



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 34459.1.1 (R-2552C)
FEDERAL PROJECT: NHF-60-1(19)
COUNTY: Johnston
DESCRIPTION: US 70 (Clayton Bypass) from east of SR 1560 to US 70 east of Clayton
SUBJECT: Geotechnical Report – Inventory

Project Description

This easternmost portion of the Clayton Bypass project consists of a new four lane roadway (-L2-, -L2LT-, and -L2RT-) beginning approximately 1.1 kilometers east of SR 1560 (Ranch Road) and extending eastward to the US 70A/US 70 Business split between Clayton and Smithfield. The project includes a major interchange at the US 70A (-Y4-)/US 70 Business (-Y4-) split. The interchange includes the construction of two bridges; comprised of a two-lane bridge, carrying -FLYOVER- over -Y4-, and a second bridge (-Y4- over -L2-) to be constructed adjacent to the existing bridge carrying US 70 Business westbound over US 70. Several SR roads (-Y3-, -Y5-, and -Y6-) are being re-aligned in the vicinity to accommodate the interchange. Two bridges are to be constructed on the -L2LT- and -L2RT- alignments over Little Creek (see Plan Sheet Nos. 4 and 5). Dual bridges (-L2LT- and -L2RT-) will also be constructed to over -Y1- (SR 1563, Little Creek Church Road) (see Plan Sheet No. 8). Three culverts, a culvert extension, and a wildlife crossing are also proposed on the project (see Plan Sheet Nos. 11, 15, 16, and 17). A “super” boulevard ditch is to be constructed in the spread median just east of the bridges over Little Creek (see Plan Sheet Nos. 4 and 5). The project is approximately 5.0 kilometers in length.

The geotechnical field investigation was conducted during the period of February, 2004 through July, 2004. ATV-mounted BK-51, CME-550 and Go Tract drill machines with manual and automatic hammers were used during the investigation. Standard Penetration Tests were performed in selected borings and additional borings were advanced using continuous flight augers. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit. Several borings from the structure investigation for the bridges over Little Creek have been included in this report (see Plan Sheet Nos. 4 and 5). Two borings from the adjacent R-2552BB project, which was investigated in September of 2000, have been included in this report as well (see Plan Sheet No. 4).

The following alignments, totaling 19.59 kilometers, were investigated. Subsurface soil profiles, or cross-sections, of these alignments are included in this report.

<u>Line</u>	<u>Station</u>
-L2LT-	108+57 to 126+38
-L2RT-	108+51 to 126+50
-L2-	126+50 to 158+55
-Y-	10+44 to 12+39
-Y1-	11+15 to 13+25
-Y2-	10+53 to 12+23
-Y3-	11+00 to 17+90
-Y4-	5+90 to 32+00
-Y4DET-	25+15 to 28+60
-Y5-	10+09 to 24+00
-Y5DET-	10+03 to 11+24
-Y6-	10+17 to 15+40
-Y7-	10+19 to 12+30
-Y9-	11+90 to 15+11
-FLYOVER-	0+00 to 16+69
-RAMP A-	0+00 to 12+58
-RAMP B-	0+00 to 6+33
-LOOP B-	0+00 to 5+48
-RAMP C-	0+00 to 8+63
-LOOP C-	0+00 to 6+05
-RAMP D-	0+00 to 4+43

Areas of Special Geotechnical Interest

- 1) Highly Plastic Clay Soils: Areas containing highly plastic clay soils are noted below:

<u>Alignment</u>	<u>Station</u>
-L2LT-	108+70 to 109+00
-L2LT-	110+18 to 111+00
-L2LT-	114+70 to 122+60
-L2RT-	108+52 to 109+00
-L2RT-	110+65 to 111+40
-L2RT-	115+60 to 117+20
-L2RT-	119+00 to 124+40
-L2-	127+60 to 130+00
-L2-	133+30 to 134+70
-L2-	135+20 to 136+60
-L2-	137+40 to 137+90
-L2-	139+00 to 141+60
-L2-	142+50 to 143+20
-L2-	146+00 to 147+30
-Y4-	19+80 to 21+40