

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PAT MCCRORY GOVERNOR ANTHONY J. TATA Secretary

September 25, 2014

MEMORANDUM TO:

Karen E. Fussell, P.E.

Division 3 Engineer

ATTENTION:

Amanda T. Glynn, P.E.

Division Bridge Program Manager

FROM:

K. J. Kim, Ph.D., P.E.

Eastern Regional Geotechnical/Manager

STATE PROJECT:

41922.1.1 (R-5023B)

F.A. PROJECT:

STP-0053(8)

COUNTY:

Onslow

DESCRIPTION:

NC 53 from 0.18 miles west of SR 1214 (Foy Lockamy Rd.)

to SR 1116 (Onslow Pines Rd.), RCBC Culvert over unnamed

tributary to Blue Creek at -L- Station 87+42.00

SUBJECT:

Culvert Foundation Recommendations

The Geotechnical Engineering Unit has completed the subsurface investigation and foundation design calculations for the above referenced reinforced concrete box culvert and presents the attached Culvert Inventory with no special foundation design recommendations.

Please call Majid Khazaei, P.E. or Chris Kreider, P.E. at (919) 662-4710 if there are any questions concerning this memorandum.

KJK/CAK/MK Attachment 3 502 X REFERENCE **CONTENTS**

DESCRIPTION

TITLE SHEET LEGEND

SITE PLAN

PROFILE BORE LOGS SOIL TEST RESULTS

SHEET NO.

41922.

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY ONSLOW

PROJECT DESCRIPTION NC 53 FROM 0.18 MI. WEST OF SR 1214 (FOY LOCKAMY RD.) TO SR 1116 (ONSLOW PINES RD.)

SITE DESCRIPTION CULVERT ON NC 53 (BURGAW HWY.) OVER UT TO BLUE CREEK AT -L- STA. 87 + 42

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5023B	1	6

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSES 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 1919 TOT-6550. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

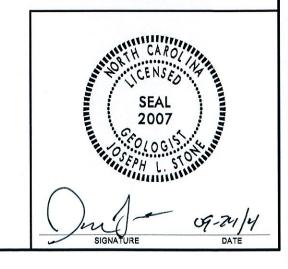
CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY 10 THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE DBSERVED 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 PHOLIPMON OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OF 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.

OTES:
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.

C.M. WRIKE J.D. GEMPERLINE R.E. SMITH D.G. PINTER INVESTIGATED BY J.L. STONE DRAWN BY _ C.P. TURNER CHECKED BY __D.N. ARGENBRIGHT SUBMITTED BY __D.N. ARGENBRIGHT

PERSONNEL



DATE SEPTEMBER 2014

R-5023B

2 OF 6

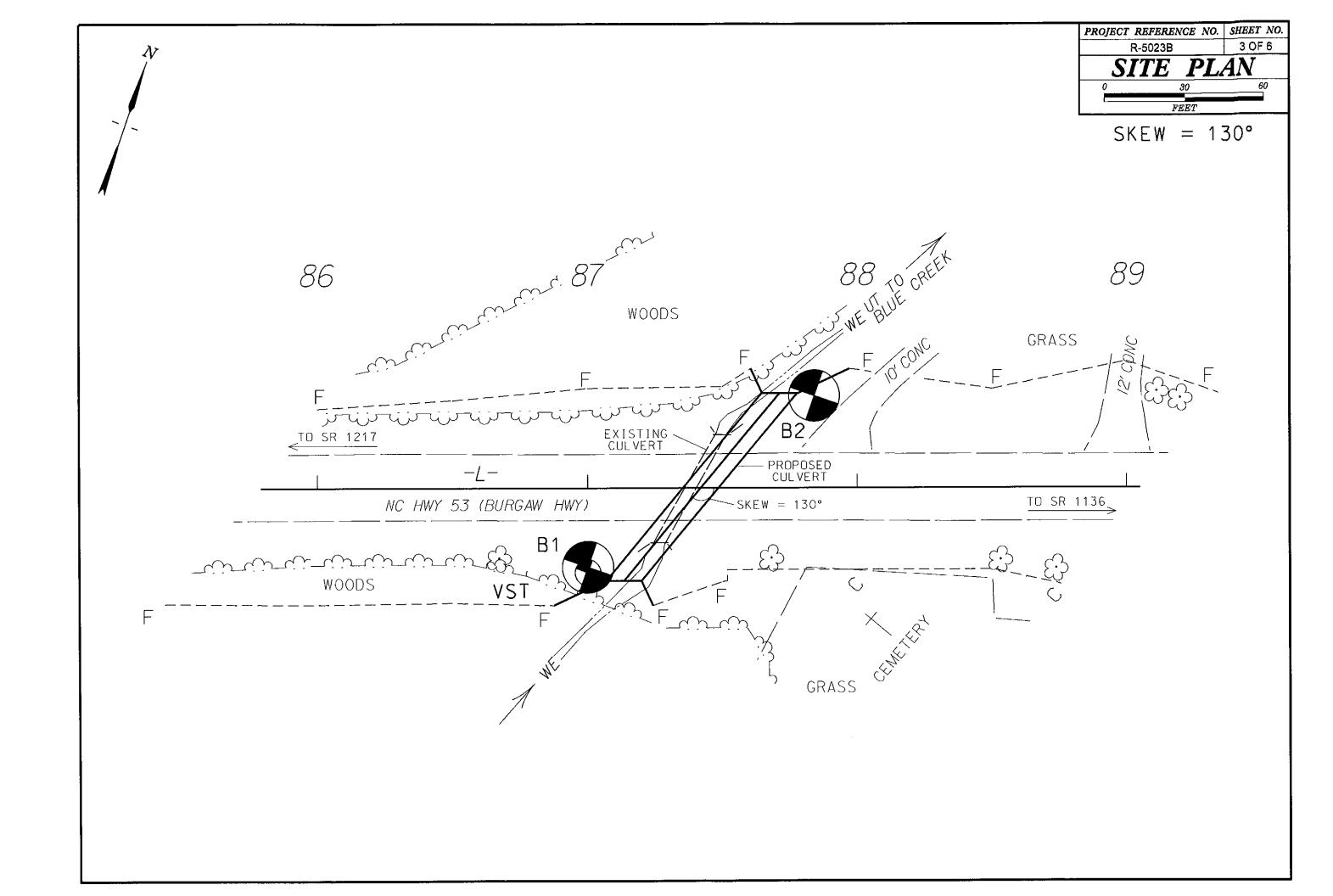
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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HARD > 30 > 4 ROCK HARDNESS TEXTURE OR GRAIN SIZE RECOMMENDATION SYMBOLS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES ROCK. ROCK. ROCK. ROCK. ROCK. ROCK. ROCK. ROCK.	F THE PARENT
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- SATURATED - USUALLY LIQUID; VERY WET, USUALLY 0 - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES INCH (SAT.) FROM BELOW THE GROUND WATER TABLE F - FINE SL SILT, SILTY ST - SHELBY TUBE SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCH	S DIVIDED BY
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COLOR TRICORE TRUGG-CARB. SOUNDING ROD INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN RED. YELLOW-RROWN, BLUE-GRAY). CORE BIT VANE SHEAR TEST	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE. WANE SHEAR TEST EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.	



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PROJECT REFERENCE NO. SHEET

R-5023B 6 OF 6

41922.1.1 **R**–5023**B**

CULVERT ON NC 53 (BURGAW HWY.) OVER UT TO BLUE CREEK AT -L- STA. 87+42

	B1 SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	C.SAND	% BY V	WEIGHT SILT	CLAY	% PAS 10	SING (S)	(EVES) 200	% MOISTURE	% ORGANIC
SS- 3	29 RT	87 +00	0.0-1.5	A- 4(1)	25	6	4.8	50.5	20.6	24.0	96	94	56	-	-
SS- 4	29 RT	87 +00	8.4-9.9	A- 4(0)	23	4	3.0	49.5	25.5	22.0	100	99	63		-