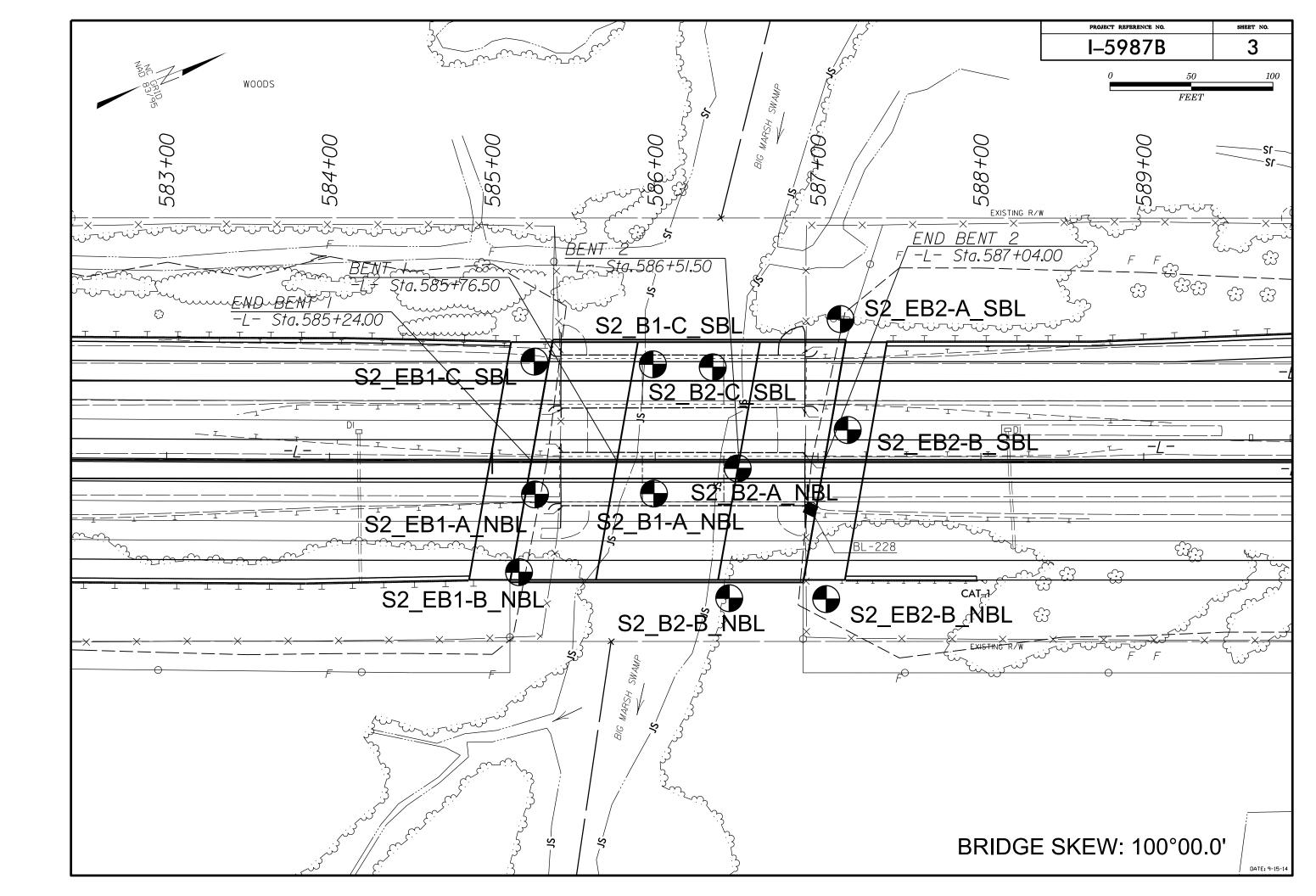
SOI	DESCRIPTION		GRADATION		ROCK DESCRIPTION
BE PENETRATED WITH A CONTINUOUS FLIGHT ACCORDING TO THE STANDARD PENETRATION IS BASED ON THE AASHTO SYSTEM BA	CONSOLIDATED, OR WEATHERED EARTH MATERIALS T POWER AUGER AND YIELD LESS THAN 100 BLOWS I TEST (AASTHO T 206, ASTM DI586), SOIL CLASSIF IC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOW	PER FOOT TCATION /ING:	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROX GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TH	IMATELY THE SAME SIZE.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TE ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIE SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER COULD TO OR LESS THAN BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROC DEDECEMTED BY A JOINT OF MEATURED DOCK.
AS MINERALOGICAL COMPOSITION, AND	HTO CLASSIFICATION, AND OTHER PERTINENT FACTO JLARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLI	Ε,	ANGULARITY OF GRAINS THE ANGULARITY OF ROUNDNESS OF SOIL GRAINS IS DESIGNATED		REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:
	INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	5	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	BI THE TERMS:	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD S ROCK (WR) 100 BLOWS PER FOOT IF TESTED.
GENERAL GRANULAR MATERIALS CLASS. (≤ 35% PASSING ■200)	SILT-CLAY MATERIALS (> 35% PASSING =200) ORGANIC MATE	RIALS	MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOL	IN. ETC.	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE
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		RUCK (CH) CNEISS, GABBRO, SCHIST, ETC.
CLASS. A-1-6 A-1-6 A-2-4 A-2-5 A-2-6	A-2-7 A-7-5 A-3 A-6, A-7				NON-CRYSTALLINE SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSA ROCK (NCR) ROCK THAT WOULD YEILD SPT REFUSA
SYMBOL 000000000			SLIGHTLY COMPRESSIBLE LL < 3 MODERATELY COMPRESSIBLE LL = 3	31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, B
2 PASSING *10 50 MX	GRANULAR SILT-	миск,	HIGHLY COMPRESSIBLE LL > 5 PERCENTAGE OF MATERIAL	00	SEDIMENTARY ROCK SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SAM
■40 30 MX 50 MX 51 MN ■200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX	SOILS CLAY	PEAT	GRANULAR SILT - CLAY		WEATHERING
MATERIAL PASSING *40 LL 40 MX 41 MN 40 MX	41 MN 48 MX 41 MN 48 MX 41 MN SOILS WITH		ORGANIC MATERIAL         SOILS         SOILS         OTT           TRACE OF ORGANIC MATTER         2 - 3%         3 - 5%         TRACE           LITTLE ORGANIC MATTER         3 - 5%         5 - 12%         LITTL           MODERATELY ORGANIC         5 - 18%         12 - 28%         SOME           HIGHLY ORGANIC         > 10%         > 20%         HIGHL	E 10 - 20% 20 - 35%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROC HAMMER IF CRYSTALLINE. VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER
PI         6 MX         NP         10 MX         10 MX         11 MN           GROUP INDEX         0         0         0         4	II MN 10 MX 10 MX II MN II MN MODERATE	HIGHLY ORGANIC SOILS		T 35% AND ABOVE	OF A CRYSTALLINE NATURE. SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO
USUAL TYPES STONE FRAGS. OF MAJOR GRAVEL, AND SAND GRAVEL AND SA		50125	WATER LEVEL IN BORE HOLE IMMEDIATELY AFT	ER DRILLING	(SLI.) I INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIC CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAM
MATERIALS SAND	FAIR TO		▼     STATIC WATER LEVEL AFTER 24 HOURS       √PW     PERCHED WATER, SATURATED ZONE, OR WATER B	EARING STRATA	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFE (MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW (C
AS SUBGRADE	FAIR TO POOR POOR POOR	UNSUITABLE	- O-MA- SPRING OR SEEP		DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENC WITH FRESH ROCK.
	LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30		MISCELLANEOUS SYMBOLS		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE
	RANGE OF STANDARD RANGE OF UN				(MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUN
PRIMARY SOIL TYPE CONSISTENCY GENERALLY VERY LOOSE CONVERT	PENETRATION RESISTENCE COMPRESSIVE (N-VALUE) (TONS/F ( 4 TO 10)		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL SOIL SYMBOL	SLOPE INDICATOR	IF TESTED, WOULD YIELD SPT REFUSAL SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPAR TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.
MATERIAL MEDIUM DENSE	10 TO 30 N/A 30 TO 50		ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING	CONE PENETROMETER	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF
(NON-COHESIVE) VERY DENSE VERY SOFT GENERALLY SOFT	> 50 < 2 < 0.2 2 TO 4 0.25 TO			SOUNDING ROD	SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS IV SEV.) REMAINING, SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE TH VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT I</u>
SILT-CLAY MEDIUM STIFF MATERIAL STIFF (COHESIVE) VERY STIFF	4 TO 8 0.5 TO 8 TO 15 1 TO 15 TO 30 2 TO	2 4	TTETTE INFERRED ROCK LINE MONITORING WELL	TEST BORING     WITH CORE     SPT N-VALUE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONU SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRING ALSO AN EXAMPLE.
	E OR GRAIN SIZE		RECOMMENDATION SYMBOLS		ROCK HARDNESS
U.S. STD. SIEVE SIZE 4	10 40 60 200 270		UNCLASSIFIED EXCAVATION - T	ASSIFIED EXCAVATION -	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIM SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
OPENING (MM) 4.76	.00 0.42 0.25 0.075 0.053			PTABLE,BUT NOT TO BE IN THE TOP 3 FEET OF ANKMENT OR BACKFILL	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER TO DETACH HAND SPECIMEN.
BOULDER COBBLE GRAVEL (BLDR.) (COB.) (GR.)	SAND SAND SILT (CSE, SD.) (F SD.)	CLAY (CL.)	ABBREVIATIONS	T - VANE SHEAR TEST	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE BY MODERATE BLOWS.
SIZE IN. 12 3	2.0 0.25 0.05 0.00 - CORRELATION OF TERMS	G	BT - BORING TERMINATED MICA MICACEOUS WE CL CLAY MOD MODERATELY $\gamma$	A WEATHERED - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFF HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HA
SOIL MOISTURE SCALE FIEL	CRIPTION GUIDE FOR FIELD MOISTURE DE	ESCRIPTION	CSE COARSE ORG ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST	- DRY UNIT WEIGHT	POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK PI
	URATED - USUALLY LIQUID; VERY WET, USU (AT.) FROM BELOW THE GROUND WAT		e - VOID RATIO         SD SAND, SANDY         SS           F - FINE         SL SILT, SILTY         ST	- BULK - SPLIT SPOON - SHELBY TUBE - ROCK	PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PI SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRA'
PLASTIC - WE	- (W) SEMISOLID; REQUIRES DRYING T ATTAIN OPTIMUM MOISTURE	0	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT	- RECOMPACTED TRIAXIAL R - CALIFORNIA BEARING	FINGERNAIL. FRACTURE SPACING BEDDING
	HTTHIN OF TIMOM MOISTORE		HIHIGHLY V-VERY	RATIO	TERM SPACING TERM
OM _ OPTIMUM MOISTURE - MO SL _ SHRINKAGE LIMIT	ST - (M) SOLID: AT OR NEAR OPTIMUM M	10ISTURE		ECT R TYPE: AUTOMATIC MANUAL	VERY WIDE         MORE THAN 10 FEET         VERY THICKLY BEDDED           WIDE         3 TO 10 FEET         THICKLY BEDDED           MODERATELY CLOSE         1 TO 3 FEET         THINLY BEDDED           CLOSE         0.16 TO 1 FOOT         VERY THILLY BEDDED
- DR	<ul> <li>(D)</li> <li>REQUIRES ADDITIONAL WATER 1 ATTAIN OPTIMUM MOISTURE</li> </ul>	го	X     CME-55		VERY CLOSE LESS THAN 0.16 FEET THICKY LAMINATED 0
I	PLASTICITY		B* HOLLOW AUGERS		INDURATION
	ASTICITY INDEX (PI) DRY STREN		CME-550 HARD FACED FINGER BITS	l	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING,
NON PLASTIC SLIGHTLY PLASTIC	0-5 VERY LO 6-15 SLIGHT			TOOLS:	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS, GENTLE BLOW BY HAMMER DISINTEGRATES SAMPL
MODERATELY PLASTIC HIGHLY PLASTIC	16-25 MEDIUM 26 OR MORE HIGH			POST HOLE DIGGER HAND AUGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH BREAKS EASILY WHEN HIT WITH HAMMER.
	COLOR			SOUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEE DIFFICULT TO BREAK WITH HAMMER.
	OR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLU REAKED, ETC. ARE USED TO DESCRIBE APPEARANC			VANE SHEAR TEST	EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMI SAMPLE BREAKS ACROSS GRAINS.

### PROJECT REFERENCE NO.



2

	TERMS AND DEFINITIONS
ED. AN INFERRED SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
FOOT PER 60	AQUIFER - A WATER BEARING FORMATION OR STRATA.
IS OFTEN	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING
N VALUES >	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.
	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
CK THAT CLUDES GRANITE,	SURFACE.
	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
AL PLAIN IF TESTED.	
2.	OF SLOPE.
MAY NOT YIELD	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.
	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
OATINGS IF OPEN.	HORIZONTAL.
AMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
ICK UP TO L FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
R BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
S. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
Y. ROCK HAS AS COMPARED	PARENT MATERIAL.
	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
ELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
OSS OF STRENGTH WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
	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
RE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
F STRONG ROCK ONLY MINOR	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.
ALUES < 100 BPF	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
IN SMALL AND	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
5. SAPROLITE IS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
	RUN AND EXPRESSED AS A PERCENTAGE.
S REQUIRES	<u>SAPROLITE (SAP.)</u> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
S ACOUNCS	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND
LOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT
EEP CAN BE ETACHED	<u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
R PICK POINT.	A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL
BLOWS OF THE	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
T. SMALL, THIN	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
	<u>STRATA ROCK QUALITY DESIGNATION (SRQD)</u> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
PIECES 1 INCH IED READILY BY	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
-	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
	BENCH MARK: ELEVATIONS TAKEN FROM 15987_LS_TIN2.TIN
THICKNESS	DATED 05/2I
4 FEET .5 - 4 FEET	ELEVATION: FEET
6 - 1.5 FEET	NOTES:
3 - 0.16 FEET 18 - 0.03 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
0.008 FEET	
AT, PRESSURE, ETC.	
EEL PROBE:	
PROBE:	
	DATE: 8-15-14



													0		100	200	PROJECT REFE		SHEET NO
· · · · · · · . :											<u>.</u>		E				I-598		4
230		K <b>MENT</b> :BROWN RED ORAN	CE TAN AND CE	ANY MOIST TO SA	T LOOSE TO D	ENSE CLAYEY AND	WITY SAND (A-2-4 A	-2-61 (1100 TO	HIGHLY PLASTIC	WITH TRACE C	RAVEI			:	$VE^{FEET} 2.5$		BIG MA	ON -L- (I-95) IRSH SWAMF STA. 586+14.00	P AT
230	BROADWAY EMBANI	KMENT: GRAY. MOIST. STIFF. TAN GRAY AND ORANGE.S	SANDY SILTY CL	AY (A-7-6)(MOD.	TO HIGHLY PLA	STIC)							····· <b>I</b>						
220	Ŭ,	GRAY AND BLACK.WET TO <b>TAL PLAIN:</b> GRAY TAN BROW							AND F.AND CSE	.SAND (A-3.A-1-	: =b)WITH TR.	ACE MICA	ļ		· · · · · · · · · · · · · · · · · · ·			·	220
	DUNDIVIDED COAST	TAL PLAIN: TAN AND GRAY. GRAY ORANGE AND BROWN	MOIST TO SAT.	SOFT TO HARD	SANDY AND SIL	TY CLAY (A-7.A-7-6.	HIGHLY PLASTIC						RAGMENTS (BLAC	K CREEK FOI	RMATION				
.210	<u> </u>	RAY, MOIST TO SAT. SOFT												,		1			
200							SOII	L TES	T RES	ULTS									200
200			SAMPLE	OFFSET	STATION	DEPTH	AASHTO	L.L. P.I.		BY WEIGHT			SING (SIEVES		%				
190			NO. SS-227	21 FT RT	585+26	INTERVAL 3.5'-4.0'	CLASS. A-7-6	48 29	$\begin{array}{c c} C. SAND & F. S. \\ \hline 11 & 3 \end{array}$		CLAY 46	10 100	40 200 93 66		RE ORGANIC				
			SS-228 SS-220	21 FT RT 20 FT RT	585+26 585+99	8.5'-10.0' 3.5'-5.0'	A-2-6	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		7 3	22 26	99	60   26   99   56	12	_				
190			SS-222	20 FT RT	585 + 99	9.7'-10.0'	A-4 A-7-6	51 29	13 1	1 18	59	100 99	92 79	26	-				190
180		· · · · · · · · · · · · · · · · · · ·	SS-07 SS-08	20 FT LT 20 FT LT	587 + 18 587 + 18	3.5'-5.0' 13.5'-14.5'	<u>A-2-6</u> A-4	39         21           32         10	$\begin{array}{c c} 50 & 13 \\ \hline 46 & 2 \end{array}$		27 28	99 99	68   33   69   36					· · · · · · · · · · · · · · · · · · ·	
			ST-04	20 FT LT	587+18	18.0'-20.0'	A-7-6	60 36	1 1:	9 24	57	100	100 81	30		J			
170					·····;··· ;	·····			· · · · · · · · · · · · · · · · · · ·	S2_EB2-B_SE 587+I8	3L		;;; ;	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				
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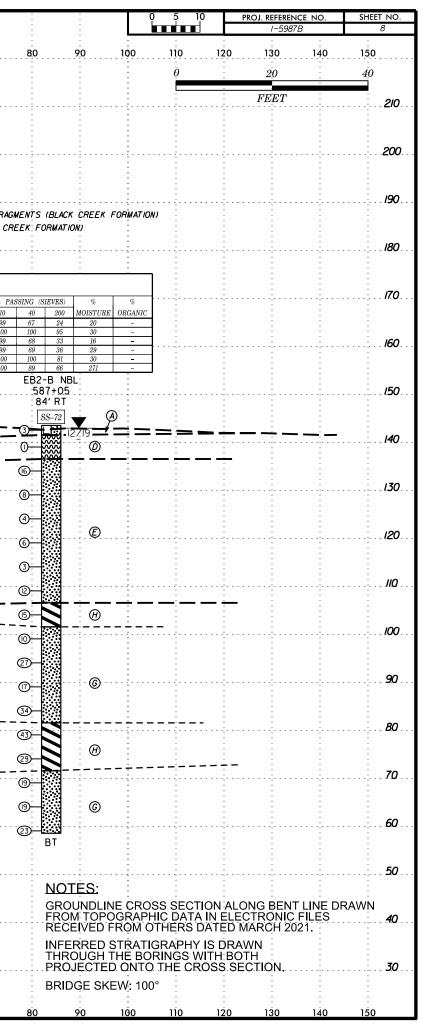
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	SAMPLE OFFSET STATION DEPTH NO. OFFSET STATION INTERVA.	AASHTO	SIEVES) % % 200 MOISTURE ORGANIC	
	SS-214         59         FT         LT         585+99         8.5'-10.0'           SS-220         20         FT         RT         585+99         3.5'-5.0'           SS-222         20         FT         RT         585+99         9.7'-10.0'	A-4         52         29         2         22         16         60         100         99           A-4         25         9         4         51         20         26         100         99	<u>83 26 -</u> 56 25 -	
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	EUNDIVIDED COAST AL PLAIN: GRAY ORAN	IGE BROWN AND TAN WET TO SAT DENSE TO V.DENSE SILTY SAND T.STIFF TO HARD SILTY SANDY CLAY (A-7-6)(MOD.TO HIGHLY PLAST		
		D ORANGE.SAT.LOOSE TO DENSE.SILTY SAND (A-2-4)WITH TRACE SOFT TO V.STIFF.SILTY CLAY (A-7)WITH TRACE SAND LENSES AND		
	EXISTING GROUN	D BI-C SBL 585+99 59' LT	MICA (BLACK CREEK FORMATION) BI-A NBL 585+99 20'. RT SS-220	
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	NO. OFFSET SS-203 58 FT LT	STATION         Diff fill           586+35         8.5'-10.0'	CLASS.         L.L.         P.I.         C. SAND         F.           A-7-6         43         23         6         6	SAND         SILT         CLAY         10           11         26         57         100	40         200         MOISTURE         ORGANIC           97         87         21         -						÷
0	<u>SS-228   84 FT RT</u> <b>©ALLUVIALs BLACK</b> (	586+45 14.5'-15.0' RAY AND BROWN,WET	A-7-6 57 31 6 TO SATLOOSE TO V.LOOSE.SILT	<u>11   13   70   100  </u> Y AND CLAYEY SAND (A-2-4	98 86 27 A-2-7) WITH TRACE CLAY.ORGANIC	CS AND WOOD FRAGMENTS					
			SANDY CLAYEY SILT (A-5) AND MU		Y SAND (A-2-4) AND F.SAND (A-3	NWITH TRACE CLAY					
0	©undwided coast	AL PLAIN: GRAY. MOIST.	STIFF TO HARD SILTY CLAY (A-7	A-7-6) (MOD.TO HIGHLY PLAS	STIC) WITH TRACE WOOD FRAGMEN	TS AND SAND			,	· · · · · · · · · · · · · · · · · · ·	
					2-4.A-2-6.A-2-7)WITH TRACE CL 5)WITH TRACE MICA SAND AND OR		v B2-B				
2	EXISTING GROUND	B2-C SBL		\$2_B2-4 586+	51 : : :		.586+ 84' F				
		586+35 58'LT		5′ R	T 1		SS-8				
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200	(A) <b>ROADWAY ENBANKWENT</b> ; BROW	IN AND GRAY.MOIST TO	SAT.V.LOOSE TO MED.DENSE	CLAYEY AND SILTY S	AND (A-2-4.A-2-6) WITH TRACE ORGA	vics	
190.		TO WET.V.SOFT TO S RANGE TAN BROWN GRA RAY AND TAN.MOIST TO	SOFT.SANDY SILT (A-4)AND MUC AY AND BROWN-TAN.SAT.V.LOOSI )SAT.SOFT TO V.STIFF.SILTY C	K WITH TRACE GRA TO DENSE.CLAYEY LAY (A-7-6)(MOD.TO	VEL AND SILTY SAND (A-2-4,A-2-6) AND I HIGHLY PLASTIC) WITH TRACE ORGANIC		
180.						TH TRACE TO LITTLE MICA AND TRACE CE TO LITTLE: MICA AND TRACE GRAVEL AND	
						SOIL TEST RESUI	
170				S2_EB2-B_SBL 587+18 207+17	SAMPLE         OFFSET         STATION         DEF           NO.         SS-2043         88         FT         LT         587+14         0.0'-           SS-2045         88         FT         LT         587+14         8.5'-	ATH         AASHTO         L.L.         P.I.         % BY W           RVAL         CLASS.         L.L.         P.I.         C. SAND         F. SAND           1.5'         A-2-4         NP         NP         49         29	TEIGHT
160	EB2-A SBL 587+I4 <u>88' L T</u>	EXISTING	GROUND	20'' L T SS-07 SS-08 ST-04	SS-07         20         FT         LT         587+18         3.57           SS-08         20         FT         LT         587+18         13.57           SS-08         20         FT         LT         587+18         13.57           ST-04         20         FT         LT         587+18         13.57           ST-04         20         FT         LT         587+18         13.57           SS-72         84         FT         T         587+05         3.57		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$
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ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	0.5ft	4	PER FOOT	75 100	NO. MO	O I G	SOIL AND ROCK DES	CRIPTION DEPTH (1
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115	•	Ŧ									115.4	37.
	113.9	38.5	8	3	17					///	ORANGE, SILTY CLAYE	A-2-6) 39.
		Ŧ		ľ	''	$\left  \begin{array}{c} \cdot \cdot \cdot \cdot \bullet \mathbf{P}^{20} \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \bullet \mathbf{P}^{20} \right  \cdot $			W		GRAY, SILTY CLAY (A-7), ORGANICS AND	MICA /
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105		Ŧ				::::``\\;::::					CLAY (A-7) WITH LIT	47
	103.9	48.5	18	23	25			· · · ·	w	-	ORANGE, SILTY FINE TO C (A-2-4) WITH LITTL	
		Ŧ					48			F	100.1	
100	98.9	53.5						+ • • • • •				
Ī		I	5	7	14	$   \cdot \cdot \cdot \cdot \bullet^{2_1} \cdot \cdot \cdot \cdot$			w		DARK GRAY, FINE TO CO CLAY (A-6) WITH LITTLE	MICA (BLACK
95		Í										57.
	93.9	58.5	7	10	9				w		GRAY, CLAYEY FINE TO C (A-2-6) WITH LITTLE M	CA (BLACK
		Ŧ								<u> </u>	CREEK FORMAT	ION)
90		L 63.5					 	+				
Ī		F	6	7	10	· · • ●17   · · · ·			м		87.9 GRAY, SILTY FINE SAND	64. Y CLAY (A-6)
85		Í					 				WITH LITTLE MICA (BLA FORMATION	ACK CRÈEK É
	83.9	68.5	4	6	9				м			,
		Ŧ									00 A	-
80	78.9	73.5						+				
Ī		I	9	14	17	<b>)</b>   • • • • <b>)</b> <sub>31</sub> • •			w		SAND (A-2-6) WITH LITTLE CREEK FORMAT	
75		Ŧ										

WRS	47533	311			т	Ρı	-5987	,		0		BOF	OBES	2N				GEOLOGI	ST B. Pain	ter		
	DESCR		BRIF						IG MA						86+	14 00					GROU	ND WTR (
	NG NO.											-	FSET			11.00		ALIGNME	NT -I -		0 HR.	N
	AR ELI						L DEF			) ft		-	RTHIN			96			2,003,012		24 HR.	FIA
	RIG/HAN			= F&F								1					л м	ud Rotary	2,000,012		IMER TYPE	
	LER D											co	MP. D/						WATER DI			, latornatio
ELEV	DRIVE ELEV	DEPTH	1	w co		Π					R FOO				AMP.		1 L					
(ft)	ELEV (ft)	(ft)		0.5ft		0		25		50		75	100		10.	мо	0   G	ELEV. (ft)	SOIL AND F	OCK DE	SCRIPTION	N DEPTH
75									Ma	atch I	_ine											
	73.9	78.5	15	20	28	ŦĿ								T		w	/././					
		Ī						_		40				-			<u>~··</u>	- Bo	ring Termina	ted at Ele	evation 72.4	ft IN
	-	Ł																	ND (COASTA FC	RMATIC	N)	KEEK
	-																					
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## GEOTECHNICAL BORING REPORT

## BORFIOG

# DODEIOC

### GEOTECHNICAL BORING REPORT BORE LOG

								<u> </u>	<u>ORE L</u>	UG			_				
WBS	47533	.1.1			Т	<b>IP I</b> -5987		COUNT	Y ROBESO	N			GEOLOG	ST W. Pesl			
SITE	DESCR	PTION	BRID	DGE O	N -L-	( <b>I</b> -95) OVER	BIG MAR	SH SWAN	/IP AT -L- ST	A. 586+	14.00					GROUN	ND WTR (ft)
Bori	NG NO.	S2_E	B1-A N	NBL	s	TATION 58	5+26		OFFSET 2	21 ft RT			ALIGNME	NT -L-		0 HR.	N/A
COLL	AR ELE	<b>EV.</b> 15	2.4 ft		т	OTAL DEPT	H 80.0 ft	:	NORTHING	383,10	69		EASTING	2,003,089		24 HR.	FIAD
DRILL	RIG/HAM	IMER EF	F./DATI	E F&F	R2175 (	CME-55 84% (	)3/01/2019			DRILL M	IETHOD	) Muc	dRotary		HAMM	ER TYPE	Automatic
DRILL	LER S.	Davis			S	TART DATE	01/30/2	0	COMP. DA	TE 01/3	31/20		SURFACE	WATER DEI	PTH N/	4	
ELEV (ft)	DRIVE ELEV	DEPTH (ft)		W CO	r —			PER FOOT		SAMP.	▼∕			SOIL AND RO	CK DES	CRIPTION	1
(14)	(ft)	(19	0.5ft	0.5ft	0.5ft	0 2	5	50	75 100	NO.	<u>/ MOI</u>	G	ELEV. (ft)				DEPTH (ft
160		-											-				
155	-	-											-				
	- 151.5	- 0.9				<b>.</b>							152.4 151.5	GROUN ROADWAY			0.0
150	_		19	22	21	1		3			м	L E		AS	SPHALT		Г <u> </u>
	148.9	3.5	3	5	5	- • <u>•</u> • • • • • • • • • • • • • • • • •	· · · · ·			SS-227	23%			D-ORANGE-BI OARSE SAND	(A-2-4) V		
	-						· · · ·						145.4 GR	G AY, FINE TO O			
145	143.9 -	8.5				] <del>  :/: : :</del>		<u> </u>	· · · · ·				= <u></u>	CLAY (A-7-6) ANGE-TAN, S	, HIGHLY	PLASTIC	<u></u>
	-		2	2	3	<b>•</b> 5	· · · ·			SS-228	12%		i	SAN	ID (A-2-4	)	i
140	-	Ł				$   i \cdots$							<u>140.4</u>	BROWN-GRA COARSE			0 / <u>12.</u> 9
	138.9	13.5	woн	1	0						Sat.	E	- <u>·</u>	ROWN-TAN-G	RAY CL	AYEY SIL	J TY
	-										out.	E		FINE TO COA			
135	133.9	L 18.5										F	-				
		- 10.0	5	8	8	· · · • 16					Sat.	F					
130	-	F				j						F					
	128.9	23.5	4	2	7	$ \cdot, \cdot\rangle$					Sat.	-	- 128.4				24.
	-	F									Sat.	N	DA	UNDIVIDED RK GRAY, FIN			NDY
125		28.5						+				N	-	SILTY	CLAY (A	-7)	
	- 123.9	- 20.5	7	11	13		24 • • •				м	N					
120	-	F										N					
	118.9	33.5	8	11	18		1					N	-				
	-	-					•29 <sup>,</sup> · · ·				М	N					
115		38.5					<u> </u>	+						ANGE-BROW			
		- 30.5	12	16	21		37				Sat.	F	С	OARSE SAND	(A-2-4) V MICA	/ITH TRA	CE
110	-	-										-					
	108.9	43.5	24	30	27			· · · · ·			Set	-	-				
	-	F						<b>•</b> 57 • •			Sat.	F					
105	103.9 -	48.5						+ + + + + + + + + + + + + + + + + + + +	+ • • • •			-	-				
	- 103.9	- 40.5 -	20	26	32			·   · · · ;€58• ·			Sat.	-					
100	-	ļ.										-	100.4				52.0
	98.9	53.5	5	11	15		· /· · ·					N	- <sub>97.9</sub> DA	<b>COAS</b> RK GRAY, FIN	TAL PLA		NDY 54.5
	-	-									W			LTY CLAÝ (A-7 (BLACK CRE	7) WITH <sup>-</sup>	FRACE M	
95								· · · ·	· · · ·					ARK GRAY, CL	AYEY SI	TY FINE	
ŀ	93.9 -	<u>58.5</u>	10	10	12	/	22				Sat.			OARSE SAND /IICA (BLACK C			
90	-	t F															
	88.9 -	63.5	40	45		$\left  \left  \begin{array}{c} \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \end{array} \right  \right $	$\dot{N}$	· · · ·	· · · ·				-				
	-	F	13	15	22		• <b>•</b> 37				Sat.						
85	-	÷					· · › › ·		· · · ·			$\mathbf{i}$	85.4 DA	RK GRAY, FIN			<u> </u>
ŀ	83.9 -	- 68.5 -	14	20	28	: : : :	· · · · · ·	48			м	N		-7) WITH TRA	CE MICA	AND WO	
	-	ł					· · · /					N		FRAGMENT FOF	S (BLACK RMATION		

								E	BORE	<u> L</u>	OG						
WBS	47533	3.1.1			Т	<b>P I</b> -5987		COUNT	ry Robe	ESO	N			GEOLOGIST W. Pesl			
SITE	DESCR	IPTION	BRID	DGE O	N -L- (	( <b>I</b> -95) OVE	R BIG MA	RSH SWA	MP AT -L	ST.	A. 586+	14.00		-			ID WTR (1
BOR	NG NO.	S2_E	B1-A N	NBL	S	TATION	585+26		OFFSE	<b>T</b> 2	21 ft RT			ALIGNMENT -L-		0 HR.	N/
COLL	AR EL	<b>EV.</b> 15	52.4 ft		Т	OTAL DE	<b>PTH</b> 80.0	ft	NORTH	ling	383,16	69		EASTING 2,003,089		24 HR.	FIA
DRILL	RIG/HAN	/MER EF	F./DATI	E F&F	R2175 C	CME-55 84	% 03/01/201	9			DRILL M	IETHOI	D Mu	ld Rotary	НАММ	ER TYPE	Automatic
DRIL	L <b>ER</b> S	. Davis			S	TART DA	<b>TE</b> 01/30	/20	COMP.	DAT	<b>FE</b> 01/3	31/20		SURFACE WATER DEI	PTH N/	A	
ELEV	DRIVE ELEV	DEPTH		w co				S PER FOC			SAMP.	▼∕		SOIL AND RO	CK DES	CRIPTION	I
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 	100	NO.	Ио	G	ELEV. (ft)			DEPTH
80	78.9	73.5					- Ma	tch Line			+						
		- / 3.5	7	9	14		• • • •	· · · · ·	·   · · · ·	:		w		(A-7) WITH TRA FRAGMENT	CE MICA	AND WO	
75		‡					:\:::			:				FORMATI			
10	73.9	78.5	9	13	16									-			
		+	3	13			• • • 29			•		W		- 72.4 - Boring Terminate	d at Elev	ation 72.4	8 ft IN
	-	ŧ												CLAY (COASTAL		I)	KEEN
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SITE BORI COLI					TI	<b>P I</b> -5987		COLINTY					0000000	OT 14/ · ·	N /		
BOR COLI		<b>IPTION</b>						COONT	Y ROBESO	N			GEOLOG	ST Weis, J.	IVI.		
COLI			BRIL	DGE O	N -L- (	I-95) OVEF	R BIG MARS	SH SWAN	/IP AT -L- ST	A. 586+′	14.00		1		0	ROUND	WTR (ft)
	NG NO.	S2_E	B1-B_	NBL	S	TATION 5	85+16		OFFSET (	68 ft RT			ALIGNME	NT -L-	(	) HR.	1.5
DRILL	AR EL	<b>EV.</b> 14	2.7 ft		Т	OTAL DEP	TH 90.0 ft		NORTHING	383,14	14		EASTING	2,003,131	24	4 HR.	1.2
	<b>RIG/HAM</b>	MMER EF	F./DAT	e Mid	3964 CI	ME-45C 91%	02/21/2019			DRILL M	ETHOD	Mud	Rotary		HAMMER	TYPE A	utomatic
DRIL	LER P	owell, B			S	TART DAT	E 05/24/2 <sup>-</sup>	1	COMP. DA	<b>FE</b> 05/2	25/21		SURFACE	WATER DEF	<b>PTH</b> N/A		
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	0.5ft	UNT 0.5ft	0		PER FOOT	75 100	SAMP. NO.		L O G	ELEV. (ft)	SOIL AND RO	CK DESCR	IPTION	DEPTH (ft)
145		-										-	- 142.7				0.0
140	141.7 139.2	- <u>1.0</u> - <u>3.5</u>	woн		woн	1 · · · · ·					D				<b>LUVIAL</b> JCK AND PI	EAT	0.0
135	136.7	Ŧ		wон wон	WOH 3				· · · · · · · · · · · · · · · · · · ·		Sat. Sat.		<u>135.7</u>				7.0
100	134.2	<u>+</u> 8.5 -	4	3	4	<b>1 1 1 1 1 1 1 1 1 1</b>	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		- BH	ROWN, SILTY S OF	Sand (a-2-4 Rganic	i), HIGHL	Ŷ
130	129.2	+ 13.5 +	3	7	10		· · · · · · · · · · · · · · · · · · ·	· · · · ·	· · · · · ·	<u>SS-06</u>	12%		128.2	UNDIVIDED	COASTAL -		14.5
125	124.2	- - 18.5		_			· · · · ·	· · · · ·	· · · · ·				<u>. 124.7</u>	GRAY, SA	NDY SILT (/	4-4)	<u> </u>
120		+	4		12						М		<u>120.2</u>			·	<u>22.5</u>
	119.2	<u> </u>	5	7	15		22	· · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		115.7	GRAY, CLAY	'EY SAND (.	A-2-6)	27.0
115	114.2	28.5	12	15	19				· · · · · · · · · · · · · · · · · · ·		Sat.	**** 0000- 0000- 0000-	- <u></u>	TAN, CSE	. SAND (A-1	I-b)	21.0
110	109.2	- 33.5	16	20	29		· · · · · ·	  49	· · · · · ·		Sat.	0000 00000 00000 0000					
105	104.2	- - - - - - - - - - - - - - - - - - -	6	10	12		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·				. <u>104.7</u>				<u> </u>
100	99.2 -	- - - - 43.5			12				· · · · ·		Μ		100 7	GRAY, SILTY			<u>42.0</u>
95		+ 43.3 - - -	4	6	8				· · · · · · · · · · · · · · · · · · ·		Sat.		98.2	GRAY, CSI	E. SAND (A-	·1-b)	44.5
	94.2	48.5 - -	2	3	5	· / .••*******************************			· · · · · · · · · · · · · · · · · · ·		Sat.						
90	89.2	53.5	6	6	7				· · · · · · · · · · · · · · · · · · ·		Sat.		. 89.7	GRAY, SILT	TY SAND (A	-2-4)	<u>53.0</u>
85	84.2	- 58.5 -	8	12	21	· · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · ·	· · · · ·		М		85.2	GRAY, SILTY	SANDY CLA	AY (A-6)	<u> </u>
80	79.2	- - - - - 63.5	8	9	16		1 1 1	· · · · ·			Sat.			GRAY, SILTY F. NTERMITTEN			<u> </u>
75	74.2	- - - - 68.5	9	10	12				· · · · · ·				.74.7	GRAY, CLAY		A-2-6)	<u> </u>
70	oc o <sup>-</sup>	+	9	12			●24   		· · · · ·		Sat.		<u>70.7</u>	GRAY, CSE. S			72.0
65	69.2	<u>73.5</u>	10	11	12	   		  	· · · · · · · · · · · · · · · · · · ·		Sat.		I	NTERMITTEN	T LENSES (	ÓF CLAY	

NBG	47533	11			т	<b>P</b> 1-598	87			ORE				GEOLOGIST Weis, J. M			
										IP AT -L-		14 00				ROUND W	
	NG NO.					TATION				OFFSET				ALIGNMENT -L-		HR.	1.:
	AR ELE			NDL				90.0 ft		NORTHIN				EASTING 2,003,131		HR.	1.
				E MID		ME-45C 9							D Mu	_ <b>_</b>	HAMMER T		
	LER P							05/24/21		COMP. D			- 1110				
EV	DRIVE	DEPTH	1	w co				BLOWS F			SAMP		1 L				
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	0	75 10	0 NO.	мо	O G	SOIL AND ROC ELEV. (ft)	K DESCRIF		EPTH
<u> 55</u>				$\lfloor$		L		Match	Line								
	64.2	/8.5	9	12	14		· · •	 26	· · · ·			Sat.	0000	GRAY, CSE. SA	LENSES OF	WITH F CLAY	
50		+					:: `	\ \	· · · · ·					-	inued)		
	59.2	83.5	9	14	22			-\ - <u>\</u>			_	Sat.	000	<u>- 59.7</u> GRAY, SILTY	SAND (A-2	<u>-</u>	<u> </u>
	-	+						· • 36 ·	· · · · ·			Jai.		-			
5	- 54 2 -	88.5				· · ·		ii:			_			-			
			9	14	17		•••	• • • • • • • • • • •				Sat.		- 52.7 - Boring Terminated a		50 7 A INI	9
	-	t t												- SAND (COASTAL PI	_AIN) (BLAC		
	-	F												-	IATION)		
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WBS	47533	3.1.1			T	<b>P I</b> -5987		COUNT	<b>Y</b> ROBESO	N			GEOLOGIST W. Pesl	
SITE	DESCR	IPTION	BRI	DGE O	N -L- (	(I-95) OVER	BIG MARS	SH SWAN	/IP AT -L- ST	A. 586+	14.00			
BOR	NG NO.	S2_B	1-C SI	ЗL	S	TATION 58	5+99		OFFSET	59 ft LT			ALIGNMENT -L-	0 HR. N/A
COLI	AR EL	<b>EV.</b> 13	7.3 ft		Т	OTAL DEPT	H 80.0 ft		NORTHING	383,26	64		EASTING 2,003,038	24 HR. FIAD
DRILL	RIG/HAN	IMER EF	F./DAT	E F&R	2175 (	CME-55 84% (	03/01/2019			DRILL M	ETHO	) Muc	Rotary HAMM	ER TYPE Automatic
DRIL	LER S	. Davis			S	TART DATE	01/28/20	)	COMP. DA	TE 01/2	29/20		SURFACE WATER DEPTH 4.	1ft
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	0.5ft	JNT 0.5ft	0 2	BLOWS F	PER FOOT	- 75 100	SAMP. NO.		L O G	SOIL AND ROCK DES	CRIPTION DEPTH (1
145		+												
140	- - -										▼		WATER SURFACE (	01/28/20)
	137.3												137.3 GROUND SURF	ACE 0.
			WOR	WOR	WOR						Sat.		MUCK	
135	133.8	- <u>3.5</u>	2	5	6	· • 11 ·	· · · · ·	· · · · ·	· · · · ·		Sat.		135.3 ALLUVIAL TAN-GRAY, SILTY FINE WITH TRACE CLAY AND	
130	128.8	8.5					· · · · ·	· · · · ·				V	130.3 UNDIVIDED COASTA GRAY, SILTY FINE SAND	
125	- 123.8	+ - - - 13.5	3	4	/			· · · · ·	· · · · · · · · · · · · · · · · · · ·	SS-214	26%		WITH TRACE MICA, HIG	
120	_	+ + +	9	10	11		1	· · · · ·			М		-	
115	<u>118.8</u>	<u>- 18.5</u> - -	7	12	18		30	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		М		115.3	22.
		23.5	16	20	30			50	· · · · · · · · · · · · · · · · · · ·		w		ORANGE-BROWN-TAN, S COARSE SAND (A-2-4) V CLAY	SILTY FINE TO
110		28.5	19	37	53		· · · · ·	· · · · ·	90		w		-	
105	103.8	- - <u>33.5</u>	5	12	21	  	••33		· · · · ·		Sat.		-	
100	98.8	- - - <u>38.5</u>	6	8	11	· · · · · ·			· · · · ·				100.3 COASTAL PLA DARK GRAY, SILTY CLA	Y (A-7) WITH
95	93.8	43.5						· · · · ·	· · · · · ·		М		TRACE FINE SAND AND CREEK FORMAT BROWN-TAN, SILTY FINE	'ION) <sup>`</sup> TO COARSE <u>42</u> .
90		+ + +	4	3	6	· • • · · ·	· · · · ·	· · · · ·	· · · · ·		Sat.		SAND (A-2-4) WITH TF (BLACK CREEK FOR -90.3	MATION) 47.
85	88.8	<u>- 48.5</u> - -	1	0	3		· · · · ·		· · · · · · · · · · · · · · · · · · ·		Sat.		ATRACE FINE SAND (BL FORMATION DARK GRAY, CLAYEY SI COARSE SAND (A-2-4) V	ACK CREEK <u>49.</u>  ) LTY FINE TO 50
	- 83.8 -	53.5	4	5	8	· · · · · · · · · · · · · · · · · · ·		· · · · ·	· · · · ·		w		MICA (BLACK CREEK F DARK GRAY, FINE SAND (A-7) WITH TRACE MICA (	ORMATION) Y SILTY CLAY BLACK CREEK
80	78.8	 	4	6	10		· · · · ·		· · · · · · · ·		Sat.		80.3 FORMATION DARK GRAY, CLAYEY SI COARSE SAND (A-2-4) V MICA (BLACK CREEK F	ÎTY FINE TO VITH TRACE
75	73.8	- - 63.5	11	19	20		<b>9</b> 39	· · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		-	
70	68.8	- <u>68.5</u>	6	11	14		· · · · ·	· · · · ·	· · · · · · · · · · · · · · · · · · ·		w		7 <u>0.3</u> DARK GRAY, FINE SAND (A-7) WITH TRACE MICA ( FORMATION	BLACK CREEK
65		ł						   	· · · · ·			Ŕ		)

WD0	47500					<b>ID</b> 1 5007							
	47533		חחם			IP I-5987 (I-95) OVER BIG MA		Y ROBESO		.14.00		GEOLOGIST W. Pesl	GROUND WTR
						TATION 585+99	10H 5WAI	OFFSET				ALIGNMENT -L-	
	NG NO.			5L	-		<u></u>						
						OTAL DEPTH 80.0		NORTHING	1		<b>–</b> 14	EASTING 2,003,038	
			F./DATI	E FAF		CME-55 84% 03/01/2019		COMP. DA					MMER TYPE Automatic
	LER S. DRIVE	DEPTH	BIC	w co		11	20 SPER FOO <sup>T</sup>	-	SAMP		1∟	SURFACE WATER DEPTH	4.111
ELEV (ft)	DRIVE ELEV (ft)	(ft)		0.5ft			50	75 100	NO.	мо		SOIL AND ROCK D	ESCRIPTION DEPTH
													<u> </u>
65						Ma	tch Line						
	63.8 -	73.5	7	10	16					$\begin{bmatrix} - \\ w \end{bmatrix}$	R	DARK GRAY, FINE SAI (A-7) WITH TRACE MIC	
	-	E				↓ ↓ ↓ ↓ <b>●</b> 26				~~		– FORMATION) (i	continued)
60		78.5										GRAY, CLAYEY SILTY F	FINE SAND (A-2-4)
		-	9	10	12	$1 \cdots 1^{ }_{22} \cdots$				Sat.		WITH TRACE MICA (	یے (ON
	-	L										Boring Terminated at E SAND (COASTAL PLAIN	levation 57.3 ft IN I) (BLACK CREEK
	-	Ļ										- FORMATI	ÓŇ)
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## GEOTECHNICAL BORING REPORT

## POPEIOC

						<u> </u>	<u>ORE L</u>	OG			
WBS	<b>4</b> 7533.1.1			TI	<b>P I</b> -5987	COUNT	Y ROBESO	N		GEOLOGIST W. Pesl	
SITE	DESCRIPTION	BRI	DGE O	N -L- (	I-95) OVER BIG MAR	SH SWAN	/IP AT -L- ST	A. 586+14	4.00		GROUND WTR (ft)
BOR	<b>NG NO.</b> S2_E	31-A N	BL	S	<b>FATION</b> 585+99		OFFSET 2	20 ft RT		ALIGNMENT -L-	0 HR. N/A
COL	LAR ELEV. 1	35.8 ft		т	DTAL DEPTH 80.0 ft		NORTHING	383,238	3	EASTING 2,003,113	24 HR. FIAD
DRILL	RIG/HAMMER EI	F./DAT	E F&R	2175 C	CME-55 84% 03/01/2019			DRILL ME	THOD	Mud Rotary HAI	MMER TYPE Automatic
DRIL	LER S. Davis			S	TART DATE 01/29/2	0	COMP. DA		<u> </u>	SURFACE WATER DEPTH	3.1ft
ELEV (ft)	DRIVE ELEV (ft) (ft)	H BLC 0.5ft	OW CO	UNT 0.5ft		PER FOOT 50	75 100	SAMP. NO.	MOI G		ESCRIPTION DEPTH (ft)
140									▼ .	WATER SURFAC	E (01/29/20)
135	135.8 - 0.0	WOH	- WOH	woн	•0	<b> </b>			Sat.		NL
	132.3 3.5									AL 133.8 DARK BROWN GRAY, CLAYEY FINE S	
130		WOR	WOH	WOH	•			SS-220 2	25%	- - -	
	127.3 8.5									ORANGE-BROWN, S	
125	-	2	8	3	• • • • • • • • • • • • • • • • • • • •			SS-222	26%	COARSE SAND (A-2-4 <u>126.1</u> GRAVE UNDIVIDED COAS	Ĺ / <u>9./</u>
										GRAY, FINE TO COARS CLAY (A-7-6), HIGH	SE SANDY SILTY
120	- 122.3 - 13.3	3	5	10		· · · · ·					
120											
	117.3 18.5	9	15	27	42				м	116.3 GRAY-ORANGE-BROW	
115						<u> </u>	· · · · ·			FINE TO COARSE SAN	ID (A-2-4) WITH
	112.3 23.5	4	15	19					Sat		
110					<b></b>						
	107.3 28.5	3	9	20	$\left \begin{array}{c} \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \end{array}\right  \stackrel{j}{\underset{I}} \cdot \cdot \cdot \cdot \\ \stackrel{j}{\underset{I}} \cdot \cdot \\ \stackrel{j}{\underset{I}} \cdot \cdot \\ \stackrel{j}{\underset{I}} \cdot \cdot \\ \stackrel{j}{\underset{I}} \cdot \\ \stackrel{j}{\underset{I} } \cdot \\ \stackrel{i}{\underset{I} } \cdot \\ \stackrel{i}{\underset{I} } \cdot \\ \stackrel{i}{\underset{I} } \cdot \\ \stackrel{j}{\underset{I} } \cdot \\ \stackrel{j}$						
105			5	20	<u> </u>				Sat		
	102.3 33.5										
100		18	12	6	· · · • • 18 · · · · ·				Sat		
	97.3 + 38.5				$\begin{vmatrix} & & & \lambda \\ & & & \lambda \end{vmatrix}$					98.8 COASTAL P	
95	97.3 30.5	5	12	12	· · · · · • • • · · · · · · · · · · · ·	· · · · ·			Sat.	DARK GRAY, SILTY C	RSE SAND AND
00					· · · · <u>\</u> . · · ·					GRAY-ORANGE-BROW	N, SILTY FINE TO
	92.3 43.5	9	14	19	· · · · · · · · · · · · · · · · · · ·			:	Sat	COARSE SAND (A-2-4 MICA (BLACK CREEK	
90					<u>   .  </u>   .	· · · ·	· · · · ·				
	87.3 48.5	11	16	19		· · · · ·			Sat.		
85					······································					è- 	
	82.3 53.5	9	9	12							
80		9	9	12	│		· · · ·		Sat.		
	77.3 58.5				· · · · ·    · · · · ·						
75	l I	6	8	14					Sat		
70	72.3 7 63.5	10	13	23					Sat		
10					· · · ·   / · · ·		· · · ·				
	67.3 68.5	10	9	14	••••••••••••••••••••••••••••••••••••••				w	66.8 DARK GRAY, FINE SAN	
65	+					+ • • •				(A-7) WITH TRACE MIC/ FORMATIO	A (BLACK CREEK
	62.3 73.5	7	12	14		· · · · ·			Sat.		
60	<u> </u>				🔽					<u>t</u>	

									B	ORE	L	OG						
	47533					P I-5				Y ROBES					GEOLOGIST W. Pesl			
									SH SWAI	MP AT -L- :			14.00		-		4	D WTR (f
BOR	NG NO.	S2_E	1-A N	BL	_		<b>N</b> 585+			OFFSET					ALIGNMENT -L-		0 HR.	N/.
COLL	AR ELI	<b>EV.</b> 13	35.8 ft		то	DTAL	DEPTH	80.0 ft							EASTING 2,003,113		24 HR.	FIA
DRILL	RIG/HAN	IMER EF	F./DAT	E F&F	R2175 C	ME-55	84% 03/0	01/2019		1		DRILL M	IETHOD	D Mu	ud Rotary	HAMM	ER TYPE	Automatic
DRILI	L <b>ER</b> S	. Davis	1			TART	DATE			COMP. D	DAT		30/20		SURFACE WATER DEF	<b>TH</b> 3.1	1ft	
ELEV (ft)	DRIVE ELEV	DEPTH (ft)						BLOWS P				SAMP.			SOIL AND RO	CK DES	CRIPTION	
(11)	(ft)	(11)	0.5ft	0.5ft	0.5ft	0	25	5	0	75 10		NO.	/моі	G	ELEV. (ft)			DEPTH
_60				+				Match	Line						58.8			7
	57.3	78.5													GRAY, CLAYEY SI WITH TRACE M		E SAND (A	-2-4)
ŀ		Ŧ	9	9	13								Sat.		<u>55.8</u> FOR	MATION	)	80
	-	Ŧ													Boring Terminate SAND (COASTAL	PLAIN) (E	BLACK CR	EEK
	-	Ŧ													- FOR	MATIÓN	)	
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WBS	47533	3.1.1			TI	<b>P I</b> -5987		COUNT	<b>Y</b> ROBESO	N			GEOLOGIS	T W. Pesl			
SITE	DESCR	IPTION	BRII	DGE ON	√-L- (	I-95) OVER	BIG MAR	SH SWAN	/IP AT -L- ST	A. 586+	14.00		1			GROUN	ID WTR (ft)
BOR	NG NO.	S2_B	2-C SI	BL	S	TATION 58	36+35		OFFSET 5	58 ft LT			ALIGNMEN	T -L-		0 HR.	N/A
COLI	LAR ELE	<b>EV.</b> 13	87.0 ft		т	OTAL DEPT	<b>H</b> 85.0 ft		NORTHING	383,29	98		EASTING	2,003,052		24 HR.	FIAD
DRILL	. Rig/han	IMER EF	F./DAT	E F&R2	2175 C	ME-55 84%	03/01/2019			DRILL M	ETHOD	) Mu	d Rotary		HAMME	ER TYPE	Automatic
DRIL	LER S.	. Davis			S	FART DATE	E 01/27/2	C	COMP. DAT	<b>FE</b> 01/2	28/20		SURFACE	WATER DEF	<b>PTH</b> 5.4	ft	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	OW COU	JNT 0.5ft	0 2		PER FOOT	- 75 100	SAMP. NO.	моі	L O G	SELEV. (ft)	Soil and RC	OCK DES	CRIPTION	DEPTH (ft
140		-											 -	WATER SUI	<u>RFACE (</u> C	1/27/20)_	
	137.0	00	WOH		0							-	137.0			ACE	0.0
135	-	‡			0	<b>●</b> 1· · · ·					Sat.		<u>135.8</u>	I	<b>LUVIAL</b> MUCK		
	133.5 -	3.5	1	1	1		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		Sat.		S	CK-GRAY, SI AND (A-2-4) \ GANICS, AND	//ITH TR/	ACE CLAY	ί,
130	128.5	8.5	2	3	6	$\begin{array}{c} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $				SS-203	21%	Z		<b>UNDIVIDED</b> Y-LIGHT GR/	AY, FINE	SANDY S	
125	-	+ + +			-	· ¶ <sup>9</sup> · ·	· · · · ·	· · · · ·	· · · · ·	33-203	2170		- CI	_AY (A-7-6) V FRAGMENT			D
120	123.5 - - - -	<u>+ 13.5</u> - -	3	4	8						м						
	118.5	18.5	8	10	11		1 1 1	· · · · ·	· · · · · · · · · · · · · · · · · · ·		м		- <u>118.0</u> O	RANGE-BRO ARSE SAND	WN, SILT		
115	113.5	23.5	8	5	20			· · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		-	ANSE SAND	CLAY		OL .
110	-	-				· · · · · ·		· · · · ·	· · · · ·		Jai.		-				
105	108.5 - - - -	- 28.5	5	17	26		43				Sat.	- - -					
	103.5 -	33.5	5	3	8	 		· · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		_				
100	98.5	- 38.5	5	6	11		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · ·		Sat.	Z		K GRAY, FIN		' SILTY C	
95	93.5	43.5					· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·				- GF	WITH TRAC FOF AY-BROWN- ARSE SAND	MATION TAN, SIL	) TY FINE <sup>-</sup>	го
90	-		8	4	2	<b>6</b>	· · · · · · · · · ·	· · · · ·	· · · · ·		Sat.		-	CLAY AND M	ĊA (BĹAC RMATION)	K CREE	< compared with the second sec
0.5	88.5 -	48.5	5	8	7	· · · • • 15			· · · · · · · · · · · · · · · · · · ·		Sat.						
85	83.5 -	53.5	7	8	9	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		Sat.		- _ <u>83.0</u> 				VITH 54.
80	78.5	58.5	5	10	15		· · · · ·	· · · · ·			8-4		- 78.0		RMATION		59.
75	-				.0			· · · · ·			Sat.	-		Y, CLAYEY S (A-2-4) WIT CREEK		MICA (BI	
70	73.5 -	<u>+ 63.5</u> -	9	8	13			· · · · ·			Sat.	-	70.0				67.
	68.5	68.5	5	6	11	••••••••••••••••••••••••••••••••••••••	· · · · ·				W		– – – DAR (A-7)	K GRAY, FIN WITH TRAC CA (BLACK C	E COARS	SE SAND	LAY — — — AND
65	63.5	73.5	5	7	10						w		-				
60	-	Ē										N	_				

WBS	47533	11			т	ΊP	-598	37		COLIN	ITY 🛛	OBESO	N			GEOLOGIST W. Pesl			
			RDIL						BIG MAR					-14 00				GROUM	ND WTR (f
	NG NO.											FSET				ALIGNMENT -L-		0 HR.	N/
	AR ELE				_				<b>1</b> 85.0 f	t	-	RTHING				EASTING 2,003,052		24 HR.	FIA
				= F&F					3/01/2019							ud Rotary	НАММ		Automatic
	ER S.		1.00/(11	_ 101					01/27/2			MP. DA							7 latornatio
	DRIVE	DEPTH	BLC	w co					BLOWS				SAMP		1 L				
(ft)	ELEV (ft)	(ft)			0.5ft	0		25	5	50	75	100	NO.	Имо	O   G	SOIL AND RC	CK DES	CRIPTION	I DEPTH
										•									
60									Mate	ch Line									
	58.5	78.5	6		14	T		i							N	DARK GRAY, FIN (A-7) WITH TRAC			
	-			'	14			<b>•</b> 21						W			REEK F ntinued)	ORMATIO	N)
55	53.5	-						+										E SAND (A	-2-4) <u>82</u>
		- 83.5	8	8	12			. <b> </b>   ●20						Sat.		_ WITH TRACE M	1ICA (BL. MATION	ACK CREI	EK8
	_	-														- Boring Terminate SAND (COASTAL	d at Elev	ation 52.0	
	-	-															MATION		
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	47533					<b>P I</b> -5987			<b>Y</b> ROBES				GEOLOGIST Lane, R. W.	
SITE	DESCR	IPTION	BRII	DGE O	N -L- (	I-95) OVER	BIG MAR	SH SWAN	/IP AT -L- S	5TA. 586	+14.00			
BOR	NG NO.	S2_E	32-A_N	IBL	S	TATION 5	36+49		OFFSET	CL			ALIGNMENT -L-	0 HR. 2.
COLI	AR EL	<b>EV.</b> 14	42.9 ft		те	OTAL DEPT	<b>H</b> 64.9 ft		NORTHIN	<b>G</b> 383,	292		EASTING 2,003,111	24 HR. FIA
DRILL	RIG/HAM	/MER EF	F./DAT	e Mid	636214	CME-45C 86	% 02/21/2019	)		DRILL	METHO	D Muo	d Rotary HAMI	MER TYPE Automatic
DRIL	LER S	tricklan	d, T <b>.</b>		S	TART DATE	11/09/2 <sup>-</sup>	1	COMP. D	<b>ATE</b> 1'	1/09/21		SURFACE WATER DEPTH	J/A
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	UNT		BLOWS F	PER FOOT	_	SAM	P. <b>▼</b> ∕		SOIL AND ROCK DE	
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 :	25 E	50	75 10	NO.	Имо		ELEV. (ft)	DEPTH
145														
		Ŧ										F	- 142.9	
		Ŧ									$\nabla$	F	ALLUVIAL GRAY, CLAYEY SAI	
140	139.5-	+ 3.4										1	-	ND (A-2-7)
		‡	WOH	woн	WOH WOI						Sat.			
		t												
135	134.5-	8.4	WOH	WOH	2						0.1		- ORGANIĆ	;
		ł									Sat.	E		
130		Ŧ				<u>  - </u>								
100	129.5	+ 13.4 +	2	3	4	····				11	Sat.	-	WHITE AND TAN, SILT	
		‡					· · · · ·	· · · ·					(A-2-4) 126.4	
125	104 5 -	+										N	GRAY, SILTY CL	AY (A-7)
	124.0	10.4 1	7	12	20		32				М	N		
		Ŧ										N		
120	119.5-	23.4					\					N	-	
		‡	10	17	26		<b>4</b> 3				М	N		
445		‡										N		
115	114.5-	28.4	10	18	19		<u>  /</u>		· · · · ·		0-4		<u>114.9</u> TAN, SAND (/	Ā-3) — — — — — —
		+									Sat.	0000		,
110		Ŧ												
	109.5-	<u>+ 33.4</u> +	20	26	30			56		1	Sat.	0000	-	
		‡												
105	104 5-	- 38.4											-	
		1 00.4	16	9	9	: : <b>•</b> 18	3				м		103.4 COASTAL PL	AINI
		t										N	COASTAL PL GRAY, SILTY CLAY (A-7	) WITH TRACE
100	99.5 -	43.4					+ • • • •							KUREEK /
		Ŧ	5	8	11	:::•	9				Sat.	F	GRAY, CLAYEY SAND ( CREEK FORMA	A-2-7) (BLACK
95		‡				:/::							95.9	,
35	94.5 -	+ <u>48.4</u>	2	1	1					11	Sat.		GRAY, SILTY CLAY (A-7) FORMATIO	(δίαυκ υκεέκ Ν)
		‡												
90	00 F -	+ F3 4				· · · · ·	· · · ·							ACK CREEK
	09.5	<u>+ 53.4</u>	8	11	14		•25 · · ·				Sat.		FORMATIO	N)
		Ŧ					N						85.9	
85	84.5 -	- 58.4		<u> </u>			\ <u>```</u>		+				GRAY, FINE SANDY CLA WITH TRACE MICA (BI	YEY SILT (A-5)
		ŧ	8	14	20						М		FORMATIO	
00		‡					<i>į</i> .					N V		
80	79.5 -	63.4	10	10	13		1	· · · ·	+		Sat.		GRAY, SAND (A-3) WITH (BLACK CREEK FOI	RMATION)
		<u>+</u>		+			23	l		4	ડતા.		78.0 Boring Terminated at Ele	vation 78.0 ft IN
		t											SAND (COASTAL PLAIN) FORMATIO	(BLACK CREEK
	-	Ē										E		,
		ł										F		
	-	Ŧ											-	
		‡												
		‡		1										
	-	L		1	I									

## GEOTECHNICAL BORING REPORT

## BORE LOG

								B	ORE L	ÜĞ			_				
WBS	47533	.1.1			TI	<b>P I</b> -5987			Y ROBESO	N			GEOLOG	ST W. Pesl			
SITE	DESCR	PTION	BRII	DGE O	N -L- (	( <b>I</b> -95) OVEF	R BIG MAR	SH SWA	MP AT -L- ST	A. 586+	14.00		-				OWTR (ft)
BORI	NG NO.	S2_B	2-B N	ЗL	S	TATION 5	86+45		OFFSET 8	84 ft RT			ALIGNME	NT -L-		0 HR.	N/A
COLL	AR ELE	<b>EV.</b> 14	2.3 ft		те	OTAL DEP	<b>TH</b> 90.0 ft	t	NORTHING	383,20	60		EASTING	2,003,189		24 HR.	0.0
DRILL	RIG/HAN	IMER EF	F./DAT	E RFO	0074 C	ME-55 80%	03/08/2019			DRILL M	ETHOD	) Mu	d Rotary		НАММ	ER TYPE	Automatic
DRILL	LER D.	. Pinter			S	TART DAT	E 12/17/1	9	COMP. DA	<b>FE</b> 12/*	8/19		SURFACE	WATER DEI	PTH N/	A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	0W COU 0.5ft		0		PER FOOT 50	г 7 <u>5</u> 100	SAMP. NO.	моі	L O G	ELEV. (ft)	SOIL AND RC	OCK DES	CRIPTION	DEPTH (ft
145	-										_		-	0.501.0			
140	142.3		wон	woн	1	•1					w			<b>AL</b> DWN-GRAY, S		E TO COAF	
	- 138.8 - -	- <u>3.5</u> -	1	2	1		· · · · · · · · · · · · · · · · · · ·	· · · · ·			Sat.			Sand (A-2-4) V Fragmen			)
135		- - 8.5	1	2	5						Sat.		-				
130	- - 128.8 -	- 13.5				.¶'   .    <del>. </del>	· · · · ·	· · · · ·	· · · · ·		- Cuti	- - -	-				
125	-		1	3	3		· · · · ·	· · · · ·	· · · · ·	<u>(SS-82</u> )	27%			UNDIVIDED ARK GRAY TC LAY (A-7-6) W	LIGHT	GRAY, SILT	
120	123.8 - - - -	- 18.5 - -	8	14	16						Μ			COARSE SÁN (BLACK CRE	d, highl	Y PLASTIC	
120		- <u>23.5</u>	8	12	14		<b>1</b> 26				М		-				
115	- - - - -		1	2	5	• • • • • • • • • • • • • • • • • • •					Sat.		= <u>115.3</u> OR	ANGE-BROW COARSE			TO 27
110		33.5	6	3	3		· · · · ·				Sat.		-				
105	- - - 103.8 -	- 38.5					· · · · · · · · · · · · · · · · · · ·		· · · · ·		Sat.		-				
100	-		4	4	4		· · · · ·		· · · · · · · · · · · · · · · · · · ·		Sat.	N	102.8 = <u>100.3</u> DA	COAS ARK GRAY, SI TRACE MIC		Y (A-7) WIT	
95	<u>98.8</u> - - -	<u>- 43.5</u> - -	3	5	4	   . ∳9 					Sat.			FOF AY TO ORANG NE TO COARS TRACE MIC	E SAND	Й <mark>Л-ТА</mark> Л, SII (A-2-4) WП	
	93.8 -	48.5	6	4	6			· · · · ·			Sat.		_	FOF	RMATION	))	
90		- <u>53.5</u>	10	11	14	X-   X 	25				Sat.		-				
85	- 83.8 -	- - <u>58.5</u>	7	13	16		29				М			RK GRAY, FIN WITH TRAC FOF		BLACK CRE	
80	-  78.8 -	6 <u>3.5</u>	7	12	14			· · · · ·			М		-				
75	-  73.8 -	- - 68.5			10									RAY, SILTY FIN A-2-4) WITH T			
70	-		10	20	16		· • • • • • • • • • • • • • • • • • • •				Sat.		FRÀ 70.3	GMÉNTS, AN	D MICA ( MATION	BLACK CRE	EEK 72.
65	<u>68.8</u> - - -	- 73.5 - -	6	13	17		30				М			) WITH TRAC		BLACK CRE	

WBS	47533.1	.1			Т	<b>P I</b> -5987	COUNT	Y ROBESO	N			GEOLOGIST W. Pesl			
SITE	DESCRIP	TION	BRID	DGE O	N -L- (	(I-95) OVER BIG MA	RSH SWA	MP AT -L- ST	A. 586+	14.00		-,	GRO	DUND WT	R (f
BORI	NG NO.	S2_B	2-B NE	3L	S	TATION 586+45		OFFSET 8	34 ft RT			ALIGNMENT -L-	ОН	R.	N/
	AR ELE				т	OTAL DEPTH 90.0	) ft	NORTHING	383,2	60		EASTING 2,003,189	24 H	R.	0.
				E REC		ME-55 80% 03/08/201					) Mi			PE Autom	
	ER D.F				-	<b>TART DATE</b> 12/17		COMP. DA						_ /	
		EPTH	BLC	w co			S PER FOO	ļ	SAMP.		L	1			
(ft)	ELEV (ft)	(ft)	0.5ft		0.5ft	0 25	50	75 100	NO.	мо	0 G	SOIL AND ROC ELEV. (ft)	K DESCRIPT		EPTH
	(-7														
65						 	atch Line								
-00-	63.8 -	78.5							+		-	GRAY, SILTY FINE	SAND (A-2-4	) WITH	
	1		4	7	7	<b>●</b> 14				Sat.		TRACE MICA AND ( FORMATIO	CLAY (BLACK N) <i>(continued)</i>		
60	±											-			
+		83.5	4	6	8					Sat.		-			
	+					· · · · · · · · · · · · · · · · · ·				Oat.		-			
55	Ŧ	00 F										-			
F	53.8 +	88.5	6	15	20					Sat.		- - 52.3			ç
Γ	- F											Boring Terminated SAND (COASTAL P	at Elevation 5	2.3 ft IN	
	+											FORM	IATION)	ONLEIN	
	±											-			
	±											-			
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									B	ORE	: L	OG							
WBS	4753	3.1.1			TI	<b>P I</b> -5987		C	OUNTY	( ROB	ESO	N			GEOLOG	IST B. Painte	r		
SITE	DESC	RIPTION	BRII	DGE O	<u>N -L- (</u>	I-95) OVEF	R BIG MA	ARSH	SWAN	1P AT -l	ST	A. 586+1	14.00					GROUN	D WTR (ft)
BOR	NG NO	. S2_E	B2-A \$	SBL	S	TATION 5	87+14			OFFSE	ET 8	38 ft LT			ALIGNME	NT -L-		0 HR.	N/A
COL	LAR EL	. <b>EV.</b> 14	14.9 ft		т	OTAL DEP	<b>FH</b> 80.0	D ft		NORTI	HING	383,38	32		EASTING	2,003,050		24 HR.	FIAD
DRILL	. RIG/HA	MMER EF	F./DAT	E F&R	85785 C	ME-55 73%	03/01/20	19				DRILL M	ETHO	) Muc	d Rotary		HAMM	ER TYPE	Automatic
DRIL	LER [	D. Tignoi	-		ST	FART DATI	E 01/08	3/20		COMP	DA'	<b>TE</b> 01/0	)9/20		SURFACE	E WATER DEF	TH N/	Ą	
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	UNT		BLOW		R FOOT			SAMP.	▼∕			SOIL AND RO	CK DES	CRIPTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50		75	100	NO.	Имо		ELEV. (ft)				DEPTH (ft)
155		+													-				
		‡																	
150		‡																	
130		‡													-				
		‡																	
145	144.9	<u>+ 00</u>													_144.9	GROUN		ACE	0.0
		‡		WOH	WOH	•0····		: :			::	SS-2043	20%	<u>s</u>		OWN-BLACK, C			
140	141.4	3.5	  woн	WOH	1		· · ·   · · ·		· · · · · ·		: :		Sat.		OR	OARSE SAND	DERÁT	ELY ORG/	ANIC
140	'	‡				N				1			001.		ìc	ORGANIC CON ORGANIC CON			.0')
	136.4	+ 8.5				$\begin{pmatrix} \mathbf{v} & \dots & \dots \\ \mathbf{v} & \dots & \dots \end{pmatrix}$	· · ·   · · ·		· · · · · ·	· · ·	: :			N	<u>137.9</u>				7.0
135		1	2	3	5		· · ·	· ·		· ·	• •	SS-2045	30%	N	- т	GHT GRAY, SIL RACE ORGANI	CS, TRA	ČE GRÁV	EL
		1				:: <i>†</i> ::		: :	· · ·		::			N	F	FROM 23.5'-25.	0', HIGHL	Y PLAST	С
130	131.4	13.5	3	6	7		· · ·   · · ·		· · ·	· · · ·			w	N					
130	'	‡				□ <u>- ¶</u> 13 <u>-</u> □ · · · · · ·				1			**		-				
	126.4	+ + 18.5				· · · \   · · · · \		: :		1	::			N					
125	120.4	-	6	12	15		27			· · ·			М	N	_				
		‡					j:::	· ·	· · ·	· · ·				N					
100	121.4	23.5	6	12	14			: :	· · · · · ·		::		м	N					
120	-	‡					<u></u>						IVI	N	-				
	116.4	+ 28.5					[: · · ·		· · · · · ·	· · ·						ORANGE, CLA			
115		<u> </u>	15	16	13		29	• •			•••		Sat.		- C	OARSE SAND	(A-2-4) V VICA	/ITH TRA	CE
		‡				· · · · ·	1:::	: :		· · ·	::			ļ					
110	111.4	33.5	3	4	3		· · ·   · · ·		· · ·	· · ·			Sat.						
110		‡				-¶( - ,				· ·			Oat.		-				07.0
	106.4	+ 38.5				I I XI I		: :			::			Ň	<u>107.9</u>	COAS		IN	<u> </u>
105		+	3	7	9	<u> </u>		• •		· ·	• •		М	N	_ DA	ARK GRAY, FIN -7), WITH TRA	CE ORG	ANICS, MI	LAY CA,
		‡				$\begin{vmatrix} \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \end{vmatrix}$		: :	· · · · · ·	· ·   · ·				N		AND GRAVE FOR	L (BLACH MATION		
100	101.4	43.5	4	9	11	· · · i·		:   :	· · ·		::		м	$\bowtie$					
100	1	‡					• • •			· · ·				N	- 07.0				47.0
	96.4	+ 48.5						·   ·	· · · · · ·	· ·	: :					ANGE-BROWN			
95		+	2	7	12	<u>· · ·</u>	9	•   •		· ·	•••		Sat.		- FI	NE TO COARS	A (BLACK	CREÉK	ΠΗ
		‡				:::¦		:   :	· · · · · ·		::			<b> </b>		FOR	MATION	)	
90	91.4	+ <u>53.5</u>	8	12	10	• • • • • •		·   ·	· · · · · ·	· ·   · ·			Sat.						
30		+				7		-   -		+ • •			Jui.		-				
	86.4	+ + 58.5				::;/:		:   :	· · ·		::			-					
85		+	4	5	9	• • • • • • • • • • • • • • • • • • •	+ • • •	•   •		· ·	• •		Sat.		-				
		‡				$\left  \left  \begin{array}{c} \cdot \cdot \mathbf{i} \\ \cdot \cdot \mathbf{i} \\ \cdot \cdot \mathbf{i} \end{array} \right $		·   ·	· · · · · ·		::				_ <u>82.9</u>				<u>62.0</u>
80	81.4	<u>+</u> 63.5	3	7	11			:   :	: : :		::		w		G N	RAY, SILTY FIN WITH LITTLE M	IICA (BLA	<b>ACK CREE</b>	к-о) К
00	-	‡					•••	-   -		· · ·					-	FOR	MATION	)	
	76.4	+ 68.5				'	\	:   :	· · · · · ·										
75		1	7	10	20		30	-   -			•	1	W		75.4				69.5

							1	ORE L							
	47533					<b>P I</b> -5987		Y ROBESO				GEOLOGIST B. Painte	er		
					N -L- (	I-95) OVER BIG MAR	RSH SWAI	MP AT -L- ST	A. 586+	14.00				1	ND WTR (ft)
BOR	NG NO.	S2_E	B2-A S	BL	S	TATION 587+14		OFFSET	38 ft LT			ALIGNMENT -L-		0 HR.	N/A
COLL	AR ELE	<b>EV.</b> 14	4.9 ft		т	OTAL DEPTH 80.0	it	NORTHING	383,38	82		EASTING 2,003,050		24 HR.	FIAD
DRILL	RIG/HAN	IMER EF	F./DATE	E F&R	85785 C	CME-55 73% 03/01/2019			DRILL M	IETHO	D Mu	ld Rotary	HAMM	ER TYPE	Automatic
	LER D	. Tignor			S	TART DATE 01/08/2	20	COMP. DA	<b>TE</b> 01/0	09/20		SURFACE WATER DEF	PTH N/	Ą	
ELEV	DRIVE ELEV	DEPTH	BLC	w co	UNT	4	PER FOO	г	SAMP.	▼∕		SOIL AND RC	CK DES	CRIPTION	I
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	50	75 100	NO.	Имо		ELEV. (ft)			DEPTH (f
75						Mat	ch Line			L					
	-	ŧ				:::://::::						GRAY, CLAYEY SI	1ICA (BLA	<b>CK CRE</b>	EK <u>72</u> .
70	71.4	73.5	6	8	14					w	$\mathbb{N}$	FORMATI DARK GRAY, FIN	ETOCO	ARSE SA	
10	-	F.				<b></b> /22 					$\mathbb{N}$	- SILTY CLAY (A-7	') WITH I EK FORI	LITTLE M MATION)	
	- 66.4	78.5				· · ·/·   · · · ·						GRAY, CLAYEY S		TOCO	ARSE 77
65		10.0	5	5	8	13				Sat.			MATION	)	80.
	-	+										- Boring Terminate - SAND (COASTAL	d at Eleva PLAIN) (B	ation 64.9 BLACK CF	ft IN REEK
	-	ł											MATIÓN		
	-	÷										-			
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## GEOTECHNICAL BORING REPORT

## PODEIOC

SITE I BORIN	47533.1.1		т	TP 1-5987								
BORIN	DECODIDEION					ROBESO	N			GEOLOGIST Weis, J. M.		
	DESCRIPTION	BRIDGE	ON -L-	(I-95) OVER BIG MARSH	I SWAMI	P AT -L- ST	A. 586+′	14.00		1	GROUN	D WTR (ft)
_	NG NO. S2_E	B2-B_SBL	s	<b>TATION</b> 587+18		OFFSET 2	0 ft LT			ALIGNMENT -L-	0 HR.	11.9
COLL	AR ELEV. 15	1.5 ft	Т	OTAL DEPTH 100.0 ft		NORTHING	383,36	53		EASTING 2,003,116	24 HR.	9.4
DRILL	RIG/HAMMER EF	F./DATE N	IID3964 C	CME-45C 91% 02/21/2019			DRILL M	ETHOD	Mud	Rotary H.	AMMER TYPE	Automatic
	ER Powell, B		s	TART DATE 05/27/21		COMP. DAT	E 05/2	28/21		SURFACE WATER DEPTH	N/A	
ELEV (ft)	DRIVE ELEV (ft) DEPTH (ft)	BLOW C 0.5ft 0.5		BLOWS PE 0 25 50		75 100	SAMP. NO.	моі	L O G	SOIL AND ROCK ELEV. (ft)	DESCRIPTION	DEPTH (ft)
155									-			
			_							151.5 ROADWAY EM		0.0
150 -	150.5 + 1.0	12 7	4					м		BROWN, CLAYEN		
,  -	148.0 _ 3.5	6 5	6				SS-07	16%				
145 -	145.5 _ 6.0	3 5	5	. <b>T</b> '				W		146.0 BROWN, CLAYEN	/ SAND (A-2-6)	<u>5.5</u>
	143.0 1 8.5							Sat.				
	+	6 8	7	15								
140	+											
	138.0 13.5	woн wc	Н 4				SS-08	29%		<u>138.0 ALLUV</u>		<u> </u>
135	_								- -	BROWN, SANDY SILT GRAV	(A-4) WITH TF 'EL	RACE
	133.0 18.5								-	. <u>133.5</u> <b>COASTAL</b>		<u> </u>
	1	<u>woн</u> wc	H 3					30% Sat.		TAN, SILTY C		
130	$\frac{1}{2}$									129.5 TAN, SILTY CLAYE		<u> 22.0</u>
,  -	128.0 23.5	1 1	2					Sat.		TAN, SILTT CLATE	1 SAND (A-2-0	)
125	Ŧ							eu.				
	123.0 28.5			1						1 <u>23.5</u> TAN, F. SA		<u>28.0</u>
	+	2 4	4					Sat.	0 0 0 0 0 0 0 0 0 0 0 0	TAN, F. SA	ND (A-3)	
120	-								0 0 0 0 0 0 0 0 0 0 0 0			22.0
,  -	118.0 33.5	2 3	3					Sat.		- <u>118.5</u>	SAND (A-2-6)	<u>33.0</u>
115	Ŧ			$\left  \begin{array}{c} \mathbf{\Psi}^{0} \\ \mathbf{I} \end{array} \right ^{0} \cdot \cdot \cdot \cdot \left  \begin{array}{c} \mathbf{I} \\ \mathbf{I} \end{array} \right ^{0} \cdot \cdot \cdot \cdot \left  \begin{array}{c} \mathbf{I} \\ \mathbf{I} \end{array} \right ^{0} \cdot $				out.	$\sim$			
	113.0 38.5											
	1	1 1	2	<b>•</b> 3 · · · · · · · ·				Sat.	///			
110	$\frac{1}{2}$									- 108.5		42.0
, F	108.0 43.5	4 14	. 14					Sat.		LIGHT-BROWN, CS	E. SAND (A-1-	b) <u>43.0</u>
105	1			<b>2</b> 0					0000	- 104.5		47.0
	103.0 48.5									GRAY, CLAYEY	SAND (A-2-6)	<u>+1</u> .0
	+	5 5	6	· •11 · · · · · ·				Sat.	///			
100	+									- 98.5		53.0
	98.0 _ 53.5	5 8	8	$ \begin{vmatrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot \\ \cdot & \cdot & \bullet \\ 16 \begin{vmatrix} \cdot & \cdot & \cdot \\ \cdot & \cdot & \bullet \\ 16 \end{vmatrix} $				Sat.	•••••	- <u>56.5</u>	ND (A-3)	<u></u> <u></u>
95	+											
	93.0 _ 58.5			]						93.5 BROWN TO GRAY, 0		$\frac{58.0}{1}$
	+	6 6	1					Sat.		BROWN TO GRAT, C	JOE. JAND (A-	1-0)
90	+				· · · ·	<u> </u>						
,	88.0 63.5	8 12	16			::::		Sat.	000			
85	Ŧ				· · · ·					- 84.5		67.0
	83.0 68.5			<u>   : : : :    : : : : </u>	· · · ·				NONE NONE	GRAY, CLAYE	Y SILT (A-5)	<u>07.0</u>
Γ	+	7 11	16	<b>b</b> 27 · · ·				W	N V			
80	Ŧ								^ ↓ ►			
,	78.0 73.5	5 10	11	$- \left  \begin{array}{c} \cdot \cdot \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot $				Sat.	N V V	.77.0		74.5
75	<del>[</del>			$   \dots \mathbf{J}_{ }^{z_1} \dots \dots  $		· · · · ·			<u>-</u>	GRAY, SANDY	' SILT (A-4)	

									B	ORI
[	WBS	47533	.1.1			TI	Ρ	-5987	COUNT	<b>Y</b> ROE
	SITE	DESCR	<b>IPTION</b>	BRID	DGE O	N -L- (	I-	95) OVER BIG MAR	SH SWAN	/IP AT -
	BOR	NG NO.	S2_E	B2-B_	SBL	S	T/	<b>TION</b> 587+18		OFFS
	COL	LAR ELE	<b>EV.</b> 15	1.5 ft		Т	Э.	TAL DEPTH 100.0	ft	NORT
	DRILL	. RIG/HAM	IMER EF	F./DATI	E MID	3964 C	M	E-45C 91% 02/21/2019		
	DRIL	LER Po	owell, B				<b>Г/</b>	ART DATE 05/27/2		COMF
	ELEV (ft)	DRIVE ELEV	DEPTH (ft)						PER FOOT 50	
	(14)	(ft)	(19	0.5ft	0.5ft	0.5ft		0 25	1	75
	75							Mate	ch Line	
	_13_						╞		· · · ·	<b>T</b>
		73.0	78.5	5	8	13		· · · · • • 21 · · · ·		
	70		-					····		· ·
		68.0	83.5	5	11	15				
	65	-	F					· · · · • • • 26 · · · ·		
		63.0	88.5					· · · · / · · · ·		
		- 00.0	- 00.0	7	10	10				
	60	-						· · · · · · · · · · · · · · · · · · ·		
		58.0	93.5	10	12	18				
	55	-	-					$\begin{array}{c} \cdot \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \\ \cdot \cdot \cdot \cdot \end{array} \qquad \begin{array}{c} \bullet 30 \\ \bullet \end{array} \qquad \cdot \cdot \cdot \\ \bullet \end{array}$		
		53.0	98.5					/		
			-	7	12	13		· · · · • • <u>25</u> · · ·		
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NCDOT BORE SINGLE B02_15987_GEO_BRDG_L61712.GPJ NC_DOT.GDT 12/10/21		-	F							
zl			L			I	L			

UNT	Y ROBESO	N		GEOLOGIST Weis, J. M.	
SWA	MP AT -L- ST	A. 586+14.00	)	GROUND WT	R (ft)
	OFFSET 2	20 ft LT		ALIGNMENT -L- 0 HR.	11.9
	NORTHING	383,363		EASTING 2,003,116 24 HR.	9.4
	1	DRILL METHO	D Mu	ud Rotary HAMMER TYPE Automa	atic
	COMP. DAT	<b>TE</b> 05/28/21		SURFACE WATER DEPTH N/A	
FOO	r	SAMP.	1 L		
	75 100	NO. MO	0 0 G	SOIL AND ROCK DESCRIPTION ELEV. (ft) DEI	PTH (ft
ne					
				GRAY, SANDY SILT (A-4) (continued) GRAY, SANDY CLAY (A-6)	78.0
		W		GRAY, SANDY CLAY (A-6)	
		Sat		68.5 GRAY, CLAYEY SAND (A-2-6) WITH	<u> </u>
		- Sat	///	CEMENTED SAND FRAGMÉNTS	
			//		<u>    88.0</u>
· · ·		Sat	000	GRAY, CSE. SAND (A-1-b) WITH TRACE CEMENTED SANDS	
	· · · · · ·		000 000 000	► ━	
				-	
		Sat			
					98.0
		Sat	$\sim$	GRAY, CLAYEY F. SAND (A-2-6)	100.0
			-••>	<ul> <li>Boring Terminated at Elevation 51.5 ft IN</li> </ul>	100.0
				SAND (COASTAL PLAIN) (BLACK CREEK	
				- <u>Other Samples:</u>	
				ST-04 (18.0 - 20.0)	
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BORING NO.         S2_EB2-           COLLAR ELEV.         143.6           DRILL RIG/HAMMER EFF./D           DRILLER         R. Smith           ELEV         DRIVE ELEV         DEPTH           (ft)         0.           145         143.6         0.0	-B NBL 5 ft DATE RF0007 BLOW COUN* 5ft 0.5ft 0.	L- (I-95) OVER BIG MARSH SWA STATION 587+05 TOTAL DEPTH 85.0 ft 74 CME-55 80% 03/08/2019 START DATE 12/12/19	OFFSET         84 ft RT           NORTHING         383,316           DRILL METHOD         Mud           COMP. DATE         12/12/19           SAMP.         L           V         V	GEOLOGIST W. Pesi ALIGNMENT -L- EASTING 2,003,209 Rotary HAMM SURFACE WATER DEPTH N/ SOIL AND ROCK DESC ELEV. (ft)	GROUND WTR (ft) 0 HR. N/A 24 HR. 0.6 ER TYPE Automatic A
BORING NO.         S2_EB2-           COLLAR ELEV.         143.6           DRILL RIG/HAMMER EFF./D           DRILLER         R. Smith           ELEV         DRIVE ELEV         DEPTH           (ft)         0.           145         143.6         0.0	-B NBL 5 ft DATE RF0007 BLOW COUN* 5ft 0.5ft 0.	STATION         587+05           TOTAL DEPTH         85.0 ft           74 CME-55         80% 03/08/2019           START DATE         12/12/19           T         BLOWS PER FOO	OFFSET         84 ft RT           NORTHING         383,316           DRILL METHOD         Mud           COMP. DATE         12/12/19           SAMP.         L	EASTING 2,003,209 Rotary HAMM SURFACE WATER DEPTH N// SOIL AND ROCK DESC	0 HR.         N/A           24 HR.         0.6           ER TYPE         Automatic
COLLAR ELEV.         143.6           DRILL RIG/HAMMER EFF./D         DRILLER         R. Smith           DRILLER         R. Smith         ELEV         DEPTH         E           (ft)         DRIVE (ft)         DEPTH (ft)         0.0         143.6         0.0           145	6 ft DATE RF0007 BLOW COUN .5ft 0.5ft 0.	TOTAL DEPTH         85.0 ft           74 CME-55         80%         03/08/2019           START DATE         12/12/19           T         BLOWS PER FOO	NORTHING         383,316           DRILL METHOD         Mud           COMP. DATE         12/12/19           F         SAMP.           ZE         100	EASTING 2,003,209 Rotary HAMM SURFACE WATER DEPTH N/, SOIL AND ROCK DESC	24 HR. 0.6 ER TYPE Automatic
DRILL RIG/HAMMER EFF_JD       DRILLER     R. Smith       ELEV     DRIVE ELEV     DEPTH       (ft)     0.       145     143.6     0.0	BLOW COUN 5ft 0.5ft 0.	Image: 100 minipage         12/12/19           START DATE         12/12/19           T         BLOWS PER FOO	DRILL METHOD     Mud       COMP. DATE     12/12/19       F     SAMP.     L       O     O	Rotary HAMMI SURFACE WATER DEPTH N/ SOIL AND ROCK DESC	ER TYPE Automatic
DRILLER     R. Smith       ELEV     DRIVE ELEV     DEPTH (ft)       145     143.6	BLOW COUN .5ft 0.5ft 0.	START DATE         12/12/19           T         BLOWS PER FOO	COMP. DATE 12/12/19	SURFACE WATER DEPTH N/	
ELEV (ft)         DRIVE ELEV (ft)         DEPTH (ft)         I           145	.5ft 0.5ft 0.	T BLOWS PER FOO		SOIL AND ROCK DES	Α
LEV (ft)         ELEV (ft)         DEPTH (ft)         0.           145	.5ft 0.5ft 0.		75 100 115 7 0		i
143.6 - 0.0	1 1 :				CRIPTION DEPTH (ft)
		2		143.6 GROUND SURF, ROADWAY EMBANI	
140 140.1 3.5 W	он мон	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	SS-72 271%	141.6 BROWN-GRAY, CLAYEY S COARSE SAND (A-2-4) W ORGANICS ALLUVIAL	VITH TRACE   
135 135.1 8.5	7 7 9	9		- <u>136.6</u> - <u>(ORGANIC CONTEN)</u> - <u>UNDIVIDED COASTA</u> GRAY AND BROWN-TAN, ( FINIE GRAY AND BROWN-TAN, (	Γ=29.6%) <b>Ι. ΡΙΑΙΝ</b> CLAYEY SILTY
	2 4 4	4	Sat.	FINE SAND (A-2	
<u>25 125.1 18.5</u>	1 2 2	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Sat		
20 120.1 23.5					
	1 2 4	4 <b>•</b> 6•••••••••••••••••••••••••••••••••••	Sat. Sat.		
<u>15 115.1 28.5</u>	1 1 :	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Sat. Sat.		
10 110.1 33.5	2 5	7	Sat.	- 106.6	37.0
05 105.1 38.5	7 7	8		COASTAL PLA DARK GRAY, FINE SANDY (A-7) (BLACK CREEK FC	IN Y SILTY CLAY
00 100.1 43.5	3 5 9	5 (10 · · · · · · · · · · · · · · · · · · ·	Sat.	101.6 GRAY AND ORANGE-BR FINE TO COARSE SAND TRACE CLAY AND MICA (E	(A-2-4) WITH
95 95.1 48.5	10 14 1	3	Sat.	FORMATION	)
90 90.1 53.5	11 9 8	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			
35 85 1 58 5			Sat. Sat.		
	13 18 1	16 	Sat.		Y SILTY CLAY 62.0
	10 19 2	24		(A-7) WITH TRACE MICA (I FORMATION	BLACK CREEK
75 75.1 68.5	5 12 1	17 <b>9</b> 29			72.0
70 70.1 73.5	3 7 1	12 · · · · · · · · · · · · · · · · · · ·	Sat.	GRAY, SILTY FINE TO CC (A-2-4) WITH TRACE MI CREEK FORMAT	CA (BLACK

	47500					, al	5007		-			1					
	47533						5987			Y ROBES		14.00		GEOLOGIST W. Pesl			ITD (1
									sun sana	MP AT -L- S							•
	NG NO.			NBL	_		ON 587			OFFSET				ALIGNMENT -L-		0 HR.	N//
	AR ELE							<b>1</b> 85.01	ft	NORTHIN				EASTING 2,003,209		24 HR.	0.0
				E RFC				3/08/2019					D Mu			RTYPE Auto	matic
DRILI							DATE	12/12/		COMP. DA			1∟1	SURFACE WATER DEPTH	H N/A		
ELEV (ft)	ELEV	DEPTH (ft)	0.5ft		0.5ft	0	25		PER FOO 50	7 <u>5</u> 100	SAM		0	SOIL AND ROCK	DESCF		
(7	(ft)	(/	0.51	0.51	0.51		I	,	1				I G	ELEV. (ft)		C	DEPTH
								•••									
65	· — — —	<u>+</u>	5	- 9 -	-10-	+ -	19	Mat	ch Line		+ +	 		GRAY, SILTY FINE		RSE SAND	
	-	ŧ				:								_ (A-2-4) WITH TRA _ CREEK FORMAT	CE MIC/	A (BLACK	
60	60.1	 83.5				]].								-	, (		
		Ŧ	7	11	12	ļĽ.		<u>3</u>			1	Sat.		– <u>58.6</u> – Boring Terminated at	4 <b>F</b> Laura 41	50 6 4 101	85
	-	Ŧ												<ul> <li>SAND (COASTAL PLA</li> </ul>	AIN) (BL	ACK CREEK	
	-	Ŧ												- FORMA	ATION)		
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## GEOTECHNICAL BORING REPORT

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