



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 34459.1.6 (R-2552C)
F.A. PROJECT: NHF-60-1(9)
COUNTY: Johnston
DESCRIPTION: US 70 (Clayton Bypass) from east of SR 1560 to US 70 east of Clayton
SUBJECT: Structure No. 604 and No. 605 on -Y4- over -L2- (US 70) at Sta. 24+03.612 and Sta. 23+89.280

Project Description

Dual two-span bridges, 90 meters in length with a 140°03'41" skew are proposed on -Y4- over -L2- (US 70). The project is located in Johnston County about two miles southeast of Clayton.

The subsurface investigation was conducted during February and October of 2004 using a CME-550 and Mobile B-57 drill machine. Borings for structure no. 604 were taken from the investigation for the existing structure over US 70 performed in June of 1989. Twelve Standard Penetration Test borings were performed at the proposed bent locations. Representative soil samples were obtained for visual classification in the field and selected samples were submitted to the Materials and Test Unit for laboratory analysis.

Physiography and Geology

The project is located in gently rolling terrain of the Coastal Plain Physiographic Province. Geologically, Coastal Plain Terrace Deposits overlie Residual soils and Weathered Mica Schist and Granite of the Raleigh Belt. The area consists of farmland and woods.

Soil Properties

Soils encountered on the project site include Roadway Embankment, Coastal Plain and Residual soils.

Roadway Embankment soils are present in the existing two-lane roadway section present at structure no. 604 and along existing US 70. These soils generally consist of loose to medium dense, silty sand (A-2-4) and medium stiff, sandy silt (A-4) and sandy clay (A-6).

Coastal Plain soils were encountered in each boring and range in thickness from 2.58 to 7.37 meters. Coastal Plain soil consists predominantly of very soft to hard, sandy silt (A-4) and medium stiff to hard, sandy clay (A-6). The Coastal Plain soils were deposited on Residual soil and Weathered Rock.

Residual soils were encountered in each boring except EB1-A (EBL) and EB1-B (EBL) and range in thickness from 0.36 to 7.75 meters. These soils consist predominantly of medium dense to very dense, silty sand (A-2-4) and stiff to hard, silty clay (A-7).

Rock Properties

Soft and Hard Weathered Rock is derived from underlying granite and mica schist. It ranges in thickness from 0.17 to 4.21 meters. The top of Soft Weathered Rock ranged in elevation from 66.08 meters in B1-A (EBL) to 73.95 meters in B1-A (WBL).

Hard Rock was encountered at each boring location except for EB2-A (EBL). The top of Hard Rock ranges in elevation from 64.46 to 72.76 meters.

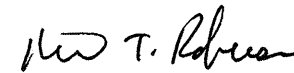
Groundwater

Groundwater was encountered in all twelve borings. Groundwater elevations ranged from 77.30 to 78.37 meters.

Notice

This Geotechnical foundation report is based on the Preliminary General Drawing for Structure No. 604 and 605, dated August, 2004. If significant changes are made in the design or location of the proposed structure, the subsurface information should be reviewed and modified as necessary.

Respectfully submitted,


Neil T. Roberson
Project Geologist