

REFERENCE: BR-0173

PROJECT: 67173

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY PAMLICO
PROJECT DESCRIPTION REPLACE BRIDGE 680078
ON NC 306 FERRY OVER NEUSE RIVER

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0173	1	6

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT, AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA 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 BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

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

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

T. PARK

D. STEWART

S. PUGH

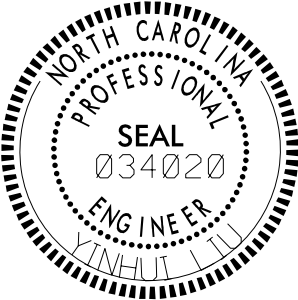
INVESTIGATED BY CATLIN

DRAWN BY Y. LIU, PE

CHECKED BY J. LEE STONE, LG

SUBMITTED BY J. LEE STONE, LG

DATE NOVEMBER 2024



Signed by:
Yinhui Liu
673A8A78BCE14BE

SIGNATURE

07/16/2025

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

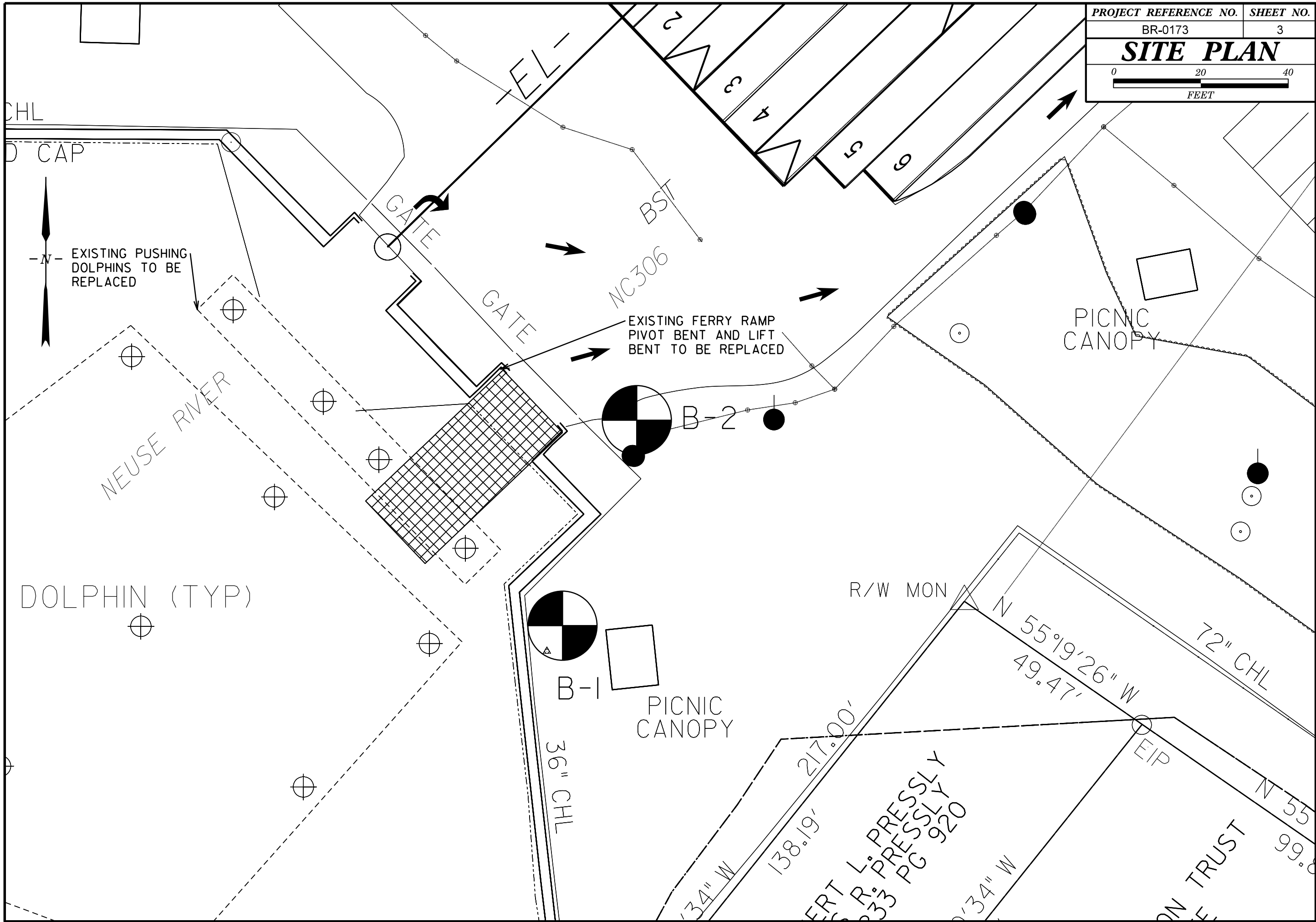
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION												GRADATION												ROCK DESCRIPTION												TERMS AND DEFINITIONS											
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>												WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.												HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:												ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. 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 SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. 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. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. 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 SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. 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 ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. 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 EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - 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 A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.											
SOIL LEGEND AND AASHTO CLASSIFICATION												ANGULARITY OF GRAINS												WEATHERED ROCK (WR)												CRISTALLINE ROCK (CR)											
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS						FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.																											
GROUP CLASS.	A-1-a	A-1-b	A-3	A-2-4	A-2	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.																														
SYMBOL																																															
% PASSING #10 #40 #200																																															
MATERIAL PASSING #40 LL PI																																															
GROUP INDEX																																															
USUAL TYPES OF MAJOR MATERIALS																																															
GEN. RATING AS SUBGRADE																																															
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																															
CONSISTENCY OR DENSENESS												MISCELLANEOUS SYMBOLS												ROCK HARDNESS																							
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)				RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)																VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.																							
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50				N/A																HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.																							
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30				< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.																							
TEXTURE OR GRAIN SIZE												RECOMMENDATION SYMBOLS												ROCK HARDNESS																							
U.S. STD. SIEVE SIZE OPENING (MM)		4 4.76		10 2.00		40 0.42		60 0.25		200 0.075		270 0.053														VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.																					
BOULDER (BLDR.)		COBBLE (COB.)		GRAVEL (GR.)		COARSE SAND (CSE, SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)														HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.																					
GRAIN SIZE		305 12		75 3		2.0		0.25		0.05		0.005														MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.																					
SOIL MOISTURE - CORRELATION OF TERMS												ABBREVIATIONS												ROCK HARDNESS																							
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION				AR - AUGER REFUSAL				MED. - MEDIUM MICA. - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST				VST - VANE SHEAR TEST				VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.																											
LL		LIQUID LIMIT		- SATURATED - (SAT.)				USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE				BT - BORING TERMINATED				WEA. - WEATHERED				HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.																											
PLASTIC RANGE (PI)		PLASTIC LIMIT		- WET - (W)				SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE				CL. - CLAY				UNIT WEIGHT				MODERATELY HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FINGER PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.																											
OM		OPTIMUM MOISTURE		- MOIST - (M)				SOLID; AT OR NEAR OPTIMUM MOISTURE				CPT - CONE PENETRATION TEST				DRY UNIT WEIGHT				SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.																											
SL		SHRINKAGE LIMIT		- DRY - (D)				REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE				CSE. - COARSE								VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.																											
PLASTICITY												EQUIPMENT USED ON SUBJECT PROJECT												ROCK HARDNESS																							
NON PLASTIC		SLIGHTLY PLASTIC		MODERATELY PLASTIC		HIGHLY PLASTIC		PLASTICITY INDEX (PI)				DRY STRENGTH				DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:				FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.																			
0-5		6-15		16-25		26 OR MORE																						FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.																			
VERY LOW		SLIGHT		MEDIUM		HIGH																						MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.																			
VERY LOW		SLIGHT		MEDIUM		HIGH																						INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.																			
VERY LOW		SLIGHT		MEDIUM		HIGH																						EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																			
COLOR																																															
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.																																															

DATE: 8-15-14



224219		<i>PROJECT REFERENCE</i>	<i>SHEET</i>
		BR-0173	4

WBS: 67173.1.1			TIP: BR-0173			COUNTY: PAMLICO			GEOLOGIST: T. Park					
SITE DESCRIPTION: Bridge 680078 on NC 306 Ferry over the Neuse River									GROUND WTR (ft)					
BORING NO.: B-1			STATION: N/A			OFFSET: N/A			ALIGNMENT: N/A			0 HR. 3.1		
COLLAR ELEV.: 6.3 ft			TOTAL DEPTH: 125.0 ft			NORTHING: 450,316			EASTING: 2,657,190			24 HR. 5.2		
DRILL RIG/HAMMER EFF./DATE: CAT4425 CME-55 81.9% 05/07/2024						DRILL METHOD: MUD ROTARY			HAMMER TYPE: AUTOMATIC					
DRILLER: S. Pugh			START DATE: 10/30/24			COMP. DATE: 10/30/24			SURFACE WATER DEPTH: N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. #	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100	RESULT	MOI		
-70						Match Line								
-75	-72.2	78.5	2	4	4									-71.2 COASTAL PLAIN OLIVE GREEN SANDY SILT, SAT 77.5
-80	-77.2	83.5	23	11	9									-76.2 COASTAL PLAIN OLIVE GREEN SILTY F. SAND, SAT 82.5
-85	-82.2	88.5	2	2	4									
-90	-87.2	93.5	2	2	5						SS-05 A-2-4(0)	44%		
-95	-92.2	98.5	2	4	6									
-100	-97.2	103.5	4	5	6									
-105	-102.2	108.5	3	4	9						SS-06 A-2-4(0)	42%		
-110	-107.2	113.5	20	26	23									
-115	-112.2	118.5	4	5	6						SS-07 A-2-4(0)	32%		
	-117.2	123.5	5	5	9									
														-118.7 Boring Terminated at Elevation -118.7 ft in medium dense SAND 125.0

224219		<i>PROJECT REFERENCE</i>	<i>SHEET</i>
		BR-0173	5

INCDOT BORE DOUBLE BR0173 GEO BRDG GPJ CATLIN.GDT 11/25/24

WBS: 67173.1.1			TIP: BR-0173			COUNTY: PAMLICO			GEOLOGIST: T. Park								
SITE DESCRIPTION: Bridge 680078 on NC 306 Ferry over the Neuse River									GROUND WTR (ft)								
BORING NO.: B-2			STATION: N/A			OFFSET: N/A			ALIGNMENT: N/A			0 HR.	3.2				
COLLAR ELEV.: 5.5 ft			TOTAL DEPTH: 125.0 ft			NORTHING: 450,363			EASTING: 2,657,207			24 HR.	4.5				
DRILL RIG/HAMMER EFF./DATE: CAT4425 CME-55 81.9% 05/07/2024						DRILL METHOD: MUD ROTARY			HAMMER TYPE: AUTOMATIC								
DRILLER: S. Pugh			START DATE: 10/29/24			COMP. DATE: 10/29/24			SURFACE WATER DEPTH: N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. #	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100	RESULT			MOI			
-70						Match Line											
-75	-73.0	78.5	3	4	5						SS-13 A-7-5(32)	100%	-72.0	COASTAL PLAIN OLIVE GREEN SANDY SILTY CLAY, SAT.	77.5		
-80	-78.0	83.5	3	4	6								-77.0	COASTAL PLAIN OLIVE GREEN CLAYEY F. SAND, SAT.	82.5		
-85	-83.0	88.5	3	3	7												
-90	-88.0	93.5	2	5	10							SS-14 A-2-6(0)	35%				
-95	-93.0	98.5	3	4	7												
-100	-98.0	103.5	3	4	6												
-105	-103.0	108.5	5	7	13												
-110	-108.0	113.5	7	7	10												
-115	-113.0	118.5	2	4	5							SS-15 A-2-4(0)	36%	-113.0	COASTAL PLAIN OLIVE GREEN SILTY F. SAND, SAT.	118.5	
	-118.0	123.5	5	6	8									-119.5	Boring Terminated at Elevation -119.5 ft in medium dense SAND		125.0

P:\2024\224219 NCDOT BR0173 - MINNESOTT BEACH FERRY GEOTECH\BR0173 GEO BRDGCADD GEOTECH\GEOTECH\BR0173 GEO BRDGGPJ

LABORATORY SUMMARY SHEET

AASHTO Standard Specifications
(As modified by NCDOT, Material and Tests Unit, 2000.)

TEST RESULTS															
Proj. Sample Number	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15
Lab Sample Number	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	SS-12	SS-13	SS-14	SS-15
Retained #4 Sieve %	6.8	1.9	0.1	4.2	0.1	0.3	0	1.0	0.6	0	0	7.8	0	0.1	0
Passing #10 Sieve %	89.7	93.5	99.8	71.8	99.8	98.4	100	98.0	98.9	100	99.5	64.0	99.9	99.8	100
Passing #40 Sieve %	50	38	99	57	96	96	93	65	64	98	97	49	99	94	94
Passing #200 Sieve %	2	1	15	11	18	24	20	4	1	60	8	10	69	23	19
MINUS NUMBER 10 FRACTION															
SOIL MORTAR - 100%															
Coarse Sand Ret.-#60 %	92.8	96.0	11.2	27.7	8.1	50.9	63.0	68.8	95.7	6.8	29.5	29.4	2.6	14.3	63.9
Fine Sand Ret.-#270 %	4.8	2.5	74.9	60.8	75.8	28.0	18.1	28.0	3.1	33.1	62.7	58.5	36.6	63.8	17.2
Silt 0.05 - 0.005mm %	0.8	0.6	5.8	8.6	6.0	9.1	8.8	0.2	0.2	55.9	2.8	8.8	22.6	9.4	8.8
Clay <0.005mm %	1.6	0.9	8.1	2.9	10.1	12.0	10.1	2.9	1.0	4.2	5.0	3.4	38.1	12.6	10.1
Liquid Limit (LL)	NP	NP	NP	NP	31	29	NP	NP	NP	NP	NP	NP	100	38	23
Plasticity Index (PI)	NP	NP	NP	NP	2	8	NP	NP	NP	NP	NP	NP	37	12	4
AASHTO Classification /Group Index	A-3(0)	A-3(0)	A-2-4(0)	A-2-4(0)	A-2-4(0)	A-2-4(0)	A-2-4(0)	A-3(0)	A-3(0)	A-4(0)	A-3(0)	A-2-4(0)	A-7-5(32)	A-2-6(0)	A-2-4(0)
Organic Content %	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Station															
Offset															
Alignment															
Boring Identification	B1	B1	B1	B1	B1	B1	B1	B2	B2	B2	B2	B2	B2	B2	B2
Depth (FT)	6.0	13.5	23.5	63.5	93.5	108.5	118.5	0.5	8.5	23.5	48.5	63.5	78.5	93.5	118.5
to	7.5	15.0	25.0	65.0	95.0	110.0	120.0	1.5	10.0	25.0	50.0	65.0	80.0	95.0	120.0
Field Moist. Content %	19	21	36	25	44	42	32	6	22	34	31	22	100	35	36
Tested By	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON	MDMASON
Submitted By	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK	TPARK
Date Submitted	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24	11/07/24

NP = Non-Plastic
NEM = Not Enough Material for Analysis
N/A = Not Applicable / Not Analyzed


Laboratory Manager

Report Date: 11/21/2024
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