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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-5304	1	5

CONTENTS

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	ROADWAY TITLE SHEET
4	INVENTORY REPORT
5	BORELOGS

**ROADWAY  
SUBSURFACE INVESTIGATION**

COUNTY PENDER  
PROJECT DESCRIPTION REPLACE BRIDGE NO. 203 ON  
SR 1324 OVER SILLS 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

JKC

INVESTIGATED BY JK CRENSHAW

DRAWN BY JK CRENSHAW

CHECKED BY DN ARGENBRIGHT

SUBMITTED BY DN ARGENBRIGHT

DATE FEBRUARY 2016



DocuSigned by:  
Joseph L. Stone 2/4/2016

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SIGNATURE DATE

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

REFERENCE: B-5304

PROJECT: 46018

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical information including soil classification tables, gradation and angularity definitions, rock descriptions, and various symbols for soil boundaries, groundwater, and rock features. It also includes tables for consistency, texture, soil moisture, plasticity, and color, as well as equipment and recommendation symbols.

09/08/99

See Sheet 1A For Index of Sheets  
See Sheet 1B for Conventional Symbols  
See Shee 1C for Survey Control Sheet

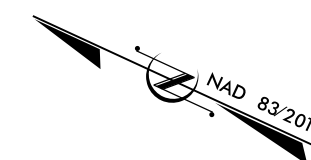
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**PENDER COUNTY**

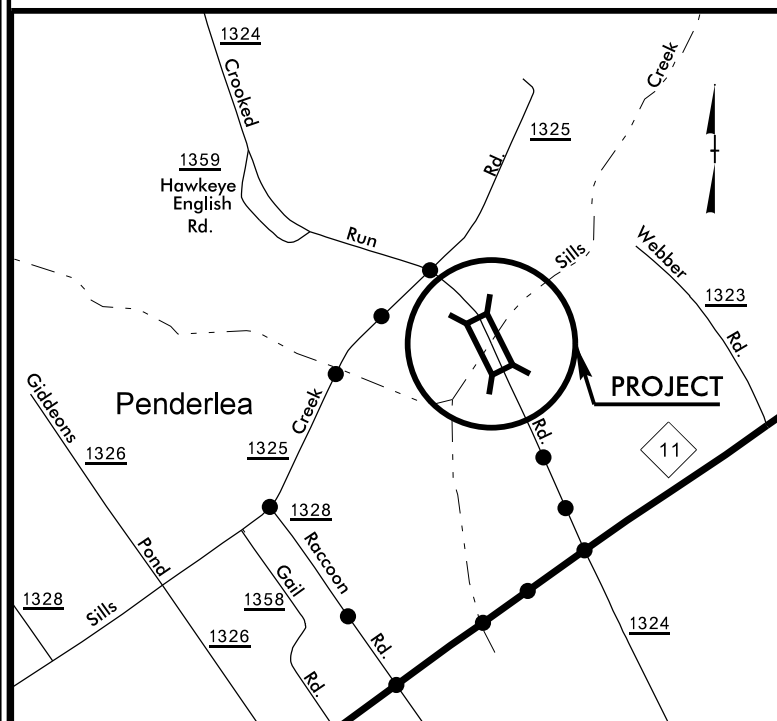
LOCATION: REPLACE BRIDGE NO. 203 OVER SILLS CREEK ON SR 1324

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5304	3	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46018.1.1	BRZ-1324(7)	PE	



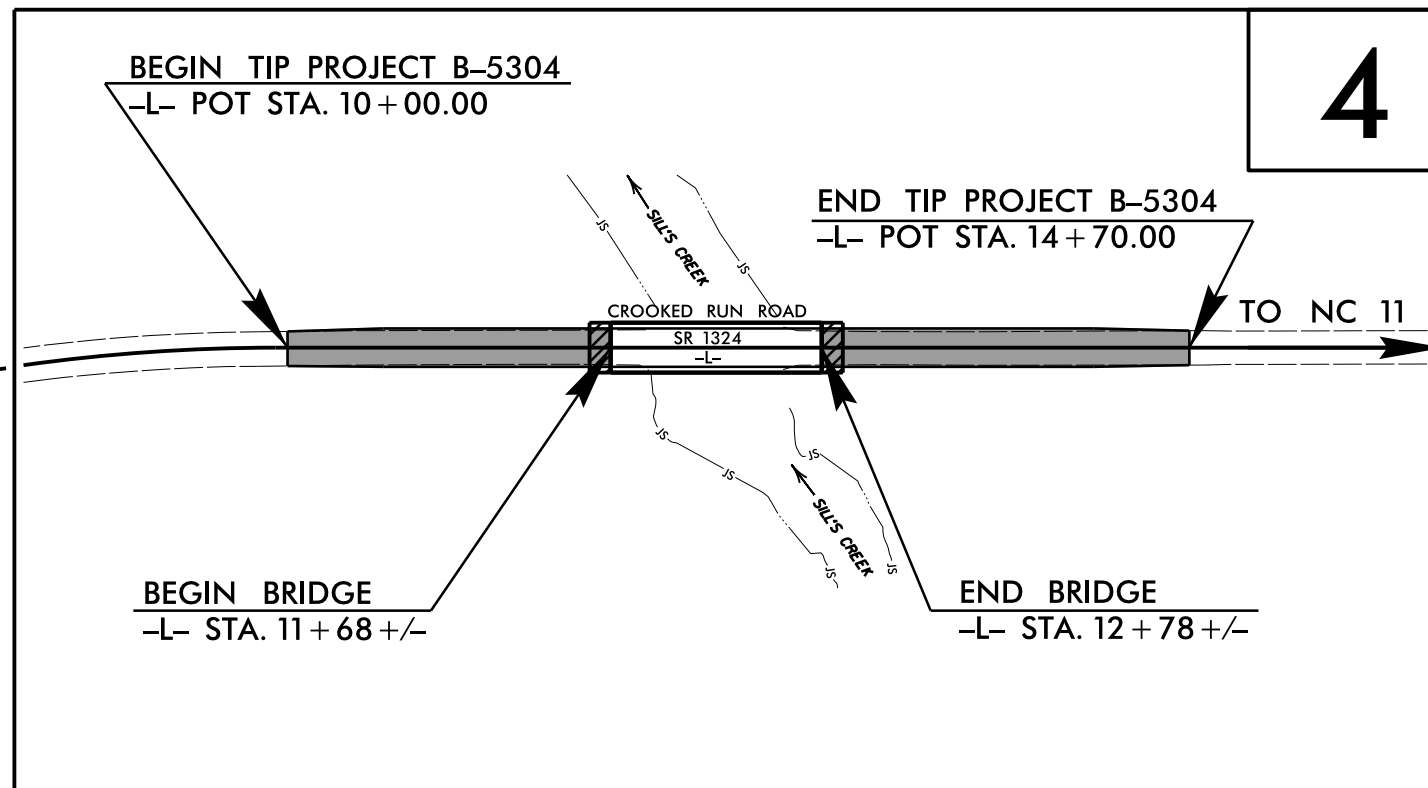
**TIP PROJECT: B-5304**



VICINITY MAP

OFF SITE DETOUR ●●●●●

TO SILLS CREEK RD.

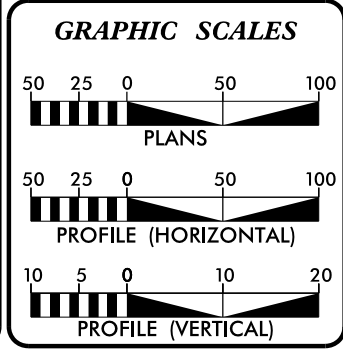


THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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 =	437
ADT 2037 =	619
K =	10 %
D =	60 %
T =	4 % *
V =	60 MPH
* TTST =	1 DUAL 3
FUNC CLASS =	LOCAL RURAL
SUB-REGIONAL TIER	

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5304	=	0.068 MILES
LENGTH STRUCTURE TIP PROJECT B-5304	=	0.021 MILES
TOTAL LENGTH TIP PROJECT B-5304	=	0.089 MILES

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

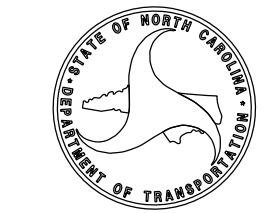
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: NOVEMBER 18, 2016	GARY LOVERING, PE PROJECT ENGINEER
LETTING DATE: NOVEMBER 21, 2017	I. T. YOUNIS PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

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

ROADWAY DESIGN ENGINEER

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



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PAT McCrory  
Governor  
NICHOLAS J. TENNYSON  
Secretary

**Physiography and Geology**

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is flat. Elevations range from 32± feet in the channel of Sills Creek to 54± feet in the upland areas of the project.

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

**Ground Water**

Ground water data was collected in January 2016, during a time of normal precipitation. Generally, ground water depths were within 6± feet of the ground surface.

**Soils**

Soils encountered within this project area have been classified as roadway embankment, alluvial and upland soils.

Upland soils are comprised of 4.5 or more feet of medium stiff sandy clay (A-6).

Alluvial soils are comprised of up to 1.5± feet of loose sand (A-3), and 2± or more feet of soft sandy silt (A-4).

Soils identified as roadway embankment are composed of up to 4.5± feet of loose sand (A-2-4).

January 20, 2016

STATE PROJECT: 46018.1.1 (B-5304)  
F.A. PROJECT: BRZ-1324 (70)  
COUNTY: Pender  
DESCRIPTION: Replace Bridge 203 over Sills Creek on SR 1324

SUBJECT: Geotechnical Inventory Report

**Project Description**

This project begins 950± feet south of the Sills Creek Rd. and SR 1324 interchange in Willard, and extends southeast along SR 1324 for approximately 470 feet. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in January 2016. Hand auger borings were completed at various offsets along the project corridor. Representative soil samples were collected for visual classification in the field.

The following alignments were investigated.

<u>Line</u>	<u>Station(±)</u>
-L-	10+00 to 14+70

**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-	14+25 to 14+70

