

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C.  | B-5332                      | 1         | 6            |

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**ROADWAY  
SUBSURFACE INVESTIGATION**

COUNTY COLUMBUS  
PROJECT DESCRIPTION BRIDGE NO. 130 ON -L- (SR 1005)  
OVER CEDAR CREEK

**INVENTORY**

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
  2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

J.K. CRENSHAW

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE FEBRUARY 2016



DocuSigned by:

*Tyler C. Bottoms*

4/27/2016

48A2D3BD08CF4A6

SIGNATURE

DATE

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

REFERENCE: B-5332

PROJECT: 46046



|                 |                             |             |              |
|-----------------|-----------------------------|-------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | B-5332                      | 3           | 6            |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 46046.1.1       | BRZ-1005 (33)               | PE          |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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# COLUMBUS COUNTY

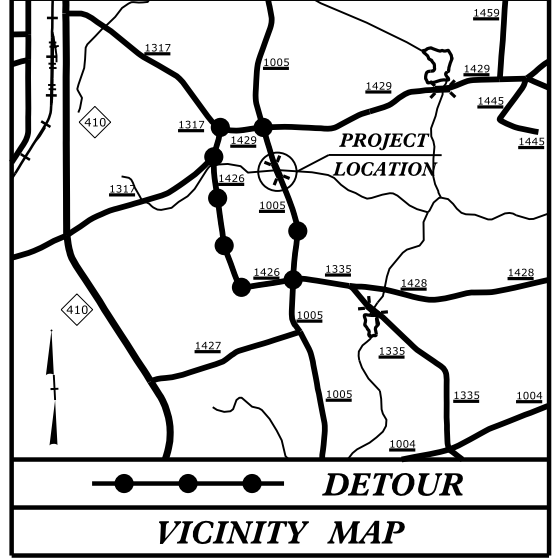
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**LOCATION: REPLACE BRIDGE 130 OVER CEDAR CREEK  
ON SR 1005 (PEACOCK ROAD)**

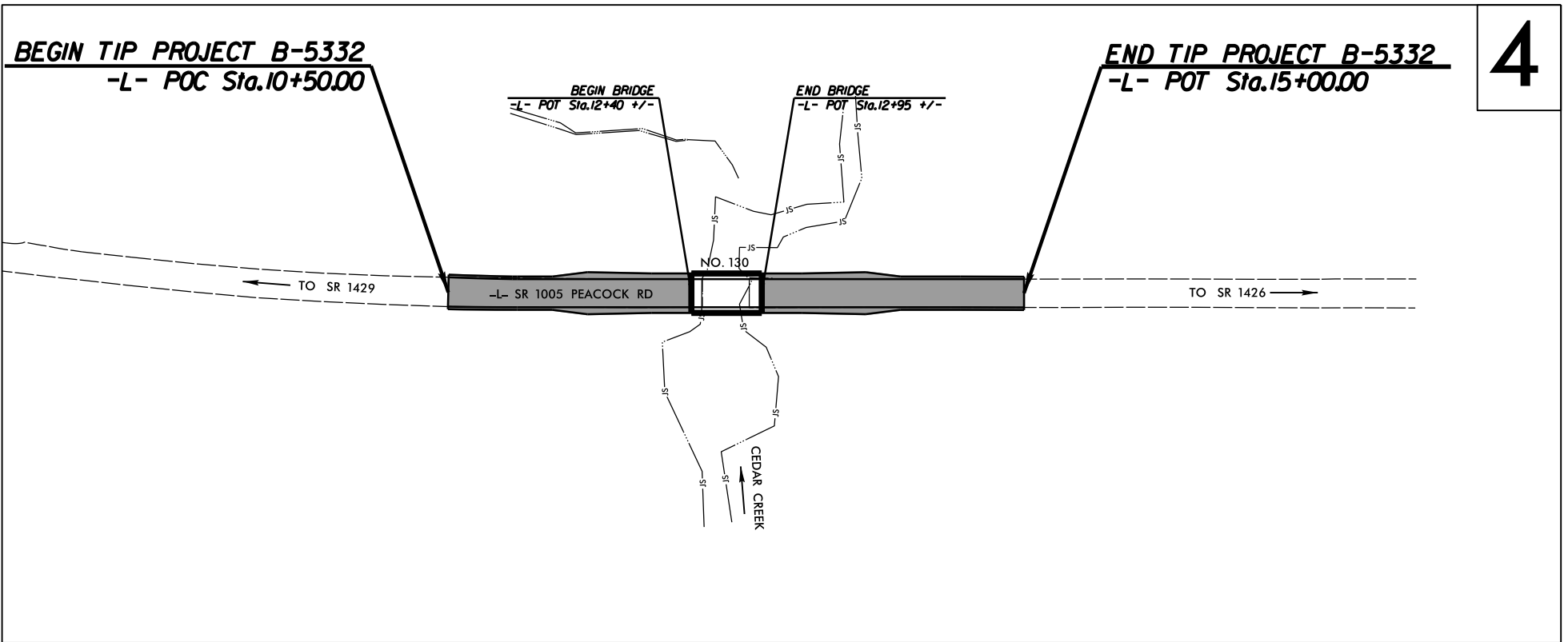
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE**



See Sheet 1A For Index of Sheets  
See Sheet 1B For Conventional Symbols  
See Sheet 1C-1 Through 1C-? For Survey Control Sheets



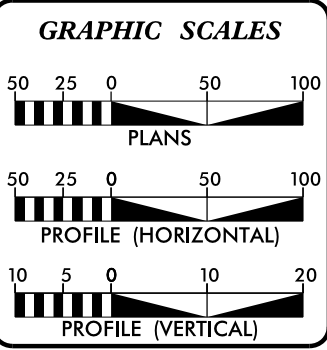
**TIP PROJECT: B-5332**



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD     .

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT:**



**DESIGN DATA**

|                          |        |
|--------------------------|--------|
| ADT 2017 =               | 1455   |
| ADT 2037 =               | 1727   |
| K =                      | 10 %   |
| D =                      | 65 %   |
| T =                      | 4 % *  |
| V =                      | 60 MPH |
| *(TTST = 1% + DUAL = 3%) |        |
| FUNC CLASS =             |        |
| MINOR COLLECTOR          |        |
| SUB-REGIONAL TIER        |        |

**PROJECT LENGTH**

|                                     |   |            |
|-------------------------------------|---|------------|
| LENGTH ROADWAY TIP PROJECT B-5332   | = | 0.075 MILE |
| LENGTH STRUCTURE TIP PROJECT B-5332 | = | 0.010 MILE |
| TOTAL LENGTH TIP PROJECT B-5332     | = | 0.085 MILE |

PLANS PREPARED BY:  
8601 SIX FORKS RD, SUITE 260  
RALEIGH, NC 27615  
919-926-4100

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
DECEMBER 16, 2016

**LETTING DATE:**  
DECEMBER 19, 2017

JENNIFER FARINO, PE  
PROJECT ENGINEER

JARED BOND, PE  
PROJECT DESIGN ENGINEER

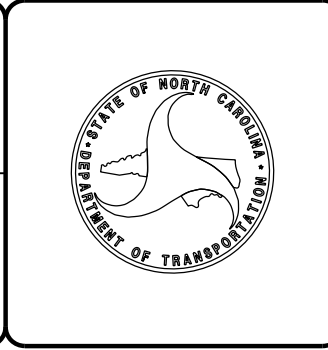
REKHA PATEL, PE  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



25-FEB-2016 09:07 L:\FRO\Greenville\_investigation\TIP\B5332\_GEO\_ROWY\CADD\_GEO\TECH\help\Proj\B5332.Rdy\_t.sh.dgn \$\$\$USERNAME\$\$\$



PAT McCrory  
Governor  
NICHOLAS J. TENNYSON  
Secretary

February 23, 2016

STATE PROJECT: 46046.1.1 (B-5332)  
 F.A. PROJECT: BRZ-1005(33)  
 COUNTY: Columbus  
 DESCRIPTION: Replace Bridge No. 130 on -L- (SR 1005) over Cedar Creek  
 SUBJECT: Geotechnical Inventory

**Project Description**

This project is located in Columbus County on SR 1005 (Peacock Road) within the floodplain of Cedar Creek. Proposed construction consists of widening SR 1005 to accommodate the replacement of Bridge Number 130. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted during January of 2016. Hand auger borings were completed and representative soil samples were collected for visual classification in the field and submitted to the soils lab for testing.

The following alignment was investigated. The subsurface profile and cross sections of this alignment are not included in this report.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 10+00 to 15+00    |

**Areas of Special Geotechnical Interest**

- 1) The entire project was found to exhibit seasonal high ground water.
- 2) The following section contains cohesive soils which have the potential to cause embankment/subgrade and or slope stability problems during construction.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 10+00 to 14+25    |

**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 range from 85± feet above sea level along the existing SR 1005 embankment to 68± feet above sea level in the bed of Cedar Creek.

Surficial soils in this area are generally classified as undivided coastal plain.

**Ground Water**

Ground water data was collected in January of 2016, during a time of normal precipitation. Ground water elevations ranged from 75± to 81± feet 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 SR 1005. These soils are comprised of 2 to 6± feet of loose sand (A-2-4).

Alluvial soils were encountered beneath the roadway embankment and in the floodplain of Cedar Creek. They are comprised of 1 to 6± feet of loose to medium dense sand and soft sandy silt (A-4).

Undivided coastal plain soils were encountered within the project limits and are comprised of 6± feet or more of loose sand and soft sandy silt.

Moisture contents of the cohesive soils varied from 27% to 31%.





**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAY  
MATERIALS & TESTS UNIT  
SOILS LABORATORY**

T. I. P. No. **B-5332**

REPORT ON SAMPLES OF **SOILS FOR QUALITY**

Project **46046.1.1** County **COLUMBUS** Owner \_\_\_\_\_

Date: Samp 2/19/16 Received 2/22/16 Reported 2/24/16

Sampled from ROADWAY By T.C BOTTOMS

Submitted by J.L PILIPCHUK 2012 Standard Specifications

799289 TO 799291  
2/25/16

**TEST RESULTS**

| Proj. Sample No.     | S-1    | S-2    | S-3    |  |  |  |
|----------------------|--------|--------|--------|--|--|--|
| Lab. Sample No.      | 799289 | 799290 | 799291 |  |  |  |
| Retained #4 Sieve %  | -      | -      | -      |  |  |  |
| Passing #10 Sieve %  | 100    | 100    | 100    |  |  |  |
| Passing #40 Sieve %  | 100    | 100    | 99     |  |  |  |
| Passing #200 Sieve % | 44     | 27     | 43     |  |  |  |

**MINUS NO. 10 FRACTION**

| SOIL MORTAR - 100%      |      |      |      |  |  |  |
|-------------------------|------|------|------|--|--|--|
| Coarse Sand Ret - #60 % | 2.6  | 1.0  | 3.8  |  |  |  |
| Fine Sand Ret - #270 %  | 59.3 | 79.9 | 58.3 |  |  |  |
| Silt 0.05 - 0.005 mm %  | 13.8 | 7.0  | 15.6 |  |  |  |
| Clay < 0.005 mm %       | 24.2 | 12.1 | 22.2 |  |  |  |
| T-#                     |      |      |      |  |  |  |
| Sample                  |      |      |      |  |  |  |

|                       |        |          |        |  |  |  |
|-----------------------|--------|----------|--------|--|--|--|
| L. L.                 | 27     | 17       | 21     |  |  |  |
| P. I.                 | 6      | NP       | 2      |  |  |  |
| AASHTO Classification | A-4(0) | A-2-4(0) | A-4(0) |  |  |  |
| Station               | 11+00  | 13+00    | 14+00  |  |  |  |
| Offset                | 24'LT  | 34'RT    | 22'LT  |  |  |  |
| Alignment             | -L-    | -L-      | -L-    |  |  |  |
| Location              |        |          |        |  |  |  |
| Depth (Ft)            | 2.00   | 2.00     | 4.00   |  |  |  |
| to                    | 6.00   | 6.00     | 6.00   |  |  |  |
| % Moisture            | 30.9   |          | 26.8   |  |  |  |

cc: T.C BOTTOMS

\_\_\_\_\_  
Soils Engineer