STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

June 3, 2013

STATE PROJECT:	17BP.2.R.11 (SF-240027)
F.A. PROJECT:	N/A
COUNTY:	Craven
DESCRIPTION:	Culvert on SR 1630 (Hudnell Rd.) over Beaverdam Swamp
SUBJECT:	Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a reconnaissance and subsurface investigation for this project and presents the following inventory. No plans, profiles, or cross sections will be submitted for this roadway project.

Project Description

This project consists of the improvement of SR 1630 to accommodate the proposed culvert, as well as the construction of a temporary detour alignment just west of the existing crossing. The total length of the roadway is 0.26 miles.

Hand auger borings were performed at various offset locations from the -L- alignment. Representative samples were collected for visual classification in the field. Copies of field boring logs are attached.

Physiography and Geology

The project corridor is located in the Coastal Plain Physiographic Province and is underlain by recent alluvial and upland sediments. Topography along the project is flat to gently sloping. Ground elevations within the project range from 7± feet along the bed of Beaverdam Swamp to 22± feet along existing SR 1630.

Areas of Special Geotechnical Interest

The following section contains organic soils that have the potential to cause embankment/subgrade and or slope stability problems during construction.

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LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Line	Station(±)
-DET-	15+00 to 17+25

Soils

Soils encountered during this investigation have been divided into three categories; roadway embankment soils, alluvial soils, and undivided coastal plain soils.

Roadway Embankment soils are present along the existing SR 1630 alignment. These soils consist of 1.2± to 5.0± feet of medium dense sand (A-2-4).

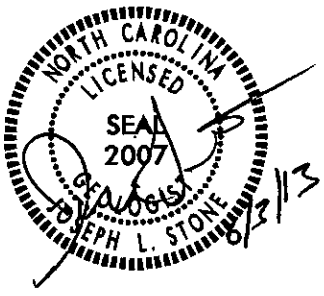
Alluvial soils were encountered within the floodplain of Beaverdam Swamp. These soils were composed of 2.2± feet of soft sandy clay (A-6), 1.6± to 7.0± feet of very soft/very loose muck and sandy muck (A-7-5, A-2-5), 2.0± to 2.5± feet of very loose organic sand (A-2-4), and 1.5± feet of very loose sand (A-3).

Undivided Coastal Plain soils were encountered along the upland portions of the project area. These units were comprised of 2.0± to 10 or more feet of loose to medium dense sand (A-2-4, A-3), with 2.8± to 5.0± feet of medium stiff to stiff sandy silt (A-4), and 7.9 or more feet of medium stiff to stiff sandy clay (A-6).

Ground Water

Ground water data was collected during April 2013. Ground water levels were measured from 1.0 feet above the ground surface to 4.6 feet below.

Submitted by,



Joseph L Stone, L.G.
Project Geological Engineer

Attachment: 2 Field Logs

ROADWAY NOTES

LINE - L -	PROJECT SF-240027 DATE 4/15/2013 COUNTY CRAVEN 4/16/2013 NOTES BY WRIKE				EST.	CADD USE ONLY		
STATION	DEPTH	SAMP	DESCRIPTION	MOI.	CLASS	DEPTH	FORM.	CLASS
15 + 23	0.0 - 5.0		VERY SOFT BROWN MUCK (ALLUVIAL)	M-S	A -7-5			
50' LT	5.0 - 7 .0		VERY LOOSE SANDY MUCK (ALLUVIAL)	S	A-2-5			
	7.0 - 8.5		MED DENSE GRAY SAND (U.C.P)	S	A-3			
H2O:+1.0								
15 + 23	0.0 - 2.0		MED DENSE TAN SAND (ROADWAY EMBK.)	M	A-2-4			
15' LT	2.0 - 5.0		SOFT GRAY SANDY CLAY (ALLUVIAL)	M-S	A-6			
	5.0 - 7.5		LOOSE BROWN ORGANIC SAND (ALLUVIAL)	S	A-2-4			
H2O: 3.0	7.5 - 8.0		MEDIUM DENSE GRAY SAND (U.C.P)	S	A-3			
15 + 00	0.0 - 5.0		MED DENSE TAN SAND (ROADWAY EMBK.)	M-S	A-2-4			
10' LT	5.0 - 10.0		MEDIUM STIFF GRAY SANDY SILT (U.C.P)	S	A-4			
H2O: 2.7								
15 + 00	0.0 - 8.0		LOOSE GRAY SAND (U.C.P)	M-S	A-2-4			
50' LT	8.0 - 9.0		DENSE GRAY FINE-MED SAND (U.C.P)	S	A-3			
H2O: 2.3								
15 + 00	0.0 - 2.3		MED DENSE TAN SAND (ROADWAY EMBK.)	M	A-2-4			
16' RT	2.3 - 10.0		LOOSE-MED DENSE GRAY SAND (U.C.P)	M-S	A-2-4			
H2O: 3.2								
14 + 50	0.0 - 1.2		MED DENSE TAN SAND (ROADWAY EMBK.)	M-S	A-2-4			
12' LT	1.2 - 10.0		LOOSE GRAY SILTY SAND (U.C.P)	S	A-2-4			
H2O: 3.7								
14 + 50	0.0 -10.0		LOOSE BROWN TAN SAND (U.C.P)	M-S	A-2-4			
40' LT								
H2O: 4.6								
14 + 00	0.0 - 1.4		MED DENSE TAN SAND (ROADWAY EMBK.)	M-S	A-2-4			
11' LT	1.4- 5.0		LOOSE GRAY SAND (U.C.P)	M-S	A-2-4			
	5.0 - 6.0		MED STIFF TAN GRAY SANDY CLAY (U.C.P)	W	A-6			
H2O: 2.5								
13 + 50	0.0 - 2.0		LOOSE BROWN SAND (U.C.P)	M-S	A-2-4			
35' LT	2.0 - 6.0		MED STIFF GRAY SANDY CLAY (U.C.P)	W	A-6			
H2O: 1.5								
12 + 00	0.0 - 3.0		LOOSE TAN SAND AND GRAVEL (U.C.P)	M-S	A-2-4			
13' RT	3.0 - 6.0		MED STIFF TAN GRAY SANDY CLAY (U.C.P)	W	A-6			
H2O: 2.4								

ROADWAY NOTES

LINE - L -	PROJECT SF-240027 DATE 4/15/2013 COUNTY CRAVEN 4/16/2013 NOTES BY WRIKE				EST.	CADD USE ONLY		
STATION	DEPTH	SAMP	DESCRIPTION	MOI.	CLASS	DEPTH	FORM.	CLASS
18 + 00	0.0 - 6.0		TAN GRAY SAND (U.C.P)	M-S	A-2-4			
12' RT								
H2O:4.5								
17 + 50	0.0 - 2.1		LOOSE TAN SAND (U.C.P)	M-S	A-2-4			
28' LT	2.1 - 10.0		STIFF TAN GRAY SANDY CLAY (U.C.P)	W	A-6			
H2O: 3.2								
17 + 00	0.0 - 1.6		VERY SOFT BROWN MUCK (ALLUVIAL)	M-S	A-7-5			
30' LT	1.6 - 6.0		STIFF GRAY SANDY SILT (U.C.P)	W	A-4			
H2O: 1.4								
17 + 00	0.0 - 3.0		MED DENSE TAN SAND (ROADWAY EMBK.)	M	A-2-4			
12' LT	3.0 - 10.0		LOOSE GRAY SAND (U.C.P)	M-S	A-2-4			
H2O: 3.8								
16 + 50	0.0 - 3.0		MED DENSE TAN SAND (ROADWAY EMBK.)	M	A-2-4			
11' RT	3.0 - 10.0		LOOSE TO DENSE GRAY SAND (U.C.P)	M-S	A-2-4			
H2O: 3.7								
16 + 50	0.0 - 3.2		VERY SOFT BROWN MUCK (ALLUVIAL)	M-S	A-7-5			
40' LT	3.2 - 6.0		STIFF GRAY SANDY SILT (U.C.P)	W	A-4			
H2O: 1.2								
16 + 00	0.0 - 2.3		VERY SOFT BROWN MUCK (ALLUVIAL)	M-S	A-7-5			
45' LT	2.3 - 4.5		SOFT GRAY SANDY CLAY (ALLUVIAL)	W	A-6			
	4.5 - 6.0		LOOSE GRAY SAND (U.C.P.)	S	A-2-4			
H2O: 0.6								
16 + 00	0.0 - 3.0		MED DENSE TAN SAND (ROADWAY EMBK.)	M	A-2-4			
11' LT	3.0 - 10.0		LOOSE TO DENSE GRAY SAND (U.C.P)	M-S	A-2-4			
H2O: 3.5								
16 + 00	0.0 - 3.5		MED DENSE TAN SAND (ROADWAY EMBK.)	M-S	A-2-4			
13' RT	3.5 - 10.0		LOOSE TO DENSE GRAY SAND (U.C.P)	S	A-2-4			
H2O: 2.4								
15 + 50	0.0 - 2.5		VERY SOFT BROWN MUCK (ALLUVIAL)	M-S	A-7-5			
50' LT	2.5 - 4.0		VERY LOOSE GRAY SAND (ALLUVIAL)	S	A-3			
	4.0 - 6.0		VERY LOOSE BROWN ORG SAND (ALLUVIAL)	S	A-2-5			
H2O: +0.5	6.0 - 8.0		DENSE GRAY SAND (U.C.P)	S	A-2-4			