



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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SECRETARY

September 23, 2003

STATE PROJECT: 6.469002T (R-0513A)
F.A. PROJECT: N/A
COUNTY: Robeson

DESCRIPTION: US 74 from Maxton Bypass to 1.82 kilometers east of SR 1166
(Cabinet Shop Rd.)

SUBJECT: Geotechnical Report – Structure Inventory for Structure No. 1 on -Y1-
(US 74 Business) over -L- (US 74 Bypass)

Project Description

A two-span bridge, 148.6 meters in length with a skew of 26°-34'-45" is proposed on -Y1- (US 74 Business) over -L- (US 74 Bypass). The project is located in Robeson County about 3 kilometers east of Maxton.

The subsurface investigation was conducted during March of 2003 using an ATV-mounted CME 550 drill machine. One standard penetration test boring was performed at each of the proposed bent locations. All borings were advanced using rotary drill methods with bentonite drilling fluid. Representative soil samples were obtained for visual classification in the field and selected samples were sent to the Materials and Test Unit for laboratory analysis.

Physiography and Geology

The project is located in flat terrain of the Coastal Plain Physiographic Province. Geologically, the site is underlain by sands and clays of the Duplin and Black Creek Formations. The area consists of a mixture of woods, farmland and sparse homes.

Soil Properties

Subsurface conditions at the site are relatively uniform. A small amount of Roadway Embankment soil is present in borings B1-B and EB2-B and consists of tan-brown, moist, loose, clayey and silty sand.

Surficial soils belonging to the Duplin Formation generally consist of 10 to 11 meters of white and tan-brown to gray-brown, moist to wet, very loose to dense, coarse and silty sand with layers of red to gray-brown, moist to wet, very soft to medium stiff, sandy silt, sandy clay and silty clay up to 1.5 meters thick.

The Black Creek formation underlies the Duplin Formation at an elevation of approximately 44 meters. Soils of the Black Creek Formation typically consist of light gray to gray, wet, stiff to hard, sandy and silty clay and tan-white to gray-brown, wet, medium dense to dense, silty sand. Moisture content of the tested silty clay sample was approximately 20 percent.

Groundwater

Groundwater was encountered at each bent location. Groundwater elevations ranged from 54.55 to 54.28 meters across the site.

Notice

This Geotechnical foundation report is based on the Preliminary General Drawing for structure No. 1 on -Y1- (US 74 Business) over -L- (US 74 Bypass) dated February 18, 2003. If significant changes are made in the design or location of the proposed structure, the subsurface information should be reviewed and modified as necessary.

Respectfully submitted,

A handwritten signature in black ink that reads "N. T. Roberson".

N. T. Roberson
Project Geologist