



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

June 24, 2019

STATE PROJECT: 45625.1.1 (B-5670)
COUNTY: Nash
DESCRIPTION: Bridge No. 29 on US 64 Alt. over Tar River
SUBJECT: Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a limited subsurface investigation for this project and presents the following inventory. No plans, profiles, or cross-sections will be submitted for this roadway project.

Project Description

The project consists of replacing Bridge 29 and upgrades to the approaches on US 64 Alternate. The total mainline (-L-) project length is 0.22 miles. A geotechnical investigation for the structure was conducted during June 2019 and was referenced for this roadway inventory.

Physiography and Geology

The project is located 2.5 miles southwest of the town of Spring Hope in central Nash County in the Piedmont physiographic province of North Carolina. The project corridor is primarily suburban residential with wooded areas along the project corridor. The terrain consists of steep-sided rolling hills. Geologically, the soils in this region are derived from the underlying felsic metavolcanic rock from the Eastern Slate belt.

Soil Properties

Soils encountered during this investigation are roadway embankment, alluvial and residual soils.

Roadway Embankment soils consist of red, orange, brown, and gray, soft to medium stiff, sandy silt and clay (A-4 and A-6), and range in thickness from 2.0 to 23.0 feet.

Alluvial soils consist of brown, orange, and gray, very soft to medium stiff, sandy silt and clay (A-4, A-6) with some loose to dense, sand and silty sand (A-3, A-2-4) and gravel. These soils overlie residual soils and weathered rock.

Residual soils are derived from the weathering of the underlying felsic metavolcanic rock. They generally consist of gray-green and brown, stiff to hard, saprolitic, sandy silt and clay (A-4, A-6) with some sandy lenses.

Weathered rock is present from 0.0 to 30.0 feet below the ground surface. Several areas of weathered rock are visible at the ground surface and are scattered along the project corridor. The weathered rock outcrops have a near vertical orientation which trend towards the east. Weathered rock consists of gray-green, severely weathered, felsic metavolcanic rock.

Crystalline rock consists of gray-green and brown, moderately weathered to fresh, moderately hard to hard, very close to close fracture spacing, felsic metavolcanic rock with some severely weathered zones.

Groundwater

Groundwater elevation was reported at 141.2 feet for Tar River on the hydraulics report. The Tar River was measured at 3.2 feet deep at Sta. 17+11 by the GEU on 6/19/2019. Groundwater is not anticipated to cause stability problems during construction.

Submitted by,



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6/27/2019

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