

REFERENCE: B-5928

PROJECT: 46371

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

**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY RANDOLPH
PROJECT DESCRIPTION Bridge No. 175 on SR 2614
(Grantville Lane) over Mill Creek

CONTENTS

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2	LEGEND
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5928	1	10

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

C.R. PASTRANA

Trigon Exploration

INVESTIGATED BY ESP Associates, P.A.

DRAWN BY T.T. WALKER

CHECKED BY P. WEAVER

SUBMITTED BY ESP Associates, P.A.

DATE August 2016



DocuSigned by:

Paul Weaver

8/30/2016

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SIGNATURE

DATE

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

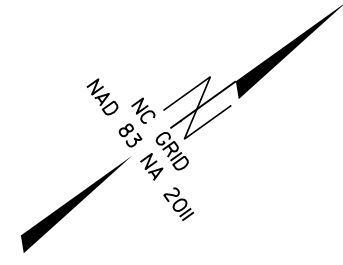
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, and various symbols and abbreviations.

PROJECT REFERENCE NO.	SHEET NO.
B-5829	3
SITE PLAN	
SKEW = 45 DEGREES	



ABAND
S

BMI ELEVATION = 540.23'
 N 712366 E 1796460
 BL STATION 7+74.00 76' LEFT
 RR SPIKE IN BASE OF H FRAME PP

13

15

18

TRANSMISSION LINE

586 DRIVE

L_1569L

L_1625L

To Buffalo Ford Rd.

L_1550R

L_1640L

Grantville Lane (SR 2614)

To Pleasant Ridge Rd.

L_1520R

L_1611R

EXISTING R/W

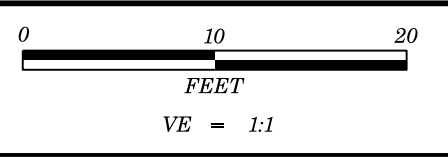
L_1573R

MILL CREEK

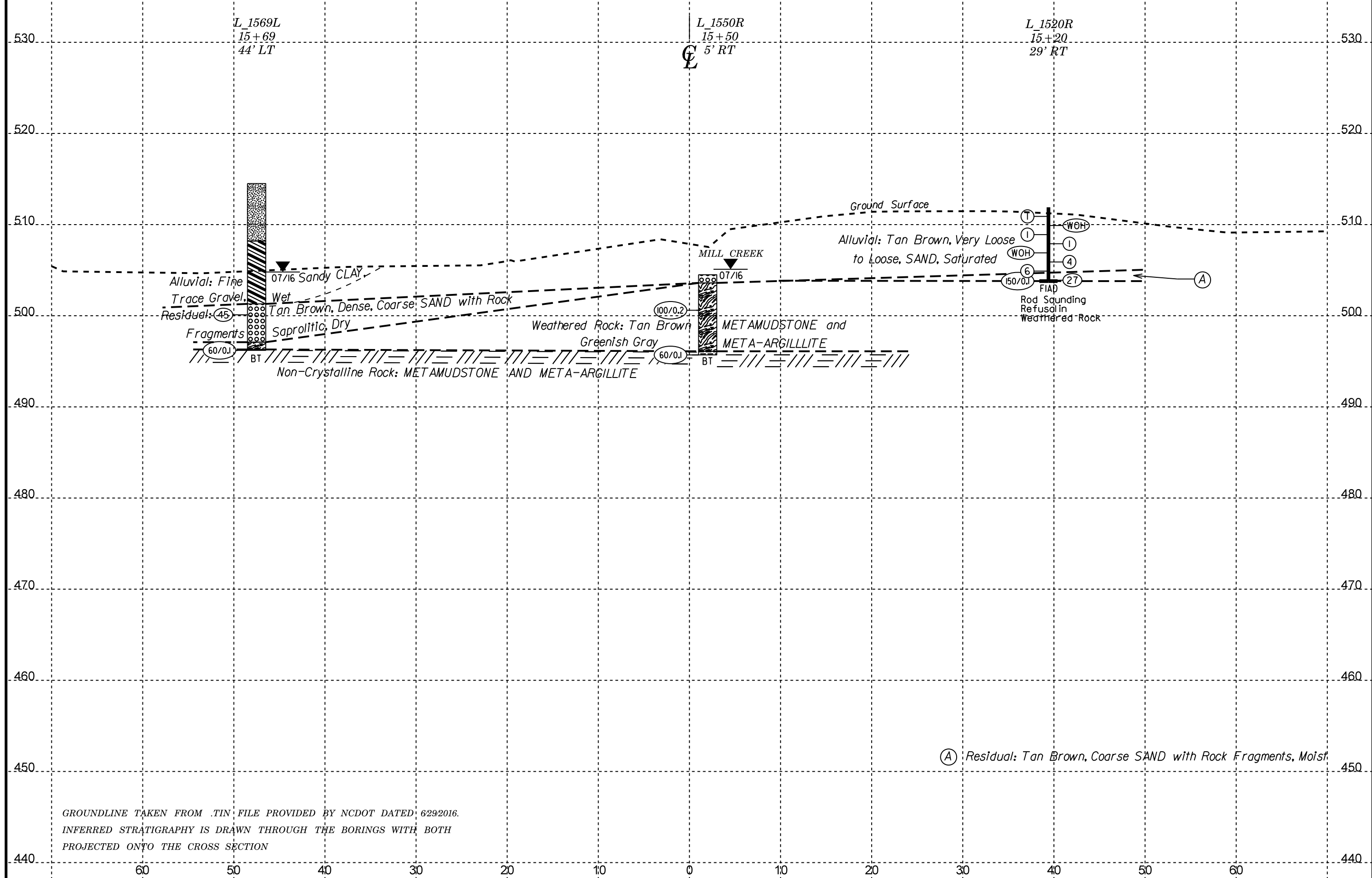
DUKE/PROGRESS ENERGY TRANSMISSION LINE

4'WW IS BW

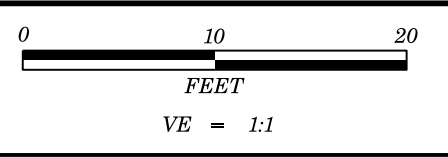
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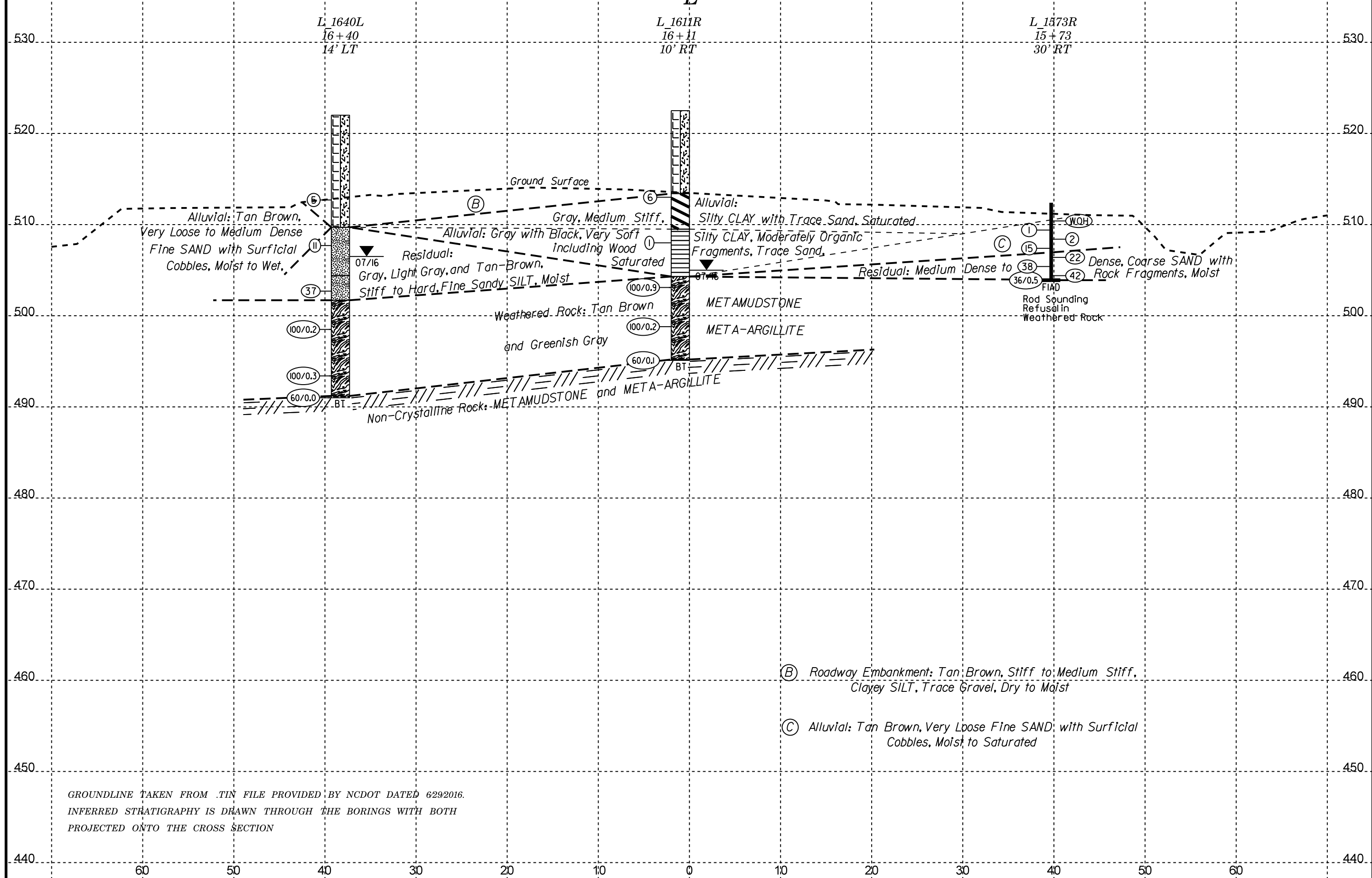
PROJECT REFERENCE NO.	SHEET NO.
46371.1.1	4
SECTION THROUGH STA. 15+47 SKEW=45 DEGREES	



GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 6/29/2016.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH
 PROJECTED ONTO THE CROSS SECTION



PROJECT REFERENCE NO.	SHEET NO.
46371.1.1	5
SECTION THROUGH STA. 15+99 SKEW=45 DEGREES	



GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 6/29/2016.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH
 PROJECTED ONTO THE CROSS SECTION

- (B) Roadway Embankment: Tan Brown, Stiff to Medium Stiff, Clayey SILT, Trace Gravel, Dry to Moist
- (C) Alluvial: Tan Brown, Very Loose Fine SAND with Surficial Cobbles, Moist to Saturated

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 46371.1.1		TIP B-5928		COUNTY RANDOLPH		GEOLOGIST PASTRANA, C. R.										
SITE DESCRIPTION Bridge # 175 on SR 2614 (Grantville Ln) over Mill Creek- Replace with Culvert							GROUND WTR (ft)									
BORING NO. L_1569L		STATION 15+69		OFFSET 44 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 514.5 ft		TOTAL DEPTH 18.3 ft		NORTHING 712,583		EASTING 1,796,655										
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 77% 02/22/2016			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Toothman, R.		START DATE 07/26/16		COMP. DATE 07/26/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
515														514.5	GROUND SURFACE	0.0
510	511.1	3.4	8	7	7											
505	506.1	8.4	5	4	4											
500	501.1	13.4	41	27	18											
	496.2	18.3	60/0.1											60/0.1		

WBS 46371.1.1		TIP B-5928		COUNTY RANDOLPH		GEOLOGIST PASTRANA, C. R.										
SITE DESCRIPTION Bridge # 175 on SR 2614 (Grantville Ln) over Mill Creek- Replace with Culvert							GROUND WTR (ft)									
BORING NO. L_1573R		STATION 15+73		OFFSET 30 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 512.4 ft		TOTAL DEPTH 8.5 ft		NORTHING 712,542		EASTING 1,796,718										
DRILL RIG/HAMMER EFF./DATE N/A			DRILL METHOD Rod Sounding		HAMMER TYPE N/A											
DRILLER N/A		START DATE 07/27/16		COMP. DATE 07/27/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
515														512.4	GROUND SURFACE	0.0
510	512.4	0.0	N/A	1	0											
	511.4	1.0	N/A	1	0											
	510.4	2.0	N/A	1	0											
	509.4	3.0	N/A	1	0											
	508.4	4.0	N/A	1	1											
	507.4	5.0	N/A	8	7											
	506.4	6.0	N/A	11	11											
	505.4	7.0	N/A	19	19											
	504.4	8.0	N/A	21	21											
	503.9	8.5	N/A	36/0.5	100/0.0									36/0.5	100/0.0	

NCDOT BORE DOUBLE B5928_GEO_BRD0175_GINT LOGS.GPJ NC_DOT_GDT 8/30/16

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 46371.1.1		TIP B-5928		COUNTY RANDOLPH		GEOLOGIST PASTRANA, C. R.										
SITE DESCRIPTION Bridge # 175 on SR 2614 (Grantville Ln) over Mill Creek- Replace with Culvert							GROUND WTR (ft)									
BORING NO. L_1640L		STATION 16+40		OFFSET 14 ft LT		ALIGNMENT -L-	0 HR. 22.1									
COLLAR ELEV. 522.0 ft		TOTAL DEPTH 31.0 ft		NORTHING 712,622		EASTING 1,796,721	24 HR. 15.5									
DRILL RIG/HAMMER EFF./DATE TRI0055 CME-55 77% 02/22/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Toothman, R.		START DATE 07/25/16		COMP. DATE 07/25/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
525														522.0	0.0	GROUND SURFACE
520	518.7	3.3	4	5	4								D			ROADWAY EMBANKMENT Tan Brown, Stiff to Medium Stiff, Clayey SILT (A-5), Trace Gravel
515	513.7	8.3	2	2	3								M			
510	508.7	13.3	5	5	6									509.7	12.3	RESIDUAL Gray and Tan-Brown, Stiff, Fine Sandy SILT (A-4)
505	503.7	18.3	41	19	18								M	504.4	17.6	Note: Softer Drilling from 15.2' to 17.6' Light Gray, Hard, SILT (A-4), Trace Rock Fragments
500	498.7	23.3	100/0.2											501.7	20.3	WEATHERED ROCK Tan Brown METAMUDSTONE and Greenish Gray META-ARGILLITE Note: Softer Drilling from 26.1' to 27.8'
495	493.7	28.3	100/0.3											491.2	30.8	NON-CRYSTALLINE ROCK Tan Brown METAMUDSTONE and Greenish Gray META-ARGILLITE Boring Terminated with Standard Penetration Test Refusal at Elevation 491.0 ft In Non-Crystalline Rock: METAMUDSTONE and META-ARGILLITE
	491.0	31.0	60/0.0											491.0	31.0	

NCDOT BORE DOUBLE B5928_GEO_BRD0175_GINT LOGS.GPJ NC_DOT_GDT 8/30/16

SITE PHOTOGRAPHS
State Project No. 46371.1.1 – TIP No. B-5928 – Bridge No. 175 on SR 2614 (Grantville Lane) Over Mill Creek – Randolph County, NC

View of Existing Bridge No. 175 Looking Upstation



View of Existing Bridge No. 175 Looking Downstation



View Looking Upstream from Bridge No. 175



View Looking Downstream from Bridge No. 175

