



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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SECRETARY

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

DESCRIPTION: US 74 from east of SR 1166 (Cabinet Shop Rd.) to west of SR 1157 (Henry Berry Rd.)

SUBJECT: Geotechnical Report - Structure Inventory for Dual Structures No. 1 & 2 on -L- (US 74) over -Y1- (NC 710)

**Project Description**

The proposed dual structures are a single-span bridge, 59.6 meters in length, on new location. It will carry proposed US 74 (-L-) over existing NC 710. The Bents will be constructed on a 45° 28' 18.5" skew. The project is located in Robeson County about 12 kilometers east of Maxton.

A subsurface investigation was conducted during April of 2003, utilizing an ATV-mounted CME 550 drill machine. Standard Penetration Test borings were performed at each of the proposed end bent locations. The end bent boring EB2-B (WBL) was drilled during the roadway investigation performed by the Greenville Area Office of the Geotechnical Unit in March 2001. All borings were advanced using rotary 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 Pliocene age Duplin Formation and the Cretaceous age Black Creek Formation. The area consists of a mixture of wooded land with scattered homes.

**Soil Properties**

Soils encountered at the project site consist of Coastal Plain soils.

Coastal Plain soils in the Duplin Formation were encountered in all borings and range in thickness from 11.00 to 13.70 meters. The soils predominantly consist of tan-brown and gray-white, moist to wet, very loose to dense, fine to coarse sand and silty sand (A-3, A-1-b, A-2-4) and light gray, moist, medium stiff, sandy silt (A-4) and tan-brown-gray, moist to wet, very soft to stiff, sandy and silty clay (A-6, A-7-6).

Soils belonging to the Black Creek Formation were encountered in all borings at an elevation of 36.32 to 34.10 meters. These soils predominantly consist of gray, wet, stiff to hard, sandy and silty clay (A-6, A-7-6) and tan-brown, and gray, wet, medium dense to very dense, coarse and silty sand (A-1-b, A-2-4). A layer of gray, wet, stiff, sandy silt (A-4) was encountered in boring EB2-B (WBL). Borings were advanced to an elevation of 23.0 ± meters with no significant change in stratigraphy.

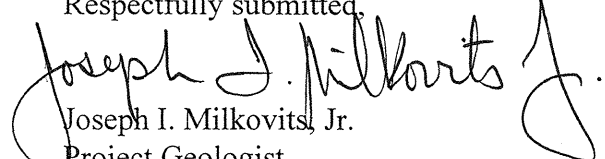
**Groundwater**

Groundwater was encountered at each bent location. Groundwater elevations ranged from 46.63 to 43.71 meters at the end bents at the time of this investigation. Groundwater elevation at the EB2-B (WBL) boring was 46.08 meters during the roadway investigation in March 2001.

**Notice**

The Geotechnical foundation report is based on the Preliminary General Drawing for dual structures no. 1 & 2 on -L- (US 74) over -Y1- (NC 710) dated January 15, 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,

  
Joseph I. Milkovits, Jr.  
Project Geologist