

NOTE: SEE SHEET 1A 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-4063	1	6
LINE NO.	F.A. PROJ. NO.	DESCRIPTION	
33427.1.1	BRZ-902(3)	P.E.	
33427.2.1	BRZ-902(3)	R/W, UTIL	
33427.3.1	BRZ-902(3)	CONST.	

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-L-	14+00 - 33+50	4,5	4,5	
-Y1-	10+00 - 12+54.66	5	6	
-Y2-	10+00 - 11+91.98	5	6	
-DRIVE1-	10+00 - 10+40.43	4	6	
-DRIVE2-	10+00 - 12+17.50	4	6	

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 33427.1.1 (B-4063) F.A. PROJ. BRZ-902(3)  
COUNTY CHATHAM  
PROJECT DESCRIPTION BRIDGE NO. 20 OVER SANDY BRANCH AND APPROACHES ON NC 902

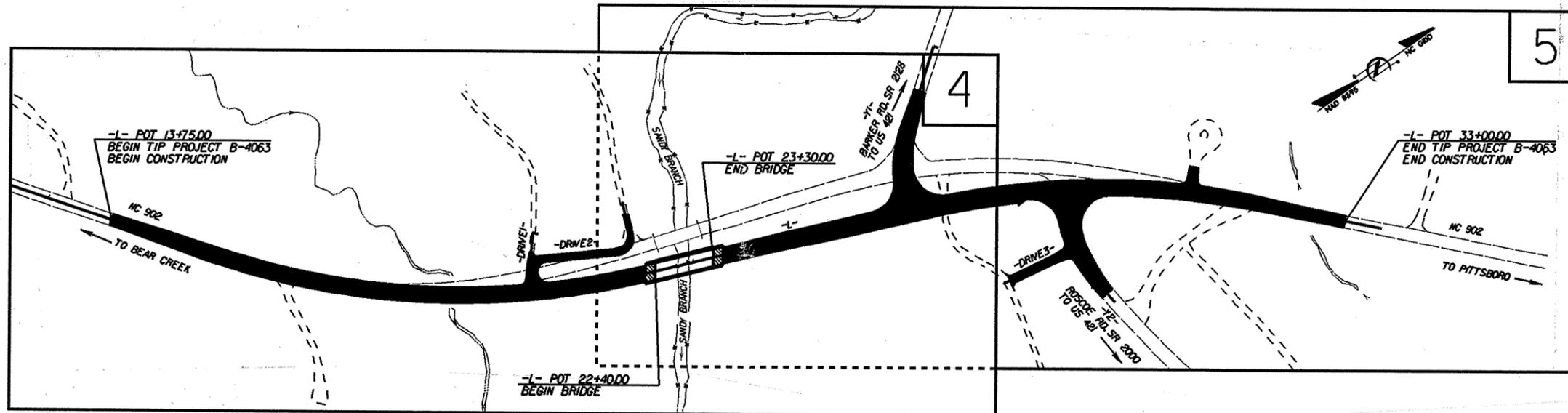
CAUTION NOTICE

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) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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.

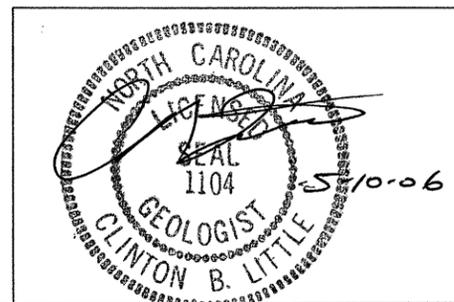
THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT 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 THIS 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.

INVENTORY



PERSONNEL  
C C MURRAY  
J E ESTEP  
L N HARPER

INVESTIGATED BY C C MURRAY  
CHECKED BY C B LITTLE  
SUBMITTED BY C B LITTLE  
DATE 5-10-06



DRAWN BY: C E BURRIS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.

CONTRACT: C201813 ID: B-4063





### EARTHWORK BALANCE SHEET (IN CUBIC YARDS)

PROJECT: B-4063

DATE: November 6, 2007

COUNTY: Chatham

SHEET 3 of 6

LINE	STATION	STATION	EXCAVATION				EMBANKMENT				BORROW	WASTE				
			TOTAL UNCLASS	ROCK	TOTAL UNDERCUT	UNSUITABLE EARTH	SUITABLE EARTH	TOTAL	ROCK	EARTH		EMBANK. +20%	ROCK	SUITABLE	UNSUITABLE	TOTAL
-L-	14+00.00	22+40.00	672				672	1,657	0	1,657	1,988	1,316	0	0	0	0
BRIDGE																
SUBTOTAL			672				672	1,657	0	1,657	1,988	1,316	0	0	0	0
BRIDGE																
-L-	23+30.00	33+00.00	4,767				4,767	1,396	0	1,396	1,675	0	0	3,092	0	3,092
-Y1-	10+70.00	12+00.00	391				391	18	0	18	22	0	0	369	0	369
-Y2-	10+50.00	11+75.00	376				376	144	0	144	173	0	0	203	0	203
SUBTOTAL			5,534				5,534	1,558	0	1,558	1,870	0	0	3,664	0	3,664
PROJECT SUBTOTALS			6,206				6,206	3,215	0	3,215	3,858	1,316	0	3,664	0	3,664
LOSS DUE TO CLEARING AND GRUBBING			(500)				(500)							(500)		(500)
PROJECT TOTALS			5,706	0	0	0	5,706	3,215	0	3,215	3,858	1,316	0	3,164	0	3,164
EARTH WASTE TO REPLACE BORROW												(1,316)		(1,316)		(1,316)
GRAND TOTALS			5,706									0		1,848		1,848
SAY			5,900									0				2,000

DDE Excavation = 400 cy

Undercut Excavation (Contingency) = 250 cy

Earthwork quantities are calculated by the Roadway Design Unit.  
 These earthwork quantities are based in part on subsurface data  
 provided by the Geotechnical Engineering Unit.



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

May 10, 2006

STATE PROJECT: 33427.1.1 (B-4063)  
FEDERAL PROJECT: BRZ-902(3)  
COUNTY: Chatham  
DESCRIPTION: Bridge No. 20 over Sandy Branch  
And Approaches on NC 902

SUBJECT: Geotechnical Report - Inventory

#### PROJECT DESCRIPTION

The project is located in southwestern Chatham County near the intersection of NC 902 and US 421. It is northwest of the town of Goldston. The proposed construction consists of a bridge replacement relocated to the southeast (downstream). The maximum relocation is about 50 feet from centerline existing to centerline proposed.

The investigation consisted of six Standard Penetration Test borings conducted in February, 2006. The borings were advanced with a CME-550 drill and hollow stem augers.

#### AREAS OF SPECIAL GEOTECHNICAL INTEREST

##### Weathered Rock

Hard sandy silt soils and weathered rock were encountered in the interval from Station 25 to 30 -L- where cut is proposed. We did not encounter auger refusal, but there was one instance of SPT refusal. Difficult excavation should be anticipated.

#### PHYSIOGRAPHY AND GEOLOGY

The project is located in the eastern piedmont region of North Carolina, within the Carolina Slate Belt. The mapped rock units are meta-volcanics. Samples of saprolite were generally consistent with the mapped units. It was noted that the saprolite soils and weathered rock samples in the Station

25 to 30 interval appeared granitic in nature, so there may be some granitic intrusion into the Slate Belt volcanic rocks.

The project begins at elevation 438' on the existing roadway ; the low point is the stream channel at elevation 415'; natural ground at the point of deepest proposed cut (Station 27+00 Right) is about elevation 455, and the high point is the project terminus at elevation 463.94'. The maximum fill height is about 10' at the northern bridge approach (End Bent Two). The deepest cut is about 13', on the right side at Station 26 to 27 -L-.

#### SOIL PROPERTIES

##### *Residual Soils*

The majority of the project is on residual soil. All of the samples returned AASHTO classification A-4, dry, clayey sandy silt. The soils are generally hard and rapidly grade to weathered rock.

##### *Artificial/Roadway Fill Soils*

Embankment (roadway fill) soils associated with the existing roadway were sampled at two locations. They were also classified A-4, medium stiff, dry, clayey sandy silt.

##### *Alluvial Soils*

The floodplain associated with Sandy Branch is about 150' wide (approx. Station 22+20 to 23+70). Alluvial soils were encountered in one boring conducted at Station 23+60. The sample returned an A-4 classification. The alluvial deposit was less than two feet thick. Another small deposit of alluvium is present bordering a small stream that crosses the alignment near Station 19+25 -L-.

#### GROUNDWATER

Groundwater was not encountered in any of the boreholes conducted in February 2006.

Respectfully submitted,

Clint Little  
Regional Geologist





