

REFERENCE: U-3330

PROJECT: 36596

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3330	1	7

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

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**ROADWAY**  
**SUBSURFACE INVESTIGATION**

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COUNTY NASH  
PROJECT DESCRIPTION US 301 BYPASS FROM NC  
43-48 (BENVENUE RD.) TO SR 1836 (MAY DR.)

**ADDENDUM**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2, 2A	LEGEND (SOIL & ROCK)
3	INVENTORY TEXT
4	SITE PLAN
5-7	BORE LOG(S)

PERSONNEL

<u>O.B. OTI</u>
<u>D.G. PINTER</u>
_____
_____
_____
_____

INVESTIGATED BY J.R. SWARTLEY  
DRAWN BY J.R. SWARTLEY  
CHECKED BY N.T. ROBERSON  
SUBMITTED BY N.T. ROBERSON  
DATE DECEMBER 2016

**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 MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION 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.



DocuSigned by:  
Jarett Swartley 12/30/2016

7F355C29E75A413  
SIGNATURE 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**  
**(PAGE 1 OF 2)**

SOIL DESCRIPTION										GRADATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
<p>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></p>										<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORMLY GRADED</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
<p align="center"><b>SOIL LEGEND AND AASHTO CLASSIFICATION</b></p>										<p align="center"><b>ANGULARITY OF GRAINS</b></p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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RATING AS SUBGRADE</td> <td colspan="5">EXCELLENT TO GOOD</td> <td colspan="5">FAIR TO POOR</td> <td>FAIR TO POOR</td> <td>POOR</td> <td>UNSUITABLE</td> <td></td> </tr> <tr> <td colspan="15">PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS &gt; LL - 30</td> </tr> <tr> <td colspan="15"> <p align="center"><b>CONSISTENCY OR DENSENESS</b></p> </td> </tr> <tr> <td colspan="3">PRIMARY SOIL TYPE</td> <td colspan="3">COMPACTNESS OR CONSISTENCY</td> <td colspan="3">RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)</td> <td colspan="3">RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT<sup>2</sup>)</td> <td colspan="3"></td> </tr> <tr> <td colspan="3">GENERALLY GRANULAR MATERIAL (NON-COHESIVE)</td> <td colspan="3">VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE</td> <td colspan="3">&lt; 4 4 TO 10 10 TO 30 30 TO 50 &gt; 50</td> <td colspan="3">N/A</td> <td colspan="3"></td> </tr> <tr> <td colspan="3">GENERALLY SILT-CLAY MATERIAL (COHESIVE)</td> <td colspan="3">VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD</td> <td colspan="3">2 TO 4 4 TO 8 8 TO 15 15 TO 30 &gt; 30</td> <td colspan="3">&lt; 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 &gt; 4</td> <td colspan="3"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>TEXTURE OR GRAIN SIZE</b></p> </td> </tr> <tr> <td colspan="3">U.S. STD. SIEVE SIZE OPENING (MM)</td> <td>4</td><td>10</td><td>40</td><td>60</td><td>200</td><td>270</td><td colspan="6"></td> </tr> <tr> <td colspan="3"></td> <td>4.76</td><td>2.00</td><td>0.42</td><td>0.25</td><td>0.075</td><td>0.053</td><td colspan="6"></td> </tr> <tr> <td colspan="2">BOULDER (BLDR.)</td> <td>COBBLE (COB.)</td> <td>GRAVEL (GR.)</td> <td>COARSE SAND (CSE. SD.)</td> <td>FINE SAND (F SD.)</td> <td>SILT (SL.)</td> <td>CLAY (CL.)</td><td colspan="7"></td> </tr> <tr> <td>GRAIN SIZE</td> <td>MM</td> <td>305</td><td>75</td><td>2.0</td><td>0.25</td><td>0.05</td><td>0.005</td><td colspan="7"></td> </tr> <tr> <td></td> <td>IN.</td> <td>12</td><td>3</td><td></td><td></td><td></td><td></td><td colspan="7"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>SOIL MOISTURE - CORRELATION OF TERMS</b></p> </td> </tr> <tr> <td colspan="3">SOIL MOISTURE SCALE (ATTERBERG LIMITS)</td> <td colspan="3">FIELD MOISTURE DESCRIPTION</td> <td colspan="3">GUIDE FOR FIELD MOISTURE DESCRIPTION</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td colspan="3">LL - LIQUID LIMIT</td> <td colspan="3">- SATURATED - (SAT.)</td> <td colspan="3">USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td colspan="3">PL - PLASTIC LIMIT</td> <td colspan="3">- WET - (W)</td> <td colspan="3">SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td colspan="3">OM - OPTIMUM MOISTURE SHRINKAGE LIMIT</td> <td colspan="3">- MOIST - (M)</td> <td colspan="3">SOLID; AT OR NEAR OPTIMUM MOISTURE</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td colspan="3">SL - SHRINKAGE LIMIT</td> <td colspan="3">- DRY - (D)</td> <td colspan="3">REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> <td colspan="3"></td> <td colspan="3"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>PLASTICITY</b></p> </td> </tr> <tr> <td colspan="6">NON PLASTIC</td> <td colspan="6">SLIGHTLY PLASTIC</td> <td colspan="3">MODERATELY PLASTIC</td> <td colspan="3">HIGHLY PLASTIC</td> </tr> <tr> <td colspan="6">0-5</td> <td colspan="6">6-15</td> <td colspan="3">16-25</td> <td colspan="3">26 OR MORE</td> </tr> <tr> <td colspan="6">VERY LOW</td> <td colspan="6">SLIGHT</td> <td colspan="3">MEDIUM</td> <td colspan="3">HIGH</td> </tr> <tr> <td colspan="15"> <p align="center"><b>COLOR</b></p> </td> </tr> <tr> <td colspan="15"> <p>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.</p> </td> </tr> <tr> <td colspan="15"> <p align="center"><b>MISCELLANEOUS SYMBOLS</b></p> </td> </tr> <tr> <td colspan="5">ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</td> <td colspan="5">DIP &amp; DIP DIRECTION OF ROCK STRUCTURES</td> <td colspan="5">SLOPE INDICATOR INSTALLATION</td> </tr> <tr> <td colspan="5">SOIL SYMBOL</td> <td colspan="5">TEST BORING</td> <td colspan="5">CONE PENETROMETER TEST</td> </tr> <tr> <td colspan="5">ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT</td> <td colspan="5">AUGER BORING</td> <td colspan="5">SOUNDING ROD</td> </tr> <tr> <td colspan="5">INFERRED SOIL BOUNDARY</td> <td colspan="5">CORE BORING</td> <td colspan="5">TEST BORING WITH CORE</td> </tr> <tr> <td colspan="5">INFERRED ROCK LINE</td> <td colspan="5">MONITORING WELL</td> <td colspan="5">PIEZOMETER INSTALLATION</td> </tr> <tr> <td colspan="5">ALLUVIAL SOIL BOUNDARY</td> <td colspan="5">SPT N-VALUE</td> <td colspan="5"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>RECOMMENDATION SYMBOLS</b></p> </td> </tr> <tr> <td colspan="5">UNDERCUT</td> <td colspan="5">UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE</td> <td colspan="5">UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</td> </tr> <tr> <td colspan="5">SHALLOW UNDERCUT</td> <td colspan="5">UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</td> <td colspan="5"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>ABBREVIATIONS</b></p> </td> </tr> <tr> <td colspan="5">AR - AUGER REFUSAL</td> <td colspan="5">MED. - MEDIUM</td> <td colspan="5">VST - VANE SHEAR TEST</td> </tr> <tr> <td colspan="5">BT - BORING TERMINATED</td> <td colspan="5">MICA - MICACEOUS</td> <td colspan="5">WEA. - WEATHERED</td> </tr> <tr> <td colspan="5">CL - CLAY</td> <td colspan="5">MOD. - MODERATELY</td> <td colspan="5">? - UNIT WEIGHT</td> </tr> <tr> <td colspan="5">CPT - CONE PENETRATION TEST</td> <td colspan="5">NP - NON PLASTIC</td> <td colspan="5">γ<sub>d</sub> - DRY UNIT WEIGHT</td> </tr> <tr> <td colspan="5">CSE. - COARSE</td> <td colspan="5">ORG. - ORGANIC</td> <td colspan="5"><b>SAMPLE ABBREVIATIONS</b></td> </tr> <tr> <td colspan="5">DMT - DILATOMETER TEST</td> <td colspan="5">PMT - PRESSUREMETER TEST</td> <td colspan="5">S - BULK</td> </tr> <tr> <td colspan="5">DPT - DYNAMIC PENETRATION TEST</td> <td colspan="5">SAP. - SAPROLITIC</td> <td colspan="5">SS - SPLIT SPOON</td> </tr> <tr> <td colspan="5">e - VOID RATIO</td> <td colspan="5">SD. - SAND, SANDY</td> <td colspan="5">ST - SHELBY TUBE</td> </tr> <tr> <td colspan="5">F - FINE</td> <td colspan="5">SL. - SILT, SILTY</td> <td colspan="5">RS - ROCK</td> </tr> <tr> <td colspan="5">FOSS. - FOSSILIFEROUS</td> <td colspan="5">SLI. - SLIGHTLY</td> <td colspan="5">RT - RECOMPACTED TRIAXIAL</td> </tr> <tr> <td colspan="5">FRAC. - FRACTURED, FRACTURES</td> <td colspan="5">TCR - TRICONE REFUSAL</td> <td colspan="5">CBR - CALIFORNIA BEARING RATIO</td> </tr> <tr> <td colspan="5">FRAGS. - FRAGMENTS</td> <td colspan="5">w - MOISTURE CONTENT</td> <td colspan="5"></td> </tr> <tr> <td colspan="5">HI. - HIGHLY</td> <td colspan="5">v - VERY</td> <td colspan="5"></td> </tr> <tr> <td colspan="15"> <p align="center"><b>EQUIPMENT USED ON SUBJECT PROJECT</b></p> </td> </tr> <tr> <td colspan="5">DRILL UNITS:</td> <td colspan="5">ADVANCING TOOLS:</td> <td colspan="5">HAMMER TYPE:</td> </tr> <tr> <td colspan="5"><input type="checkbox"/> CME-45C</td> <td colspan="5"><input type="checkbox"/> CLAY BITS</td> <td colspan="5"><input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL</td> </tr> <tr> <td colspan="5"><input type="checkbox"/> CME-55</td> <td colspan="5"><input type="checkbox"/> 6' CONTINUOUS FLIGHT AUGER</td> <td colspan="5">CORE SIZE:</td> </tr> <tr> <td colspan="5"><input type="checkbox"/> CME-550</td> <td colspan="5"><input type="checkbox"/> 8" HOLLOW AUGERS</td> <td colspan="5"><input type="checkbox"/> -B <input type="checkbox"/> -H</td> </tr> <tr> <td colspan="5"><input type="checkbox"/> VANE SHEAR TEST</td> <td colspan="5"><input type="checkbox"/> HARD FACED FINGER BITS</td> <td colspan="5"><input type="checkbox"/> -N</td> </tr> <tr> <td colspan="5"><input type="checkbox"/> PORTABLE HOIST</td> <td colspan="5"><input type="checkbox"/> TUNG-CARBIDE INSERTS</td> <td colspan="5">HAND TOOLS:</td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"><input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER</td> <td colspan="5"><input type="checkbox"/> POST HOLE DIGGER</td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"><input type="checkbox"/> TRICONE _____ STEEL TEETH</td> <td colspan="5"><input checked="" type="checkbox"/> HAND AUGER</td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"><input type="checkbox"/> TRICONE _____ TUNG-CARB.</td> <td colspan="5"><input type="checkbox"/> SOUNDING ROD</td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"><input type="checkbox"/> CORE BIT</td> <td colspan="5"><input type="checkbox"/> VANE SHEAR TEST</td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"></td> <td colspan="5"></td> </tr> <tr> <td colspan="5"><input type="checkbox"/></td> <td colspan="5"></td> <td colspan="5"></td> </tr> </table>										GENERAL CLASS.	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RATING AS SUBGRADE	EXCELLENT TO GOOD					FAIR TO POOR					FAIR TO POOR	POOR	UNSUITABLE		PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30															<p align="center"><b>CONSISTENCY OR DENSENESS</b></p>															PRIMARY SOIL TYPE			COMPACTNESS OR CONSISTENCY			RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)			RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )						GENERALLY GRANULAR MATERIAL (NON-COHESIVE)			VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE			< 4 4 TO 10 10 TO 30 30 TO 50 > 50			N/A						GENERALLY SILT-CLAY MATERIAL (COHESIVE)			VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD			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						<p align="center"><b>TEXTURE OR GRAIN SIZE</b></p>															U.S. STD. SIEVE SIZE OPENING (MM)			4	10	40	60	200	270										4.76	2.00	0.42	0.25	0.075	0.053							BOULDER (BLDR.)		COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)								GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005									IN.	12	3												<p align="center"><b>SOIL MOISTURE - CORRELATION OF TERMS</b></p>															SOIL MOISTURE SCALE (ATTERBERG LIMITS)			FIELD MOISTURE DESCRIPTION			GUIDE FOR FIELD MOISTURE DESCRIPTION									LL - LIQUID LIMIT			- SATURATED - (SAT.)			USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE									PL - PLASTIC LIMIT			- WET - (W)			SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE									OM - OPTIMUM MOISTURE SHRINKAGE LIMIT			- MOIST - (M)			SOLID; AT OR NEAR OPTIMUM MOISTURE									SL - SHRINKAGE LIMIT			- DRY - (D)			REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE									<p align="center"><b>PLASTICITY</b></p>															NON PLASTIC						SLIGHTLY PLASTIC						MODERATELY PLASTIC			HIGHLY PLASTIC			0-5						6-15						16-25			26 OR MORE			VERY LOW						SLIGHT						MEDIUM			HIGH			<p align="center"><b>COLOR</b></p>															<p>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.</p>															<p align="center"><b>MISCELLANEOUS SYMBOLS</b></p>															ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION					DIP & DIP DIRECTION OF ROCK STRUCTURES					SLOPE INDICATOR INSTALLATION					SOIL SYMBOL					TEST BORING					CONE PENETROMETER TEST					ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT					AUGER BORING					SOUNDING ROD					INFERRED SOIL BOUNDARY					CORE BORING					TEST BORING WITH CORE					INFERRED ROCK LINE					MONITORING WELL					PIEZOMETER INSTALLATION					ALLUVIAL SOIL BOUNDARY					SPT N-VALUE										<p align="center"><b>RECOMMENDATION SYMBOLS</b></p>															UNDERCUT					UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE					UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL					SHALLOW UNDERCUT					UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK										<p align="center"><b>ABBREVIATIONS</b></p>															AR - AUGER REFUSAL					MED. - MEDIUM					VST - VANE SHEAR TEST					BT - BORING TERMINATED					MICA - MICACEOUS					WEA. - WEATHERED					CL - CLAY					MOD. - MODERATELY					? - UNIT WEIGHT					CPT - CONE PENETRATION TEST					NP - NON PLASTIC					γ <sub>d</sub> - DRY UNIT WEIGHT					CSE. - COARSE					ORG. - ORGANIC					<b>SAMPLE ABBREVIATIONS</b>					DMT - DILATOMETER TEST					PMT - PRESSUREMETER TEST					S - BULK					DPT - DYNAMIC PENETRATION TEST					SAP. - SAPROLITIC					SS - SPLIT SPOON					e - VOID RATIO					SD. - SAND, SANDY					ST - SHELBY TUBE					F - FINE					SL. - SILT, SILTY					RS - ROCK					FOSS. - FOSSILIFEROUS					SLI. - SLIGHTLY					RT - RECOMPACTED TRIAXIAL					FRAC. - FRACTURED, FRACTURES					TCR - TRICONE REFUSAL					CBR - CALIFORNIA BEARING RATIO					FRAGS. - FRAGMENTS					w - MOISTURE CONTENT										HI. - HIGHLY					v - VERY										<p align="center"><b>EQUIPMENT USED ON SUBJECT PROJECT</b></p>															DRILL UNITS:					ADVANCING TOOLS:					HAMMER TYPE:					<input type="checkbox"/> CME-45C					<input type="checkbox"/> CLAY BITS					<input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL					<input type="checkbox"/> CME-55					<input type="checkbox"/> 6' CONTINUOUS FLIGHT AUGER					CORE SIZE:					<input type="checkbox"/> CME-550					<input type="checkbox"/> 8" HOLLOW AUGERS					<input type="checkbox"/> -B <input type="checkbox"/> -H					<input type="checkbox"/> VANE SHEAR TEST					<input type="checkbox"/> HARD FACED FINGER BITS					<input type="checkbox"/> -N					<input type="checkbox"/> PORTABLE HOIST					<input type="checkbox"/> TUNG-CARBIDE INSERTS					HAND TOOLS:					<input type="checkbox"/>					<input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER					<input type="checkbox"/> POST HOLE DIGGER					<input type="checkbox"/>					<input type="checkbox"/> TRICONE _____ STEEL TEETH					<input checked="" type="checkbox"/> HAND AUGER					<input type="checkbox"/>					<input type="checkbox"/> TRICONE _____ TUNG-CARB.					<input type="checkbox"/> SOUNDING ROD					<input type="checkbox"/>					<input type="checkbox"/> CORE BIT					<input type="checkbox"/> VANE SHEAR TEST					<input type="checkbox"/>															<input type="checkbox"/>														
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**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
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GEOTECHNICAL ENGINEERING UNIT**

# SUBSURFACE INVESTIGATION

## SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS (PAGE 2 OF 2)

ROCK DESCRIPTION		TERMS AND DEFINITIONS	
<p>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:</p>		<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.  <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA.  <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.  <b>ARGILLACEOUS</b> - 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.  <b>ARTESIAN</b> - 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.  <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.  <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.  <b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.  <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.  <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.  <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.  <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.  <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.  <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.  <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.  <b>FORMATION (FM.)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.  <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.  <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.  <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.  <b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.  <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.  <b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.  <b>ROCK QUALITY DESIGNATION (ROD)</b> - 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.  <b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.  <b>SILL</b> - 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.  <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.  <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - 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.  <b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.  <b>STRATA ROCK QUALITY DESIGNATION (SROD)</b> - 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.  <b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>	
WEATHERED ROCK (WR)		NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.	
CRYSTALLINE ROCK (CR)		FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.	
NON-CRYSTALLINE ROCK (NCR)		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.	
COASTAL PLAIN SEDIMENTARY ROCK (CP)		COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	
WEATHERING			
FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.		
VERY SLIGHT (V SL.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.		
SLIGHT (SL.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.		
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.		
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <u>IF TESTED, WOULD YIELD SPT REFUSAL</u>		
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES &gt; 100 BPF</u>		
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</u>		
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.		
ROCK HARDNESS			
VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.		
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.		
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.		
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		
SOFT	CAN BE GROOVED 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.		
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 FINGER NAIL.		
FRACTURE SPACING		BEDDING	
TERM	SPACING	TERM	THICKNESS
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET
		THINLY LAMINATED	< 0.008 FEET
INDURATION			
FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.		
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.		
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.		
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.		
		BENCH MARK: *see note	
		ELEVATION: _____ FEET	
<b>NOTES:</b>			
elevations derived from geopak and the tin file 'u3330.ls_tin.tin' dated 10/10/14			
DATE: 8-15-14			



PAT McCRORY  
*Governor*

NICHOLAS J. TENNYSON  
*Secretary*

December 21, 2016

STATE PROJECT: 36596.1.1 (U-3330)  
FEDERAL PROJECT: STP-030(28)  
COUNTY: Nash

DESCRIPTION: US 301 Bypass from NC 43-48 (Benvenue Rd.) to SR 1836 (May Dr.)

SUBJECT: Geotechnical Report – Inventory Addendum

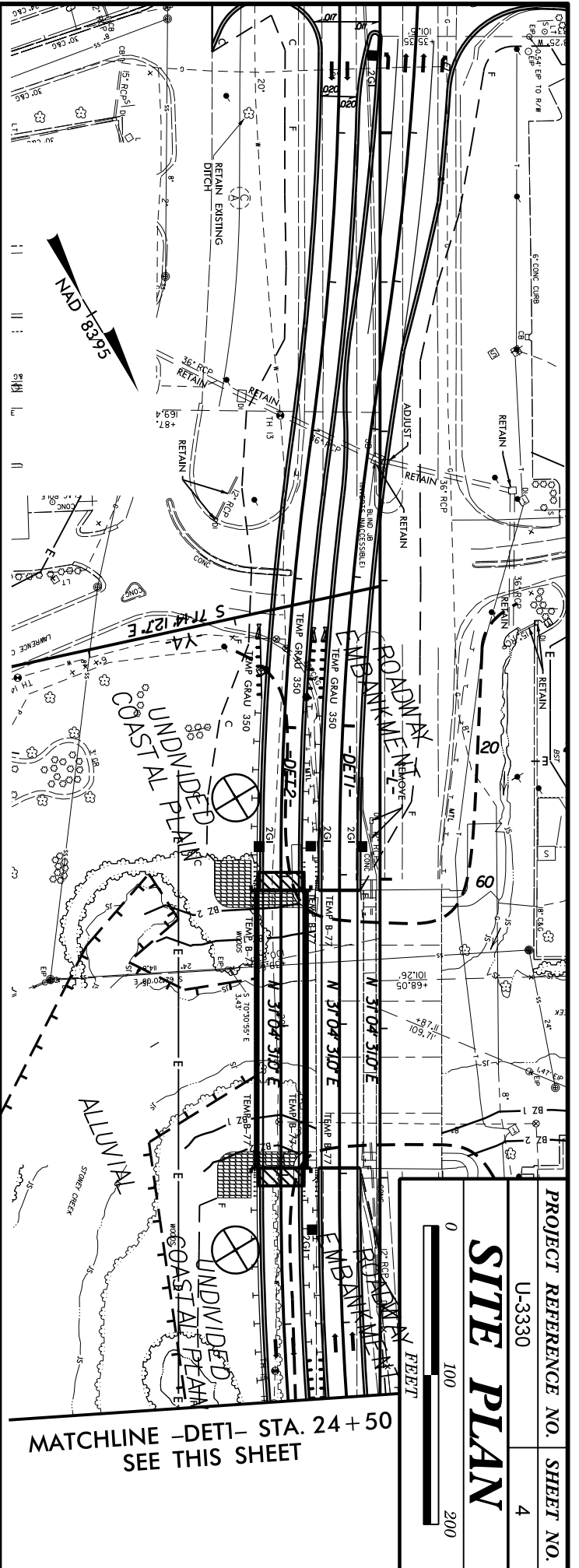
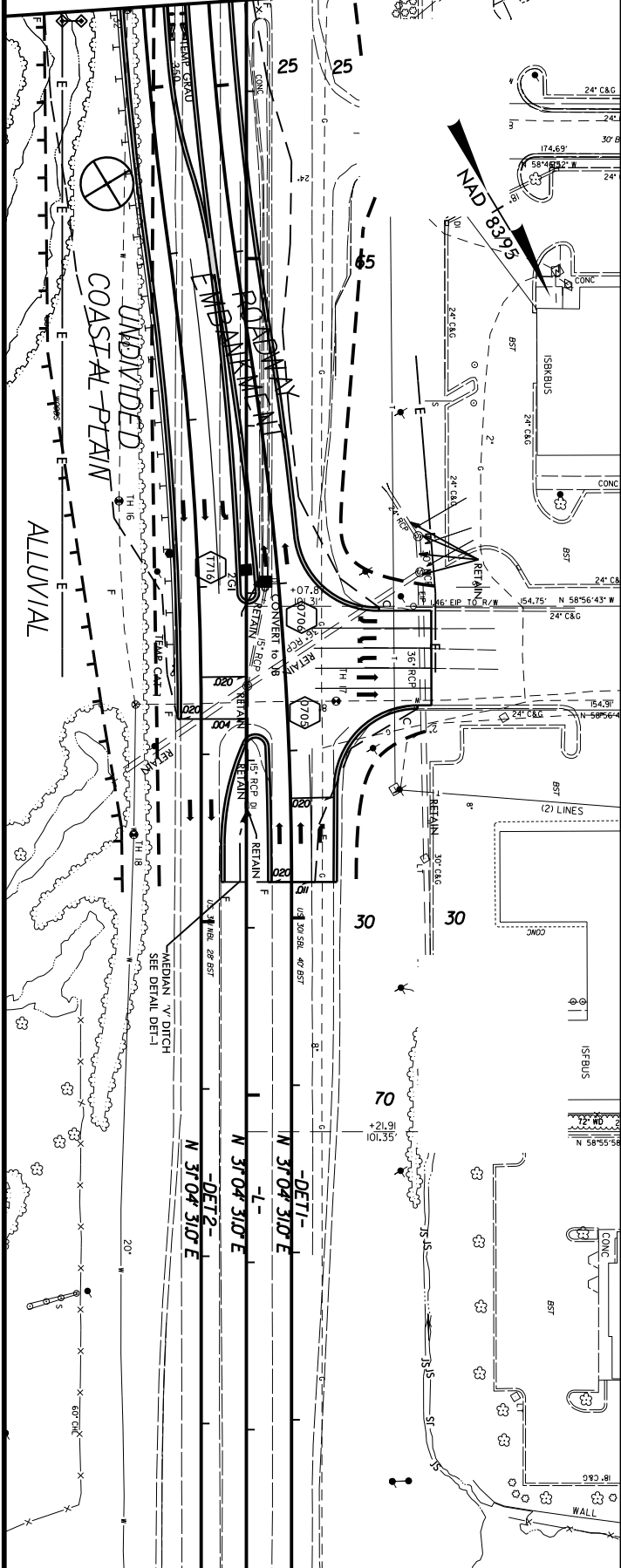
The Geotechnical Engineering Unit has completed a limited subsurface investigation for this project and presents the following inventory addendum. No profiles, or cross-sections will be submitted for this report.

### **Project Description**

The project consists of the adding alignments for the third phase of the detour over Stoney Creek. Due to these revisions, the road will be widened along the eastern side of the bridge approaches. New fill sections will be added in previously unexplored areas of the project so additional borings were performed. A geotechnical investigation was conducted during November of 2016. Three hand auger borings were performed at selected locations with respect to -DET1-alignment stationings. Representative soil samples were collected for visual classification in the field.



MATCHLINE -DET1- STA. 24+50  
SEE THIS SHEET



MATCHLINE -DET1- STA. 24+50  
SEE THIS SHEET

PROJECT REFERENCE NO.	U-3330	SHEET NO.	4
<h1 style="text-align: center;">SITE PLAN</h1>		<p>0 100 200 FEET</p>	

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 36591.1.1			TIP U-3330			COUNTY NASH			GEOLOGIST Oti, O. B.							
SITE DESCRIPTION US 301 BYP FROM MAY DRIVE TO NC 43									GROUND WTR (ft)							
BORING NO. 2050			STATION 20+50			OFFSET 70 ft RT			ALIGNMENT -DET1-							
COLLAR ELEV. 90.5 ft			TOTAL DEPTH 6.0 ft			NORTHING 806,838			EASTING 2,349,031							
DRILL RIG/HAMMER EFF./DATE N/A						DRILL METHOD Hand Auger			HAMMER TYPE N/A							
DRILLER Pinter, D. G.			START DATE 11/21/16			COMP. DATE 11/21/16			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
95																
90														90.5	GROUND SURFACE 0.0	
85														86.5	UNDIVIDED COASTAL PLAIN TAN, GRAY AND BROWN, SILTY SAND AND CLAYEY SAND 4.0	
														84.5	Boring Terminated at Elevation 84.5 ft IN DENSE CLAYEY SAND 6.0	

NCDOT BORE SINGLE U3330\_GEO\_RDWY\_DET\_REVISIONS\_BORINGS.GPJ NC\_DOT.GDT 12/15/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 36591.1.1		TIP U-3330		COUNTY NASH		GEOLOGIST Oti, O. B.											
SITE DESCRIPTION US 301 BYP FROM MAY DRIVE TO NC 43							GROUND WTR (ft)										
BORING NO. 2350		STATION 23+50		OFFSET 70 ft RT		ALIGNMENT -DET1-											
COLLAR ELEV. 87.3 ft		TOTAL DEPTH 6.0 ft		NORTHING 807,098		EASTING 2,349,188											
DRILL RIG/HAMMER EFF./DATE N/A				DRILL METHOD Hand Auger		HAMMER TYPE N/A											
DRILLER Pinter, D. G.		START DATE 11/21/16		COMP. DATE 11/21/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
90																	
															87.3	GROUND SURFACE	0.0
85																UNDIVIDED COASTAL PLAIN TAN AND BROWN, SILTY SAND	
															81.3	Boring Terminated at Elevation 81.3 ft IN DENSE SILTY SAND	6.0

NCDOT BORE SINGLE U3330\_GEO\_RDWY\_DET\_REVISIONS\_BORINGS.GPJ NC\_DOT.GDT 12/15/16

# GEOTECHNICAL BORING REPORT BORE LOG

WBS 36591.1.1		TIP U-3330		COUNTY NASH		GEOLOGIST Oti, O. B.										
SITE DESCRIPTION US 301 BYP FROM MAY DRIVE TO NC 43							GROUND WTR (ft)									
BORING NO. 2550		STATION 25+50		OFFSET 70 ft RT		ALIGNMENT -DET1-										
COLLAR ELEV. 87.3 ft		TOTAL DEPTH 6.0 ft		NORTHING 807,282		EASTING 2,349,282										
DRILL RIG/HAMMER EFF./DATE N/A				DRILL METHOD Hand Auger		HAMMER TYPE N/A										
DRILLER Pinter, D. G.		START DATE 11/21/16		COMP. DATE 11/21/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						ELEV. (ft)
90																
														87.3	GROUND SURFACE	0.0
85															<b>UNDIVIDED COASTAL PLAIN</b> TAN AND BROWN, SANDY SILT	
														81.3	Boring Terminated at Elevation 81.3 ft IN STIFF SANDY SILT	6.0

NCDOT BORE SINGLE U3330\_GEO\_RDWY\_DET\_REVISIONS\_BORINGS.GPJ NC\_DOT.GDT 12/15/16