STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

November 22, 2004

STATE PROJECT: 33304.1.1 (B-3857)
F. A. PROJECT: BRZ-1314(3)
COUNTY: Henderson

DESCRIPTION: Bridge No. 8 on SR-1314 over Boylston Creek

SUBJECT: Geotechnical Report – Foundation Investigation

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 60 feet downstream from the existing crossing. The new structure will be erected with a single span 90 feet long, with end bents on a 90-degree skew angle. The width of the bridge will be a clear opening of 40 feet.

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

Physiography and Geology

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.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

The project area is underlain by the rocks of the Brevard Fault Zone. These rocks are primarily mylonitic "fish-scale" schist and phyllonite. Rock core specimens were not retrieved on the project.

Foundation Materials

A boring along centerline was advanced at both end bent locales. Alluvial soils comprise the surficial strata, composed of one to eight feet of loose to medium dense silty sand. This deposit overlies another alluvial layer of very soft to stiff micaceous clayey silt from two to six feet thick. One to three feet of alluvial basal gravel has been deposited beneath the upper strata. Saprolite comprised of very stiff to hard, sandy silty clay lies beneath the alluvial horizon at approximate elevation 2049 feet. Borings penetrated weathered rock beneath the saprolite between elevations 2046 and 2047 feet. Hard rock refusal was recorded at approximate elevations 2038 feet (Boring EB1-C) and 2036 feet (Boring EB2-C).

Groundwater

Groundwater was measured between elevations 2053 and 2054 feet at both end bents.

Respectfully Submitted,

John W. Mann, LG
Project Engineering Geologist