

REFERENCE: SF-620019

PROJECT: 17BP.8.R.89

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY MOORE  
 PROJECT DESCRIPTION BRIDGE NO.19 ON SR 1112  
(ROSELAND RD) OVER DEEP CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.8.R.89	1	9

**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**

B. WORLEY, PG

L. GONZALEZ

D. SUTTON

A. GROSS

INVESTIGATED BY B. WORLEY, PG

DRAWN BY B. WORLEY, PG

CHECKED BY D. DEWEY, PE

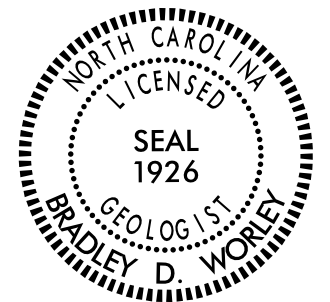
SUBMITTED BY Summit Design and Engineering Services, PLLC

DATE OCTOBER, 2016

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DocuSigned by:  
Brad Worley 11/4/2016  
 SIGNATURE DATE

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

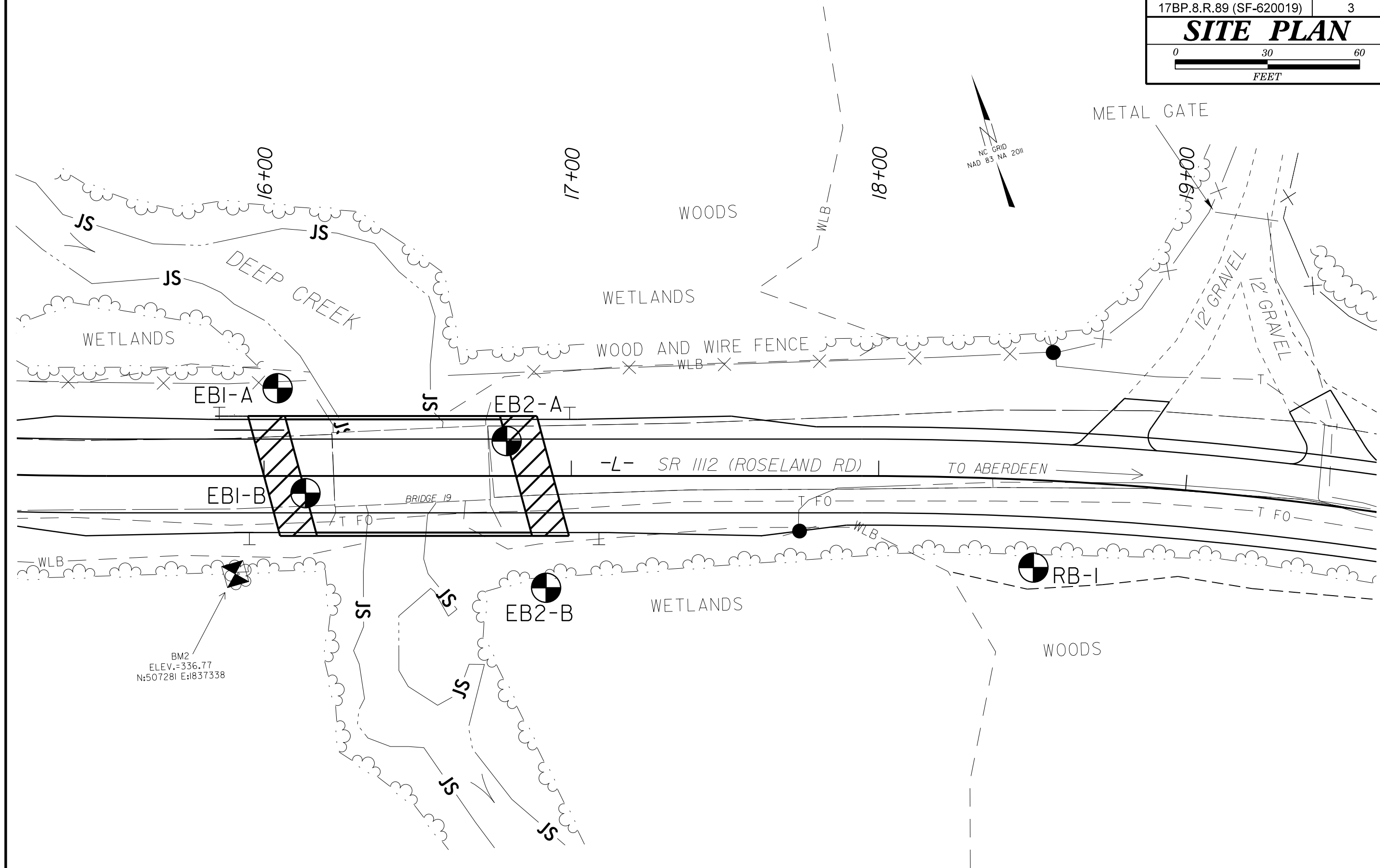
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT**

# SUBSURFACE INVESTIGATION

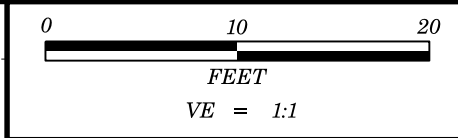
## SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROQ) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDER ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH DIA. SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQ) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
<b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>	<b>ANGULARITY OF GRAINS</b>	<b>WEATHERED ROCK (WR)</b>	
GENERAL CLASS.	MINERALOGICAL COMPOSITION	CRYSTALLINE ROCK (CR)	
GROUP CLASS.	COMPRESSIBILITY	NON-CRYSTALLINE ROCK (NCR)	
SYMBOL	PERCENTAGE OF MATERIAL	COASTAL PLAIN SEDIMENTARY ROCK (CP)	
% PASSING	GROUND WATER	<b>WEATHERING</b>	
MATERIAL PASSING #40 LL PI	MISCELLANEOUS SYMBOLS	FRESH	
GROUP INDEX	RECOMMENDATION SYMBOLS	VERY SLIGHT (V SL)	
USUAL TYPES OF MAJOR MATERIALS	ABBREVIATIONS	SLIGHT (SL)	
GEN. RATNG AS SUBGRADE	EQUIPMENT USED ON SUBJECT PROJECT	MODERATE (MOD)	
<b>TEXTURE OR GRAIN SIZE</b>			
<b>SOIL MOISTURE - CORRELATION OF TERMS</b>			
<b>PLASTICITY</b>			
<b>COLOR</b>			
DESCRIPTORS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.			

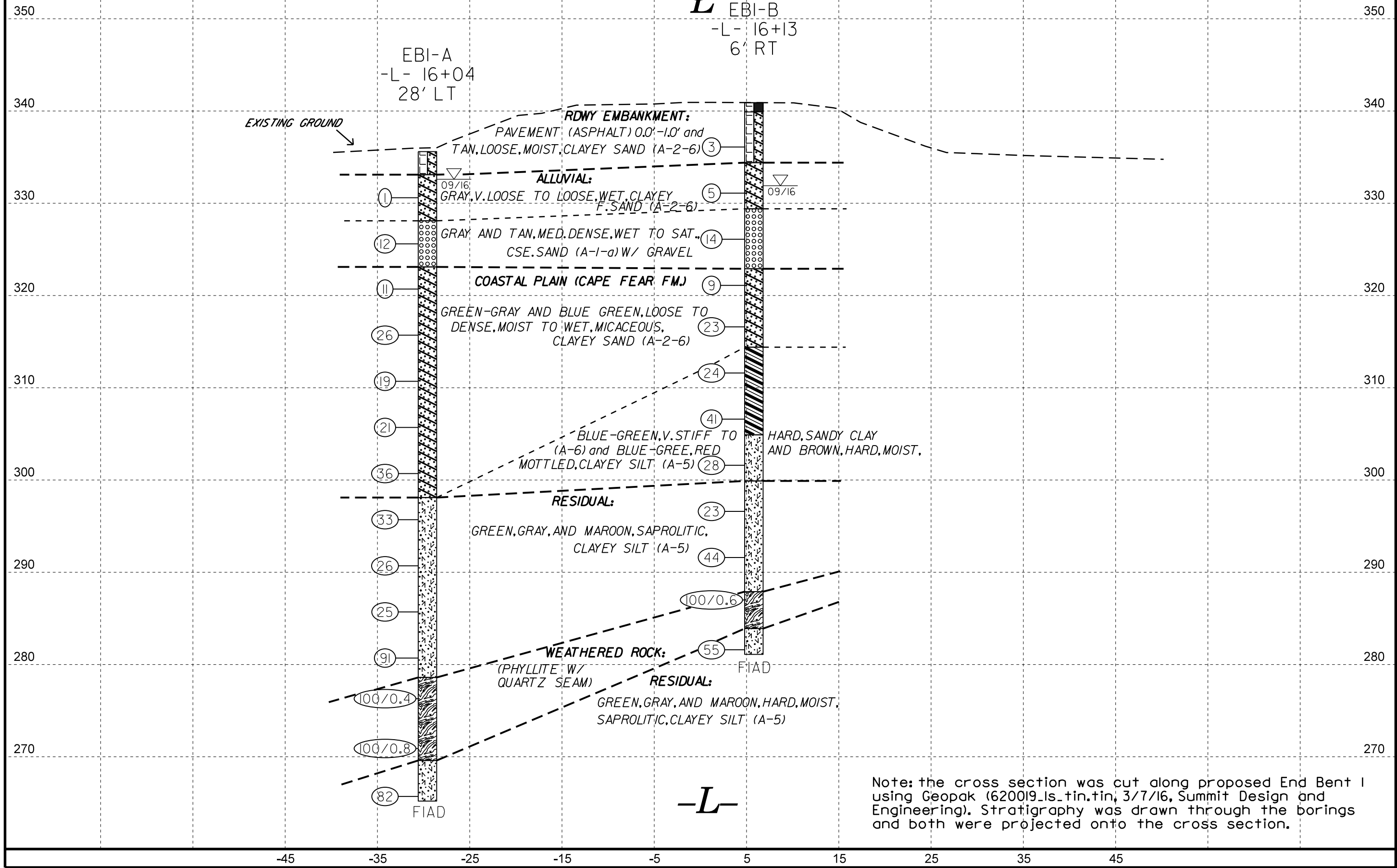
<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
17BP.8.R.89 (SF-620019)	3
<b>SITE PLAN</b>	
 0                      30                      60 FEET	



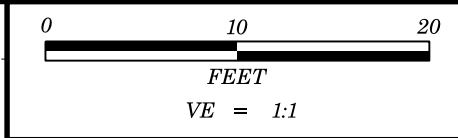
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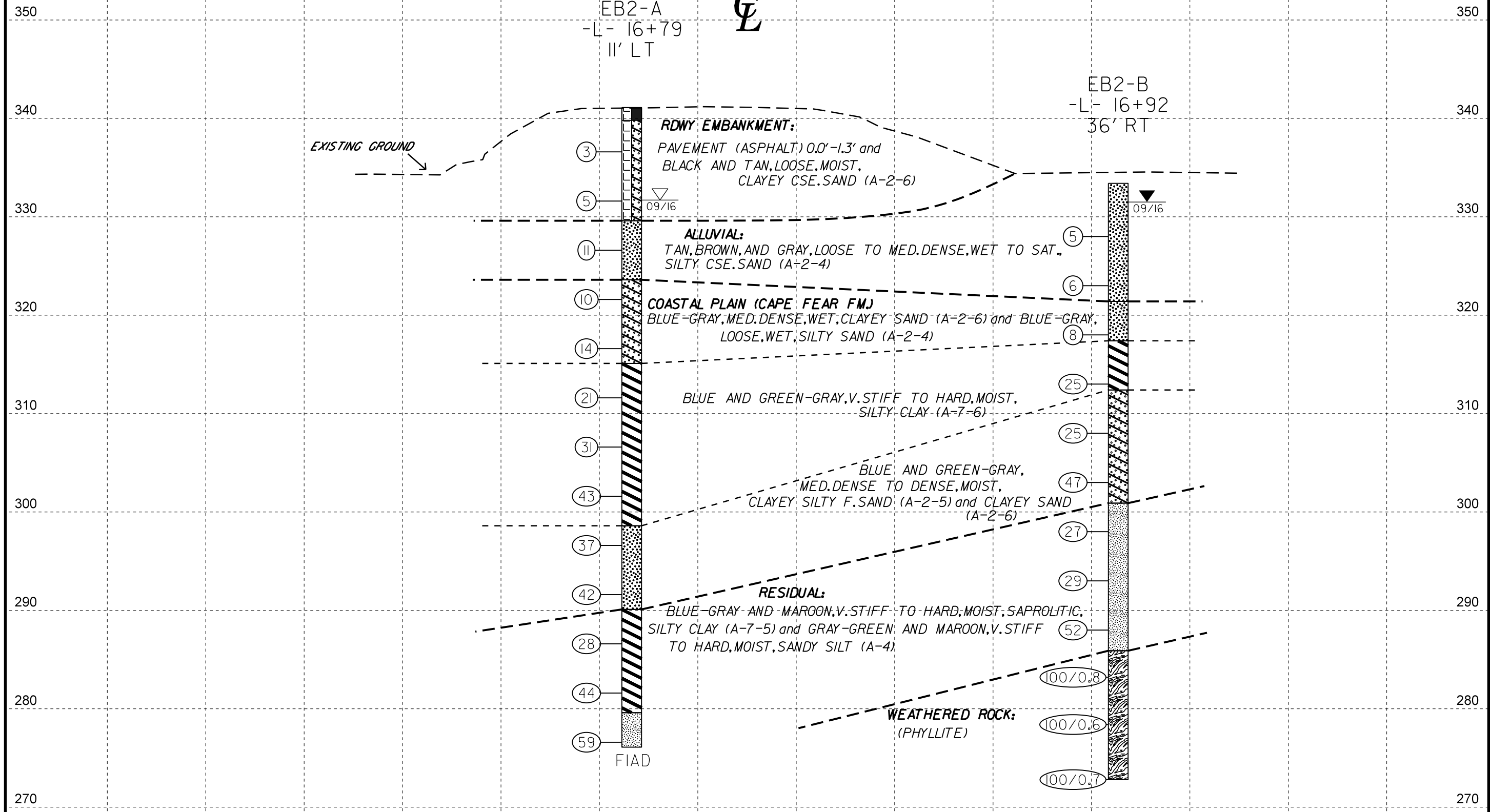
PROJECT REFERENCE NO.	SHEET
17BP.8.R.89 (SF-620019)	4
<b>BRIDGE 19</b>	
<b>EBI CROSS SECTION</b>	



Note: the cross section was cut along proposed End Bent 1 using Geopak (620019\_ls.tin.tin, 3/7/16, Summit Design and Engineering). Stratigraphy was drawn through the borings and both were projected onto the cross section.

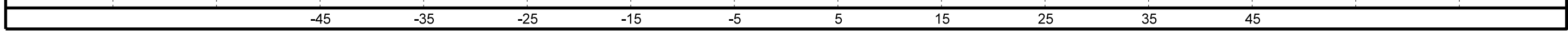


PROJECT REFERENCE NO.	SHEET
17BP.8.R.89 (SF-620019)	5
<b>BRIDGE 19</b>	
<b>EB2 CROSS SECTION</b>	



Note: the cross section was cut along proposed End Bent 2 using Geopak (620019\_ls.tin.tin, 3/7/16, Summit Design and Engineering). Stratigraphy was drawn through the borings and both were projected onto the cross section.

-L-



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.8.R.89		TIP SF-620019		COUNTY MOORE		GEOLOGIST B. Worley, PG										
SITE DESCRIPTION Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 16+04		OFFSET 28 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 335.6 ft		TOTAL DEPTH 70.4 ft		NORTHING 507,335		EASTING 1,837,368										
DRILL RIG/HAMMER EFF./DATE SUM3123 CME-550X 93% 11/06/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER L. Gonzalez		START DATE 09/23/16		COMP. DATE 09/23/16		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						
340																
335																
330	331.6	4.0	WOH	WOH	1											
325	326.6	9.0	1	3	9											
320	321.7	13.9	2	5	6											
315	316.7	18.9	8	13	13											
310	311.7	23.9	3	8	11											
305	306.7	28.9	6	9	12											
300	301.7	33.9	14	17	19											
295	296.7	38.9	8	13	20											
290	291.7	43.9	9	10	16											
285	286.7	48.9	10	10	15											
280	281.7	53.9	9	31	60											
275	276.7	58.9	100/0.4													
270	271.7	63.9	57	43/0.3												
	266.7	68.9	39	51	31											

WBS 17BP.8.R.89		TIP SF-620019		COUNTY MOORE		GEOLOGIST A. Gross										
SITE DESCRIPTION Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 16+13		OFFSET 6 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 340.9 ft		TOTAL DEPTH 59.8 ft		NORTHING 507,300		EASTING 1,837,367										
DRILL RIG/HAMMER EFF./DATE SUM3123 CME-550X 93% 11/06/2015			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER L. Gonzalez		START DATE 09/20/16		COMP. DATE 09/20/16		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						
345																
340																
335	337.1	3.8	2	2	1											
330	332.1	8.8	1	2	3											
325	327.1	13.8	3	6	8											
320	322.1	18.8	2	3	6											
315	317.6	23.3	5	10	13											
310	312.6	28.3	6	10	14											
305	307.6	33.3	10	17	24											
300	302.6	38.3	8	13	15											
295	297.6	43.3	8	10	13											
290	292.6	48.3	12	21	23											
285	287.6	53.3	90	10/0.1												
	282.6	58.3	14	22	33											

NCDOT BORE DOUBLE\_SF620019\_GEO\_BRDG\_GINT.GPJ\_NC\_DOT.GDT\_10/26/16

\*Boring terminated early due to heavy rain while in lane closure. NCDOT GEU personnel on site.

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.8.R.89		TIP SF-620019		COUNTY MOORE		GEOLOGIST B. Worley / A. Gross										
SITE DESCRIPTION Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 16+79		OFFSET 11 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 341.1 ft		TOTAL DEPTH 65.0 ft		NORTHING 507,298		EASTING 1,837,435										
DRILL RIG/HAMMER EFF./DATE SUM3123 CME-550X 93% 11/06/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER L. Gonzalez		START DATE 09/20/16		COMP. DATE 09/20/16		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						
345																
340																
	337.6	3.5	3	2	1											
335																
	332.6	8.5	2	2	3											
330																
	327.6	13.5	3	5	6											
325																
	322.6	18.5	3	5	5											
320																
	317.6	23.5	5	4	10											
315																
	312.6	28.5	6	9	12											
310																
	307.6	33.5	8	13	18											
305																
	302.6	38.5	8	17	26											
300																
	297.6	43.5	12	18	19											
295																
	292.6	48.5	17	20	22											
290																
	287.6	53.5	8	12	16											
285																
	282.6	58.5	5	17	27											
280																
	277.6	63.5	10	28	31											

WBS 17BP.8.R.89		TIP SF-620019		COUNTY MOORE		GEOLOGIST B. Worley / A. Gross										
SITE DESCRIPTION Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 16+92		OFFSET 36 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 333.4 ft		TOTAL DEPTH 60.6 ft		NORTHING 507,248		EASTING 1,837,434										
DRILL RIG/HAMMER EFF./DATE SUM3123 CME-550X 93% 11/06/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER L. Gonzalez		START DATE 09/19/16		COMP. DATE 09/19/16		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						
335																
330																
	329.0	4.4	1	2	3											
325																
	324.0	9.4	3	2	4											
320																
	319.0	14.4	4	4	4											
315																
	314.0	19.4	6	10	15											
310																
	309.0	24.4	5	11	14											
305																
	304.0	29.4	8	16	31											
300																
	299.0	34.4	8	11	16											
295																
	294.0	39.4	5	10	19											
290																
	289.0	44.4	5	20	32											
285																
	284.0	49.4	17	83/0.3												
280																
	279.0	54.4	69	31/0.1												
275																
	274.0	59.4	20	54	46/0.2											

NCDOT BORE DOUBLE\_SF620019\_GEO\_BRDG\_GINT.GPJ\_NC\_DOT.GDT\_10/26/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.8.R.89		TIP SF-620019		COUNTY MOORE		GEOLOGIST B. Worley, PG										
SITE DESCRIPTION Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek							GROUND WTR (ft)									
BORING NO. RB-1		STATION 18+51		OFFSET 28 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 338.6 ft		TOTAL DEPTH 10.5 ft		NORTHING 507,211		EASTING 1,837,588										
DRILL RIG/HAMMER EFF./DATE SUM3123 CME-550X 93% 11/06/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER L. Gonzalez		START DATE 09/19/16		COMP. DATE 09/19/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
340																
															338.6	0.0
335	334.6	4.0	4	5	5	10						M				
330	329.6	9.0	3	4	5	9						M				
															328.1	10.5
															Boring Terminated at Elevation 328.1 ft In Coastal Plain Clayey SAND (A-2-6)	

NCDOT BORE DOUBLE\_SF620019\_GEO\_BRDG\_GINT.GPJ NC\_DOT.GDT 10/26/16



**SITE PHOTOGRAPH**  
Bridge No. 19 on SR 1112 (Roseland Rd.) over Deep Creek



View Facing East (Upstation)



View Facing West (Downstation)