

November 8, 2002  
Resubmit May 19, 2003

NCDOT – Geotechnical Unit  
Century Center  
P. O. Box 25201  
Raleigh, North Carolina 27611

Attention: Mr. Njoroge Wainaina, P.E.  
State Transportation Engineering Geologist

State Project: 8.T540402

Tip Number: R-2417BB

Federal Project: STP-NHF-421(2)

County: Lee

Description: US 421 – NC 87 Sanford Bypass from East of SR 1521 to East of NC 42

Subject: Geotechnical Report – Inventory

Project Description:

The proposed facility is a four (4) lane, controlled access roadway with a total length in this segment of 1.97 miles excluding ramps, loops, detours and -Y- lines. An interchange is planned at -Y3- (NC 42). Culverts will be required at two (2) small stream crossings, at -L- Station 508+41 and -L- Station 532+65.

CTL Engineering's field investigation was performed in February, 2002. A CME-550X, all-terrain drill rig capable of providing 7,000 ft.-pounds of rotary torque was utilized to advance auger borings. Standard Penetration tests, utilizing a 140 pound automatic hammer, were conducted where deemed necessary. Soil samples were retrieved and field classified, with representative samples submitted to our Durham laboratory for analysis.

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Soil borings were generally drilled at 200 foot intervals with the following base lines being investigated:

<u>Line</u>	<u>Station</u>
-L-	484+64.47 to 588+88.22
-Y1-	11+50.00 to 27+50.00
-DET-	1+00.00 to 16+02.16
-RPB-	1+00.00 to 24+77.12
-LPB-	1+00.00 to 14+71.48
-RPC-	1+00.00 to 22+32.72
-LPC-	1+00.00 to 14.38.95
-Y3-	10+50.00 to 55+00.00

Areas of Special Geotechnical Interest

Hard Rock

Hard rock was not encountered in cut sections on the project.

Plastic Soils

The following areas were found to contain clay soils of high plasticity (P.I.  $\geq$  26) within construction limits.

<u>Line</u>	<u>Station</u>
-L-	516+00 to 518+00

Groundwater

Groundwater was not encountered within six (6) feet of proposed grade in any borings on the project.

Springs

Springs were identified at the following locations:

<u>Line</u>	<u>Station</u>
-L-	500+00, 75 Lt.
-L-	505+50, 140 Rt.