STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
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LYNDO TIPPETT, SECRETARY

June 20, 2003

STATE PROJECT: 8.2407901 (B-3704)
FEDERAL PROJECT: BRZ-1834 (2)
COUNTY: Wake
DESCRIPTION: Approaches for Bridge No. 108 on -L- (SR 1834) over Lower Barton's Creek

SUBJECT: Geotechnical Report - Inventory

PROJECT DESCRIPTION

The project consists of widening, as well as partial horizontal and vertical realignment of the roadway approaches to Bridge No. 108. Project length is approximately 0.3 miles. A geotechnical investigation was conducted in May 2003, using a hand auger and sounding (bridge) rods. The following alignment, totaling 0.3 miles, was investigated. Subsurface soil cross sections of this line are included in this report.

Line	Station
-L-	11+75 to 27+25

AREAS OF SPECIAL GEOTECHNICAL INTEREST

1) Highly Micaceous Soils: Highly micaceous soils are present in discontinuous zones at or above proposed subgrade in the following areas.

Line	Station
-L-	11+75 to 14+75
-L-	21+75 to 27+25

2) Hard Rock: Hard rock occurs above or within 6 feet below proposed grade at the following locations.

Line	Station
-L-	11+75 to 14+75

3) Wells: No water wells were found within proposed right of way. However, the Preliminary Plans used for this investigation show a residential water well at -L- Station 25+00, 45 Rt. A discussion with the property owner indicates that a non-functioning well is at this location, and that it has been abandoned. Additionally, a subsurface water tank is at this location. A water line is shown on the plans connecting to the "well". This line actually connects to a well on the adjoining property, and is used to fill the water tank.

4) Underground Storage Tanks: As discussed above in Item 3, an underground, water storage tank is located at -L- Station 25+00, 45 Rt. This feature is not shown on the Preliminary Plans.

PHYSIOGRAPHY AND GEOLOGY

The project is in the Piedmont Physiographic Province. Topography is hilly, with excellent drainage. Geologically, the project is in the Raleigh Belt. The bedrock is biotite schist.

SOIL PROPERTIES

Soils on the project are of alluvial and residual origin. Also present are existing roadway embankment soils, which were not investigated as the embankments appear stable. The alluvial soils are present in the floodplain under the existing bridge and to the left of -L-, from approximately Station 12+75 to the bridge. These soils are mostly very loose to loose, slightly to moderately micaceous, moist to wet, silty sand. The cuts left and right of -L- will yield residual soils that are mostly medium stiff to hard, moist, silty clay and sandy silt. These soils range from slightly to highly micaceous. Residual, loose to medium dense, moderately micaceous, dry to moist, silty sand is also present, but is less common than the silts and clays.

ROCK PROPERTIES

Rock outcrops and boulders at the site consist of well foliated, biotite schist.

GROUNDWATER

Groundwater was encountered in a single hand auger hole in the floodplain, at a depth that indicates the groundwater table is approximately 2 to 3 feet below the floodplain surface.

Respectfully submitted,

Steve P. Brown, LG
Project Geologist