



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

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STATE PROJECT: 8.2441101 U-2912
FEDERAL PROJECT: STP-0620(1)
COUNTY: Cumberland
DESCRIPTION: Owens Drive Extension from East of I-95 Business/US 301 to NC 87 at East Mountain Drive
SUBJECT: Geotechnical Report – Revised Inventory

Due to a revision in the alignment of this project, the Geotechnical Unit has completed a new subsurface investigation for the project. This Inventory Report supercedes the Inventory Report dated October, 1996.

Project Description

The project consists of constructing a five lane curb and gutter facility. The project begins at the Owens Drive and I-95 Business/US 301 intersection and proceeds southeasterly along a new alignment. The project will then tie in with East Mountain Drive where the existing two lanes will be upgraded to a five lane curb and gutter highway to the intersection with NC 87. Total length of the proposed project is approximately 3.1 kilometers. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

<u>Line</u>	<u>Station</u>
-LREV-	6+93 to 38+07
-Y1-	10+00 to 10+87
-Y2-	10+00 to 11+13
-Y3-	10+00 to 10+50
-Y4-	10+00 to 10+50
-Y6-	10+00 to 10+89
-Y7-	10+00 to 10+50

-Y8- 10+20 to 11+00
-Drive 1- 10+00 to 10+80

Areas of Special Geotechnical Interest

- 1) The sections along -LREV- station 17+20± to 18+65± and 33+80± to 34+20± contain relatively soft organic soils which have the potential for settlement and stability problems.
- 2) The following sections contain surficial cohesive sediments of A-6 or A-7 AASHTO Classification with moderate to high percentage passing the 75µm sieve, high plasticity indices and/or relatively high moisture contents and may have the potential to cause subgrade failure:

<u>Line</u>	<u>Station (±)</u>
-LREV-	19+40 to 19+85
-LREV-	26+60 to 27+50
-LREV-	29+80 to 30+45
-LREV-	33+80 to 37+00

- 3) A relatively deep subsurface deposit of sandy muck was encountered at station 17+85 which may have the potential for settlement and/or stability problems.
- 4) The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

<u>Line</u>	<u>Station (±)</u>
-LREV-	17+40 to 18+50
-LREV-	26+60 to 27+50
-LREV-	33+60 to 36+00

- 5) Springs or small seeps were encountered approximately 5 meters right of -LREV- station 18+30±.

Physiography and Geology

The project is located in the Coastal Plain Physiographic Province. The geology of the area basically consists of Quaternary to Recent age sediments underlain by Upper Cretaceous age marine deposits. The project begins on upland terrain characterized by a fairly prominent bluff and ends on the Cape Fear River terrace which is a relict flood plain. Topography ranges from gently to moderately sloping along upland areas to nearly flat along the Cape Fear River terrace.