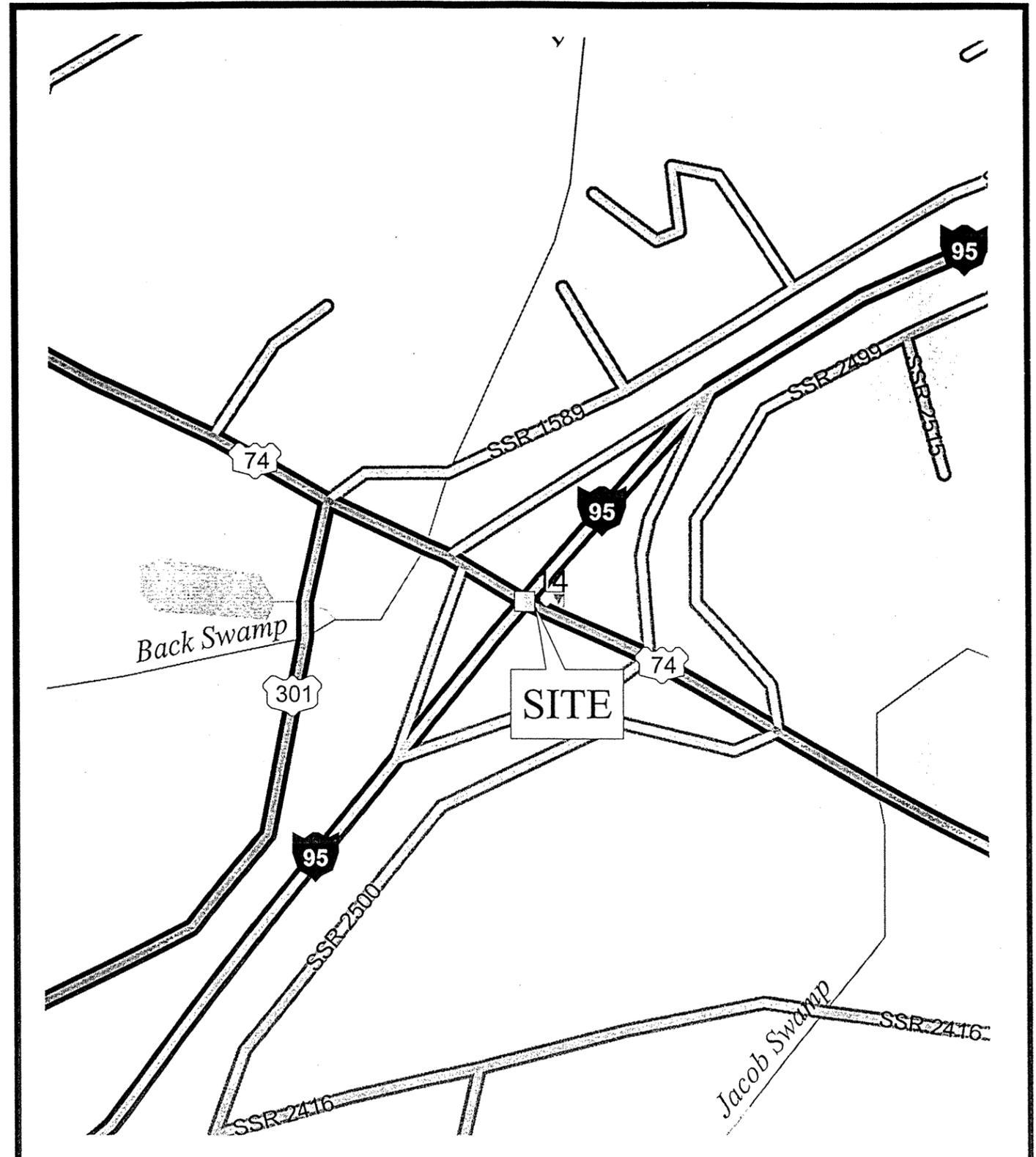


**NORTH CAROLINA DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
SOIL AND ROCK CLASSIFICATION, LEGEND, AND ABBREVIATIONS**

SOIL LEGEND AND AASHTO CLASSIFICATION										CONSISTENCY OR DENSENESS													
GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS	PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (N - VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (q <sub>u</sub> ) (kN / m <sup>2</sup> )								
GROUP CLASS.	A-1	A-3	A-2		A-4	A-5	A-6	A-7	A-1-A-2 A-3	A-4-A-5 A-6-A-7	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT	GENERALLY GRANULAR MATERIAL	VERY LOOSE	LOOSE	MEDIUM DENSE	DENSE	VERY DENSE	N/A			
SYMBOL																							
% PASSING	#10 50 MX	#10 30 MX	#10 50 MX	#10 50 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX	#10 30 MX		< 4	4 TO 10	10 TO 30	30 TO 50	> 50				
(PASSING #40)															< 2	2 TO 4	4 TO 8	8 TO 15	15 TO 30	> 30			
LL																							
PI	6 MX	N.P.																					
GROUP INDEX	0	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX														
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS	CLAYEY SOILS					SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	HIGHLY ORGANIC SOILS											
* PI OF A-7-5 < (LL-30); PI OF A-7-6 > (LL-30)																							
TEXTURE OR GRAIN SIZE										GROUND WATER													
BOULDER	COBBLE	GRAVEL	COARSE SAND	FINE SAND	SILT	CLAY	WATER LEVEL IN BORE HOLE [IMMEDIATELY AFTER DRILLING (I.A.D.) SOON AFTER DRILLING (S) HRS.] STATIC WATER LEVEL (AFTER 24 HRS.) PERCHED WATER (PW), SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEPAGE																
GRAIN (mm)	305	75	2	0.25	0.05	0.005																	
SIZE (IN)	12	3																					
SOIL MOISTURE - CORRELATION OF TERMS										MISCELLANEOUS SYMBOLS AND ABBREVIATIONS													
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION						ROADWAY EMBANKMENT WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS INFERRED SOIL BOUNDARIES STRIKE AND DIP APPARENT DIP (NORMAL TO _____) ROD SOUNDING SPT TEST BORING AUGER BORING CORE BORING PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE MONITORING WELL SAMPLE DESIGNATIONS S-BULK SAMPLE SS-SPLIT SPOON SAMPLE ST-SHELBY TUBE SAMPLE RS-ROCK SAMPLE													
LL	LIQUID LIMIT	-SATURATED- (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE																				
PLASTIC RANGE (PI) PL	PLASTIC LIMIT	-WET- (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE																				
DM	OPTIMUM MOISTURE	-MOIST- (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE																				
SL	SHRINKAGE LIMIT	-DRY- (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE																				
ROCK DESCRIPTION										ABBREVIATIONS													
IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF 'WEATHERED ROCK'. FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:										ALLUV. ALLUVIUM AR AUGER REFUSAL BLDR. BOULDER CALC. CALCAREOUS CL. CLAY CLY. CLAYEY COB. COBBLE CSE. COARSE DPT DYNAMIC PENETRATION TEST EST. ESTIMATED F. FINE FIAD FILLED IMMED. AFTER DRILLING FOSS. FOSSILIFEROUS FRAC. FRACTURED FRAG(S). FRAGMENT(S) GR. GRAVEL GS SPECIFIC GRAVITY GW GROUND WATER MED. MEDIUM MIC. MICACEOUS MOT. MOTTLED N BLOWS / 30 CM NS NO SAMPLE TAKEN ORG. ORGANIC P.P. POCKET PENETROMETER REF. REFER TO RES. RESIDUAL S. SOFT SAT. SATURATED SD. SAND SDY. SANDY SED(S). SEDIMENT(S) SL. SILT, SILTY SLI. SLIGHTLY SPT STANDARD PENETRATION TEST TS. TOPSOIL VST VANE SHEAR TEST V. VERY W/ WITH													
TERM	SYMBOLS		DESCRIPTION																				
HARD ROCK (HR)	CORED ROCK	INFERRED ROCK LINE	MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE																				
WEATHERED ROCK (WR)	HARD WEATHERED ROCK (HWR)	SOFT WEATHERED ROCK (SWR)	MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGERS AND YIELDS SPT REFUSAL																				
1 SPT REFUSAL ≤ 2.5 cm OF PENETRATION PER 50 BLOWS IN SPT. 2 AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. THE HARD ROCK SYMBOL IS SHOWN WHEN ROCK IS CORED AND ONLY TO THAT DEPTH CORED. A DESCRIPTION OF ROCK IS GIVEN, INCLUDING: CORE RECOVERY (REC.) - TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%. ROCK QUALITY DESIGNATION (ROD) - TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 0.1 m DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.										BENCH MARK: NCGS MONUMENT (ANDY 1977) -BY3- STA 11+99.640, EL. 46.101  STATE PROJECT NO. 6.469002T T.I.P. NO. R-0513C F.A. NO. N/A COUNTY ROBESON ROUTE _____ SITE DESCRIPTION STRUCTURE ON -Y3- (US 74) OVER -Y2- (I-95)  PROJECT GEOLOGIST C.NORVILLE SUBMITTED BY TRIGON PERSONNEL D.J.GOODNIGHT D.L. TEAGUE S.W.WHICHARD DATE SUBMITTED MAY 2001 G.C.REECE P.R.NORVILLE REV. 6/11/98													



SITE LOCATION MAP	
STRUCTURE ON -Y3- (US74) OVER -Y2-(I-95)	
ROBESON COUNTY	
Project No. 6.469002T	Tip No. R-0513C
Federal No. N/A	Vert. Scale AS SHOWN
Date MAY 2001	Horiz. Scale AS SHOWN
Drawn By PRN	Drawing No. 1