

REFERENCE: BP11.R004

PROJECT: SF-850062

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY SURRY
PROJECT DESCRIPTION REPLACE BRIDGE NO. 062 ON
SR 1350 (RED BRUSH ROAD) OVER STEWARTS
CREEK

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
2A	SUPPLEMENTAL LEGEND (GSI)
3	SITE PLAN
4	PROFILE
5-8	CROSS SECTIONS
9-17	BORE LOGS, CORE LOGS, AND ROCK CORE PHOTOS
18	LAB RESULTS
19	SITE PHOTOGRAPHS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP11.R004	1	19

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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

CG2 EXPLORATION

S.N. PATTERSON, G.I.T.

F&R, INC.

INVESTIGATED BY CG2, PLLC

DRAWN BY S. N. PATTERSON, G.I.T.

CHECKED BY M. BREWER, P.E.

SUBMITTED BY CG2, PLLC

DATE SEPTEMBER 2022

Prepared in the Office of:



**CAROLINAS
GEOTECHNICAL
GROUP**

2400 CROWNPOINT EXECUTIVE DRIVE
SUITE 800
CHARLOTTE, NC 28227
(980) 339-8684



DocuSigned by:

D. Matthew Brewer 11/4/2022

386129C0A4C1462
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																																																																																																																																					
<p>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 208, 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</p>																																																																																																																																								
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VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET																																																																																																																																					
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET																																																																																																																																					
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET																																																																																																																																					
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET																																																																																																																																					
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET																																																																																																																																					
		THINLY LAMINATED	< 0.008 FEET																																																																																																																																					
INDURATION																																																																																																																																								
<p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																																																																																								

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION

**SUPPLEMENTAL LEGEND, GEOLOGICAL STRENGTH INDEX (GSI) TABLES
 FROM AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS**

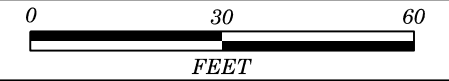
AASHTO LRFD Figure 10.4.6.4-1 — Determination of GSI for Jointed Rock Mass (Marinos and Hoek, 2000)

AASHTO LRFD Figure 10.4.6.4-2 — Determination of GSI for Tectonically Deformed Heterogeneous Rock Masses (Marinos and Hoek, 2000)

GEOLOGICAL STRENGTH INDEX (GSI) FOR JOINTED ROCKS (Hoek and Marinos, 2000)		SURFACE CONDITIONS					GSI FOR HETEROGENEOUS ROCK MASSES SUCH AS FLYSCH (Marinos, P and Hoek E., 2000)		SURFACE CONDITIONS OF DISCONTINUITIES (Predominantly bedding planes)				
From the lithology, structure and surface conditions of the discontinuities, estimate the average value of GSI. Do not try to be too precise. Quoting a range from 33 to 37 is more realistic than stating that GSI = 35. Note that the table does not apply to structurally controlled failures. Where weak planar structural planes are present in an unfavorable orientation with respect to the excavation face, these will dominate the rock mass behaviour. The shear strength of surfaces in rocks that are prone to deterioration as a result of changes in moisture content will be reduced if water is present. When working with rocks in the fair to very poor categories, a shift to the right may be made for wet conditions. Water pressure is dealt with by effective stress analysis.		VERY GOOD Very rough, fresh unweathered surfaces	GOOD Rough, slightly weathered, iron stained surfaces	FAIR Smooth, moderately weathered and altered surfaces	POOR Slickensided, highly weathered surfaces with compact coatings or fillings or angular fragments	VERY POOR Slickensided, highly weathered surfaces with soft clay coatings or fillings	From a description of the lithology, structure and surface conditions (particularly of the bedding planes), choose a box in the chart. Locate the position in the box that corresponds to the condition of the discontinuities and estimate the average value of GSI from the contours. Do not attempt to be too precise. Quoting a range from 33 to 37 is more realistic than giving GSI = 35. Note that the Hoek-Brown criterion does not apply to structurally controlled failures. Where unfavourably oriented continuous weak planar discontinuities are present, these will dominate the behaviour of the rock mass. The strength of some rock masses is reduced by the presence of groundwater and this can be allowed for by a slight shift to the right in the columns for fair, poor and very poor conditions. Water pressure does not change the value of GSI and it is dealt with by using effective stress analysis.		VERY GOOD - Very Rough, fresh unweathered surfaces	GOOD - Rough, slightly weathered surfaces	FAIR - Smooth, moderately weathered and altered surfaces	POOR - Very smooth, occasionally slickensided surfaces with compact coatings or fillings with angular fragments	VERY POOR - Very smooth, slickensided or highly weathered surfaces with soft clay coatings or fillings
STRUCTURE		DECREASING SURFACE QUALITY →					COMPOSITION AND STRUCTURE						
INTACT OR MASSIVE - intact rock specimens or massive in situ rock with few widely spaced discontinuities		90			N/A	N/A	A. Thick bedded, very blocky sandstone The effect of pelitic coatings on the bedding planes is minimized by the confinement of the rock mass. In shallow tunnels or slopes these bedding planes may cause structurally controlled instability.	70					
BLOCKY - well interlocked undisturbed rock mass consisting of cubical blocks formed by three intersecting discontinuity sets		80					B. Sandstone with thin inter-layers of siltstone	60					
VERY BLOCKY - interlocked, partially disturbed mass with multi-faceted angular blocks formed by 4 or more joint sets			70				C. Sandstone and siltstone in similar amounts		50				
BLOCKY/DISTURBED/SEAMY - folded with angular blocks formed by many intersecting discontinuity sets. Persistence of bedding planes or schistosity			60				D. Siltstone or silty shale with sandstone layers			40			
DISINTEGRATED - poorly interlocked, heavily broken rock mass with mixture of angular and rounded rock pieces				50			E. Weak siltstone or clayey shale with sandstone layers				30		
LAMINATED/SHEARED - Lack of blockiness due to close spacing of weak schistosity or shear planes				40			F. Tectonically deformed, intensively folded/faulted, sheared clayey shale or siltstone with broken and deformed sandstone layers forming an almost chaotic structure					20	
				30			G. Undisturbed silty or clayey shale with or without a few very thin sandstone layers						10
				20			H. Tectonically deformed silty or clayey shale forming a chaotic structure with pockets of clay. Thin layers of sandstone are transformed into small rock pieces.						
				10									
		N/A	N/A										

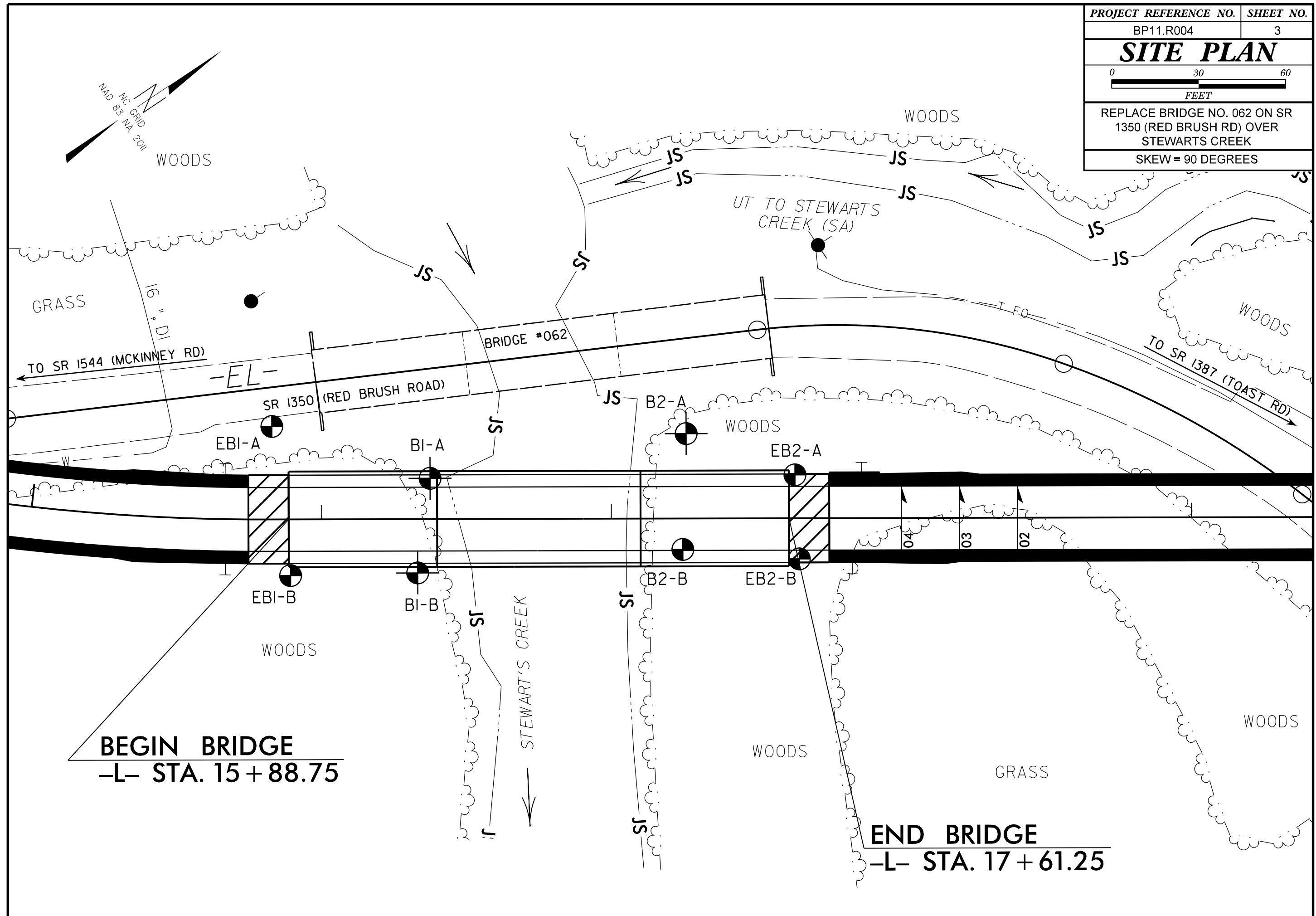
→ Means deformation after tectonic disturbance

SITE PLAN



REPLACE BRIDGE NO. 062 ON SR 1350 (RED BRUSH RD) OVER STEWARTS CREEK

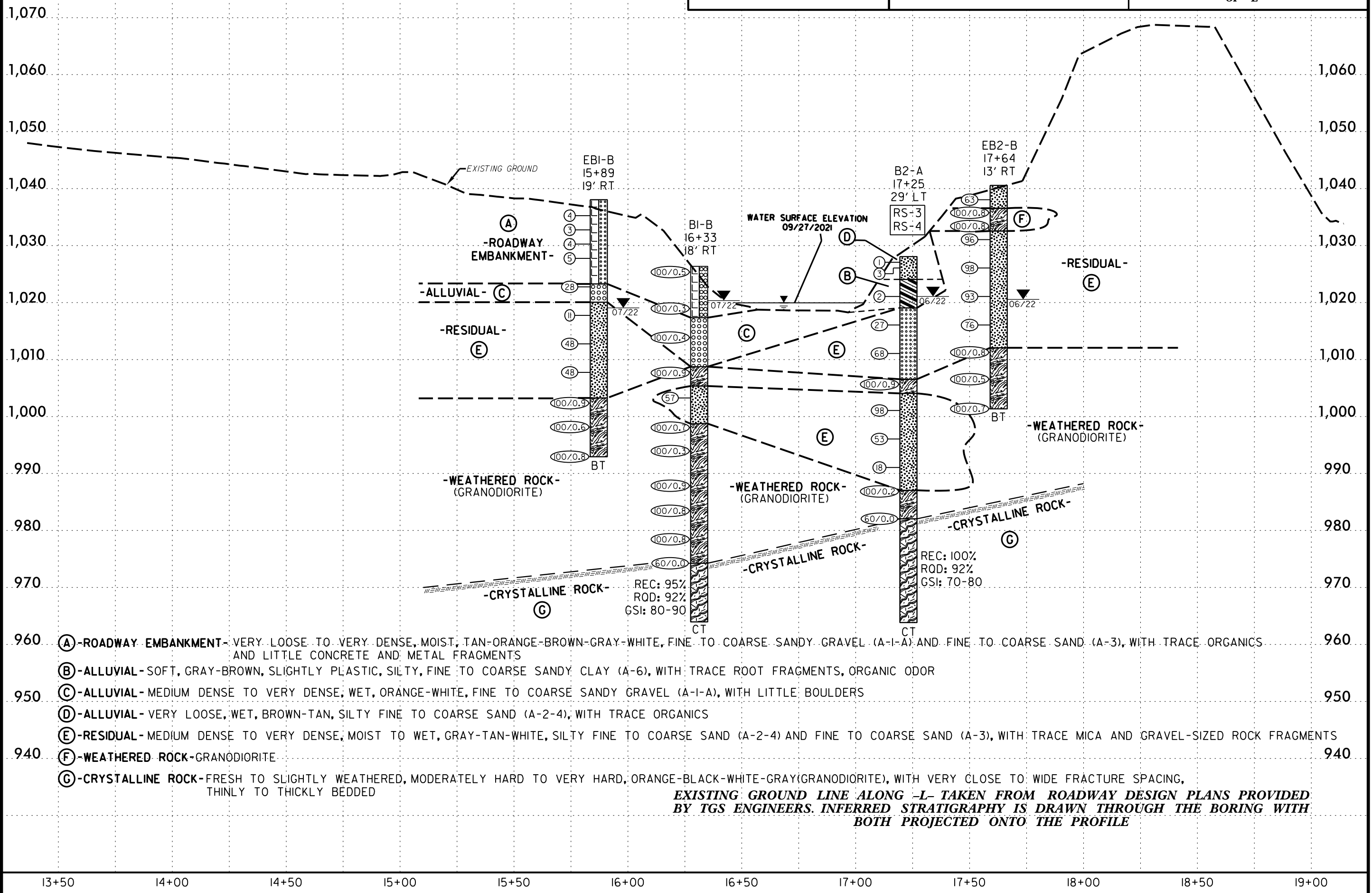
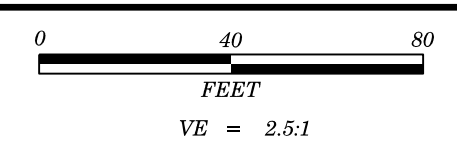
SKEW = 90 DEGREES



BEGIN BRIDGE
-L- STA. 15 + 88.75

END BRIDGE
-L- STA. 17 + 61.25

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- (A) -ROADWAY EMBANKMENT- VERY LOOSE TO VERY DENSE, MOIST, TAN-ORANGE-BROWN-GRAY-WHITE, FINE TO COARSE SANDY GRAVEL (A-I-A) AND FINE TO COARSE SAND (A-3), WITH TRACE ORGANICS AND LITTLE CONCRETE AND METAL FRAGMENTS
- (B) -ALLUVIAL- SOFT, GRAY-BROWN, SLIGHTLY PLASTIC, SILTY, FINE TO COARSE SANDY CLAY (A-6), WITH TRACE ROOT FRAGMENTS, ORGANIC ODOR
- (C) -ALLUVIAL- MEDIUM DENSE TO VERY DENSE, WET, ORANGE-WHITE, FINE TO COARSE SANDY GRAVEL (A-I-A), WITH LITTLE BOULDERS
- (D) -ALLUVIAL- VERY LOOSE, WET, BROWN-TAN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE ORGANICS
- (E) -RESIDUAL- MEDIUM DENSE TO VERY DENSE, MOIST TO WET, GRAY-TAN-WHITE, SILTY FINE TO COARSE SAND (A-2-4) AND FINE TO COARSE SAND (A-3), WITH TRACE MICA AND GRAVEL-SIZED ROCK FRAGMENTS
- (F) -WEATHERED ROCK- GRANODIORITE
- (G) -CRYSTALLINE ROCK- FRESH TO SLIGHTLY WEATHERED, MODERATELY HARD TO VERY HARD, ORANGE-BLACK-WHITE-GRAY (GRANODIORITE), WITH VERY CLOSE TO WIDE FRACTURE SPACING, THINLY TO THICKLY BEDDED

EXISTING GROUND LINE ALONG -L- TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE PROFILE

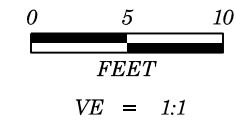
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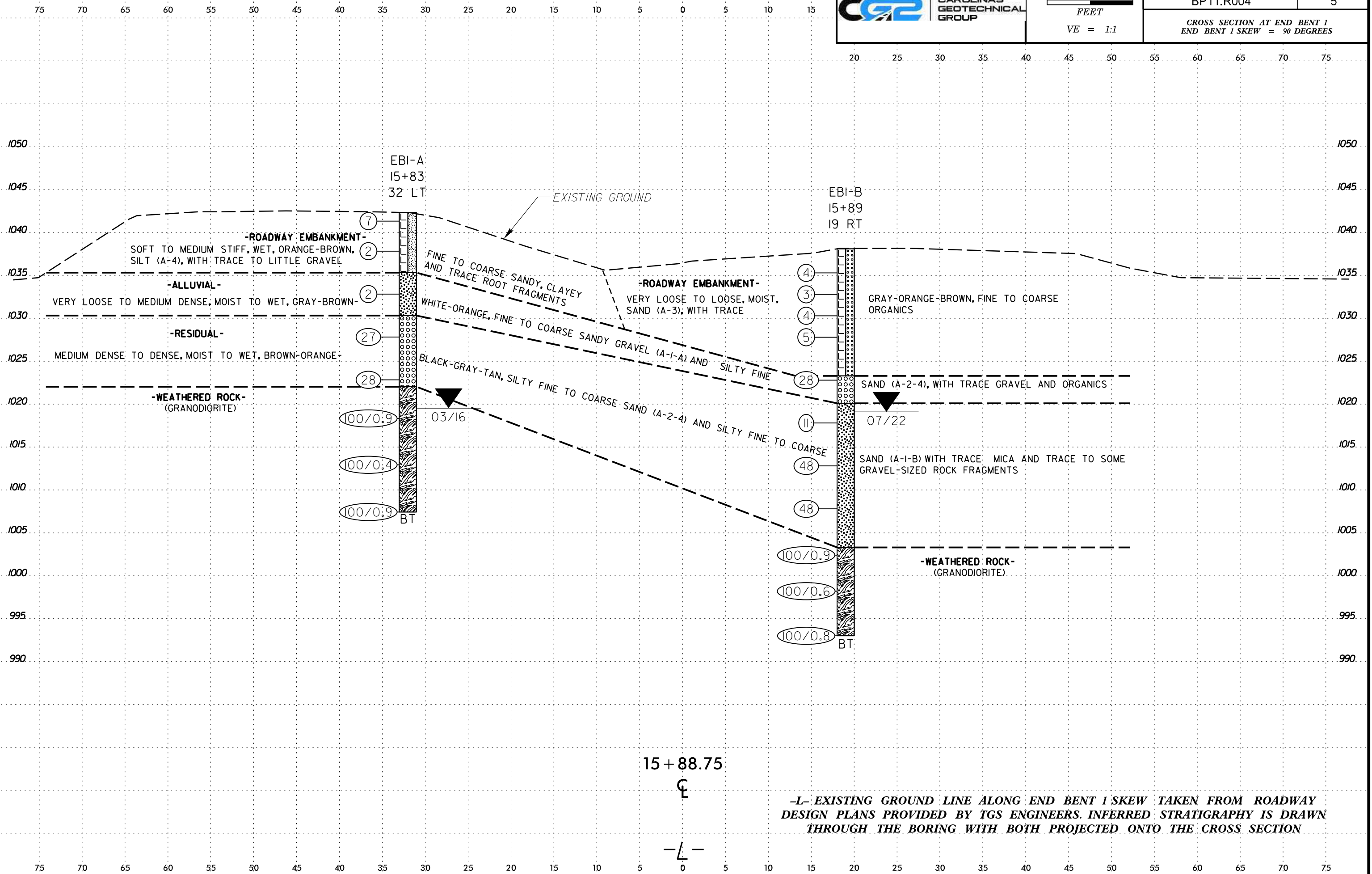
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GEOTECHNICAL
GROUP



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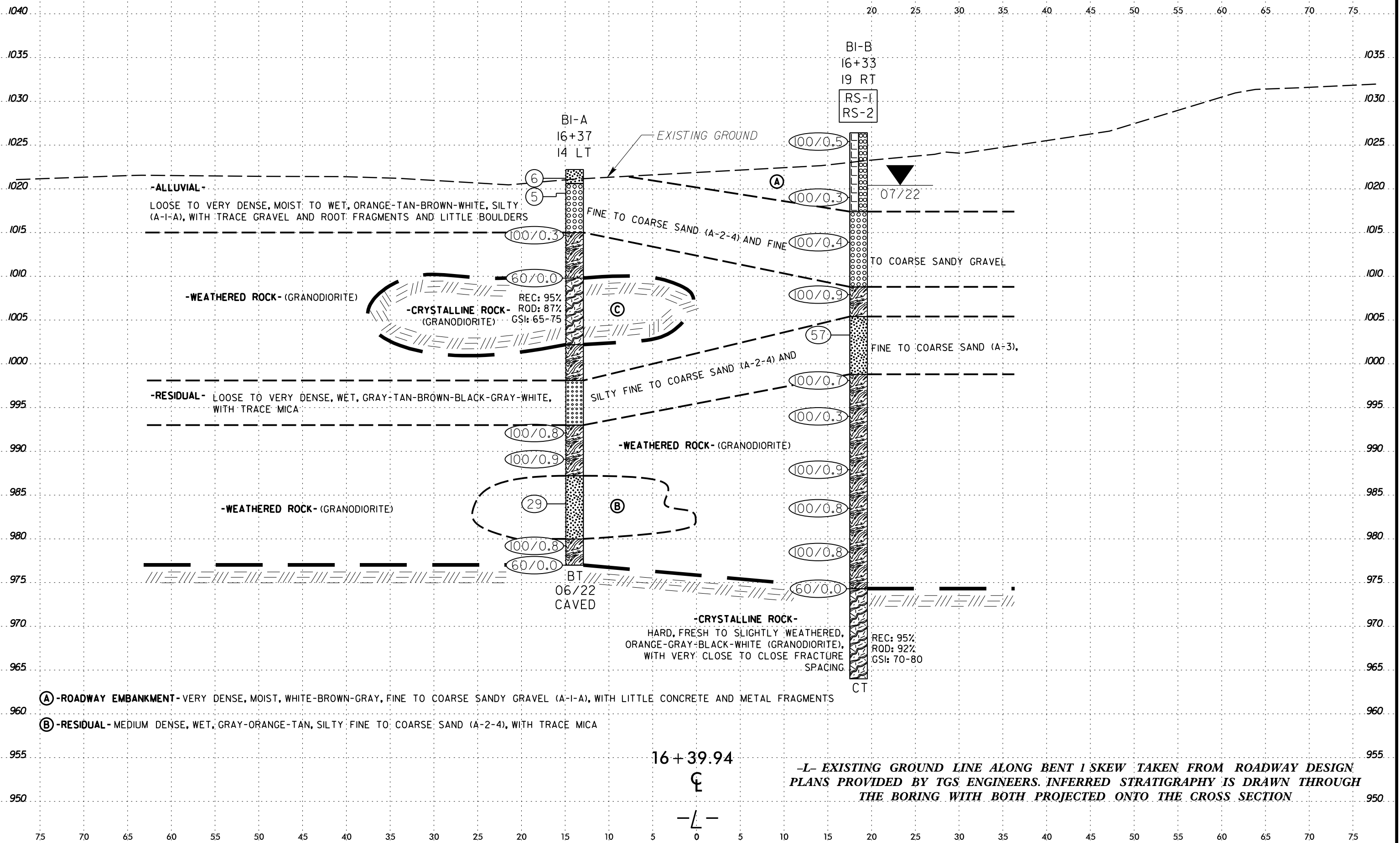
CROSS SECTION AT END BENT 1
END BENT 1 SKEW = 90 DEGREES



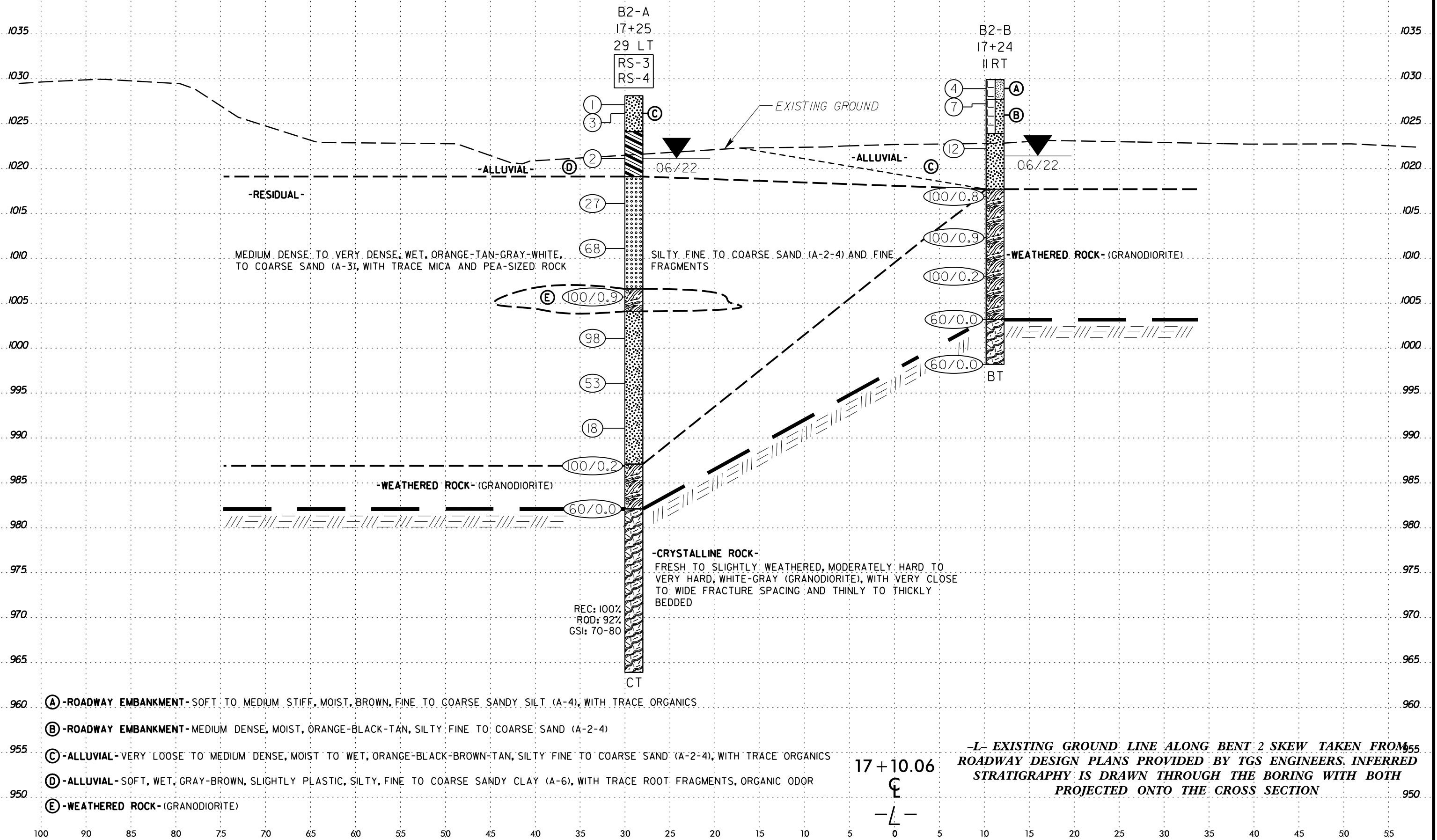
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Sierra Patterson AT DESK TOP-H35N1C1

-L- EXISTING GROUND LINE ALONG END BENT 1 SKEW TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

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 SierraPatterson



- (A) -ROADWAY EMBANKMENT- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE ORGANICS
- (B) -ROADWAY EMBANKMENT- MEDIUM DENSE, MOIST, ORANGE-BLACK-TAN, SILTY FINE TO COARSE SAND (A-2-4)
- (C) -ALLUVIAL- VERY LOOSE TO MEDIUM DENSE, MOIST TO WET, ORANGE-BLACK-BROWN-TAN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE ORGANICS
- (D) -ALLUVIAL- SOFT, WET, GRAY-BROWN, SLIGHTLY PLASTIC, SILTY, FINE TO COARSE SANDY CLAY (A-6), WITH TRACE ROOT FRAGMENTS, ORGANIC ODOR
- (E) -WEATHERED ROCK-(GRANODIORITE)

17+10.06
 L
 -L-

-L- EXISTING GROUND LINE ALONG BENT 2 SKEW TAKEN FROM 1955 ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16

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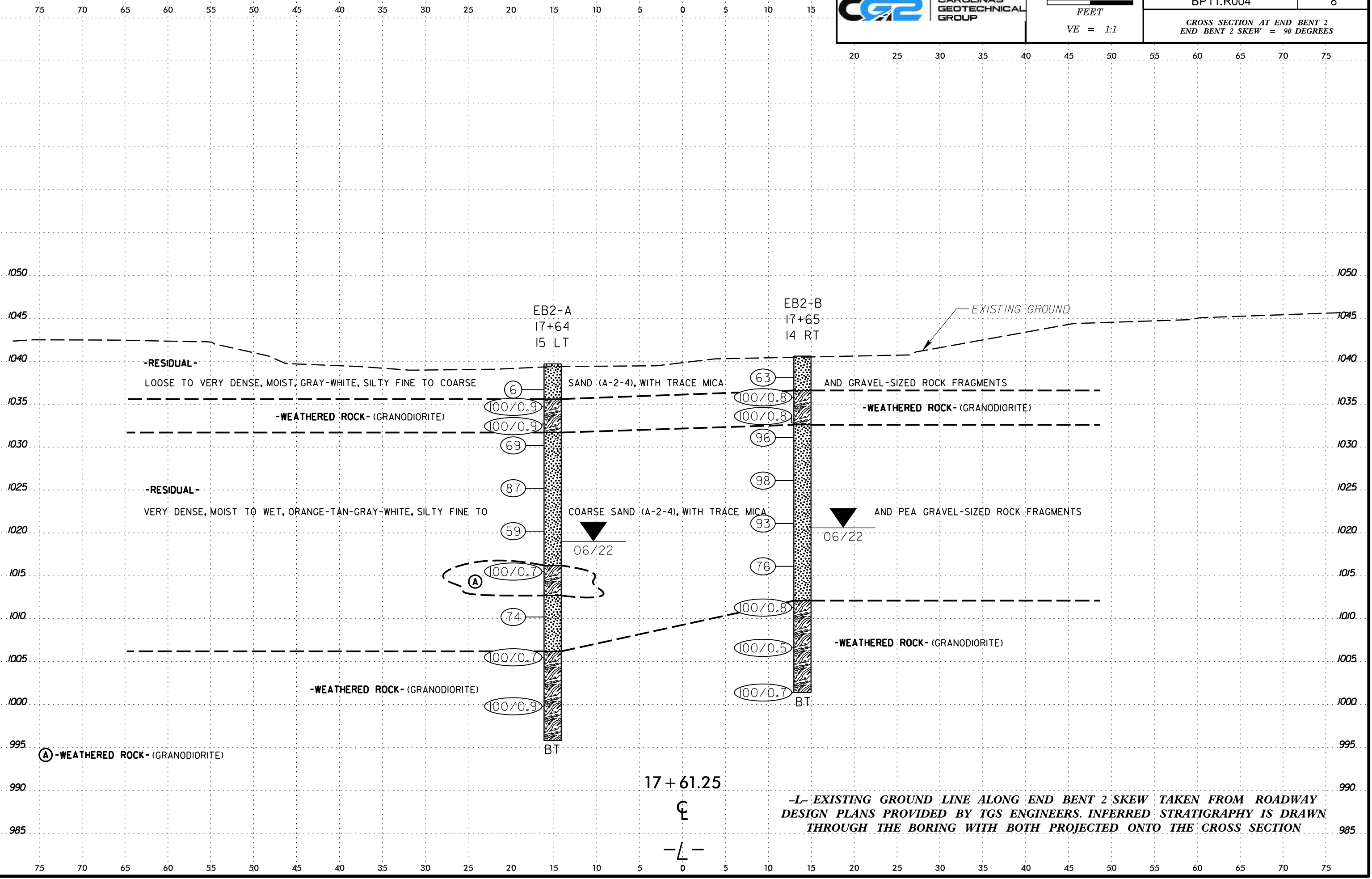
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PROJECT REFERENCE NO. SHEET NO.

BP11.R004

8

CROSS SECTION AT END BENT 2
END BENT 2 SKEW = 90 DEGREES



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Sierra Patterson

-L- EXISTING GROUND LINE ALONG END BENT 2 SKEW TAKEN FROM ROADWAY
DESIGN PLANS PROVIDED BY TGS ENGINEERS. INFERRED STRATIGRAPHY IS DRAWN
THROUGH THE BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST C. Wang										
SITE DESCRIPTION BRIDGE NO. 62 ON SR 1350 OVER STEWART'S CREEK							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 15+83		OFFSET 32 ft LT		ALIGNMENT N/A										
COLLAR ELEV. 1,042.3 ft		TOTAL DEPTH 34.9 ft		NORTHING 1,003,960		EASTING 1,515,952										
DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 80% 02/16/2016		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER D. Tignor		START DATE 03/23/16		COMP. DATE 03/23/16		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						
1045																
	1,042.3	0.0	2	4	3										1,042.3	0.0
1040	1,038.8	3.5	1	1	1											
	1,035.3	7.0														
1035	1,033.8	8.5	2	1	1											
	1,030.3	12.0														
1030	1,028.8	13.5	12	13	14											
	1,025.3	16.5														
1025	1,023.8	18.5	6	11	17											
	1,020.3	21.5														
1020	1,019.2	23.1	78	22/0.4												
	1,015.7	26.1														
1015	1,013.8	28.5	25	100/0.4												
	1,010.3	31.5														
1010	1,008.8	33.5	18	40	60/0.4											
	1,007.4	34.9														
Boring Terminated at Elevation 1,007.4 ft in WEATHERED ROCK (GRANO-DIORITE) NOTES: 1) 0.0'-0.2'= Surficial Organic Soil 2) SPT Drive at 23.1' in Case Boulders Present																

NCDOT BORE SINGLE B8941_GEO_BH_BRDG0062.GPJ_NC_DOT.GDT 9/20/22

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson										
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 15+89		OFFSET 19 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 1,038.1 ft		TOTAL DEPTH 45.1 ft		NORTHING 1,003,937		EASTING 1,515,998										
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER C. Odom		START DATE 07/01/22		COMP. DATE 07/01/22		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						
1040																
	1,038.1	0.0													1,038.1	0.0
1035	1,036.3	1.8	2	2	2											
	1,033.8	4.3	1	1	2											
1030	1,031.3	6.8	2	2	2											
	1,028.8	9.3	3	2	3											
1025	1,023.8	14.3	4	12	16											
	1,020.3	17.8														
1020	1,018.8	19.3	2	4	7											
	1,015.3	22.8														
1015	1,013.8	24.3	14	21	27											
	1,010.3	27.8														
1010	1,008.8	29.3	15	23	25											
	1,005.3	32.8														
1005	1,003.8	34.3	16	46	54/0.4											
	1,000.3	37.8														
1000	998.8	39.3	62	38/0.1												
	995.3	42.8														
995	993.8	44.3	42	58/0.3												
	993.0	45.1														
Boring Terminated at Elevation 993.0 ft In Weathered Rock (GRANODIORITE) SPT blow counts influenced by the presence of gravel at 14.3 feet Hard Drilling encountered from approximately 16.0 to 17.0 feet																

NCDOT BORE DOUBLE SURRY 62.GPJ_NC_DOT.GDT 10/27/22

GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson									
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)								
BORING NO. B1-A		STATION 16+37		OFFSET 14 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 1,022.2 ft		TOTAL DEPTH 45.2 ft		NORTHING 1,003,995		EASTING 1,515,997									
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022			DRILL METHOD SPT Core Boring			HAMMER TYPE Automatic									
DRILLER C. Odom		START DATE 06/30/22		COMP. DATE 06/30/22		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					
1025															
	1,022.2	0.0												1,022.2	0.0
			1	2	4										
1020	1,020.5	1.7	4	2	3									1,020.6	1.8
1015	1,015.0	7.2	100/0.3											1,015.0	7.2
1010	1,009.8	12.4	60/0.0											1,009.8	12.4
1005															
1000															
995	993.5	28.7	2	3	97/0.4									993.0	29.2
990	990.0	32.2	31	69/0.4										987.2	35.0
985	985.0	37.2	24	17	12									980.0	42.2
980	980.0	42.2	36	64/0.3										977.0	45.2
	977.0	45.2	60/0.0											977.0	45.2

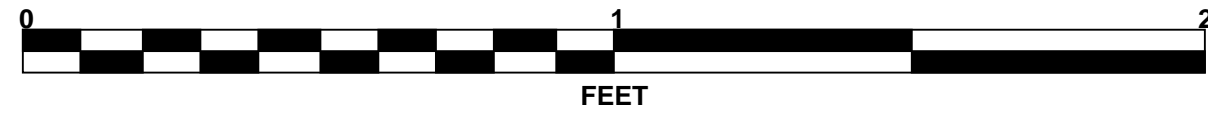
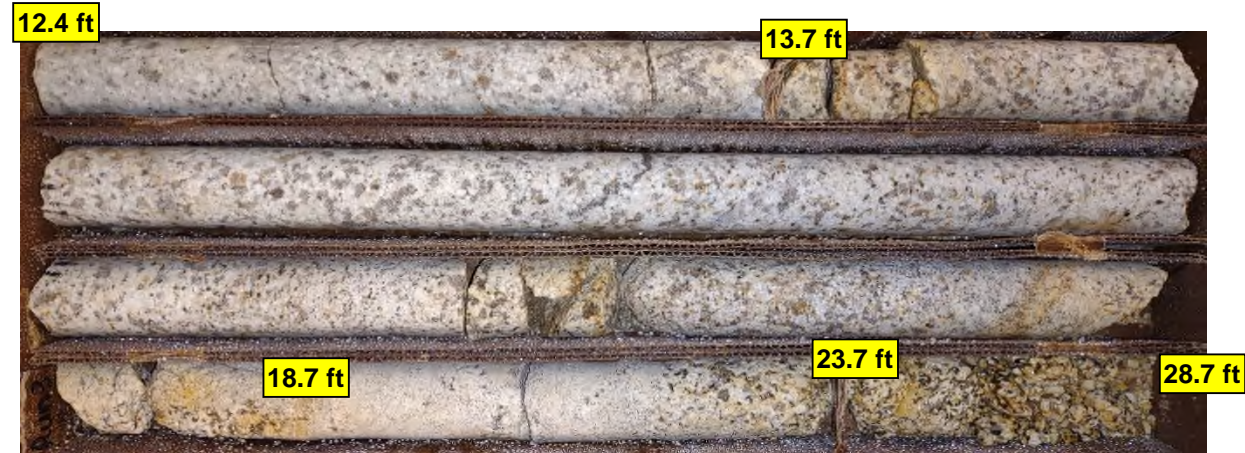
WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson						
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)					
BORING NO. B1-A		STATION 16+37		OFFSET 14 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 1,022.2 ft		TOTAL DEPTH 45.2 ft		NORTHING 1,003,995		EASTING 1,515,997						
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022			DRILL METHOD SPT Core Boring			HAMMER TYPE Automatic						
DRILLER C. Odom		START DATE 06/30/22		COMP. DATE 06/30/22		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	TOTAL RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
1009.8	1,009.8	12.4	1.3	N=60/0.0 8:05/1.0 1:03/0.3	(1.3) 100%	(1.3) 100%		(7.2) 95%	(6.6) 87%		Begin Coring @ 12.4 ft CRYSTALLINE ROCK Hard, Fresh, Black-Gray-White (GRANODIORITE), with very close to wide fracture spacing	12.4
1005	1,003.5	18.7	5.0	2:15/1.0 3:32/1.0 2:46/1.0 3:15/1.0 2:49/1.0	(4.8) 96%	(4.1) 82%					GSI: 65-75	
1000	998.5	23.7	5.0	2:00/1.0 1:52/1.0 1:32/1.0 1:15/1.0 1:17/1.0	(1.3) 26%	(1.2) 24%		(0.6) 15%	(0.0) 0%		WEATHERED ROCK Moderately to Completely Weathered, Soft, Black-Gray-White (GRANODIORITE), with very close to close fracture spacing	20.0
995	993.5	28.7	5.0	1:18/1.0 0:46/1.0 0:38/1.0 0:54/1.0 0:41/1.0	(0.4) 8%	(0.0) 0%		(0.0) 0%	(0.0) 0%		GSI: 15-20 RESIDUAL Loose, Gray-Brown-Tan, Fine to Coarse SAND (A-3)	24.1
990				N=100/0.8							WEATHERED ROCK Black-Gray-White, (GRANODIORITE)	29.2
985				N=100/0.9								35.0
980				N=29							RESIDUAL Medium Dense, Orange-Gray-Tan, Silty Fine to Coarse SAND (A-2-4), with trace mica	42.2
				N=100/0.8							WEATHERED ROCK White, (GRANODIORITE)	45.2
				N=60/0.0							Boring Terminated with Standard Penetration Test Refusal at Elevation 977.0 ft On Crystalline Rock (GRANODIORITE) Hard Drilling encountered from approximately 5.0 to 12.4 feet, 33.0 to 36.0 feet, and 44.0 to 45.2 feet Rock Coring performed from 12.4 to 28.7 feet Sand Seam from approximately 24.1 to 29.2 feet	

Replace Bridge No. 062 on SR 1350 (Red Brush Road) over Stewarts Creek, Surry County, NC

Rock Core Photographs

Boring: B1-A

12.4 to 28.7 Feet



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson									
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)								
BORING NO. B1-B		STATION 16+33		OFFSET 19 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 1,026.4 ft		TOTAL DEPTH 62.4 ft		NORTHING 1,003,974		EASTING 1,516,022									
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022		DRILL METHOD SPT Core Boring		HAMMER TYPE Automatic											
DRILLER C. Odom		START DATE 06/30/22		COMP. DATE 07/01/22		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					
1030															
1025	1,026.4	0.0	8	91	9/0.1							M	GROUND SURFACE	0.0	
1020	1,019.3	7.1										M	ROADWAY EMBANKMENT Very Dense, White-Brown-Gray, Fine to Coarse Sandy GRAVEL (A-1-a), with little concrete and metal fragments		
1015	1,014.3	12.1										W	ALLUVIAL Very Dense, Orange-White, GRAVEL (A-1-a), with little boulders		
1010	1,009.3	17.1	9	35	65/0.4							W	WEATHERED ROCK Black-Gray-White, (GRANODIORITE)	17.6	
1005	1,004.3	22.1	20	27	30							W	RESIDUAL Very Dense, Black-Gray-White, Silty Fine to Coarse SAND (A-2-4), with trace mica	21.0	
1000	999.3	27.1	24	62	38/0.2							W	WEATHERED ROCK Black-Gray-White, (GRANODIORITE)	27.6	
995	994.3	32.1													
990	989.3	37.1	31	44	56/0.4										
985	984.3	42.1	49	51/0.3											
980	979.3	47.1	50	50/0.3											
975	974.3	52.1													
970												RS-1	CRYSTALLINE ROCK Orange-Gray-Black-White, (GRANODIORITE)	52.1	
965												RS-2	CRYSTALLINE ROCK Orange-Gray-Black-White, (GRANODIORITE) REC: 95% RQD: 92% GSI: 80-90	62.4	
													Boring Terminated at Elevation 964.0 ft In Crystalline Rock (GRANODIORITE) Hard Drilling/boulders encountered from approximately 0.0 to 4.0 feet, 7.0 to 10.0 feet, and 12.0 to 14.0 feet		

NCDOT BORE DOUBLE SURRY 62.GPJ NC_DOT.GDT 10/27/22

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson						
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)					
BORING NO. B1-B		STATION 16+33		OFFSET 19 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 1,026.4 ft		TOTAL DEPTH 62.4 ft		NORTHING 1,003,974		EASTING 1,516,022						
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022		DRILL METHOD SPT Core Boring		HAMMER TYPE Automatic								
DRILLER C. Odom		START DATE 06/30/22		COMP. DATE 07/01/22		SURFACE WATER DEPTH N/A						
CORE SIZE NQ		TOTAL RUN 10.3 ft										
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
974.3	974.3	52.1	1.3	N=60/0.0 7:09/1.0 2:37/0.3	(0.8)	(0.5)		(9.8)	(9.5)		Begin Coring @ 52.1 ft	
970	973.0	53.4	5.0	6:20/1.0 4:14/1.0 4:16/1.0 6:05/1.0 8:25/1.0	100%	100%	RS-1				CRYSTALLINE ROCK Hard, Fresh to Slightly Weathered, Orange-Gray-Black-White (GRANODIORITE), with very close to close fracture spacing	52.1
965	968.0	58.4	4.0	10:54/1.0 6:13/1.0 19:21/1.0 19:08/1.0	100%	100%	RS-2				GSI: 80-90 RS-1: 54.7-55.3' Unit Weight: 162.4 pcf Unconfined Compressive Strength: 16,430 psi (2,366 ksf)	
	964.0	62.4									RS-2: 59.7-60.4' Unit Weight: 163.8 pcf Unconfined Compressive Strength: 18,940 psi (2,727 ksf) Boring Terminated at Elevation 964.0 ft In Crystalline Rock (GRANODIORITE)	62.4
											Hard Drilling/boulders encountered from approximately 0.0 to 4.0 feet, 7.0 to 10.0 feet, and 12.0 to 14.0 feet	

NCDOT BORE DOUBLE SURRY 62.GPJ NC_DOT.GDT 10/27/22

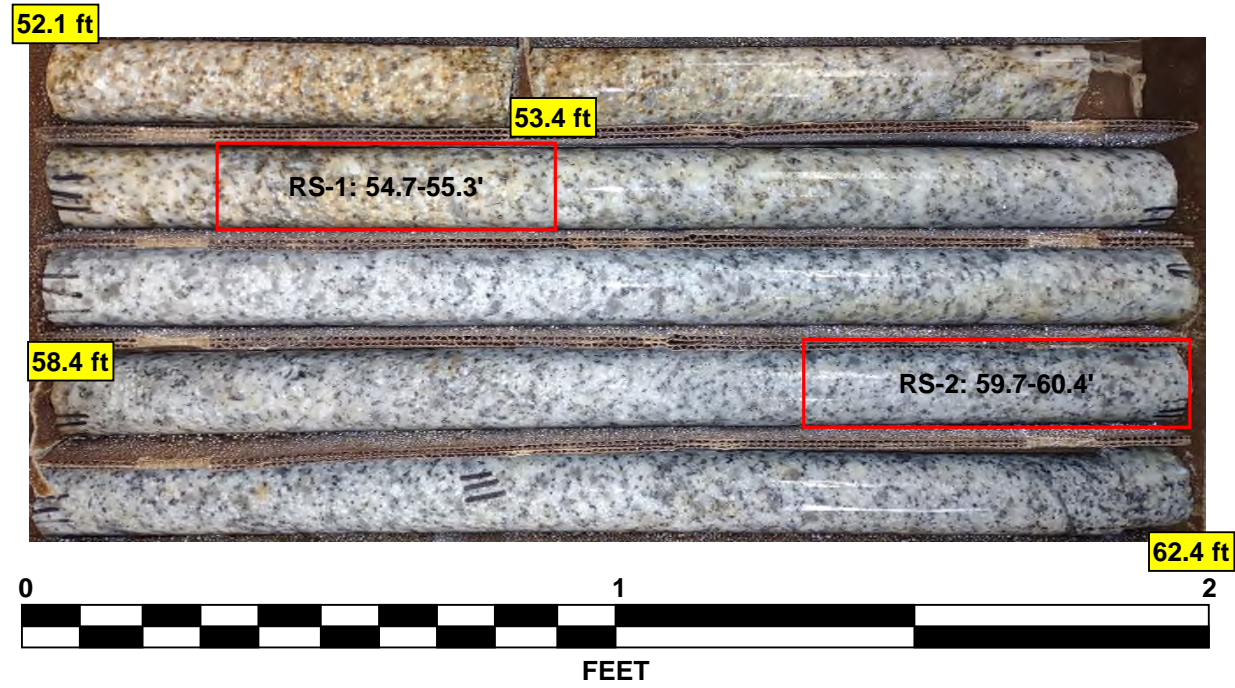


Replace Bridge No. 062 on SR 1350 (Red Brush Road) over Stewarts Creek, Surry County, NC

Rock Core Photographs

Boring: B1-B

52.1 to 62.4 Feet



GEOTECHNICAL BORING REPORT BORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson										
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)									
BORING NO. B2-A		STATION 17+25		OFFSET 29 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,028.1 ft		TOTAL DEPTH 64.2 ft		NORTHING 1,004,077		EASTING 1,516,033										
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022							DRILL METHOD SPT Core Boring									
DRILLER C. Odom		START DATE 06/28/22		COMP. DATE 06/29/22		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			
			0.5ft	0.5ft	0.5ft	0	25	50	75				100	ELEV. (ft)	DEPTH (ft)	
1030														1,028.1	0.0	GROUND SURFACE
1025	1,027.1	1.0	2	1	2							M		1,024.1	4.0	ALLUVIAL Very Loose, Brown-Tan, Silty Fine to Coarse SAND (A-2-4), with trace organics
1020	1,022.1	6.0	1	1	1							W		1,019.1	9.0	Soft, Gray-Brown, Slightly Plastic, Silty, Fine to Coarse SANDY CLAY (A-6), with trace root fragments, organic odor
1015	1,017.1	11.0	10	12	15							W				RESIDUAL Medium Dense to Very Dense, Gray-Tan, Fine to Coarse SAND (A-3), with trace mica
1010	1,012.1	16.0	20	32	36							W				
1005	1,007.1	21.0	20	36	64/0.4							W		1,006.6	21.5	WEATHERED ROCK White-Gray, (GRANODIORITE)
1000	1,002.1	26.0	30	54	44							W		1,004.1	24.0	RESIDUAL Medium Dense to Very Dense, Orange-Gray-White, Silty Fine to Coarse SAND (A-2-4), with trace mica and pea gravel-sized rock fragments
995	997.1	31.0	25	25	28							W				
990	992.1	36.0	5	7	11							W				
985	987.1	41.0	100/0.2									W		987.1	41.0	WEATHERED ROCK White-Gray, (GRANODIORITE)
980	982.1	46.0	60/0.0									W		982.1	46.0	CRYSTALLINE ROCK White-Gray, (GRANODIORITE)
975												RS-3				REC: 100% RQD: 92% GSI: 70-80
970												RS-4				
965														963.9	64.2	Boring Terminated at Elevation 963.9 ft In Crystalline Rock (GRANODIORITE) Hard Drilling encountered from approximately 22.0 to 23.0 feet Sandy Soil Seam from approximately 34.0 to 39.0 feet

NCDOT BORE DOUBLE SURRY 62.GPJ NC_DOT.GDT 10/27/22

GEOTECHNICAL BORING REPORT CORE LOG

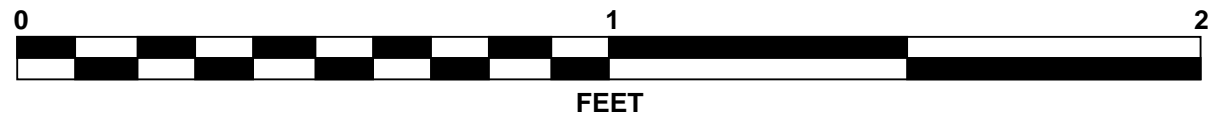
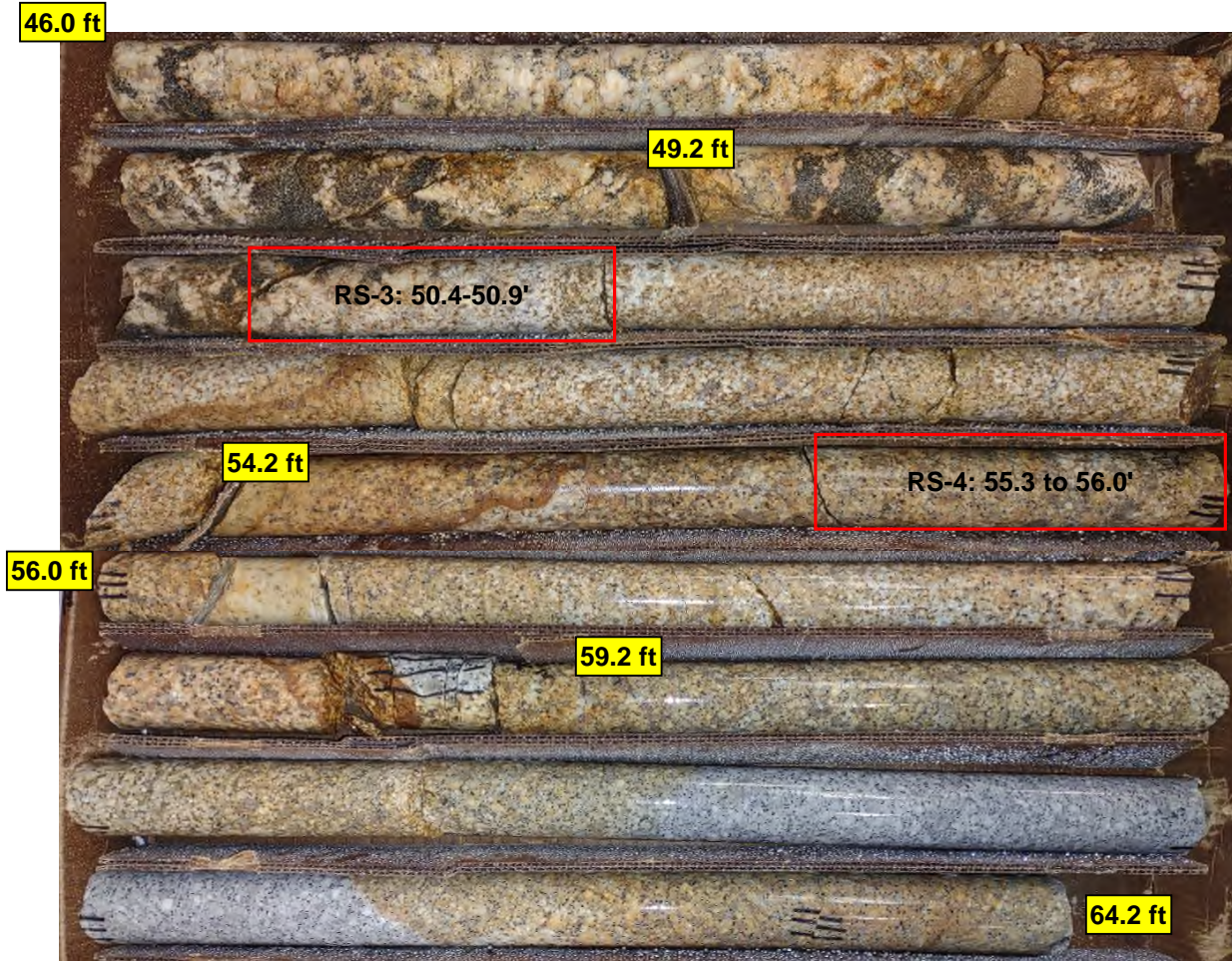
WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson						
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)					
BORING NO. B2-A		STATION 17+25		OFFSET 29 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 1,028.1 ft		TOTAL DEPTH 64.2 ft		NORTHING 1,004,077		EASTING 1,516,033						
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022							DRILL METHOD SPT Core Boring					
DRILLER C. Odom		START DATE 06/28/22		COMP. DATE 06/29/22		SURFACE WATER DEPTH N/A						
CORE SIZE NQ		TOTAL RUN 18.2 ft										
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC (ft)	RQD (ft)		REC (ft)	RQD (ft)			
982.1	982.1	46.0	3.2	N=60/0.0 3:10/1.0 3:07/1.0 0:21/0.2	(3.2)	(2.5)		(18.2)	(16.8)		Continued from previous page	
980	978.9	49.2	5.0	4:30/1.0 3:40/1.0 3:46/1.0 2:24/1.0 2:20/1.0	(5.0)	(4.6)	RS-3				CRISTALLINE ROCK Fresh to Slightly Weathered, Moderately Hard to Very Hard, White-Gray (GRANODIORITE), with very close to wide fracture spacing and thinly to thickly bedded	46.0
975	973.9	54.2	5.0	4:30/1.0 3:15/1.0 3:20/1.0 3:48/1.0 4:02/1.0	(5.0)	(4.7)	RS-4				GSI: 70-80 RS-3: 50.4-50.9' Unit Weight: 159.2 pcf Unconfined Compressive Strength: 4,760 psi (685 ksf)	
970	968.9	59.2	5.0	3:59/1.0 5:02/1.0 6:17/1.0 4:05/1.0 3:29/1.0	(5.0)	(5.0)					RS-4: 55.3-56.0' Unit Weight: 161.5 pcf Unconfined Compressive Strength: 16,060 psi (2,313 ksf)	
965	963.9	64.2									Boring Terminated at Elevation 963.9 ft In Crystalline Rock (GRANODIORITE) Hard Drilling encountered from approximately 22.0 to 23.0 feet Sandy Soil Seam from approximately 34.0 to 39.0 feet	64.2

Replace Bridge No. 062 on SR 1350 (Red Brush Road) over Stewarts Creek, Surry County, NC

Rock Core Photographs

Boring: B2-A

46.0 to 64.2 Feet



GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson											
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek						GROUND WTR (ft)											
BORING NO. B2-B		STATION 17+24		OFFSET 11 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 1,029.9 ft		TOTAL DEPTH 31.7 ft		NORTHING 1,004,054		EASTING 1,516,066											
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic													
DRILLER C. Odom		START DATE 06/28/22		COMP. DATE 06/28/22		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			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
1030	1,029.9	0.0	2	1	3										1,029.9	0.0	GROUND SURFACE
	1,028.2	1.7	2	4	3										1,027.7	2.2	ROADWAY EMBANKMENT Soft to Medium Stiff, Brown, Fine to Coarse Sandy SILT (A-4), with trace organics
1025															1,023.9	6.0	Loose, Orange-Black-Tan, Silty Fine to Coarse SAND (A-2-4)
	1,023.2	6.7	2	3	9												ALLUVIAL Medium Dense, Orange-Black-Tan, Silty Fine to Coarse SAND (A-2-4), with trace mica
1020																	
	1,018.2	11.7	28	53	47/0.3										1,017.7	12.2	WEATHERED ROCK Gray-White, (GRANODIORITE)
1015																	
	1,013.2	16.7	36	64/0.4													
1010																	
	1,008.2	21.7	100/0.2														
1005																	
	1,003.2	26.7	60/0.0												1,003.2	26.7	CRYSTALLINE ROCK Gray-White, (GRANODIORITE)
1000																	
	998.2	31.7	60/0.0												998.2	31.7	Boring Terminated at Elevation 998.2 ft In Crystalline Rock (GRANODIORITE)

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson											
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek						GROUND WTR (ft)											
BORING NO. EB2-A		STATION 17+64		OFFSET 15 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 1,039.7 ft		TOTAL DEPTH 43.9 ft		NORTHING 1,004,101		EASTING 1,516,066											
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic													
DRILLER C. Odom		START DATE 06/28/22		COMP. DATE 06/28/22		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			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
1040															1,039.7	0.0	GROUND SURFACE
	1,037.7	2.0															RESIDUAL Loose to Medium Dense, Gray-White, Silty Fine to Coarse SAND (A-2-4), with trace mica
1035															1,035.6	4.1	WEATHERED ROCK Gray-Tan, (GRANODIORITE)
	1,033.6	6.1	39	61/0.4											1,031.7	8.0	RESIDUAL Very Dense, Gray-White-Orange, Silty Fine to Coarse SAND (A-2-4), with trace mica
1030																	
	1,031.2	8.5	41	30	39												
1025																	
	1,026.2	13.5	17	36	51												
1020																	
	1,021.2	18.5	21	29	30												
1015																	
	1,016.2	23.5	56	44/0.2											1,016.2	23.5	WEATHERED ROCK Gray-White, (GRANODIORITE)
1010																	
	1,011.2	28.5	23	33	41										1,012.7	27.0	RESIDUAL Very Dense, Orange-Gray-Tan, Silty Fine to Coarse SAND (A-2-4), with trace mica and pea-sized rock fragments
1005																	
	1,006.2	33.5	55	45/0.2											1,006.2	33.5	WEATHERED ROCK Gray-White, (GRANODIORITE)
1000																	
	1,001.2	38.5	27	49	51/0.4												
	996.2	43.5	100/0.4												995.8	43.9	Boring Terminated at Elevation 995.8 ft In Weathered Rock (GRANODIORITE) Hard Drilling encountered from approximately 3.0 to 8.0 feet

NCDOT BORE DOUBLE SURRY 62.GPJ NC_DOT.GDT 9/15/22

GEOTECHNICAL BORING REPORT

BORE LOG

WBS BP11.R004		TIP SF-850062		COUNTY SURRY		GEOLOGIST S. N. Patterson											
SITE DESCRIPTION Replace Bridge No. 062 on SR 1350 over Stewarts Creek							GROUND WTR (ft)										
BORING NO. EB2-B		STATION 17+65		OFFSET 14 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 1,040.6 ft		TOTAL DEPTH 39.2 ft		NORTHING 1,004,086		EASTING 1,516,091											
DRILL RIGHAMMER EFF./DATE CG20446 Diedrich D50 87% 05/10/2022				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER C. Odom		START DATE 06/27/22		COMP. DATE 06/27/22		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			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
1045																	
1040															1,040.6	GROUND SURFACE	0.0
	1,039.1	1.5	19	22	41								M				
	1,036.6	4.0	41	59/0.3											1,036.6	RESIDUAL Very Dense, Gray-White, Silty Fine to Coarse SAND (A-2-4), with trace mica and gravel-sized rock fragments	4.0
1035																	
	1,034.1	6.5	35	61	39/0.3												
	1,032.1	8.5	30	47	49										1,032.6	WEATHERED ROCK Gray-White, (GRANODIORITE)	8.0
1030																	
	1,027.1	13.5	23	36	62												
1025																	
	1,022.1	18.5	12	32	61												
1020																	
	1,017.1	23.5	19	27	49												
1015																	
	1,012.1	28.5	40	60/0.3											1,012.1	WEATHERED ROCK Gray-White, (GRANODIORITE)	28.5
1010																	
	1,007.1	33.5	100/0.5														
1005																	
	1,002.1	38.5	61	39/0.2											1,001.4	Boring Terminated at Elevation 1,001.4 ft In Weathered Rock (GRANODIORITE)	39.2

NCDOT BORE DOUBLE SURRY 62.GPJ NC_DOT.GDT 9/13/22

ROCK TEST RESULTS

<i>SAMPLE NO.</i>	<i>BORING</i>	<i>STATION</i>	<i>OFFSET</i>	<i>DEPTH INTERVAL</i>	<i>ROCK TYPE</i>	<i>UNIT WEIGHT (PCF)</i>	<i>UNCONFINED COMPRESSIVE STRENGTH</i>
<i>RS-1</i>	<i>B1-B</i>	<i>16+33 -L-</i>	<i>19' RT</i>	<i>54.7 - 55.3'</i>	<i>GRANODIORITE</i>	<i>162.4</i>	<i>16,430 psi / 2,366 ksf</i>
<i>RS-2</i>	<i>B1-B</i>	<i>16+33 -L-</i>	<i>19' RT</i>	<i>59.7 - 60.4'</i>	<i>GRANODIORITE</i>	<i>163.8</i>	<i>18,940 psi / 2,727 ksf</i>
<i>RS-3</i>	<i>B2-A</i>	<i>17+25 -L-</i>	<i>29' LT</i>	<i>50.4 - 50.9'</i>	<i>GRANODIORITE</i>	<i>159.2</i>	<i>4,760 psi / 685 ksf</i>
<i>RS-4</i>	<i>B2-A</i>	<i>17+25 -L-</i>	<i>29' LT</i>	<i>55.3 - 56.0'</i>	<i>GRANODIORITE</i>	<i>161.5</i>	<i>16,060 psi / 2,313 ksf</i>

LAB TESTING PERFORMED BY NCDOT LAB CERT NO. 117-1104

SITE PHOTOS



PHOTO #1: NORTH EAST SIDE OF EXISTING BRIDGE LOOKING WEST (DOWNSTATION)



PHOTO #2: NORTH EAST END OF BENT 2 SIDE OF EXISTING BRIDGE LOOKING SOUTHWEST (DOWNSTATION)