STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

April 29, 2013

STATE PROJECT: 34352.1.1, R-0623
FEDERAL PROJECT: STP-24(6)
COUNTY: Montgomery

DESCRIPTION: NC 24/27 (Troy Bypass) from SR 1138 (Dairy Rd.) to East of Little River

SUBJECT: Geotechnical Report –Inventory

Project Description

The project consists of the construction of a four lane divided facility, widening, and some resurfacing. The project begins at SR 1138 (Dairy Rd.) and extends east for approximately 6.6 miles to East of Little River in Montgomery County.

A geotechnical investigation was conducted in January and February of 2012. Borings were advanced utilizing an ATV mounted CME-550 drill machine with an automatic hammer or by hand auger. Standard Penetration Tests were performed at selected locations and additional borings were advanced using continuous flight augers. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis. The following alignments were investigated.

Line	Station(±)
-L1-	17+00 to 28+91
-L2-	18+50 to 28+91
-L-	28+84 to 368+00
-Y1-	14+00 to 20+00
-Y2-	10+47 to 15+50
-Y3-	10+47 to 12+25
-Y5-	11+50 to 12+82
-Y6-	11+00 to 19+65
-Y7-	10+09 to 25+00
-Y8-	11+60 to 17+50
-Y9-	11+50 to 23+86
-Y10-	14+00 to 22+00
-Y11-	13+50 to 22+00
-Y12-	15+00 to 18+14
-Y13-	10+50 to 25+00

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

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

Areas of Special Geotechnical Interest

1) Highly Plastic Clays: Highly plastic (PI≥ 26) clays were encountered on the project at the following intervals.

Line	Station (±)	Offset (ft)
-L-	114+25 to 115+25	150 LT to 150 RT
-L-	145+77 to 147+27	150 LT to 150 RT
-L-	321+80 to 323+30	100 LT to 125 RT
-Y9-	13+65 to 14+75	30 LT to 50 RT

2) Loose/Soft Soils: Soils with "soft" or "very loose" densities (N-value < 4) were encountered on the project and may impact subgrade or embankment construction. These soils were found at the following locations:

Line	Stations (±)	Offsets (ft)
-L-	47+75 to 49+75	10 LT to 115 RT
-L-	53+10 to 55+50	30 to 90 RT & 60 to 90 LT
-L-	66+75 to 73+80	10 LT to 110 RT & 55 to 105 LT
-L-	75+75 to 78+90	CL to 105 RT
-L-	120+75 to 121+75	120 LT to 20 RT
-L-	187+25 to 188+25	120 to 20 LT
-L-	262+10 to 265+50	80 LT to 110 RT
-L-	287+75 to 292+25	90 LT to 110 RT
-L-	335+25 to 338+25	90 LT to CL
-L-	340+85 to 343+75	120 LT to 120 RT

3) Organic Soils: The following areas on the project contained organic matter and wood debris.

Line	Station (±)	Offset (ft)
-L1-	27+75 to 28+50	35 LT to 85 LT
-L-	48+00 to 49+80	78 LT to 110 RT
-L-	53+75 to 55+50	85 LT to 90 RT