



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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August 3, 2001

STATE PROJECT: 8.T311002 (R-2552B)
FEDERAL PROJECT: NHF-60-1(9)
COUNTY: Johnston

DESCRIPTION: US 70 Clayton Bypass from East of NC 42 to East of SR 1560
(Ranch Rd.)

SUBJECT: Geotechnical Report – Inventory

Project Description

This project is located in northern central Johnston County 4 kilometers south of the town of Clayton. This project consists of a four-lane divided facility along 5.05 kilometers of new alignment as well as 14 other lines consisting of ramps, loops, detours, drives and -Y- lines totaling 6.03 kilometers of roadway along new alignment and existing alignment. There are a total of six structures proposed with one over -L-, two over -Y10-, two over -Y11-REV, and one over Little Creek. Three culverts are also proposed with two under -L- and one under -Y11-REV.

A preliminary geotechnical investigation was conducted in June 1999 to check ground water elevations in areas of high cut. The primary geotechnical investigation was conducted between April 2000 and September 2000 utilizing ATV-mounted BK-51 and CME 45C drill machines. Borings were advanced with continuous flight and hollow stem augers with N-casing and NX-core used in one boring. Standard Penetration Tests were conducted at select locations. Representative soil samples were obtained for visual classification in the field, and for laboratory analysis by the Material and Tests Unit.

The following survey lines were investigated.

<u>Line</u>	<u>Station</u>
-L-	58+00 – 93+95
-L-LT	93+95 – 108+57
-L-RT	93+95 – 108+51

<u>Line</u>	<u>Station</u>
-Y7-DET	11+82 – 16+50
-Y11-REV	12+34 – 26+82
-Y11-DET	17+50 – 24+32
-RP-A	0+00 – 4+41
-RP-B	0+00 – 6+14
-RP-C	0+00 – 4+17
-RP-D	0+00 – 7+33
-Y13-REV	8+88 – 11+05
-DR-1	10+00 – 11+29

Areas of Special Geotechnical Interest

- 1) Groundwater: Groundwater was found to be above or within 2 meters of the proposed grade at the following locations.

<u>Line</u>	<u>Station</u>
-L-	58+60 – 68+00
-L-	69+20 – 71+20
-L-LT	105+30 – 108+57
-L-RT	105+60 – 108+00
-Y11-REV	15+80 – 23+00
-RP-B	1+00 – 6+14
-RP-C	2+00 – 4+17
-RP-D	6+00 – 7+33

- 2) Soft Foundation Soils: The following areas call for proposed embankments that will impact on soft alluvial and Coastal Plain soils with organics in some areas.

<u>Line</u>	<u>Station</u>
-L-	68+25 – 68+75
-L-	75+00 – 76+00
-L-	80+00 – 81+70
-L-	83+00 – 85+20
-L-	92+00 – 92+45
-Y11-REV	13+50 – 14+50
-Y11-REV	24+20 – 25+20

- 3) High Plasticity Clays: The following areas contain clays that have plasticity indices higher than 35 within the proposed construction limits.

<u>Line</u>	<u>Station</u>
-L-	59+00 – 60+00
-L-	64+65 – 65+90
-L-	90+70 – 91+30