STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 8.2711301 (B-2905)
F. A. PROJECT: BRZ-1179(1)
COUNTY: Ashe
DESCRIPTION: Approaches to Bridge No. 113 on SR-1179 Over South Fork New River

SUBJECT: Geotechnical Report – Inventory

Site Description

This project is located on an unpaved section of SR-1179 in a rural area of southern Ashe County approximately 2.5 miles from the intersection of SR-1179 and SR-1003. Bridge No. 113 is a low water bridge that is flooded whenever the New River rises more than a few feet. Although the replacement structure is located in the same location, some relocation of SR-1179 is proposed to improve the roadway alignment. At the site, the floodplain is used for pasture and agricultural purposes, while the surrounding hills are planted with Christmas trees.

Rock and Soil Characteristics

Rock exposed in the existing cuts is fresh appearing, mica gneiss with some thin layers of mica schist. Weathered rock and saprolite in the cuts are composed of dry to moist, micaceous, sandy silt, probably classifying as A-4 and A-5. Near the start of the project are shallow deposits of colluvium, unconsolidated mixtures of soil and rock fragments migrating downslope from a source higher up. Some water is present in these deposits.

Rock structure obtained from the existing cuts is presented below.

Structure	Strike and Dip	Dip/Dip Direction
Foliation	N55-70E, 45-55SE	45-55/145-160
Joint	N25-40W, 60-65SW	60-65/230-245
Joint	N40E, 55NW	55/130

Areas of Special Geotechnical Interest

Springs

(1) A block spring house is located 50 feet left of Station 21+15, very close to construction along Line -L- and Line -D2-.

(2) There are several springs in the colluvium deposits left of Stations 12+00 to 12+50, -L-.

Geotechnical Description of the Project

Stations 11+00 to 13+50, -L-

Exposed in the slopes left of these stations are deposits of colluvium consisting of small to medium sized, angular, rock fragments in a matrix of sandy, silty soil. This material has migrated downslope by gravity from a source higher on the mountain. These deposits are usually marginally stable, especially when saturated. There are several springs showing in the slope between Stations 12+00 to 12+50.

Stations 13+50 to 15+50, -L-

The majority of material in the cuts left of Line -L- consists of limited amounts of soft weathered rock overlain by saprolite. These soils are brown, micaceous, sandy silt which are dry to moist. There is a narrow ledge of rock exposed in the cut left of Station 14+00, but it appears not to extend for any significant extent in either direction.

Stations 15+50 to 21+50, -L-

Bridge and approach fills.

Stations 21+50 to 26+50, -L-

Soils through this interval consist of dry to moist, micaceous, sandy silt probably classifying as A-4 and A-5. With depth, saprolite grades into soft weathered rock of similar composition. Weathered rock quickly grades into fresh rock consisting of fresh, gray, mica gneiss with occasional thin layers of mica schist.

No groundwater was apparent in the existing cuts in the Fall of 1999.

Respectfully Submitted,

F. R. Glass

F. R. Glass, TEGS

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