

REFERENCE: B-5642

PROJECT: 45597

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

**CONTENTS**

<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>
-L-	14+00 TO 22+50	4

**CROSS SECTIONS**

<u>LINE</u>	<u>STATION</u>	<u>SHEETS</u>
-L-	14+50 TO 21+00	5-8

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


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**ROADWAY**  


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**SUBSURFACE INVESTIGATION**

COUNTY BRUNSWICK  
 PROJECT DESCRIPTION BRIDGE NO. 65 ON -L-  
(NC 87) OVER BATARORA BRANCH

**INVENTORY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5642	1	8

**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:
- 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.
  - 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

S.N. ZIMARINO  
R.E. SMITH

INVESTIGATED BY T.C. BOTTOMS  
 DRAWN BY S.N. ZIMARINO  
 CHECKED BY D.N. ARGENBRIGHT  
 SUBMITTED BY D.N. ARGENBRIGHT  
 DATE AUGUST 2019



DocuSigned by:  
Tyler C. Bottoms 11/27/2019  
 48A2D3BD08CF446 SIGNATURE DATE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

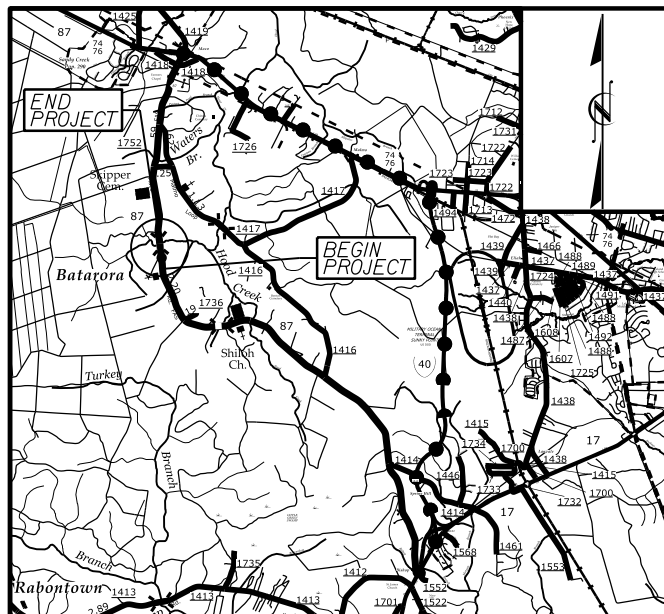
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns containing: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, PLASTICITY, COLOR, FRACTURE SPACING, BEDDING, INDURATION, and NOTES.

09/08/19

See Sheet I-A For Index of Sheets  
See Sheet I-B For Conventional Symbols



**VICINITY MAP**

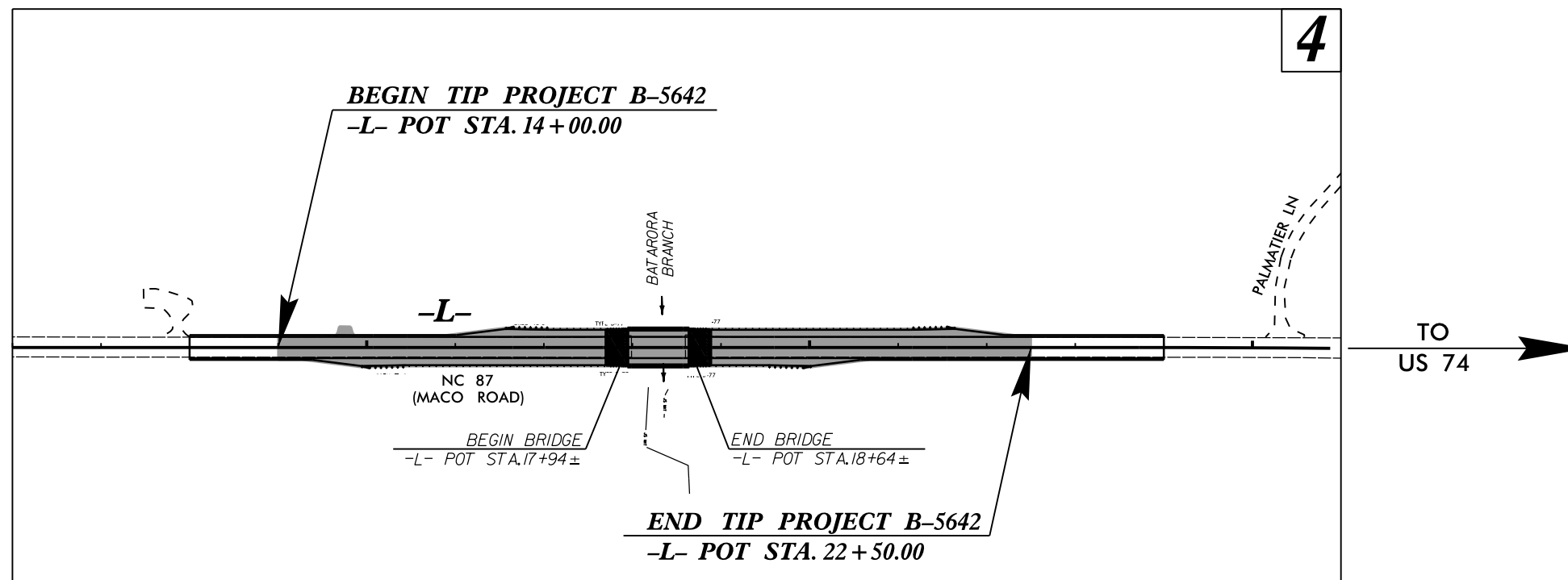
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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**BRUNSWICK COUNTY**

**LOCATION: REPLACE BRIDGE NO. 65 OVER BATARORA BRANCH ON NC 87 (MACO ROAD)**

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

**25% PLANS**



THIS PROJECT IS NOT WITHIN A MUNICIPAL BOUNDARY.  
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

**TIP PROJECT: B-5642**

**CONTRACT:**

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2020 = 2,100 VPD  
ADT 2040 = 3,100 VPD  
K = 9%  
D = 55%  
T = 7%  
V = 60 MPH  
TTST = 2% DUALS = 5%  
FUNC CLASS = MAJOR COLLECTOR REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-5642 = 0.148 MILES  
LENGTH BRIDGE TIP PROJECT B-5642 = 0.013 MILES  
  
TOTAL LENGTH TIP PROJECT B-5642 = 0.161 MILES

Prepared in the Office of:  
**CDM Smith**  
5400 Glenwood Avenue  
Suite 400  
Raleigh, NC 27612-3228  
NC CDA No. F-1255

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
SEPTEMBER 6, 2019

LETTING DATE:  
JULY 21, 2020

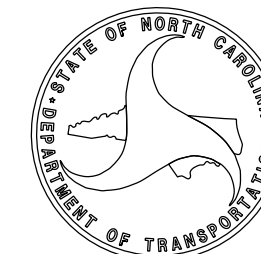
**ADAM M. CONRAD, PE**  
PROJECT ENGINEER  
  
**MONIQUE N. GYANT, EI**  
PROJECT DESIGN ENGINEER  
  
**KRISTY ALFORD, PE**  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



22-AUG-2019 16:12  
B5642\_Rdy\_Tsh.dgn  
\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

August 22, 2019

State Project: 45597.1.1 (B-5642)  
F.A. Project: N/A  
County: Brunswick  
Description: Bridge No. 65 on -L- (NC 87) over Batarora Branch

Subject: Geotechnical Inventory Report

**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 32± to 44± feet above sea level.

Surficial soils in this area are generally classified as alluvial and undivided coastal plain sediments and are underlain by formational soils belonging to the Peedee Formation. The Peedee Formation and undivided coastal plain were not encountered during this investigation.

**Project Description**

This project begins approximately 400 feet south of Bridge Number 65 over Batarora Branch on NC 87 (Maco Road) in Brunswick County, and extends north along NC 87 for approximately 0.15 miles. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in July and August of 2019. Hand auger borings and push probes were completed at various offsets along the project corridor. Representative soil samples were collected for visual classification in the field.

The following alignment was investigated. Selected cross sections of this alignment are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	14+50 to 21+00

**Areas of Special Geotechnical Interest**

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

<u>Line</u>	<u>Station(±)</u>
-L-	17+70 to 19+70

**Ground Water**

Ground water data was collected in August of 2019. Ground water elevations ranged from 32± to 34± feet above sea level.

**Soils**

Soils encountered within this project area have been divided into two categories: Roadway Embankment and alluvial soils.

Roadway embankment soils were found along the existing NC 87 corridor. Where encountered it was composed of up to 5 feet of loose sand (A-2-4).

Soils identified as alluvial were encountered beneath NC 87 and within the floodplain of Batarora Branch. These soils were composed of 2± to 4± feet of soft muck, and 2 or more feet of sand (A-2-4).

# SITE PLAN

