



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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July 2004

STATE PROJECT: 33304.1.1 (B-3857)  
F. A. PROJECT: BRZ-1314(3)  
COUNTY: Henderson  
DESCRIPTION: Approaches to Bridge No. 8 on SR-1314 over Boylston Creek  
SUBJECT: Geotechnical Report – Inventory

**Project Description**

This project is located in northern Henderson County between the communities of Mills River and Mountain Home. Construction consists of the relocation of Bridge No. 8 approximately 30 feet downstream from the existing crossing, necessitating the building of new approaches.

A geotechnical investigation was conducted during May of 2004 utilizing a CME-550 ORV drill machine. Standard Penetration Tests (SPT's) were performed at selected locations with the use of an automatic drop hammer. Representative soil samples were collected and submitted for AASHTO classification by the Materials and Tests Unit.

The -L- survey line was investigated between Stations 10+00 – 23+00.

**Areas of Special Geotechnical Interest**

- (1) Liquid Limits > 50: A highly compressible saprolitic silt (A-5) was found at Station 18+00.
- (2) Groundwater: Groundwater was measured or can be expected within 6 feet of natural ground along -L- Stations 15+00 – 19+00.

**Physiography**

Boylston Creek is located within the drainage basin of the French Broad River. The site area is characteristically flat due to the extensive floodplain developed by the French Broad. The resulting land use at the site is primarily agricultural.

**Geotechnical Descriptive Analysis**

Stations 10+00 – 15+00

Divergence from existing SR-1314.

Stations 15+00 – 19+00

Proposed construction entails up to 15 feet high fills to be placed at these stations.

Alluvial soils compose the surficial strata throughout this station interval. These soils consist of one to eight feet of loose to medium dense silty sand. This deposit overlies an alluvial layer of one to 6 feet of very soft to stiff silty clay and micaceous clayey silt. From one to three feet of dense alluvial basal gravel has been deposited beneath the silt and clay. Saprolite comprised of soft to hard sandy silty clay and micaceous sandy silt lies beneath the alluvial horizon between approximate elevations 2049 and 2055 feet. Borings penetrated weathered rock beneath the saprolite at elevations varying from 2041 to 2046 feet.

Stations 19+00 – 23+00

Convergence to existing SR-1314.

Respectfully Submitted,

John W. Mann, LG  
Project Engineering Geologist