# ROADWAY INVENTORY
**for**
**US 74 From SR 1003 to I-95**
**State Project No: 6.469002T**
**Tip No: R-0513C**
**FA No: N/A**
**County: Robeson**

**June 21, 1999**
**Revised January 19, 2001**

## 1.0 INTRODUCTION AND PROJECT DESCRIPTION

CATLIN Engineers and Scientists was retained by the North Carolina Department of Transportation (NCDOT) Geotechnical Unit to conduct a Roadway Subsurface Investigation under an Annual Limited Services Agreement (Agreement) dated December 7, 1998. The investigation was designed to inventory and document the surficial and subsurficial conditions of the project corridor. Existing geological and geotechnical information was collected to assist with the design and construction of highway improvements to be constructed on US 74 from SR 1003 to I-95.

The project is located in the southern portion of Robeson County, west-southwest of Lumberton, North Carolina. The proposed highway improvements will begin on US 74 from west of SR 1164 and extend approximately 9.0 kilometers (km) southeast to just beyond the intersection of US 74 and NC 41. In addition, proposed highway improvements will include the I-95 corridor just north of Exit 14 and extend southwest approximately 1.0 km south on the I-95 corridor. The total length of the proposed project is 9.839 km. Project vicinity figures are included in the Appendix.

The following baselines were investigated for this project:

| ALIGNMENT | Station (Begin to End) | | |
|---|---|---|---|
| -L- | 250+00.00 | to | 303+00.00 |
| -Y1- | 10+61.14 | to | 18+20.00 |
| -RPA@Y1- | 0+00.00 | to | 5+14.01 |
| -RPB@Y1- | 0+00.00 | to | 4+92.87 |
| -RPC@Y1- | 0+00.00 | to | 4+69.08 |
| -RPD@Y1- | 0+00.00 | to | 5+01.70 |
| -Y2 Lt.- | 10+00.00 | to | 18+18.63 |
| -Y2 Rt.- | 10+00.00 | to | 18+26.43 |
| -COAD- | 16+80.00 | to | 44+45.88 |
| -COBC- | 18+40.00 | to | 44+11.40 |
| -RPA@Y2- | 0+00.00 | to | 8+61.15 |
| -RPB@Y2- | 0+00.00 | to | 10+63.46 |





| | | | |
|---|---|---|---|
| -RPC@Y2- | 0+00.00 | to | 7+25.53 |
| -RPD@Y2- | 0+00.00 | to | 11+28.18 |
| -LPA@Y2- | 0+00.00 | to | 5+78.90 |
| -LPB@Y2- | 0+00.00 | to | 6+92.30 |
| -LPC@Y2- | 0+00.00 | to | 4+88.45 |
| -LPD@Y2- | 0+00.00 | to | 7+05.75 |
| -Y3 | 30+00.00 | to | 43+40.00 |
| -RPA@Y3- | 0+00.00 | to | 5+53.96 |
| -RPB@Y3- | 0+00.00 | to | 5+00.75 |
| -RPC@Y3- | 0+00.00 | to | 5+68.14 |
| -RPD@Y3- | 0+00.00 | to | 5+35.75 |
| -Y5- | 10+20.00 | to | 28+00.00 |
| -Y8- | 9+80.00 | to | 73+17.00 |
| -Y9- | 3+27.91 | to | 30+80.00 |

## 2.0 FIELD METHODS

Drilling was conducted utilizing either a Central Mining Equipment (CME) 45B drilling rig mounted on a Gemco articulating all terrain vehicle (ATV) or a trailer-mounted Diedrich D50 drilling rig. Borings were advanced with one, or a combination of the following: hand auger, continuous flight hollow stem augers [0.21 meter (m) and 0.15m outer diameter (OD)], continuous flight solid stem augers (0.15m OD), mud rotary utilizing 0.1m OD step-tooth drag or 0.1m OD tri-cone roller bits. Typically, mud rotary techniques were utilized to advance borings with depths greater than 4.5m below existing land surface (BLS). Borings with depths less than 4.5m were typically advanced with one of the other previously mentioned techniques.

Selected borings were advanced in conjunction with performing Standard Penetration Testing (SPT) in accordance with American Association of State Highway and Transportation (AASHTO) Standard Method T206. Soil samples were also collected utilizing solid stem auger drilling methods in accordance with AASHTO Standard Method T203. When cohesive sediments were encountered in the shallow subsurface (less than approximately 3 meters BLS), thin-walled sampling tubes (Shelby tubes) were utilized in accordance with AASHTO Standard Method T207. The field geologist using AASHTO Designation M145 visually described soil samples, with the exception of those collected via Shelby tubes, in the field. The field geologist recorded all SPT results, sample numbers, sample descriptions, and pertinent drilling information on modified NCDOT field boring logs.

Water level measurements were taken in all boreholes immediately after drilling (IAD) at zero hour and recorded on each field boring log. If possible, a 24 hour measurement was also recorded for each boring. The locations of several borings were such that the borings needed to be backfilled IAD as a safety precaution. Unless otherwise noted, field work was conducted in accordance with NCDOT Geotechnical Unit Guidelines and Procedures Manual for Subsurface Investigations (Revised March 1994).