STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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GOVERNOR

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October, 2003

STATE PROJECT NO: 32971.1.1 (B-3266)
COUNTY: Wilkes
DESCRIPTION: Approaches to Bridge No. 264 over North Fork Reddies River on SR 1567

SUBJECT: Geotechnical Report – Inventory

Site Description

This project is located in northern Wilkes County on Vannoy Rd. (SR 1567), approximately 18 kilometers north of the intersection of NC 16 and US 421. The area is rural and primarily woodland, with farms and widely scattered residential lots along the valley floor. The North Fork of the Reddies River is a shallow stream about 10 meters wide with an intermittent flood plain that is bordered by forested hills not more than 60 meters high. The flood plain at the project site varies in width from 30 meters to about 70 meters.

The project consists of roadway approaches on alignment -L- from Station 10+40 to Station 14+46, and two short driveway alignments not investigated. Alignment -L- is located about 15 meters Left of the existing roadway. A mobile home, a neighboring grassy yard, and a small pond lie within the limits of construction on the north side of the river. The rest of the project is chiefly grassland with scattered trees.

The Geotechnical Engineering Unit conducted a subsurface investigation in December 2002, using a preliminary plan that has since been superceded by the current plan. Boring locations on the old -L- stationing have been adjusted to the current -L-. Borings were made with a CME 550 power drilling machine using 8-inch, hollow stem augers. Standard Penetration Tests (SPT's) were made at regular intervals, and soil samples from all materials were submitted to a DOT laboratory for quality tests. The site was revisited in September 2003, at which time a shallow hand auger boring was made and existing roadcuts and ditch lines were investigated.

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LOCATION:
CENTURY CENTER COMPLEX
BUILDING B
1020 BIRCH RIDGE DRIVE
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Soil and Rock Properties

Alluvial soils are the principal materials to be dealt with on this project. Saprolite, weathered rock and hard rock will be encountered in one cut. Small amounts of roadway embankment are present, but have not been investigated.

Alluvial soils are not more than 2.5 to 3 meters deep, and they consist of 2 types: flood plain soils composed of loose, silty sand and basal gravel (A-2-4, A-1-b); and more compact, flood plain terrace soils composed of brown, yellow-brown or orange, moist, medium stiff to stiff clay and medium dense, clayey gravel (A-6, A-1-b).

Saprolite is composed of brown to gray, moist, medium dense to very dense, silty sand (A-2-4). It can be found at the ground surface at the beginning of the project, and it underlies alluvial soils in two borings.

Hard rock at this site consists of massive granite gneiss, which weathers to light gray, friable, sandy weathered rock. Those materials crop out beneath saprolite in an existing cut near the beginning of the project.

Areas of Special Geotechnical Concern

I. Pond and Stream Crossing Centerline

A small pond is located on the Left Side with an earthen dam approximately on centerline. The pond is about 20 meters by 10 meters (.02 hectares) in surface area and is located within the following stations of -L-:

11+40 to 11+60
CL to 22 meters Left

The outlet for the pond is a PVC pipe that crosses Centerline at Station 11+60, with only a very small flow of water.

II. Groundwater Within One Meter of Ground Surface

Static groundwater within 1 meter of the ground surface should be expected on both sides of Centerline within the following Stations:

11+10 to 13+00

III. Groundwater Within One Meter of Proposed Grade

The static groundwater table should be expected at proposed grade or within 1 meter of proposed grade within the following Stations:

11+10 to 11+80