



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 8.1830501 (R-2206B)  
F.A. PROJECT: F-24-1(34)  
COUNTY: Lincoln  
DESCRIPTION: NC 16 Bypass from north of NC 73 to north of SR 1386 (St. James Church Rd.)

SUBJECT: Geotechnical Report - Inventory

This report presents the findings of the Geotechnical Investigation for section B of NC 16. Stations encompassed on this project are from -L- 102+80 to 180+68. The project generally proceeds in a northerly direction from beginning to end.

The geotechnical field investigation for this project was conducted between February and May of 1999. An ATV mounted drill machine was utilized for this investigation.

The following survey lines were investigated:

Line	Station
-L-	102+80 to 180+68
-Y9- Rev.	11+09 to 19+83
-Y10- Rev.	11+27 to 17+13
-Y12-	13+26 to 19+68
Ramp A at -Y9-	10+00 to 15+31
Ramp B at -Y9-	10+00 to 15+72
Ramp C at -Y9-	10+00 to 14+84
Loop C at -Y9-	10+00 to 12+87
Ramp A at -Y10-	10+00 to 16+06
Ramp B at -Y10-	10+00 to 14+96
Ramp C at -Y10-	10+00 to 15+89
Ramp D at -Y10-	10+00 to 16+38

**Areas of Special Geotechnical Interest:**

1. *Alluvial Soils / Wet Areas:*

There are many areas containing alluvial soils throughout the project corridor. Most of these areas are the result of adjacent streams and tributaries. Although many of the alluvial areas encountered should be of no special interest there were a few areas containing soft alluvial silt and clay soils. Likewise there were a few areas of low-lying residual soils that were wet and soft. These soils lie at the bottom of proposed fills with heights greater than 6 meters. It appears that some of these areas are merely "seasonally wet". The following locations meet these conditions:

- A. An area left and right of -L- stations 118+60 to 119+20 contains approximately 1 to 2 meters of soft wet residual silty clay (A-7-6). This area is a low spot in the surrounding topography with a high water table and had recently been cleared of all trees.
- B. A small floodplain area consisting of soft alluvial sandy silt approximately 1 meter thick exists either side of the creek at -L- station 122+20. The creek appears to be running on hard rock and the footprint of the floodplain is rather small in its extent.
- C. Another floodplain area was encountered left and right of -L- stations 123+80. Soils along this creek are composed of 1 to 2 meters of soft sandy silt. The floodplain is adjacent to the -Y8- (CSX Railroad) and thus is below the -Y8- proposed bridge.
- D. A floodplain area was encountered left and right of -L- stations 131+95 to 132+65. Soils along this creek are composed of up to 1 meter of very soft to soft sandy silt (A-4).
- E. At the intersection of the project corridor with -Y9- there is an extensive floodplain along the creek to the east. The extent of the wet floodplain soils encompasses portions of Ramp C, Loop C, and -Y9- Rev.. There is also another wet low lying feature which runs from east to west and crosses proposed Ramp B at station 13+60, -L- at station 126+00 and Ramp C at 11+50. Approximate thicknesses of these soft wet sandy silt soils are 1 to 2 meters. Ramp A at -Y9- also contains approximately 1.0 meter of soft alluvial sandy clayey silt between stations 12+00 to 12+80. Much of this area appears to be "seasonally wet".
- F. A floodplain area was encountered left and right of -L- stations 151+05 to 151+30. Alluvial soils consist of 1.0 meters of soft sandy silt (A-4)
- G. A floodplain area was encountered left and right of -L- stations 177+70 to 179+00. Alluvial soils consist of approximately 2.0 meters of soft to medium stiff sandy clay (A-6).
- H. Several small floodplain areas were encountered at the -Y10- Rev. interchange. Alluvial soils consisting of up to 1.0 meter of soft silt and clay soils were encountered between Ramp A stations 11+80 to 12+60. A small floodplain exists between Ramp B stations 12+80 to 13+00 and may contain similar soils. Ramp C contains a floodplain between stations 13+80 to 14+40 and Ramp D also has a very small floodplain area between stations 13+80 to 14+00.