STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

December 10, 2012

STATE PROJECT:	38496.1.1 (B-4722B)
F.A. PROJECT:	BRNHS-0070(84)
COUNTY:	Carteret
DESCRIPTION:	Bridge No. 33 on US 70 over the North River
SUBJECT:	Geotechnical Inventory

Project Description

This project is located in Carteret County on US 70 between the intersection of Merrimon Road to the west and River Shore Drive to the east. Proposed construction consists of realigning US 70 to the north to accommodate the bridge replacement over the North River. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted between June and August of 2012. Standard Penetration Test borings were advanced with CME-45C and CME 550 drill machines with an automatic hammer. Hand auger borings were also completed. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignment was investigated. Subsurface profiles and selected cross sections of this alignment are included in this report.

Line	Station(±)
-L-	31+00 to 66+50

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237
Website: www.ncdot.org./doh

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Areas of Special Geotechnical Interest

1) The following sections contain cohesive soils which have the potential to cause embankment stability and/or long term settlement problems:

Line	Station(±)
-L-	34+75 to 35+25
-L-	36+80 to 37+40
-L-	55+75 to 56+95

2) The entire project contains organic soils, which have the potential for embankment stability and/or subgrade problems during construction.

3) The entire project was found to exhibit seasonal high ground water.

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations ranged from 11± feet below sea level along the bed of the North River to 8± feet above sea level along the existing US 70 embankment.

Surficial soils in this area are generally classified as alluvial sediments.

Ground Water

Ground water data was collected between June and August of 2012, during a time of normal precipitation. Ground water elevations ranged from sea level to 1± foot above sea level.

Soils

Soils within this project area have been divided into three categories: roadway embankment, alluvial and undivided coastal plain.

Roadway Embankment soils were encountered along existing US 70. These soils are comprised of 1± to 12 or more feet of loose to medium dense sand (A-2-4, A-3) and soft sandy silt (A-4).

Alluvial soils were encountered beneath the embankment and within the floodplain of the North River. They are comprised of 1± to 7± feet of very loose sand (A-2-4, A-3), 1± to 3± feet of very soft to soft sandy silt (A-4), and 5± to 20± feet of sandy silt and silty clay with trace to moderate organic material (A-6, A-7-6).

Laboratory analysis of these soils show organic percentages ranging from 3% to 16% and moisture contents ranging from 23% to 140%. Shear strengths ranged from 83 psf to 3800 psf.