

REFERENCE: SF-580077

PROJECT: 17BP.13.R.176

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-580077	1	6

STRUCTURE
SUBSURFACE INVESTIGATION

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	CROSS SECTIONS
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COUNTY MCDOWELL
PROJECT DESCRIPTION REPLACE BRIDGE #77 OVER
JOHN CREEK ON SR 1510 (HANKINS RD.)
B-5875
SITE DESCRIPTION _____

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 1919 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

CD JOHNSON
DO CHEEK
CJ COFFEY

INVESTIGATED BY DM MULLEN
DRAWN BY DMM
CHECKED BY JC KUHNE
SUBMITTED BY JCK
DATE 4/24/2019

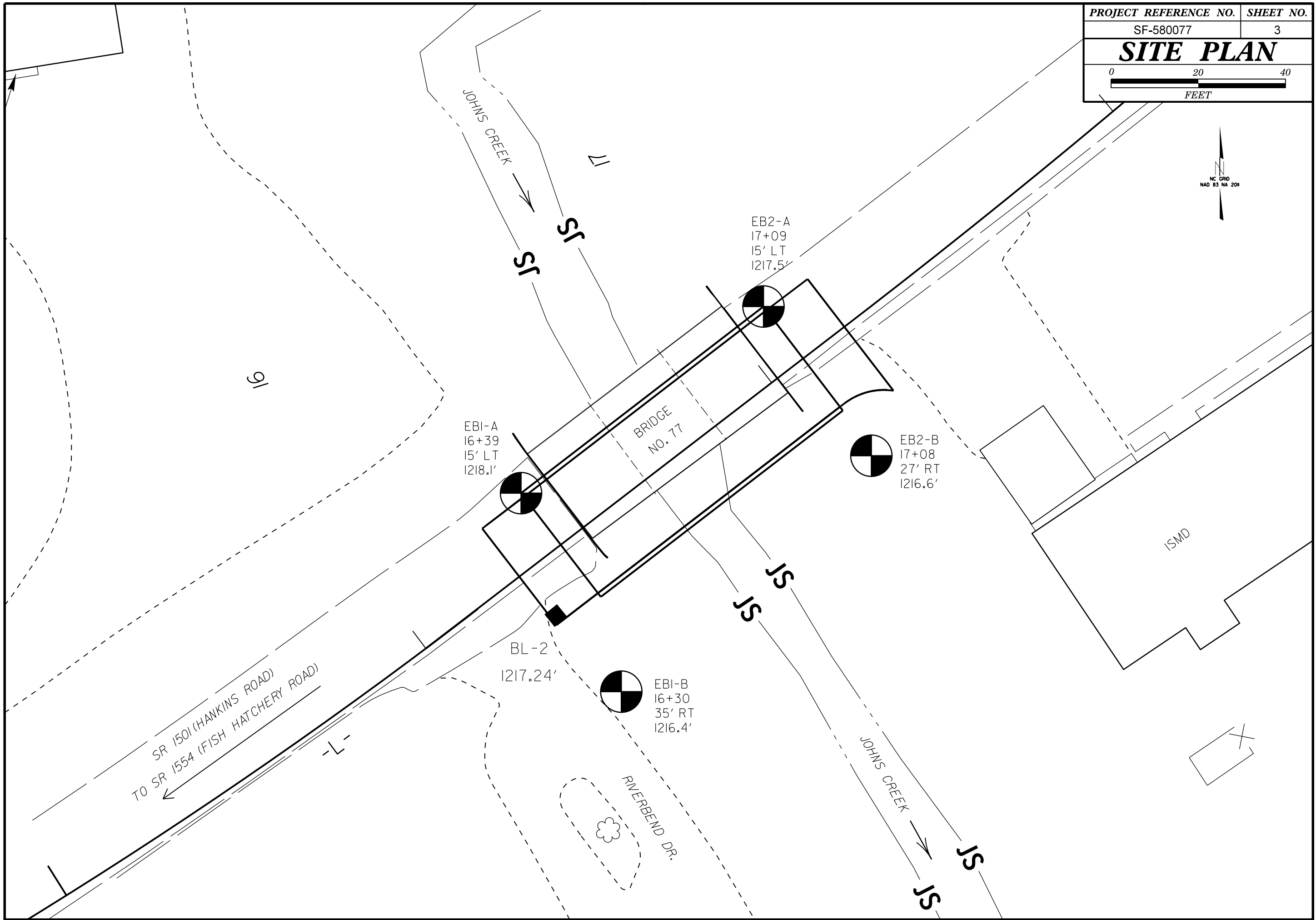


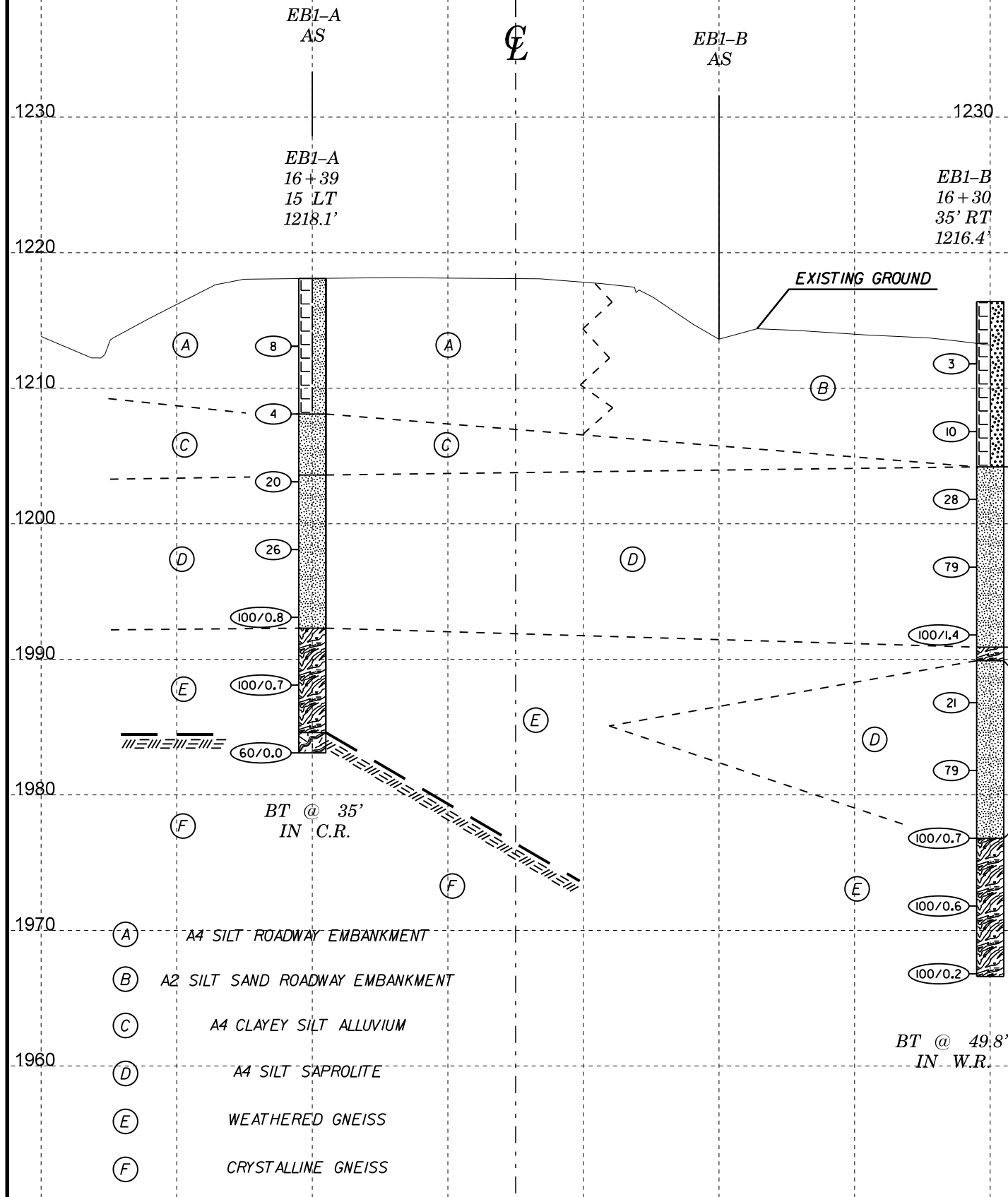
DocuSigned by:
D Matt Mullen 4/23/2019
18909BD3CD8406 DATE

**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

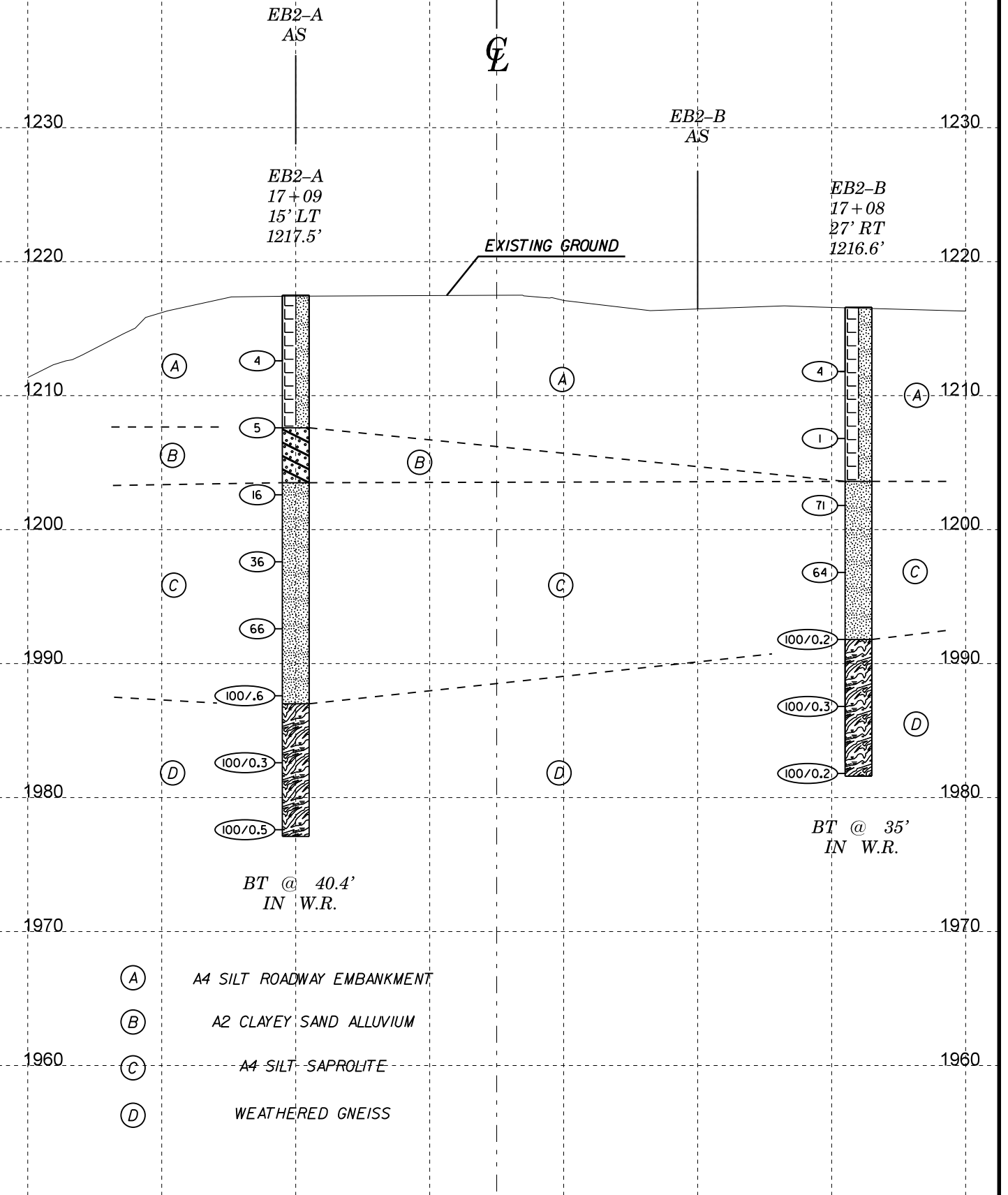
Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, and INDURATION.





HORIZ. SCALE 0 10 20 (FEET) VE = 1H:1V

SECTION ALONG EB1



HORIZ. SCALE 0 10 20 (FEET) VE = 1H:1V

SECTION ALONG EB2

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.13.R.176		TIP SF-580077		COUNTY McDOWELL		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION N/A							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 16+39		OFFSET 15 ft LT		ALIGNMENT L										
COLLAR ELEV. 1,218.1 ft		TOTAL DEPTH 35.0 ft		NORTHING 732,288		EASTING 1,103,612										
DRILL RIG/HAMMER EFF./DATE AFO8963 CME-550X 77% 07/31/2017		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Cheek, D. O.		START DATE 03/29/19		COMP. DATE 03/29/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1220														1,218.1	0.0	GROUND SURFACE
1215	1,213.1	5.0	2	3	5											ROADWAY EMBANKMENT Brown clayey sandy silt with gravels
1210	1,208.1	10.0	2	2	2											
1205	1,203.1	15.0	7	8	12									1,208.1	10.0	ALLUVIAL Grey brown mottled, micaceous, very clayey sandy silt
1200	1,203.6	15.0	7	8	12									1,203.6	14.5	SAPROLITE Grey white to brown micaceous clayey sandy silt with weathered rock fragments
1195	1,198.1	20.0	7	10	16											
1190	1,193.1	25.0	29	71/0.3												
1185	1,188.1	30.0	24	76/0.2										1,192.3	25.8	WEATHERED ROCK Weathered gneiss
	1,183.1	35.0	60/0.0											1,184.6	33.5	CRYSTALLINE ROCK Crystalline gneiss Boring Terminated with Standard Penetration Test Refusal at Elevation 1,183.1 ft IN CR

WBS 17BP.13.R.176		TIP SF-580077		COUNTY McDOWELL		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION N/A							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 16+30		OFFSET 35 ft RT		ALIGNMENT L										
COLLAR ELEV. 1,216.4 ft		TOTAL DEPTH 49.8 ft		NORTHING 732,243		EASTING 1,103,635										
DRILL RIG/HAMMER EFF./DATE AFO8963 CME-550X 77% 07/31/2017		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic												
DRILLER Cheek, D. O.		START DATE 04/01/19		COMP. DATE 04/01/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1220														1,216.4	0.0	GROUND SURFACE
1215																ROADWAY EMBANKMENT Brown slightly clayey silty sand with gravels and some mica
1210	1,211.8	4.6	3	2	1											
1205	1,206.8	9.6	8	6	4											
1200	1,201.8	14.6	7	14	14											
1195	1,196.8	19.6	17	32	47											
1190	1,191.8	24.6	19	49	51/0.4											
1185	1,186.8	29.6	14	13	8											
1180	1,181.8	34.6	14	24	55											
1175	1,176.8	39.6	47	53/0.2												
1170	1,171.8	44.6	22	78/0.1												
	1,166.8	49.6	100/0.2													
														1,204.2	12.2	SAPROLITE Tan brown slightly micaceous clayey slightly sandy silt with a few rock fragments stiffness increases with depth
														1,190.9	25.5	WEATHERED ROCK Weathered gneiss
														1,189.9	26.5	SAPROLITE Very stiff, tan brown slightly micaceous clayey slightly sandy silt with a few rock fragments
														1,176.8	39.6	WEATHERED ROCK Weathered gneiss
														1,166.6	49.8	Boring Terminated with Standard Penetration Test Refusal at Elevation 1,166.6 ft IN WR

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.13.R.176		TIP SF-580077		COUNTY McDOWELL		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION N/A							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 17+09		OFFSET 15 ft LT		ALIGNMENT L										
COLLAR ELEV. 1,217.5 ft		TOTAL DEPTH 40.4 ft		NORTHING 732,331		EASTING 1,103,668										
DRILL RIG/HAMMER EFF./DATE AFO8963 CME-550X 77% 07/31/2017			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic										
DRILLER Cheek, D. O.		START DATE 03/29/19		COMP. DATE 03/29/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1220														1,217.5	GROUND SURFACE	0.0
1215	1,212.6	4.9	3	2	2										ROADWAY EMBANKMENT Red brown, very clayey slightly micaceous, silt with rock fragments	
1210	1,207.6	9.9	2	2	3											
1205	1,202.6	14.9	3	7	9									1,203.5	ALLUVIAL Brown slightly clayey, micaceous silty sand with small pebbles and gravel at 11.6'	14.0
1200	1,197.6	19.9	7	14	22										SAPROLITE Brown clayey micaceous silt with weathered rock fragments	
1195	1,192.6	24.9	14	27	39											
1190	1,187.6	29.9	54	46/0.1										1,187.0	WEATHERED ROCK Weathered gneiss	30.5
1185	1,182.6	34.9	100/0.3													
1180	1,177.6	39.9	100/0.5											1,177.1	Boring Terminated with Standard Penetration Test Refusal at Elevation 1,177.1 ft IN WR	40.4

WBS 17BP.13.R.176		TIP SF-580077		COUNTY McDOWELL		GEOLOGIST Johnson, C. D.										
SITE DESCRIPTION N/A							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 17+08		OFFSET 27 ft RT		ALIGNMENT L										
COLLAR ELEV. 1,216.6 ft		TOTAL DEPTH 35.0 ft		NORTHING 732,297		EASTING 1,103,693										
DRILL RIG/HAMMER EFF./DATE AFO8963 CME-550X 77% 07/31/2017			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic										
DRILLER Cheek, D. O.		START DATE 04/01/19		COMP. DATE 04/01/19		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1220														1,216.6	GROUND SURFACE	0.0
1215	1,211.8	4.8	2	2	2										ROADWAY EMBANKMENT Red micaceous clayey sandy silt	
1210	1,206.8	9.8	woh	woh	1											
1205	1,201.8	14.8	14	27	44										SAPROLITE Brown tan micaceous clayey sandy silty with a trace of MnO layers	
1200	1,196.8	19.8	20	32	32											
1195	1,191.8	24.8	100/0.2													
1190	1,186.8	29.8	100/0.3											1,181.8	WEATHERED ROCK Weathered gneiss	24.8
1185	1,181.8	34.8	100/0.2													
														1,181.6	Boring Terminated with Standard Penetration Test Refusal at Elevation 1,181.6 ft IN WR	35.0

NCDOT BORE DOUBLE B6875_GEO_BRDG_BORELOGS.GPJ NC_DOT.GDT 4/23/19