



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

Michael F. Easley
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

Lyndo Tippet
SECRETARY

August 5, 2004

STATE PROJECT: 34459.1.1 (R-2552AA)
FEDERAL PROJECT: NHF-60-1(9)
COUNTY: Wake/ Johnston

DESCRIPTION: US 70 Clayton Bypass from I-40 in Wake County to east of SR 1525 (Cornwallis Rd.)

SUBJECT: Geotechnical Report - Inventory

Project Description

This project consists of the construction on new location of US 70, Clayton Bypass (-L-, -LREV-). The proposed facility will consist of a four-lane, divided roadway and the intersection and tie-in with existing I-40 at the Wake/ Johnston county line.

A geotechnical investigation was conducted during July and October 2000 and from December 2001 to March 2002 for previous design alignments. The investigation for the current design was conducted in February and March 2004. ATV-mounted BK-51, CME 45C, CME 750, B-57 and CME 550 drill machines with automatic hammers were used during the investigation. 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 by the Materials and Tests Unit. The following alignments were investigated.

-I1Y1-	10+40 to 41+60
-FLYLEREV-	10+00 to 35+14
-FLYLWREV-	10+00 to 26+77
-LPB-	10+00 to 24+01
-RPD-	10+00 to 17+60
-LREV-	11+04 to 18+99
-L-	18+99 to 28+00
-YREV-	10+03 to 17+75
-Y2B-	10+00 to 19+28
-Y4-	12+50 to 15+95
-Y4DET-	10+40 to 13+78
-SRD1-	10+00 to 12+68

Areas of Special Geotechnical Interest

1) Highly Plastic Clays: Highly plastic clays were encountered on the project at the following intervals:

<u>Line</u>	<u>Stations</u>
-I1Y1-	19+10 to 21+50
-I1Y1-	22+10 to 24+10
-I1Y1-	36+30 to 38+70
-FLYLEREV-	10+50 to 21+60
-FLYLEREV-	22+20 to 27+30
-FLYLEREV-	28+30 to 29+10
-FLYLEREV-	31+20 to 31+70
-FLYLWREV-	10+50 to 17+50
-FLYLWREV-	18+20 to 22+50
-FLYLWREV-	25+76 to 26+76
-LPB-	10+05 to 11+70
-LPB-	12+50 to 16+60
-LPB-	19+70 to 21+75
-LPB-	22+70 to 23+00
-RPD-	10+45 to 12+40
-RPD-	12+90 to 13+60
-LREV-	11+04 to 13+10
-LREV-	16+90 to 18+80
-L-	22+80 to 23+20
-Y2B-	14+10 to 14+90
-Y4DET-	12+40 to 13+78
-SRD1-	11+90 to 12+68

2) Hard Rock: Hard rock was encountered at the following intervals:

<u>Line</u>	<u>Stations</u>
-FLYLEREV-	10+20 to 12+60
-I1Y1-	19+40 to 20+00
-FLYLWREV-	11+00 to 12+60

3) Groundwater: The following areas exhibit a high water table, seasonal high groundwater or the potential for groundwater related construction problems:

<u>Line</u>	<u>Stations</u>
-FLYLEREV-	10+00 to 21+60
-FLYLEREV-	26+00 to 28+30
-FLYLEREV-	29+50 to 33+30
-FLYLWREV-	10+00 to 16+40
-FLYLWREV-	18+00 to 22+20
-FLYLWREV-	23+10 to 23+40