

REFERENCE: B-5825

PROJECT: 45778

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY YADKIN
PROJECT DESCRIPTION BRIDGE NO. 35 ON
NC 67 OVER YADKIN RIVER

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
2A	GSI SUPPLEMENTAL LEGEND
3-4	SITE PLAN
5-6	PROFILE
7-12	CROSS-SECTIONS
13-45	BORE LOGS CORE LOGS AND CORE PHOTOGRAPHS
46	LABORATORY RESULTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5825	1	46

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

J.K. STICKNEY
C.L. SMITH
B.E. FOSTER

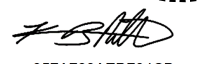
INVESTIGATED BY J.K. STICKNEY
DRAWN BY S. PAPKE/C. DRISCOLL
CHECKED BY J.E. BEVERLY
SUBMITTED BY K.B. MILER
DATE NOVEMBER 2019

Prepared in the Office of:



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Bright People. Right Solutions.
7343 WEST FRIENDLY AVE.
GREENSBORO, NC 27409
NC FIRM LICENSE NO. F-132

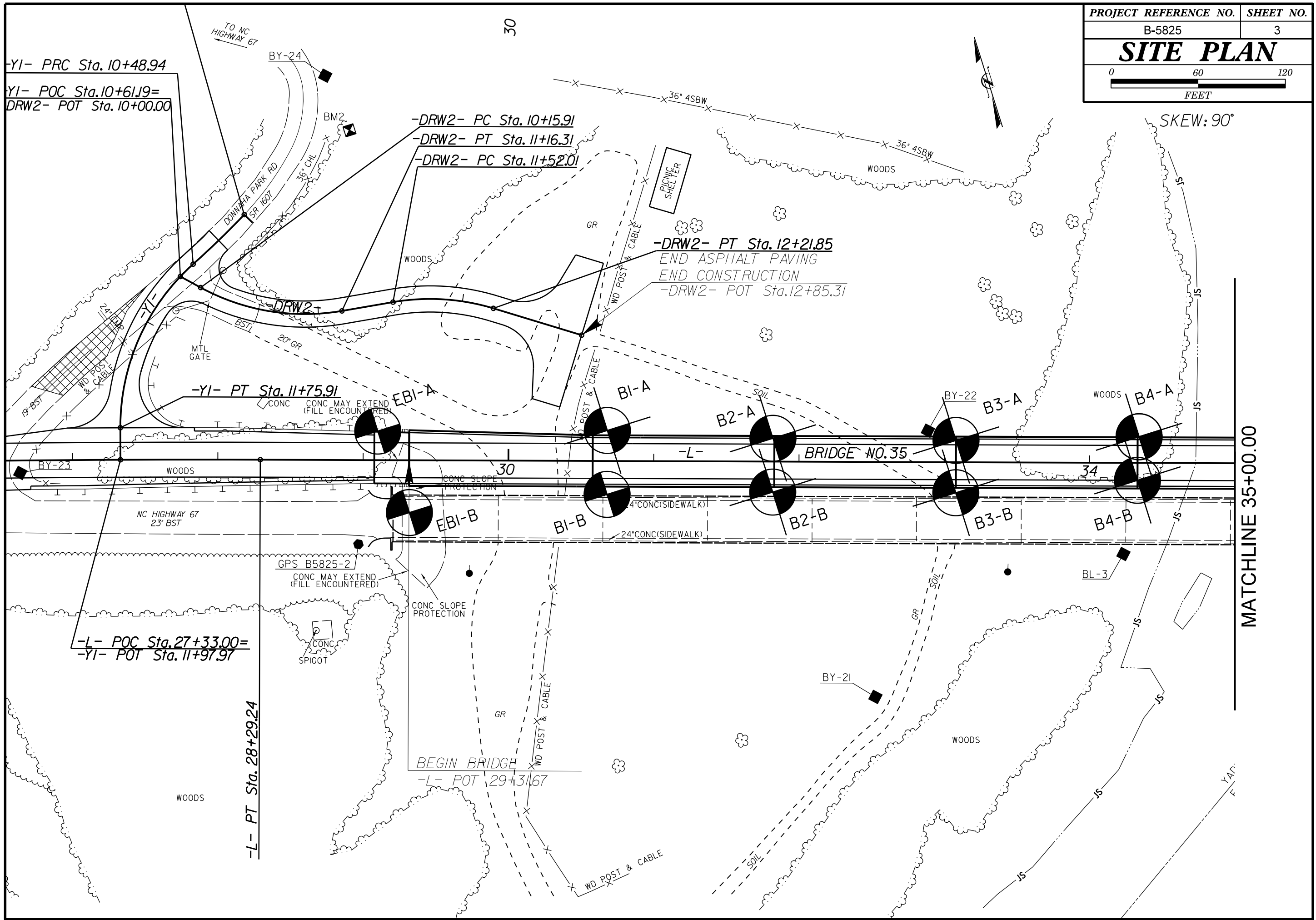


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SIGNATURE DATE
**DOCUMENT NOT CONSIDERED FINAL
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, 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 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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>																																																																										
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<p>GROUND WATER</p> <p>▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ▽ PW STATIC WATER LEVEL AFTER 24 HOURS ▽ PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA ○ SPRING OR SEEP</p>																																																																										
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<p>RECOMMENDATION SYMBOLS</p> <p>⊗ UNDERCUT ⊗ UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE ⊗ UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p> <p>⊗ SHALLOW UNDERCUT ⊗ UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</p>																																																																										
<p>ABBREVIATIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>AR - AUGER REFUSAL</td> <td>MED. - MEDIUM</td> <td>VST - VANE SHEAR TEST</td> </tr> <tr> <td>BT - BORING TERMINATED</td> <td>MICA - MICACEOUS</td> <td>WEA. - WEATHERED</td> </tr> <tr> <td>CL. - CLAY</td> <td>MOD. - MODERATELY</td> <td>W - UNIT WEIGHT</td> </tr> <tr> <td>CPT - CONE PENETRATION TEST</td> <td>NP - NON PLASTIC</td> <td>W_g - DRY UNIT WEIGHT</td> </tr> <tr> <td>CSE. - COARSE</td> <td>ORG. - ORGANIC</td> <td></td> </tr> <tr> <td>DMT - DILATOMETER TEST</td> <td>PMT - PRESSUREMETER TEST</td> <td>SAMPLE ABBREVIATIONS</td> </tr> <tr> <td>DPT - DYNAMIC PENETRATION TEST</td> <td>SAP. - SAPROLITIC</td> <td>S - BULK</td> </tr> <tr> <td>e - VOID RATIO</td> <td>SD. - SAND, SANDY</td> <td>SS - SPLIT SPOON</td> </tr> <tr> <td>F - FINE</td> <td>SL. - SILT, SILTY</td> <td>ST - SHELBY TUBE</td> </tr> <tr> <td>FOSS. - FOSSILIFEROUS</td> <td>SLI. - SLIGHTLY</td> <td>RS - ROCK</td> </tr> <tr> <td>FRAC. - FRACTURED, FRACTURES</td> <td>TCR - TRICONE REFUSAL</td> <td>RT - RECOMPACTED TRIAXIAL</td> </tr> <tr> <td>FRAGS. - FRAGMENTS</td> <td>w - MOISTURE CONTENT</td> <td>CBR - CALIFORNIA BEARING RATIO</td> </tr> <tr> <td>HI. - HIGHLY</td> <td>V - VERY</td> <td></td> </tr> </table>				AR - AUGER REFUSAL	MED. - MEDIUM	VST - VANE SHEAR TEST	BT - BORING TERMINATED	MICA - MICACEOUS	WEA. - WEATHERED	CL. - CLAY	MOD. - MODERATELY	W - UNIT WEIGHT	CPT - CONE PENETRATION TEST	NP - NON PLASTIC	W _g - DRY UNIT WEIGHT	CSE. - COARSE	ORG. - ORGANIC		DMT - DILATOMETER TEST	PMT - PRESSUREMETER TEST	SAMPLE ABBREVIATIONS	DPT - DYNAMIC PENETRATION TEST	SAP. - SAPROLITIC	S - BULK	e - VOID RATIO	SD. - SAND, SANDY	SS - SPLIT SPOON	F - FINE	SL. - SILT, SILTY	ST - SHELBY TUBE	FOSS. - FOSSILIFEROUS	SLI. - SLIGHTLY	RS - ROCK	FRAC. - FRACTURED, FRACTURES	TCR - TRICONE REFUSAL	RT - RECOMPACTED TRIAXIAL	FRAGS. - FRAGMENTS	w - MOISTURE CONTENT	CBR - CALIFORNIA BEARING RATIO	HI. - HIGHLY	V - VERY																																	
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e - VOID RATIO	SD. - SAND, SANDY	SS - SPLIT SPOON																																																																								
F - FINE	SL. - SILT, SILTY	ST - SHELBY TUBE																																																																								
FOSS. - FOSSILIFEROUS	SLI. - SLIGHTLY	RS - ROCK																																																																								
FRAC. - FRACTURED, FRACTURES	TCR - TRICONE REFUSAL	RT - RECOMPACTED TRIAXIAL																																																																								
FRAGS. - FRAGMENTS	w - MOISTURE CONTENT	CBR - CALIFORNIA BEARING RATIO																																																																								
HI. - HIGHLY	V - VERY																																																																									
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<p>INDURATION</p> <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.</p> <p>MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																										
<p>TERMS AND DEFINITIONS</p> <p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.</p> <p>AQUIFER - A WATER BEARING FORMATION OR STRATA.</p> <p>ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p>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.</p> <p>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.</p> <p>CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p>COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p>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.</p> <p>DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p>DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p>DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p>FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p>FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p>FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL.</p> <p>FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p>FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p>JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p>LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p>LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p>MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p>PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p>RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p>ROCK QUALITY DESIGNATION (ROD) - 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.</p> <p>SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p>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 INTRUDED ROCKS.</p> <p>SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p>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 OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.</p> <p>STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p>STRATA ROCK QUALITY DESIGNATION (SROD) - 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.</p> <p>TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																										
<p>BENCH MARK: SEE NOTES</p> <p style="text-align: right;">ELEVATION: N/A FEET</p>																																																																										
<p>NOTES: FIAD - FILLED IMMEDIATELY AFTER DRILLING</p> <p>B5825-2 GPS AT STA. 18+18.53 -L- (900,836 FT. N., 1,576,810 FT. E.) ELEVATION: 769.45</p> <p>BL-4 AT STA. 29+61.97 -L- (900,488 FT. N., 1,577,899 FT. E.) ELEVATION: 769.60</p> <p>BY-26 AT STA. 12+13.49 -L- (900,709 FT. N., 1,578,216 FT. E.) ELEVATION: 756.60</p>																																																																										
DATE: 8-15-14																																																																										



MATCHLINE 35+00.00

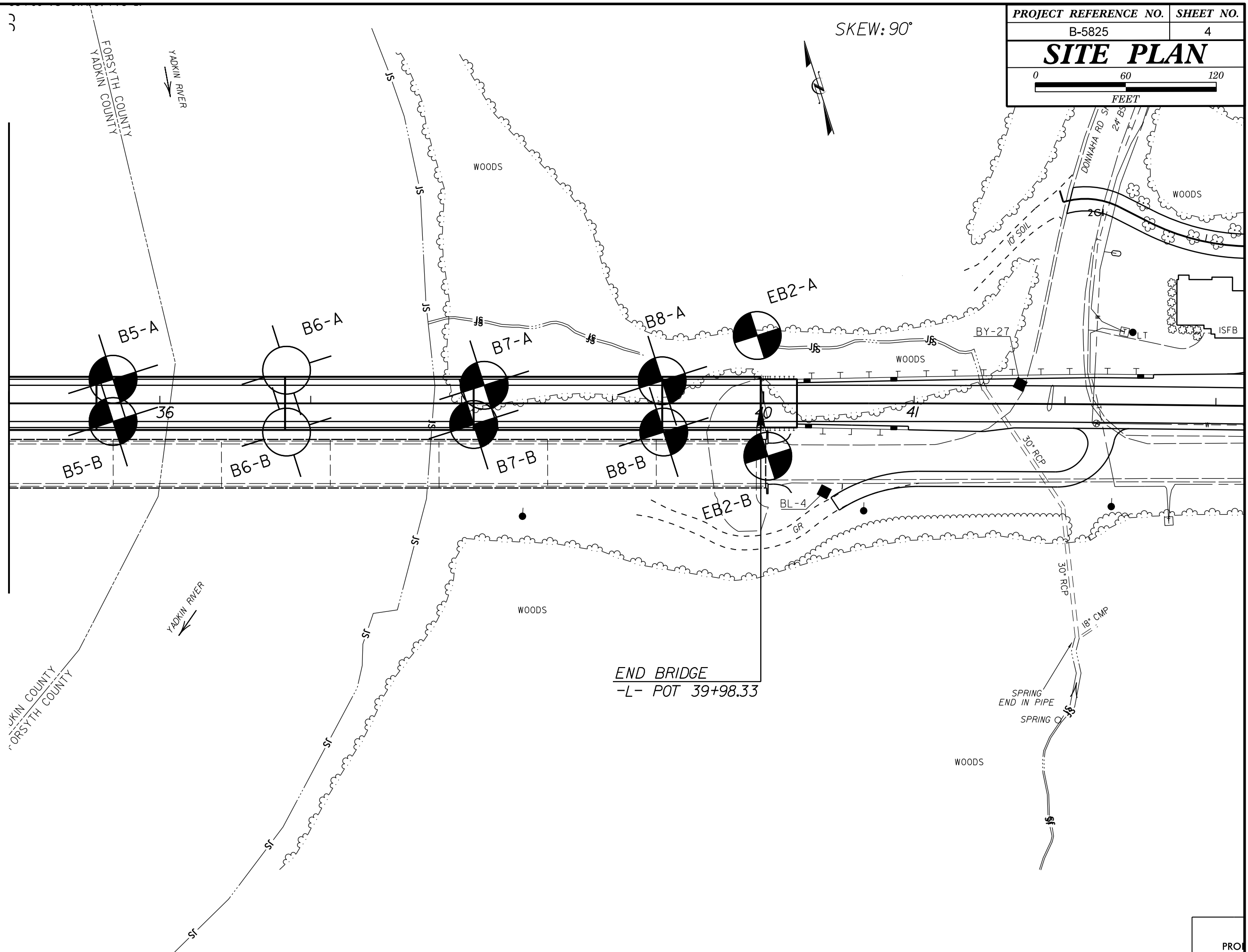
SKEW: 90°

PROJECT REFERENCE NO.	SHEET NO.
B-5825	4
SITE PLAN	
 0 60 120 FEET	

SKEW: 90°

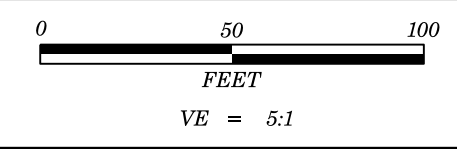


MATCHLINE STA. 35+00.00



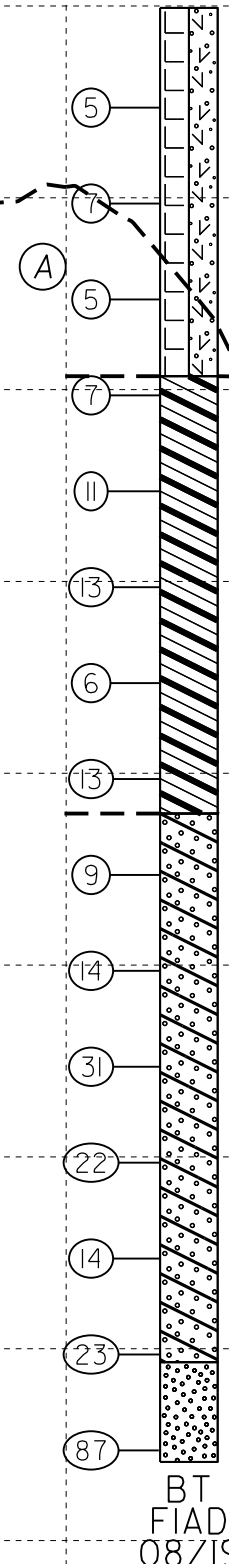
END BRIDGE
-L- POT 39+98.33

PRO



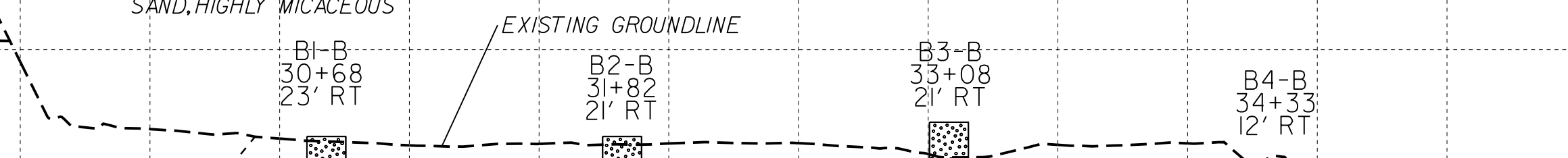
780
770
760
750
740
730
720
710
700
690
680

EBI-B
29+32
36' RT



- (A) **ROADWAY EMBANKMENT:**
MOIST, MEDIUM STIFF, TAN TO ORANGE,
CLAYEY SILT, HIGHLY MICACEOUS
- (B) **ALLUVIAL:**
MOIST, MEDIUM STIFF
TO STIFF, BROWN, GRAY,
AND ORANGE, SANDY CLAY
WITH TRACE MICA AND
GRAVEL LAYER
- (C) **RESIDUAL:**
MOIST, LOOSE TO VERY DENSE,
TAN, YELLOW,
ORANGE, GRAY, AND WHITE
CLAYEY FINE SAND TO SILTY
SAND, HIGHLY MICACEOUS

- (D) **ALLUVIAL:**
MOIST, VERY LOOSE TO MEDIUM DENSE,
BROWN, TAN, GRAY, AND ORANGE,
SILTY FINE SAND TO SANDY GRAVEL
WITH TRACE MICA AND ROUNDED QUARTZ FRAGMENTS
- (E) **RESIDUAL:**
DRY, BROWN, FINE SANDY GRAVEL
- (F) **CRYSTALLINE ROCK:**
GRANITIC GNEISS

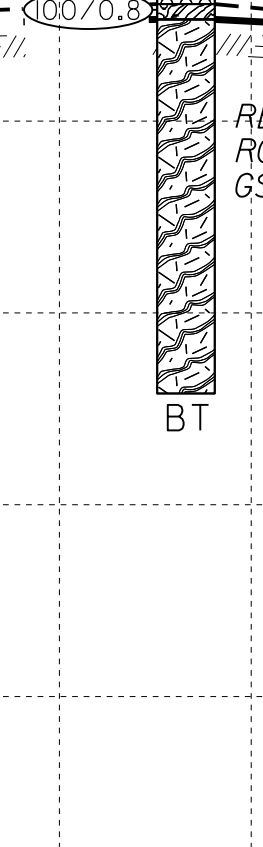
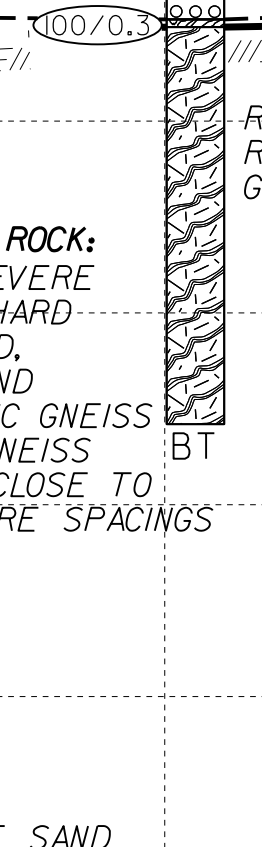
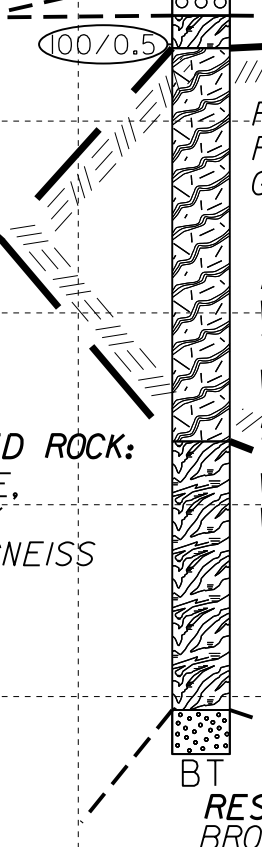
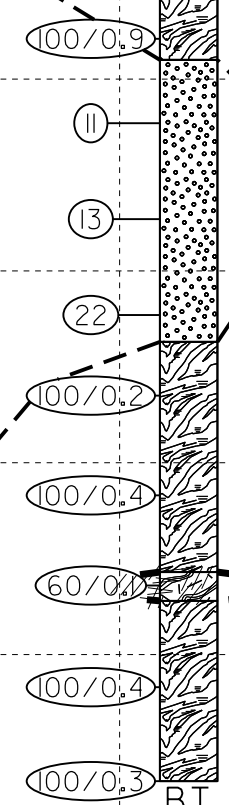
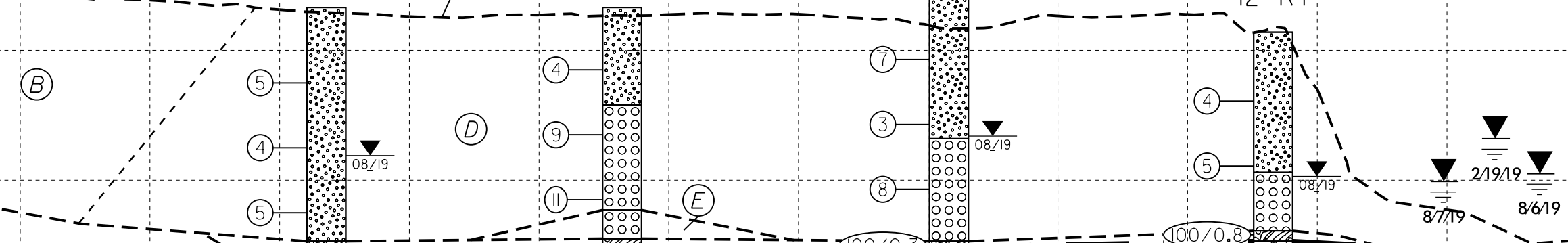


BI-B
30+68
23' RT

B2-B
31+82
21' RT

B3-B
33+08
21' RT

B4-B
34+33
12' RT



WEATHERED ROCK:
GRAY, WHITE,
AND BLACK
GRANITIC GNEISS

CRYSTALLINE ROCK:
FRESH TO SEVERE
WEATHERING, HARD
TO VERY HARD,
WHITE, GRAY, AND
BLACK, GRANITIC GNEISS
TO BIOTITE GNEISS
WITH VERY CLOSE TO
WIDE FRACTURE SPACINGS

RESIDUAL:
BROWN, SILTY FINE SAND

REC: 78%
RQD: 49%
GSI: 80-85

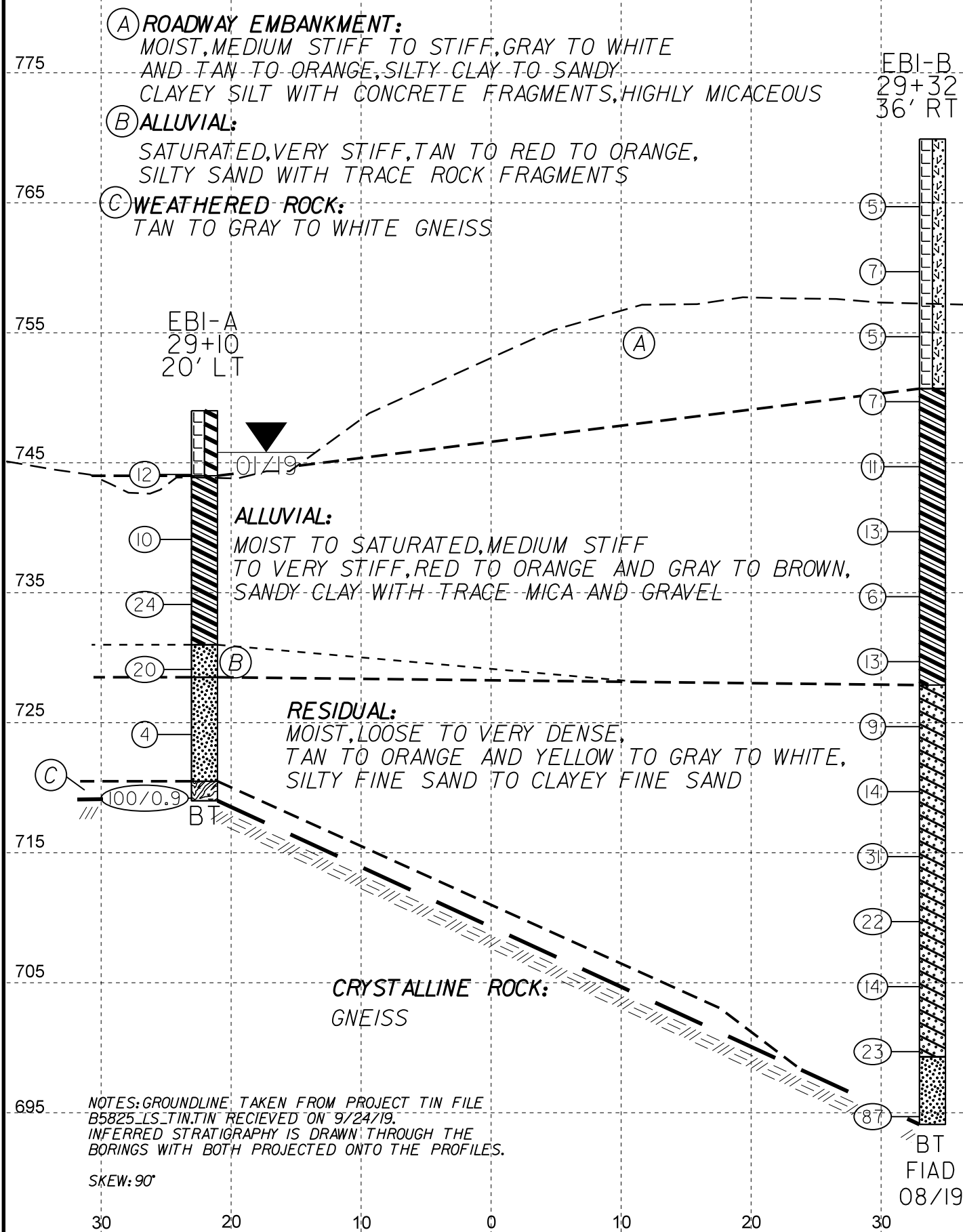
REC: 93%
RQD: 80%
GSI: 85-95

REC: 95%
RQD: 88%
GSI: 90-94

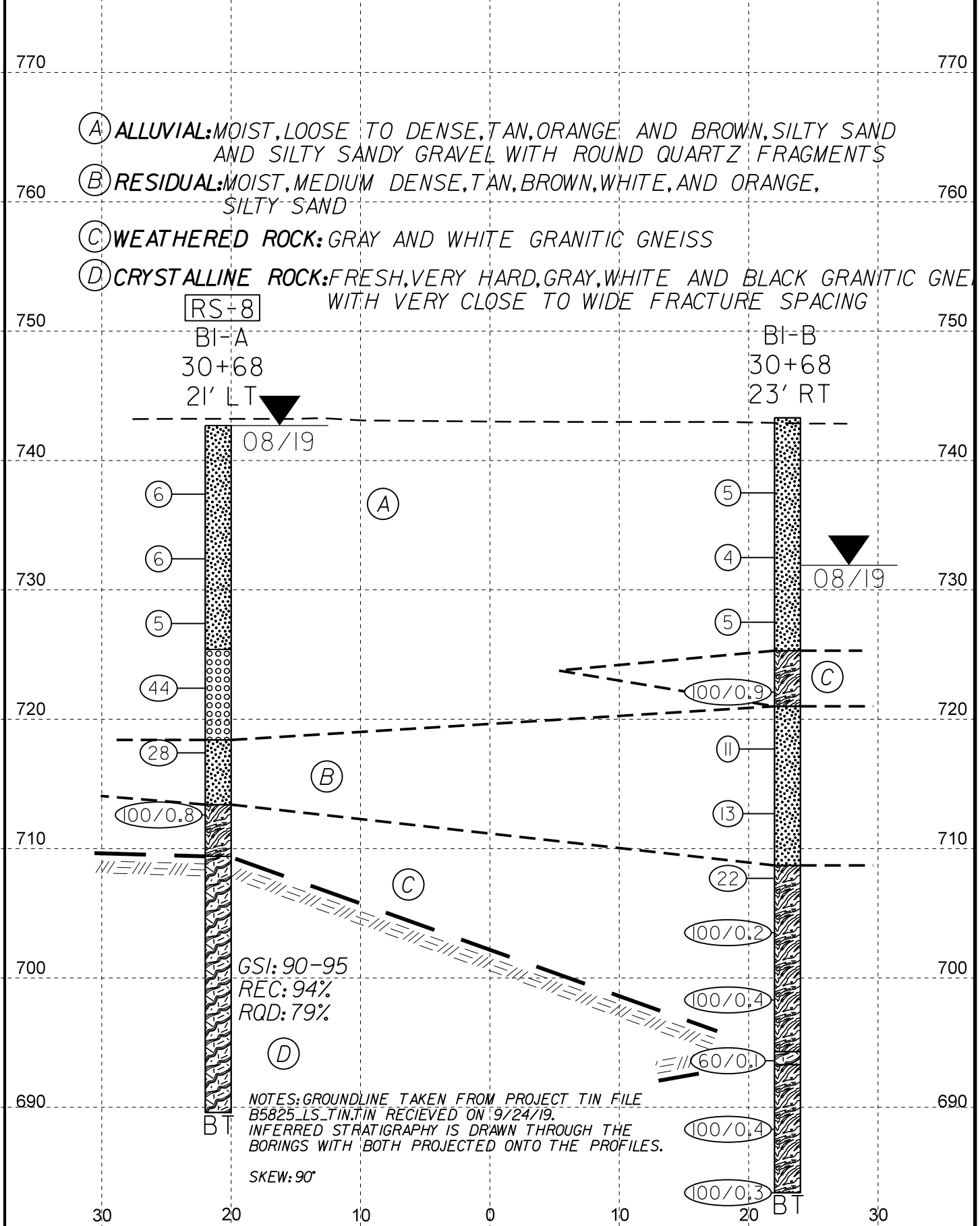
MATCHLINE STA. 35+50.00

NOTES: GROUNDLINE TAKEN FROM PROJECT
TIN FILE B5825_LS_TIN.TIN RECEIVED
ON 9/24/19.

28+00 28+50 29+00 29+50 31+00 31+50 32+00 32+50 33+00 33+50 34+00 34+50 35+00 35+50

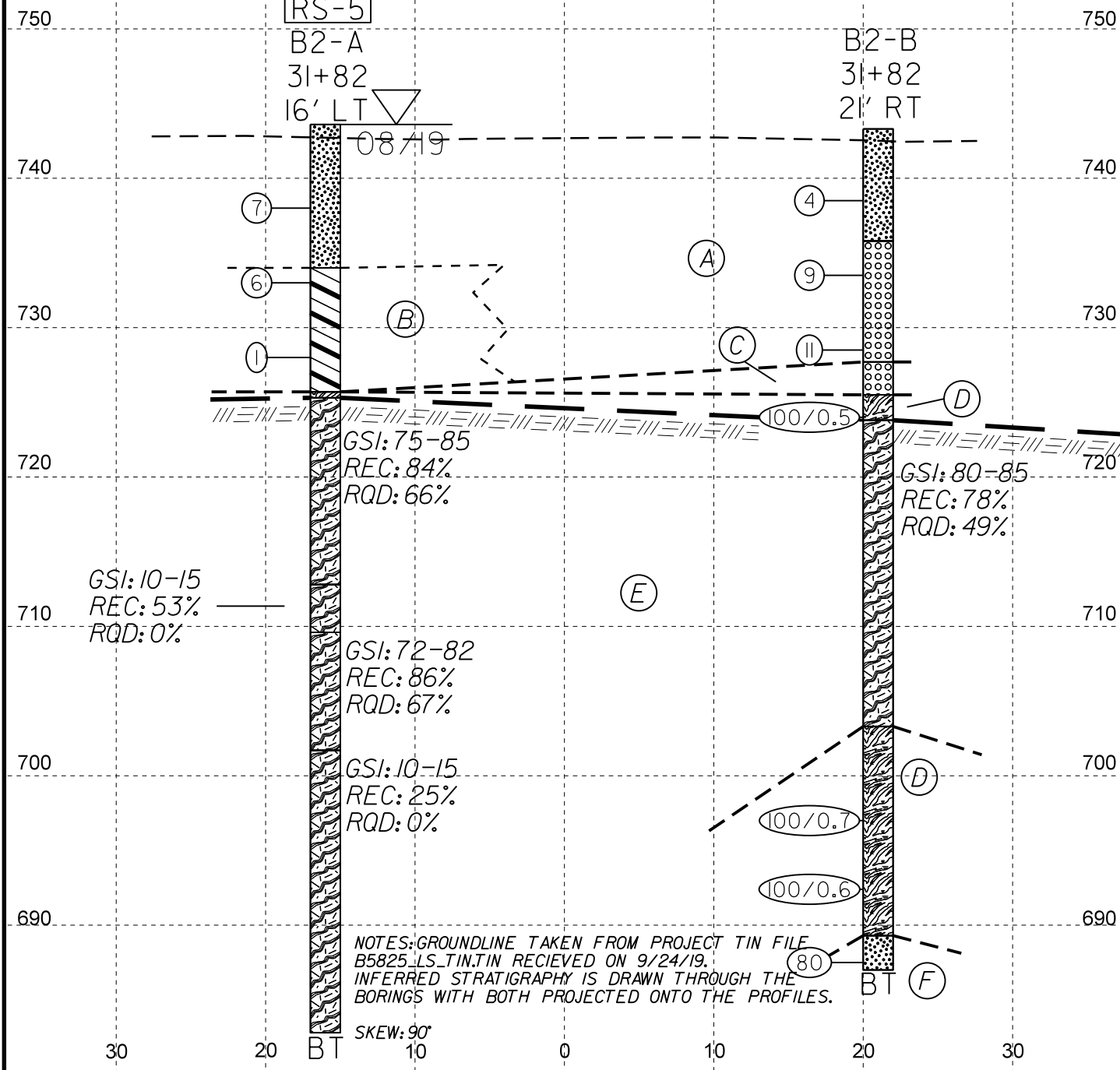


HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 **CROSS SECTION ALONG END BENT 1 AT 29+31.67**



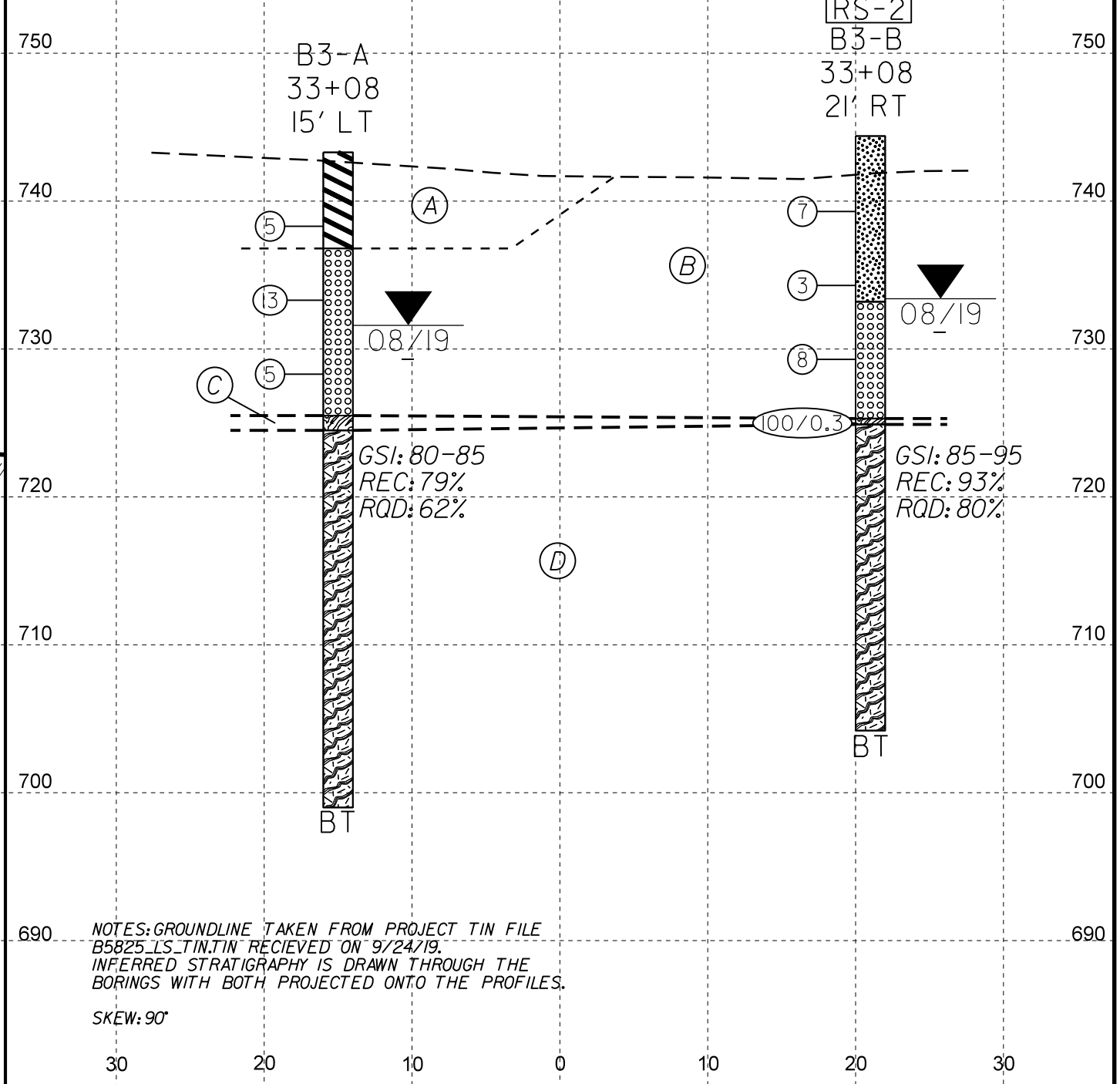
HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 **CROSS SECTION ALONG BENT 1 AT STA. 30+58.00**

- (A) ALLUVIAL: MOIST, LOOSE TO MEDIUM DENSE, BROWN AND TAN, SILTY FINE SAND AND SILTY, FINE SANDY GRAVEL
- (B) ALLUVIAL: MOIST, MEDIUM STIFF TO VERY SOFT, BROWN AND TAN, SILTY, SANDY CLAY
- (C) RESIDUAL: DRY, BROWN, SILTY, FINE SANDY GRAVEL
- (D) WEATHERED ROCK: GRANITIC GNEISS
- (E) CRYSTALLINE ROCK: FRESH TO COMPLETELY WEATHERED, VERY SOFT TO VERY HARD, WHITE, GRAY TO BLACK GRANITIC GNEISS WITH VERY CLOSE TO WIDE FRACTURE SPACING
- (F) RESIDUAL: BROWN, SILTY SAND



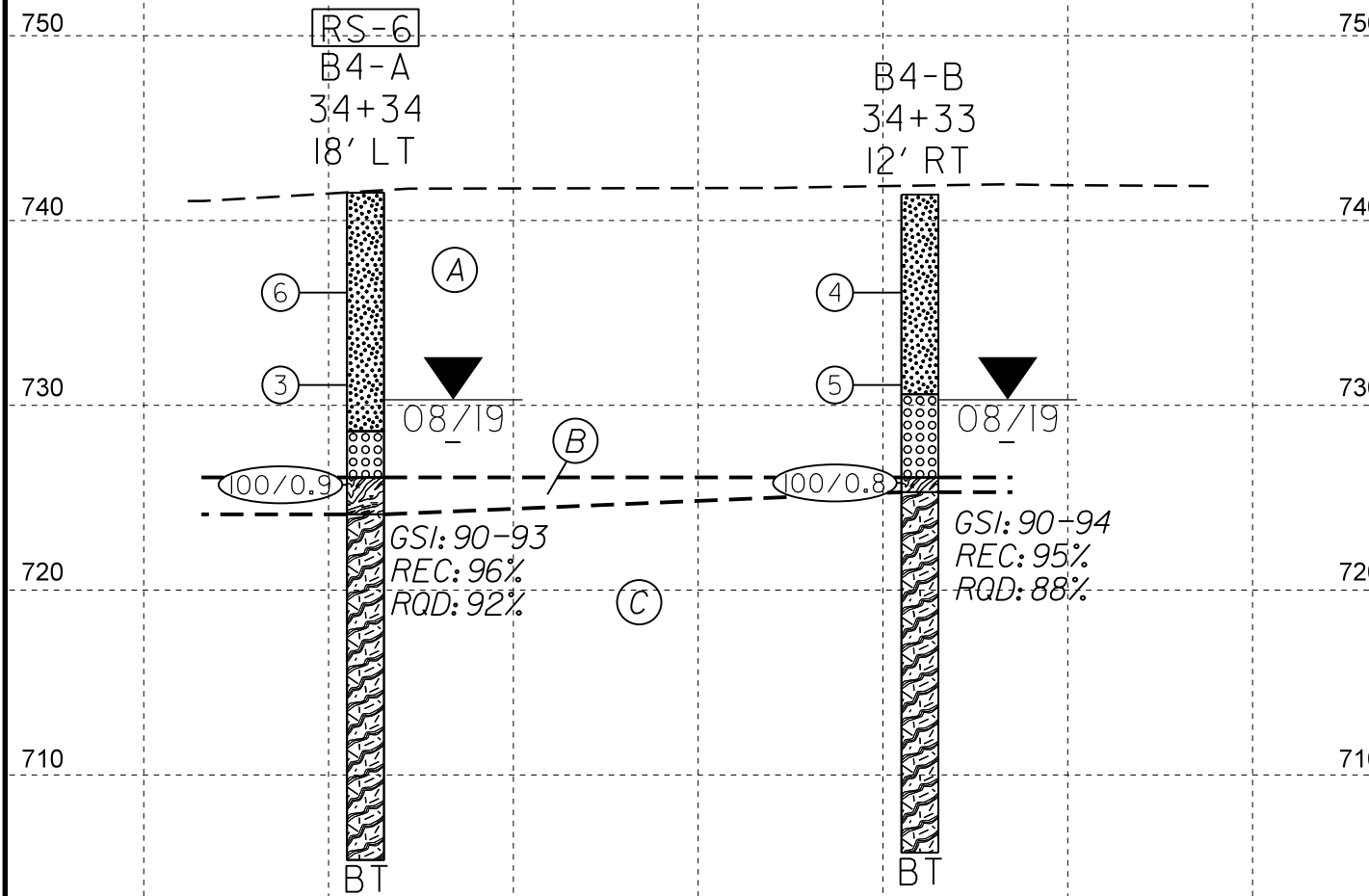
HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 CROSS SECTION ALONG BENT 2 AT 31+83.00

- (A) ALLUVIAL: MOIST, MEDIUM STIFF TO STIFF, TAN BROWN, SANDY, SILTY CLAY
- (B) ALLUVIAL: MOIST, LOOSE AND MEDIUM DENSE, BROWN AND TAN, SILTY SAND AND SILTY, SANDY GRAVEL
- (C) WEATHERED ROCK: GRAY, WHITE AND BLACK GRANITIC GNEISS
- (D) CRYSTALLINE ROCK: SLIGHT WEATHERING TO FRESH, HARD TO VERY HARD, GRAY WHITE AND BLACK, GRANITIC GNEISS AND META-BIOTITE GNEISS WITH VERY CLOSE TO WIDE FRACTURE SPACING

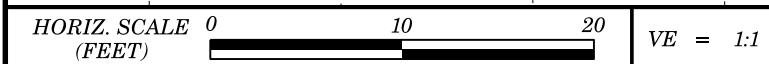


HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 CROSS SECTION ALONG BENT 3 AT STA. 33+08.00

(A) ALLUVIAL: MOIST, LOOSE TO VERY LOOSE, TAN BROWN, SILTY SAND AND GRAVEL WITH TRACE MICA
 (B) WEATHERED ROCK: GRAY AND WHITE GRANITIC GNEISS
 (C) CRYSTALLINE ROCK: FRESH, VERY HARD, GRAY, WHITE AND BLACK, GRANITIC GNEISS WITH CLOSE TO WIDE FRACTURE SPACING

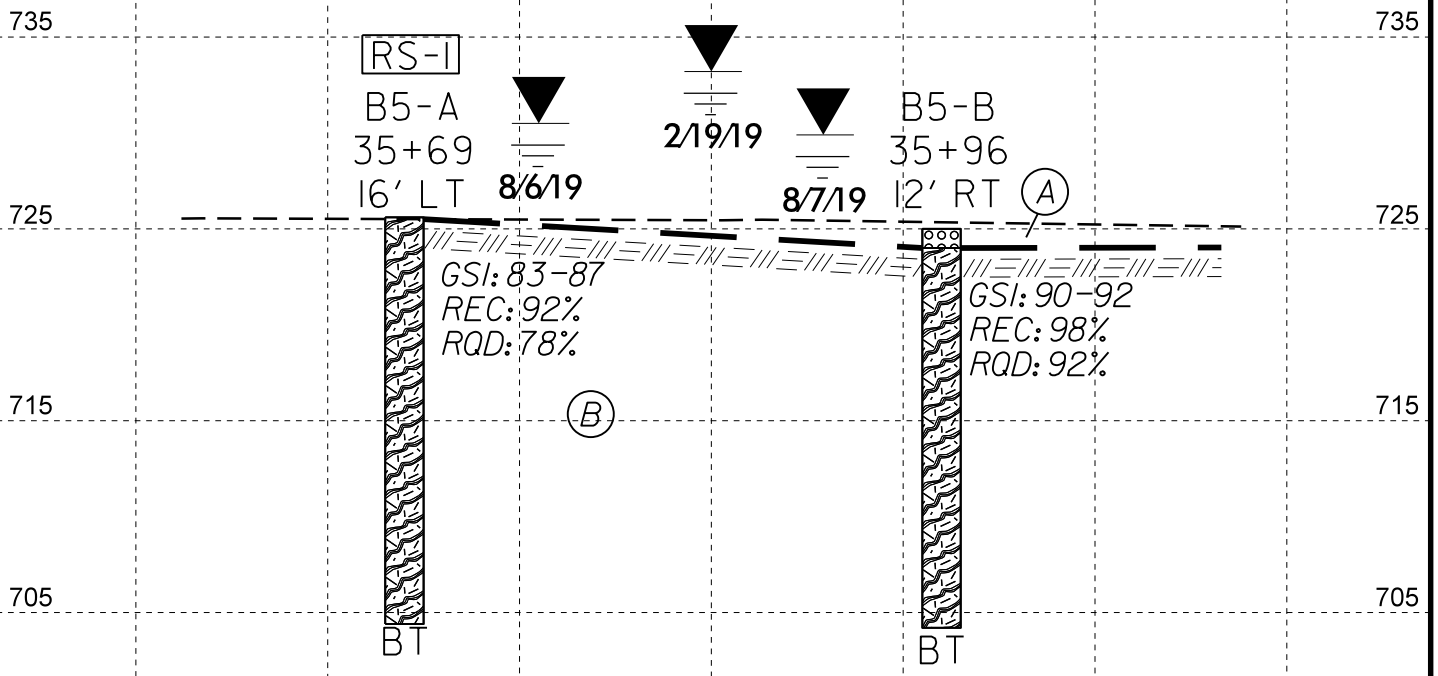


NOTES: GROUNDLINE TAKEN FROM PROJECT TIN FILE B5825_LS_TIN.TIN RECEIVED ON 9/24/19. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILES.
 SKEW: 90°

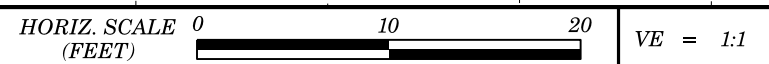


CROSS SECTION ALONG BENT 4 AT 34+33.00

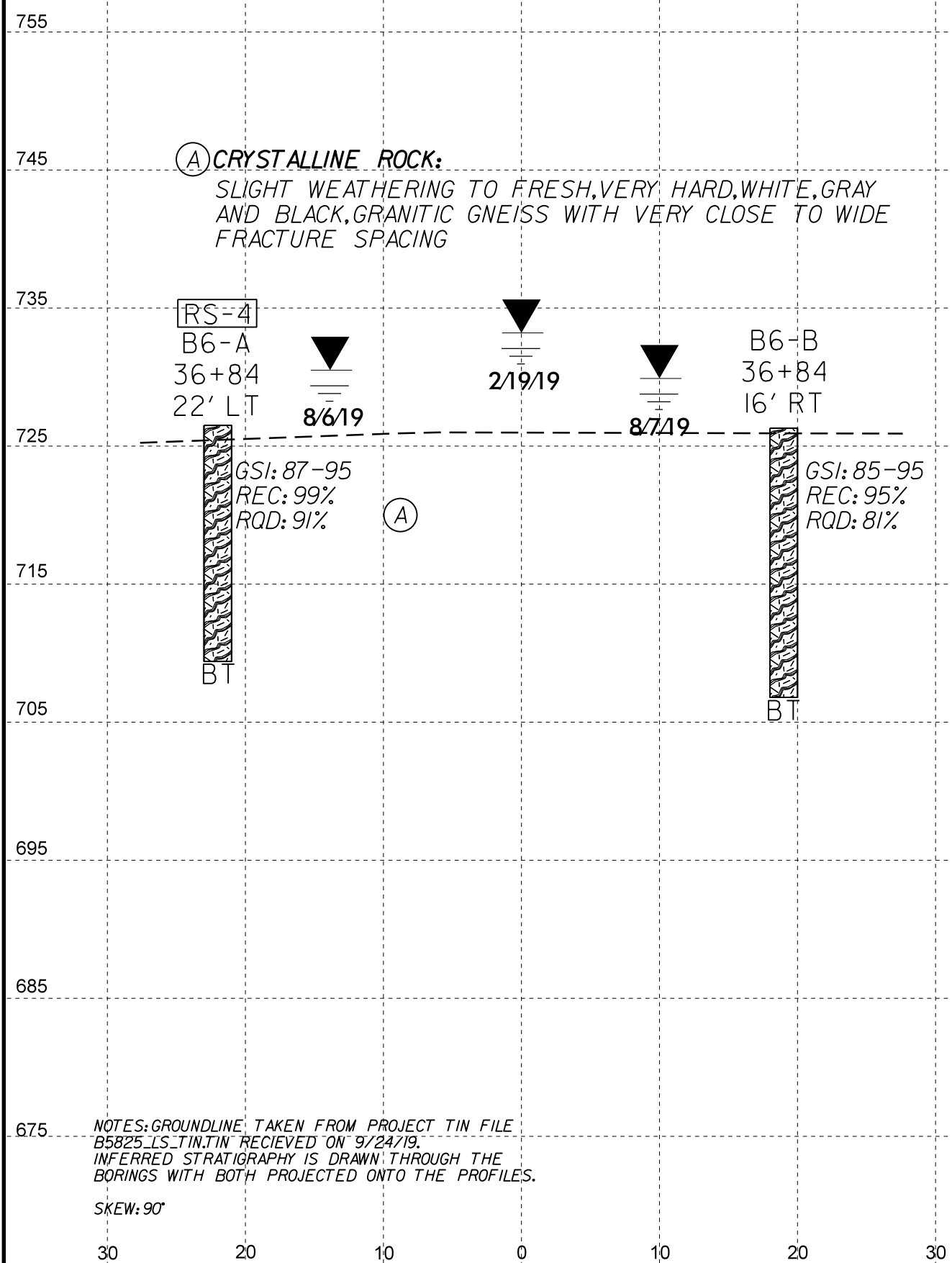
(A) ALLUVIAL: SAND, COBBLES AND GRAVEL
 (B) CRYSTALLINE ROCK: VERY SLIGHTLY WEATHERED TO FRESH, HARD TO VERY HARD, GRAY, WHITE AND BLACK GRANITIC GNEISS WITH CLOSE TO WIDE FRACTURE SPACING



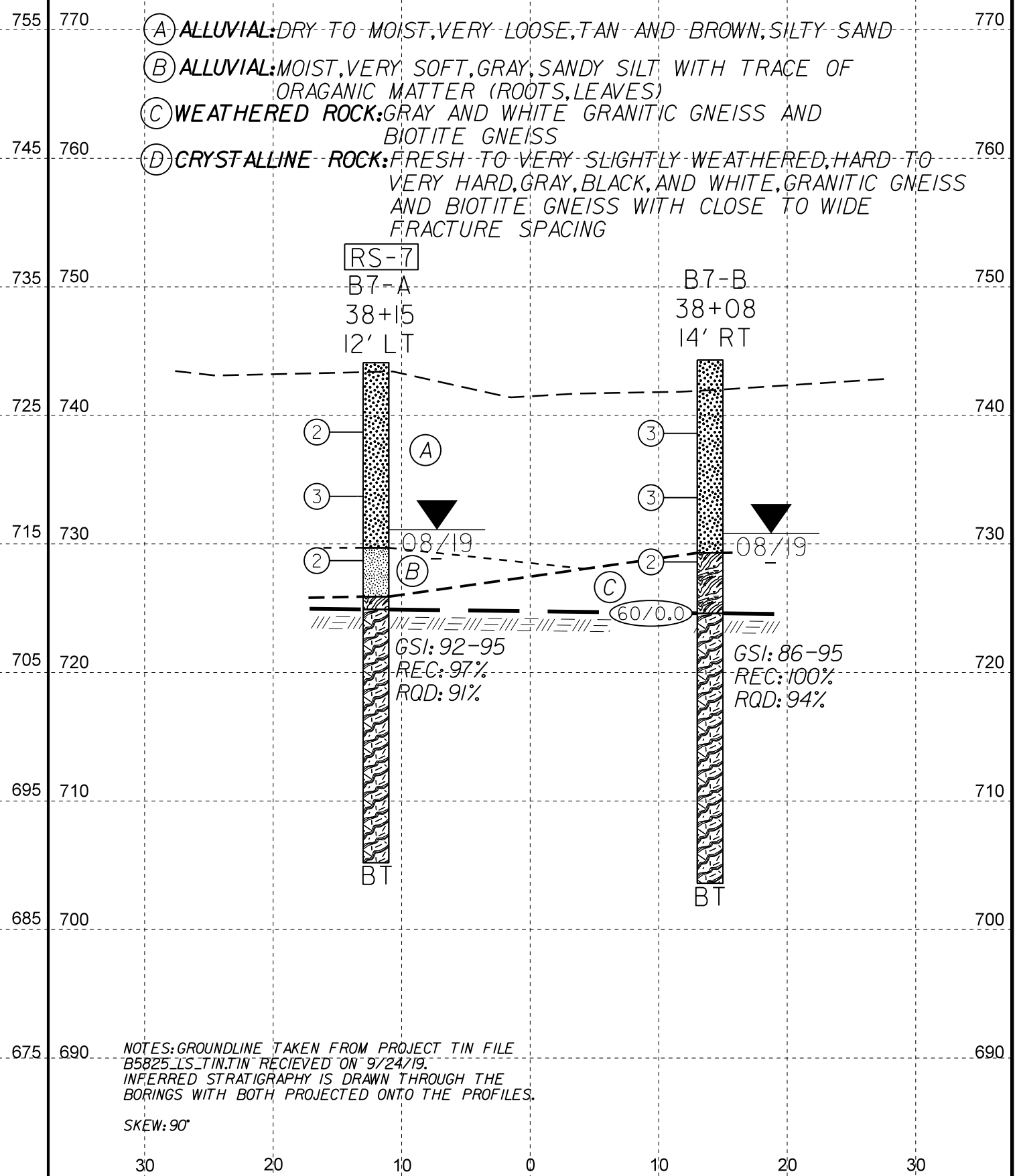
NOTES: GROUNDLINE TAKEN FROM PROJECT TIN FILE B5825_LS_TIN.TIN RECEIVED ON 9/24/19. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILES.
 SKEW: 90°



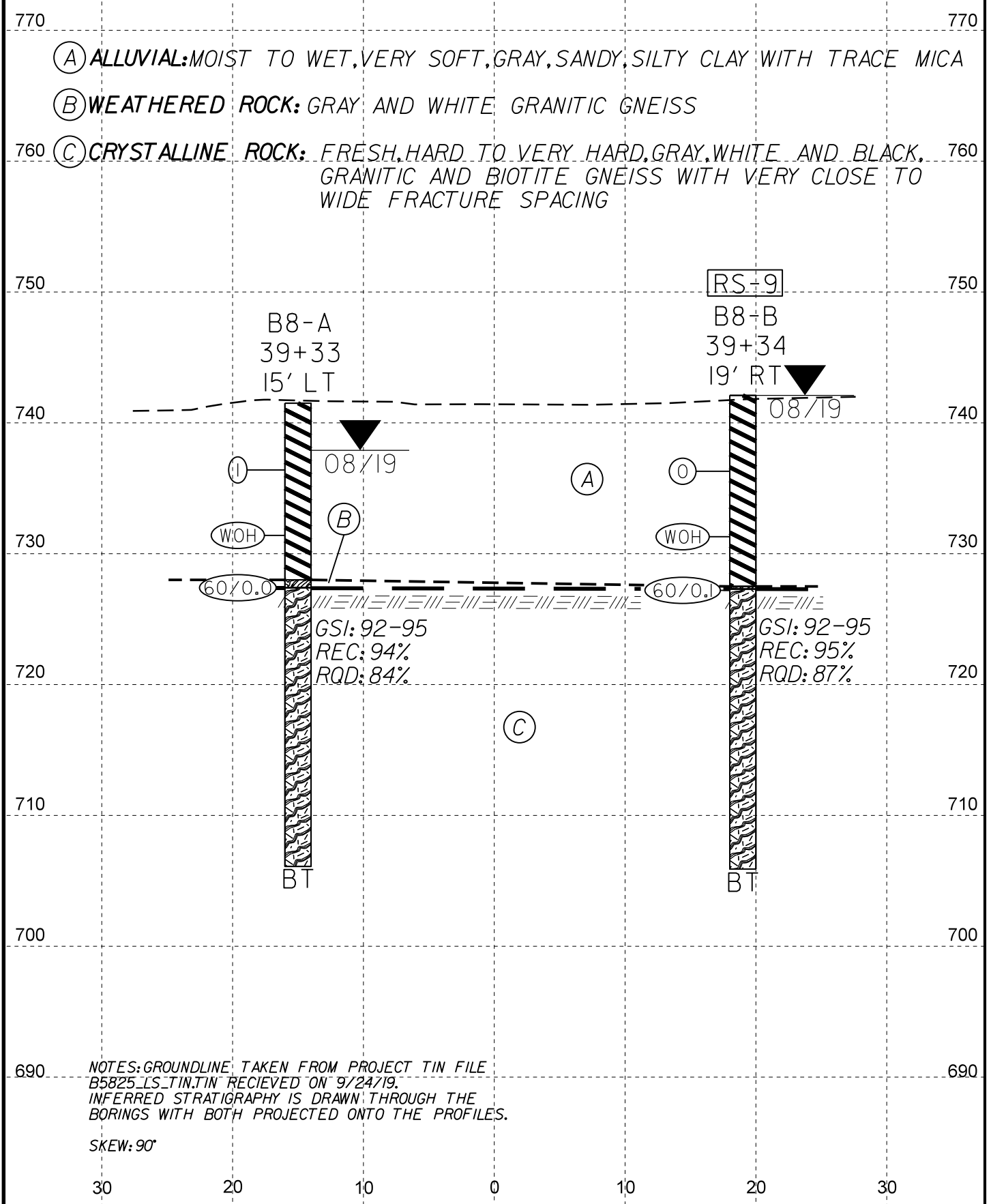
CROSS SECTION ALONG BENT 5 AT STA. 35+58.00



HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 **CROSS SECTION ALONG BENT 6 AT 36+83.00**



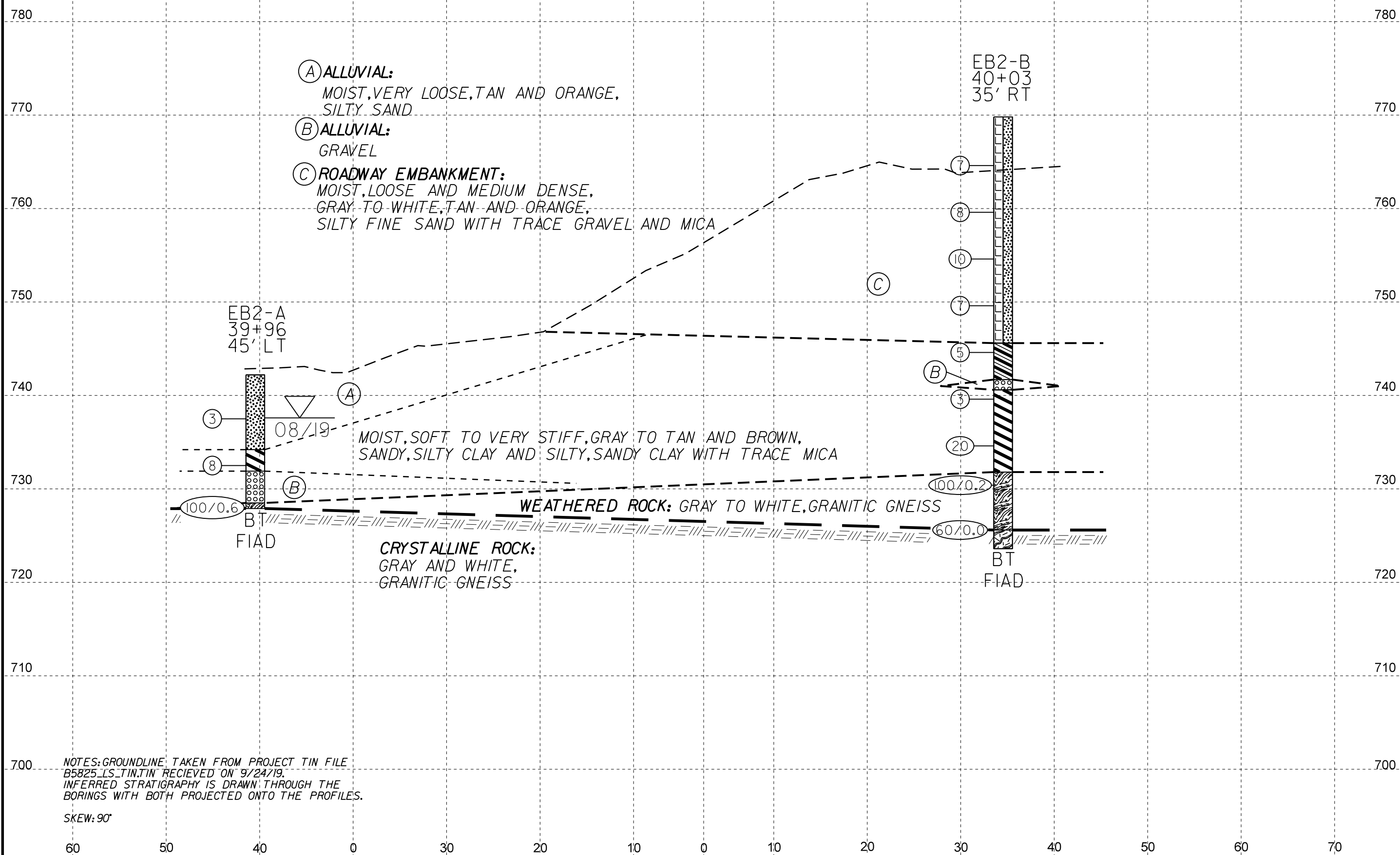
HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 **CROSS SECTION ALONG BENT 7 AT STA. 38+08.00**



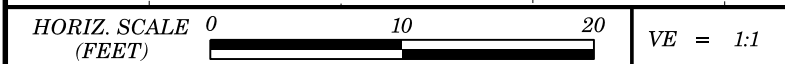
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NOTES: GROUNDLINE TAKEN FROM PROJECT TIN FILE B5825_LS_TIN.TIN RECEIVED ON 9/24/19. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILES.

SKEW: 90°



NOTES: GROUNDLINE TAKEN FROM PROJECT TIN FILE
B5825_LS_TIN.TIN RECEIVED ON 9/24/19.
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE
BORINGS WITH BOTH PROJECTED ONTO THE PROFILES.
SKEW: 90°



CROSS SECTION ALONG END BENT 2 AT 39+98.33

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 29+10		OFFSET 20 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 749.0 ft		TOTAL DEPTH 30.0 ft		NORTHING 900,906		EASTING 1,576,846										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 01/29/19		COMP. DATE 01/29/19		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						
750														749.0	GROUND SURFACE	0.0
															ROADWAY EMBANKMENT Gray to White, Silty CLAY (A-7-5) with Concrete Fragments	
745	745.1	3.9	1	10	2								M	744.0	ALLUVIAL Red to Orange, Sandy CLAY (A-6)	5.0
740	740.1	8.9	3	4	6								W			
735	735.1	13.9	7	14	10								Sat.			
730	730.1	18.9	6	10	10								Sat.	731.0	Tan to Red to Orange, Silty SAND (A-2-4) with Rock Fragments	18.0
725	725.1	23.9	1	2	2								M	728.5	RESIDUAL Tan to Orange, Silty SAND (A-2-4)	20.5
720	720.1	28.9	11	89/0.4										720.5	WEATHERED ROCK Tan to Gray to White, GNEISS	28.5
														719.0	Boring Terminated by Auger Refusal at Elevation 719.0 ft on CRYSTALLINE ROCK: GNEISS	30.0

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 29+32		OFFSET 36 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 769.9 ft		TOTAL DEPTH 75.8 ft		NORTHING 900,846		EASTING 1,576,850										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 08/28/19		COMP. DATE 08/29/19		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						
770														769.9	GROUND SURFACE	0.0
															ROADWAY EMBANKMENT Tan, Orange, Sandy, Clayey SILT (A-5) Highly Micaceous	
765	765.7	4.2	3	3	2								M			
760	760.7	9.2	3	3	4								M			
755	755.7	14.2	2	2	3								M			
750	750.7	19.2	3	3	4								M	750.7	ALLUVIAL Brown, Gray and Orange, Sandy CLAY (A-6) with Trace Mica and Gravel Layer (37.8-40.7')	19.2
745	745.7	24.2	3	3	8								M			
740	740.7	29.2	3	6	7								M			
735	735.7	34.2	2	3	3								M			
730	730.7	39.2	31	8	5								M			
725	725.7	44.2	8	5	4								M	727.9	RESIDUAL Tan, Yellow and Orange, Silty, Clayey Fine SAND (A-2-6) Highly Micaceous	42.0
720	720.7	49.2	7	8	6								M			
715	715.7	54.2	7	8	23								M			
710	710.7	59.2	5	10	12								M			
705	705.7	64.2	2	3	11								M			
700	700.7	69.2	3	4	19								M	699.3	Tan, Orange, Gray and White, Silty SAND (A-2-4)	70.6
695	695.7	74.2	10	52	35								M	694.1	Boring Terminated by NW Casing Refusal at Elevation 694.1 ft on CRYSTALLINE ROCK: GRANITIC GNEISS	75.8

NCDOT BORE DOUBLE B5825 GEO_BRDG_GINT.GPJ NC_DOT.GDT 11/4/19

GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.											
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)										
BORING NO. B1-A		STATION 30+68		OFFSET 21 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 742.7 ft		TOTAL DEPTH 53.1 ft		NORTHING 900,859		EASTING 1,576,997											
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 08/20/19		COMP. DATE 08/21/19		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							
745														742.7	GROUND SURFACE	0.0	
740															ALLUVIAL Tan and Brown Silty SAND (A-2-4)		
735	738.4	4.3	3	3	3								M				
730	733.4	9.3	3	3	3								M				
725	728.4	14.3	3	2	3								M				
720	723.4	19.3	12	32	12								W	725.4	Tan, Brown and Orange, Silty, Sandy GRAVEL (A-1) with Round Quartz Fragments	17.3	
715	718.4	24.3	8	12	16									718.4	RESIDUAL Tan, Brown and White, Silty SAND (A-2-4)	24.3	
710	713.4	29.3	48	52/0.3										713.4	WEATHERED ROCK Gray and White GRANITIC GNEISS	29.3	
705														709.4	CRYSTALLINE ROCK Gray, White and Black GRANITIC GNEISS	33.3	
700																	
695																	
690																	
														689.6	Boring Terminated at Elevation 689.6 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	53.1	

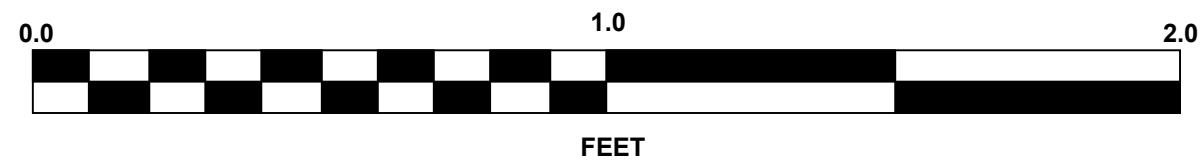
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B1-A		STATION 30+68		OFFSET 21 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 742.7 ft		TOTAL DEPTH 53.1 ft		NORTHING 900,859		EASTING 1,576,997						
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic							
DRILLER Smith, C. L.		START DATE 08/20/19		COMP. DATE 08/21/19		SURFACE WATER DEPTH N/A						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
709.4	709.4	33.3	2.3		(2.2)	(1.5)		(18.7)	(15.6)		Begin Coring @ 33.3 ft	33.3
	707.1	35.6			96%	65%		94%	79%		CRYSTALLINE ROCK Fresh, Very Hard, Gray, White and Black GRANITIC GNEISS with Very Close to Wide Fracture Spacing	
705			5.0		(4.3)	(3.0)					GSI = 90 to 95	
	702.1	40.6			86%	60%						
700			5.0		(4.7)	(4.6)						
	697.1	45.6			94%	92%				RS-8		
695			5.0		(5.0)	(4.2)						
	692.1	50.6			100%	84%						
	689.6	53.1	2.5		(2.5)	(2.3)						
690					100%	92%					Boring Terminated at Elevation 689.6 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	53.1

NCDOT BORE DOUBLE B5825 GEO_BRDG_GINT_GPJ_NC_DOT.GDT 11/10/19

CORE PHOTOGRAPHS

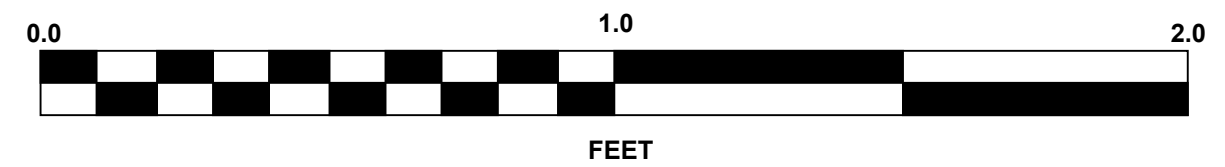
B1-A

BOX 1: 33.3 - 43.5 FEET



B1-A

BOX 2: 43.5 - 53.1 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

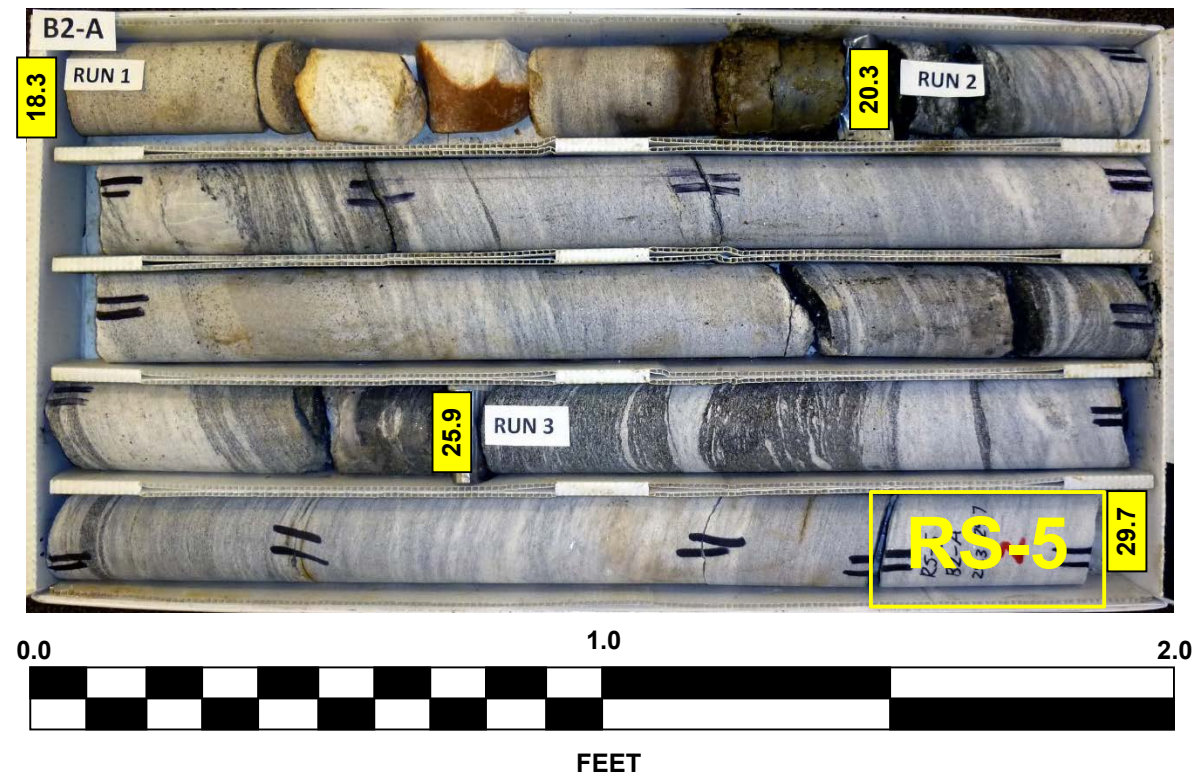
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. B1-B		STATION 30+68		OFFSET 23 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 743.3 ft		TOTAL DEPTH 59.9 ft		NORTHING 900,817		EASTING 1,576,984										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018				DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 08/19/19		COMP. DATE 08/19/19		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)		
745														743.3	0.0	GROUND SURFACE
740	738.5	4.8	1	2	3								M			ALLUVIAL Tan and Brown, Silty SAND (A-2-4)
735	733.5	9.8	2	2	2								M			
730	728.5	14.8	1	3	2								M			
725	723.5	19.8	28	31	69/0.4								M	725.3	18.0	WEATHERED ROCK GRANITIC GNEISS
720	718.7	24.6	4	5	6								M	721.0	22.3	RESIDUAL Tan, Brown and Orange, Silty Fine SAND (A-2-4)
715	713.7	29.6	5	5	8								M			
710	708.7	34.6	5	6	16								M			
705	703.7	39.6	100/0.2										M	707.2	36.1	WEATHERED ROCK Gray and White GRANITIC GNEISS
700	698.7	44.6	100/0.4										M			
695	693.7	49.6	60/0.1										M	694.3	49.0	CRYSTALLINE ROCK GRANITIC ROCK
690	688.7	54.6	100/0.4										M	692.8	50.5	WEATHERED ROCK Gray and White GRANITIC GNEISS
685	683.7	59.6	100/0.3										M	683.4	59.9	Boring Terminated at Elevation 683.4 ft in WEATHERED ROCK: GRANITIC GNEISS

NCDOT BORE DOUBLE B5825 GEO_BRDG_GINT.GPJ NC_DOT.GDT 11/7/19

CORE PHOTOGRAPHS

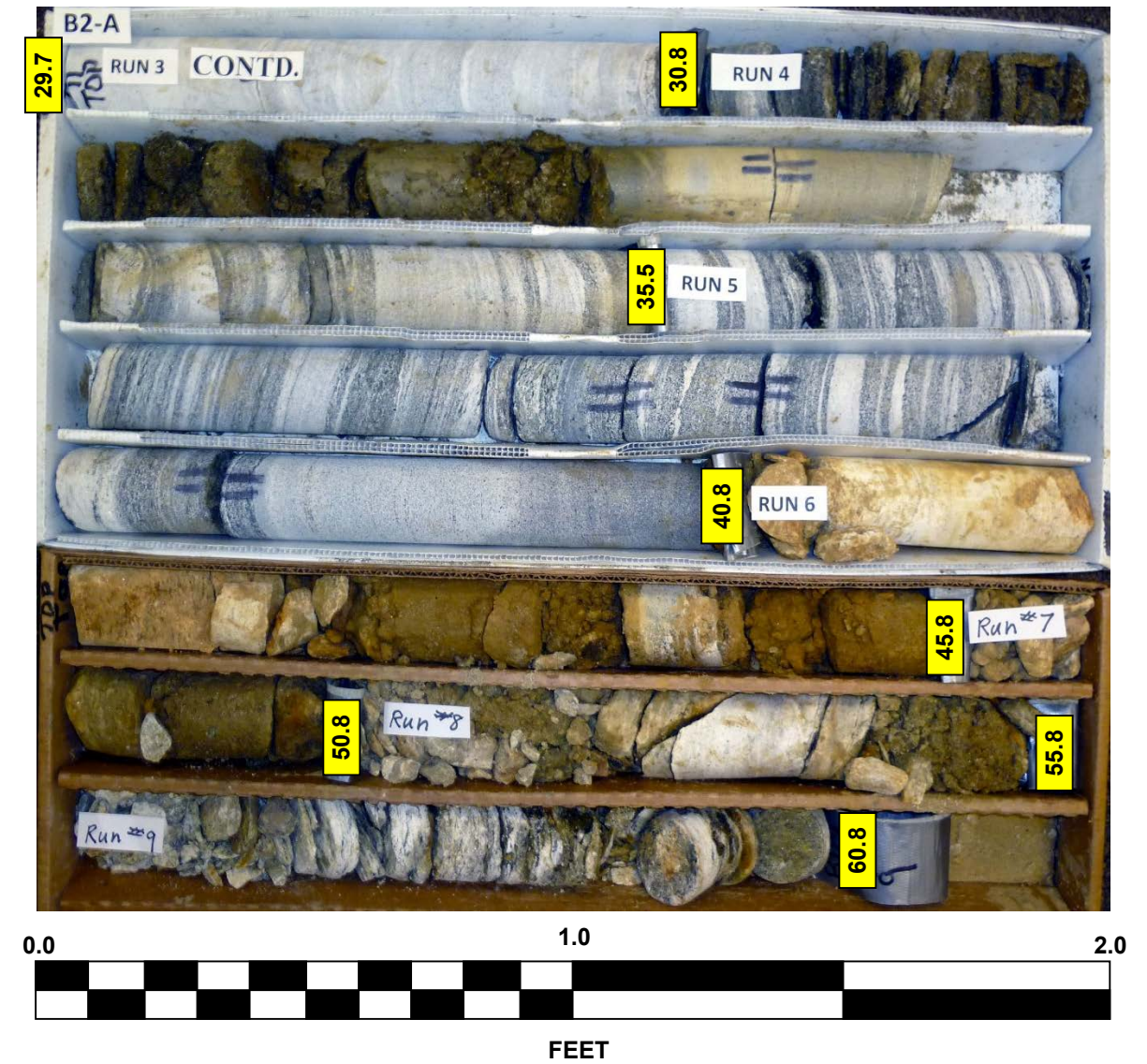
B2-A

BOX 1: 18.3 - 29.7 FEET



B2-A

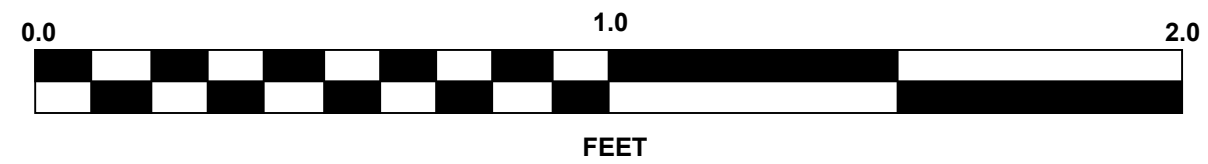
BOX 2: 29.7 - 60.8 FEET



CORE PHOTOGRAPHS

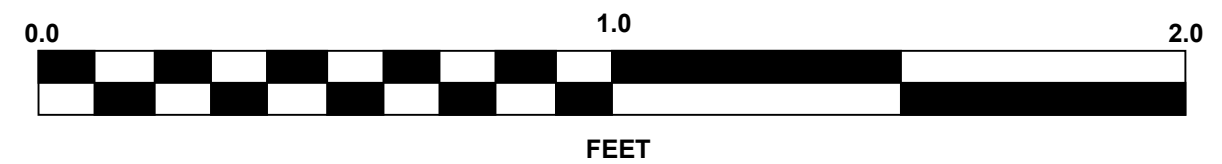
B2-B

BOX 1: 19.5 - 29.8 FEET



B2-B

BOX 2: 29.8 - 35.0 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

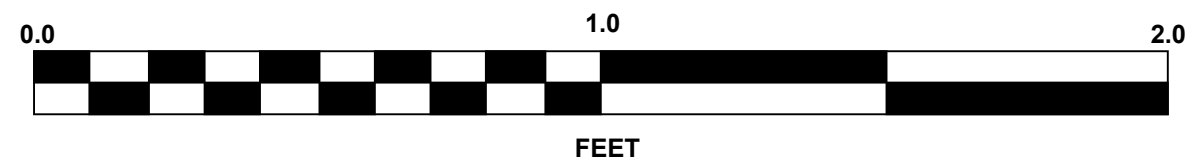
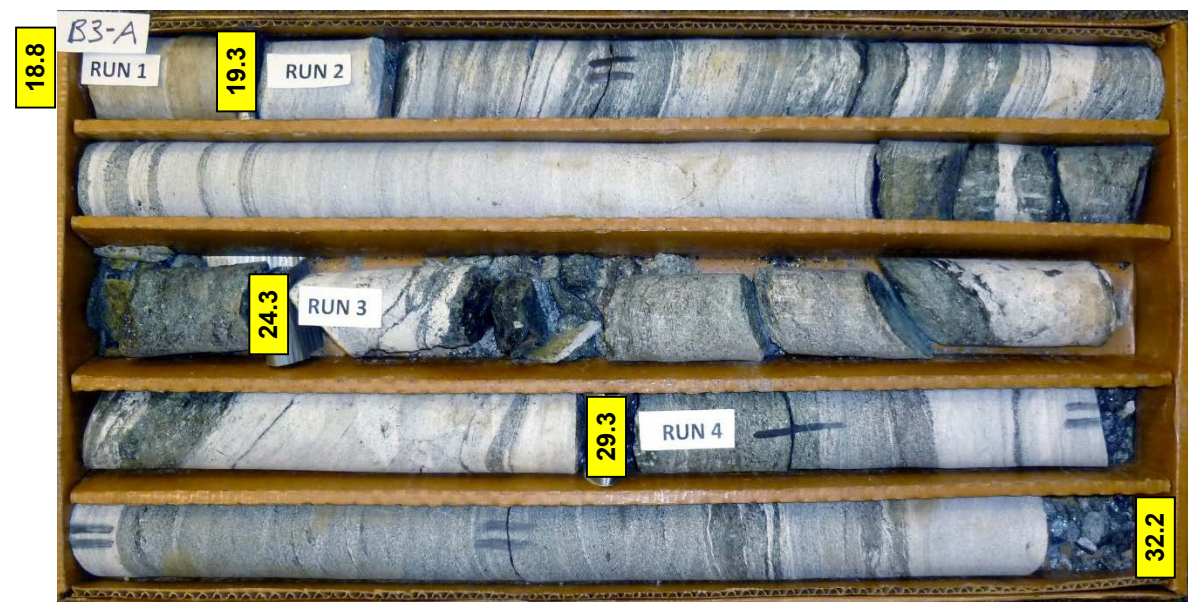
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. B3-A		STATION 33+08		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 743.3 ft		TOTAL DEPTH 44.3 ft		NORTHING 900,781		EASTING 1,577,224										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 08/01/19		COMP. DATE 08/01/19		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)		
745														743.3	GROUND SURFACE	0.0
740	739.3	4.0											M	735.3	ALLUVIAL Tan Brown, Sandy Silty CLAY (A-7)	
735	734.3	9.0	3	2	3								M	735.3	Tan, Brown, Silty, Sandy GRAVEL (A-1)	8.0
730	729.3	14.0	5	6	7								M	725.5	WEATHERED ROCK Gray and White GRANITIC GNEISS	17.8
725			4	3	2								M	724.5	CRYSTALLINE ROCK Gray, White and Black GRANITIC GNEISS	18.8
720																
715																
710																
705																
700																
														699.0	Boring Terminated at Elevation 699.0 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	44.3

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.							
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)						
BORING NO. B3-A		STATION 33+08		OFFSET 15 ft LT		ALIGNMENT -L-							
COLLAR ELEV. 743.3 ft		TOTAL DEPTH 44.3 ft		NORTHING 900,781		EASTING 1,577,224							
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic							
DRILLER Smith, C. L.		START DATE 08/01/19		COMP. DATE 08/01/19		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		
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		ELEV. (ft)	DEPTH (ft)	
724.5	724.0	18.8	0.5		(0.3)	(0.0)		(20.2)	(15.9)		724.5	Begin Coring @ 18.8 ft CRYSTALLINE ROCK	18.8
720	719.0	24.3	5.0		(3.8)	(2.7)		76%	54%			Slight Weathering to Fresh, Hard to Very Hard, Gray, White and Black GRANITIC GNEISS with Intermittent Zones of Biotite Gneiss and Schist with Very Close to Wide Fracture Spacing	
715	714.0	29.3	5.0		(2.3)	(0.9)		46%	18%			GSI = 80 to 85 Predominantly Biotite Schist Zone from 23.5 ft to 28.2 ft, GSI = 40 to 45	
710	709.0	34.3	5.0	1:41/0.5 1:30/1.0 1:44/1.0 1:39/1.0 1:36/1.0	(4.7)	(4.7)		94%	94%				
705	704.0	39.3	5.0	1:47/1.0 1:40/1.0 1:50/1.0 1:39/1.0 1:42/1.0	(4.5)	(3.4)		90%	68%				
700	699.0	44.3	5.0	1:50/1.0 1:45/1.0 1:37/1.0 1:41/1.0 1:44/1.0	(4.6)	(4.2)		92%	84%				
											699.0	Boring Terminated at Elevation 699.0 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	44.3

CORE PHOTOGRAPHS

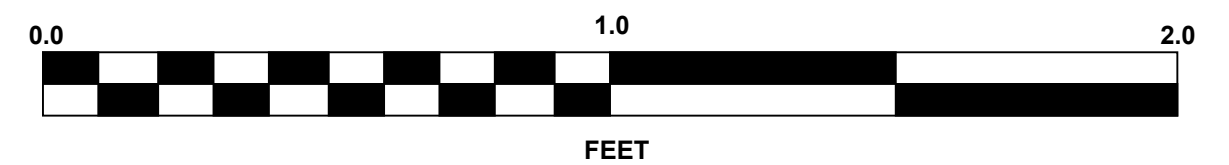
B3-A

BOX 1: 18.8 - 32.2 FEET



B3-A

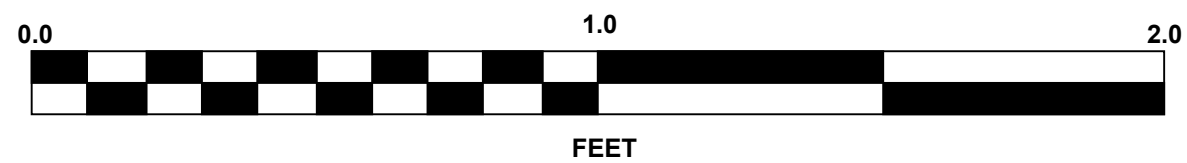
BOX 2: 32.2 - 44.3 FEET



CORE PHOTOGRAPHS

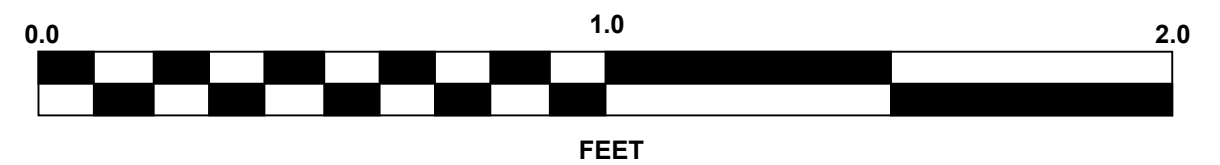
B3-B

BOX 1: 19.5 - 30.2 FEET



B3-B

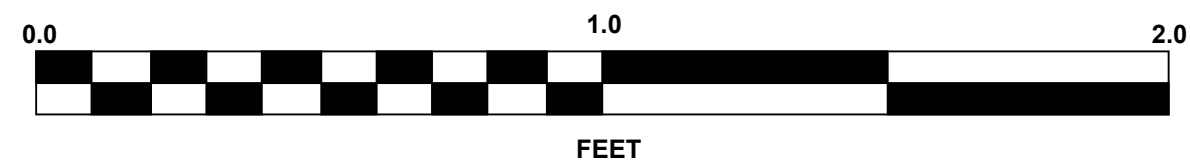
BOX 2: 30.2 - 40.2 FEET



CORE PHOTOGRAPHS

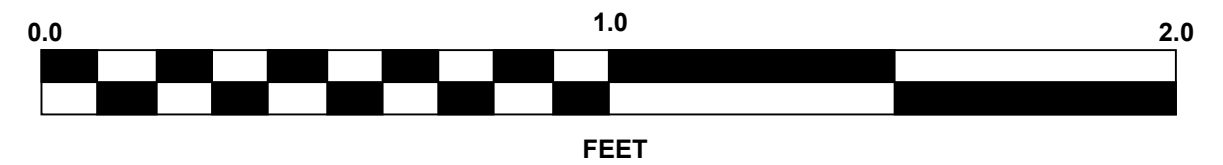
B4-A

BOX 1: 17.4 - 27.5 FEET



B4-A

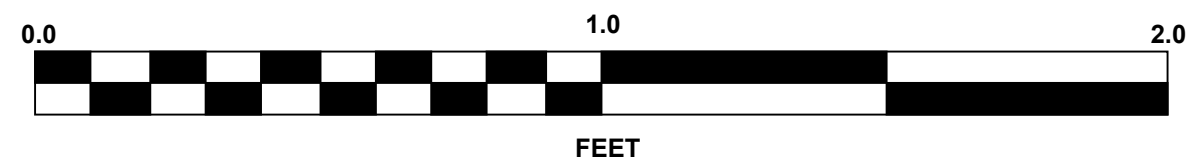
BOX 2: 27.5 - 36.1 FEET



CORE PHOTOGRAPHS

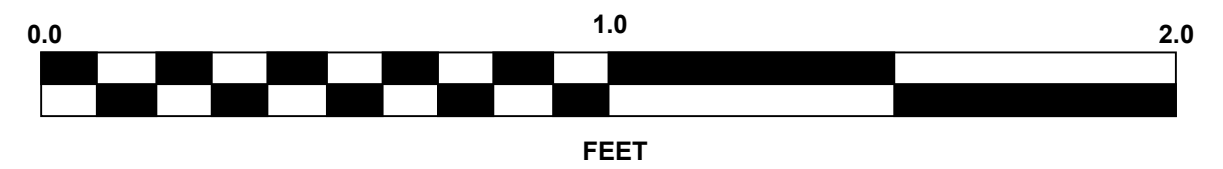
B4-B

BOX 1: 16.1 - 30.0 FEET



B4-B

BOX 2: 30.0 - 35.6 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

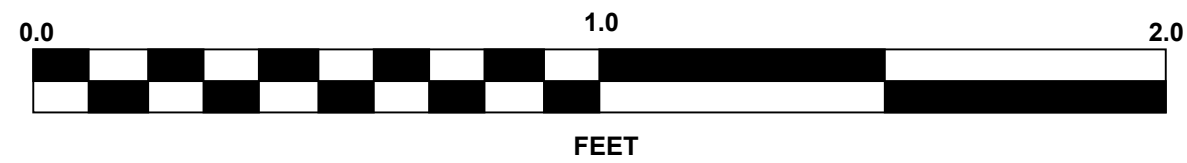
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. B5-A		STATION 35+69		OFFSET 16 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 725.6 ft		TOTAL DEPTH 21.2 ft		NORTHING 900,702		EASTING 1,577,473										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 08/07/19		COMP. DATE 08/07/19		SURFACE WATER DEPTH 4.3ft										
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						
730												▼		-----	WATER SURFACE (08/07/19)	
725														725.6	GROUND SURFACE	0.0
720													[Pattern]		CRYSTALLINE ROCK White, Gray and Black GRANITIC GNEISS	
715													[Pattern]			
710													[Pattern]			
705													[Pattern]			
													[Pattern]	704.4	Boring Terminated at Elevation 704.4 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	21.2

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B5-A		STATION 35+69		OFFSET 16 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 725.6 ft		TOTAL DEPTH 21.2 ft		NORTHING 900,702		EASTING 1,577,473						
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic								
DRILLER Smith, C. L.		START DATE 08/07/19		COMP. DATE 08/07/19		SURFACE WATER DEPTH 4.3ft						
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)		REC. (%)	RQD (%)			
725.6	725.6	0.0	1.2	NM/1.2	(1.0)	(0.0)		(19.6)	(16.6)	[Pattern]	Ground Surface	
720	724.4	1.2	5.0	3:15/1.0 3:21/1.0 3:07/1.0 3:14/1.0 3:26/1.0	83% (4.7)	0% (3.4) 68%		92%	78%	[Pattern]	CRYSTALLINE ROCK Very Slightly Weathered to Fresh, Very Hard, GRANITIC GNEISS with Close to Wide Fracture Spacing GSI = 83-87	
715	719.4	6.2	5.0	3:11/1.0 3:19/1.0 3:27/1.0 3:07/1.0 3:15/1.0	(5.0) 100%	(4.6) 92%				[Pattern]		
710	714.4	11.2	5.0	3:30/1.0 3:11/1.0 3:24/1.0 3:19/1.0 3:20/1.0	(4.8) 96%	(4.5) 90%				[Pattern]		
705	709.4	16.2	5.0	3:32/1.0 3:30/1.0 3:18/1.0 3:23/1.0 3:25/1.0	(4.1) 82%	(4.1) 82%				[Pattern]		
	704.4	21.2								[Pattern]	Boring Terminated at Elevation 704.4 ft in CRYSTALLINE ROCK: GRANITIC GNEISS	21.2

CORE PHOTOGRAPHS

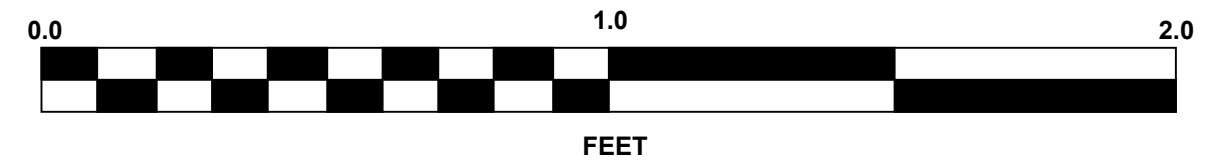
B5-A

BOX 1: 0.0 - 9.7 FEET



B5-A

BOX 2: 9.7 - 21.2 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

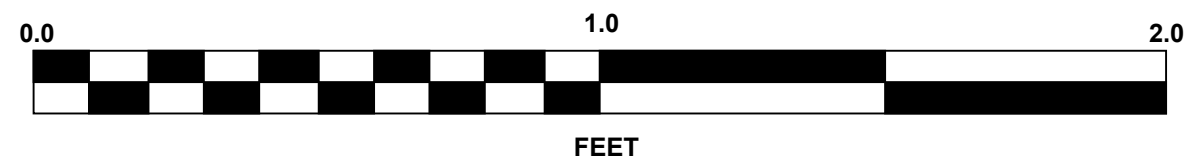
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. B5-B		STATION 35+69		OFFSET 12 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 725.0 ft		TOTAL DEPTH 20.8 ft		NORTHING 900,676		EASTING 1,577,464									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 08/06/19		COMP. DATE 08/06/19		SURFACE WATER DEPTH 4.9ft									
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)	
730												▼		WATER SURFACE (08/06/19)	
725														GROUND SURFACE 0.0	
720														724.0 ALLUVIAL Sand, Cobbles, and Gravel 1.0	
715														CRYSTALLINE ROCK Gray, White and Black GRANITIC GNEISS	
710															
705														704.2 Boring Terminated at Elevation 704.2 ft in CRYSTALLINE ROCK: GRANITIC GNEISS 20.8	

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B5-B		STATION 35+69		OFFSET 12 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 725.0 ft		TOTAL DEPTH 20.8 ft		NORTHING 900,676		EASTING 1,577,464						
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic								
DRILLER Smith, C. L.		START DATE 08/06/19		COMP. DATE 08/06/19		SURFACE WATER DEPTH 4.9ft						
CORE SIZE NW2			TOTAL RUN 19.8 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
					REC. (%)	RQD (%)		REC. (%)	RQD (%)		ELEV. (ft)	DEPTH (ft)
724	724.0	1.0	4.8		(4.6) 96%	(3.6) 75%		(19.4) 98%	(18.2) 92%		Begin Coring @ 1.0 ft	
720	719.2	5.8	5.0		(4.8) 96%	(4.8) 96%					CRYSTALLINE ROCK Fresh, Hard to Very Hard, Gray, White and Black GRANITIC GNEISS with Close to Wide Fracture Spacing	
715	714.2	10.8	5.0		(5.0) 100%	(4.9) 98%					GSI = 90 to 92	
710	709.2	15.8	5.0		(5.0) 100%	(4.9) 98%						
705	704.2	20.8									704.2 Boring Terminated at Elevation 704.2 ft in CRYSTALLINE ROCK: GRANITIC GNEISS 20.8	

CORE PHOTOGRAPHS

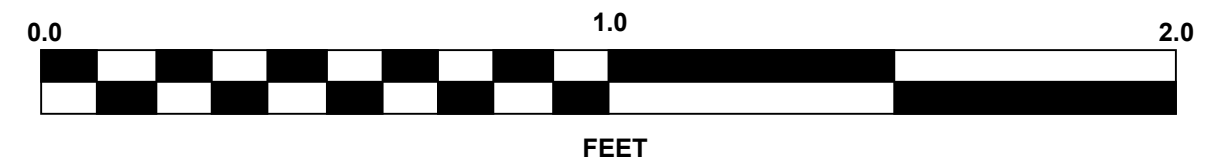
B5-B

BOX 1: 1.0 - 10.5 FEET



B5-B

BOX 2: 10.5 - 20.8 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

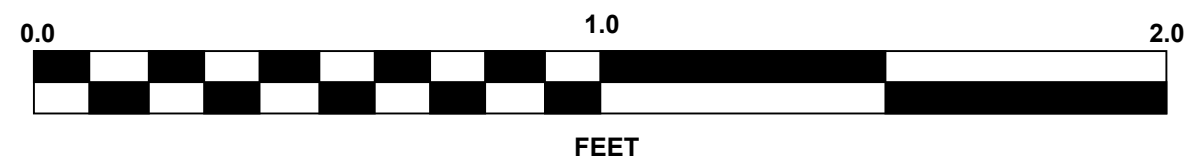
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. B6-A		STATION 36+84		OFFSET 22 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 726.5 ft		TOTAL DEPTH 17.1 ft		NORTHING 900,673		EASTING 1,577,584									
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 93% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 08/07/19		COMP. DATE 08/08/19		SURFACE WATER DEPTH 3.4ft									
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					
730															
															WATER SURFACE (08/07/19)
															GROUND SURFACE
725															726.5
															CRYSTALLINE ROCK
															White, Gray and Black GRANITIC GNEISS
720															
715															
															RS-4
710															
															709.4
															Boring Terminated at Elevation 709.4 ft in CRYSTALLINE ROCK: GRANITIC GNEISS

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.					
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)				
BORING NO. B6-A		STATION 36+84		OFFSET 22 ft LT		ALIGNMENT -L-					
COLLAR ELEV. 726.5 ft		TOTAL DEPTH 17.1 ft		NORTHING 900,673		EASTING 1,577,584					
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 93% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic							
DRILLER Smith, C. L.		START DATE 08/07/19		COMP. DATE 08/08/19		SURFACE WATER DEPTH 3.4ft					
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (%)	RQD (%)	REC. (%)	RQD (%)			
726.5											
	726.5	0.0	2.1		(2.0)	(1.7)	(17.0)	(15.6)			Ground Surface
725	724.4	2.1			95%	81%					CRYSTALLINE ROCK
			5.0		(5.0)	(4.2)					Very Slight Weathering to Fresh, Very Hard, White, Gray and Black GRANITIC GNEISS with Close to Wide Fracture Spacing
					100%	84%					GSI = 87 to 95
720	719.4	7.1									
			5.0		(5.0)	(4.9)					
					100%	98%					
715	714.4	12.1									
			5.0		(5.0)	(4.8)					
					100%	96%					
710	709.4	17.1									
											709.4
											Boring Terminated at Elevation 709.4 ft in CRYSTALLINE ROCK: GRANITIC GNEISS

CORE PHOTOGRAPHS

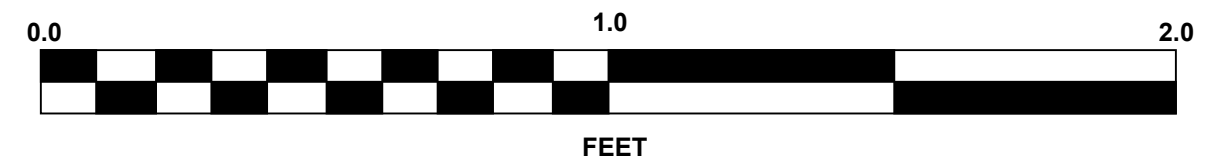
B6-A

BOX 1: 0.0 - 9.7 FEET



B6-A

BOX 2: 9.7 - 17.1 FEET



GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT CORE LOG

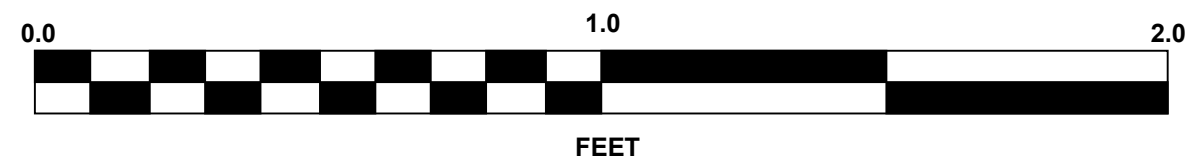
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. B6-B		STATION 36+84		OFFSET 19 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 726.3 ft		TOTAL DEPTH 19.5 ft		NORTHING 900,634		EASTING 1,577,572										
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 93% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic												
DRILLER Smith, C. L.		START DATE 08/08/19		COMP. DATE 08/08/19		SURFACE WATER DEPTH 3.5ft										
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)	
730																WATER SURFACE (08/08/19)
725																726.3 GROUND SURFACE 0.0
720																CRYSTALLINE ROCK White, Gray and Black GRANITIC GNEISS
715																
710																
																706.8 Boring Terminated at Elevation 706.8 ft in CRYSTALLINE ROCK: GRANITIC GNEISS 19.5

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B6-B		STATION 36+84		OFFSET 19 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 726.3 ft		TOTAL DEPTH 19.5 ft		NORTHING 900,634		EASTING 1,577,572						
DRILL RIG/HAMMER EFF./DATE HFO0065 CME-45C 93% 08/15/2018		DRILL METHOD NW Casing w/ Core		HAMMER TYPE Automatic								
DRILLER Smith, C. L.		START DATE 08/08/19		COMP. DATE 08/08/19		SURFACE WATER DEPTH 3.5ft						
CORE SIZE NWL				TOTAL RUN 19.5 ft								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			ELEV. (ft)
726.3												Ground Surface
725	726.3 724.3	0.0 2.0	2.0		(1.6) 80%	(0.5) 25%		(18.6) 95%	(15.7) 81%			CRYSTALLINE ROCK Slight Weathering to Fresh, Very Hard, White, Gray and Black GRANITIC GNEISS with Very Close to Wide Fracture Spacing GSI = 85 to 95
720			5.0	3:07 3:24 3:17 3:40 3:46	(4.8) 96%	(3.1) 62%						
715	719.3	7.0	5.0	4:10 3:50 3:41 3:33 3:52	(4.8) 96%	(4.8) 96%						
710	714.3	12.0	5.0	3:47 7:10 11:00 13:00 8:10	(5.0) 100%	(4.9) 98%						
	709.3	17.0	2.5	11:00 9:45	(2.4) 96%	(2.4) 96%						
	706.8	19.5										706.8 Boring Terminated at Elevation 706.8 ft in CRYSTALLINE ROCK: GRANITIC GNEISS 19.5

CORE PHOTOGRAPHS

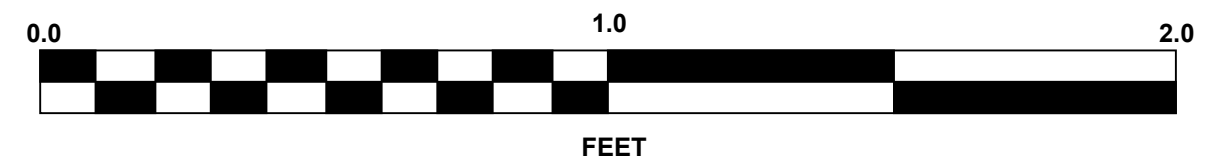
B6-B

BOX 1: 0.0 - 9.7 FEET



B6-B

BOX 2: 9.7 - 19.5 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)									
BORING NO. B7-A		STATION 38+15		OFFSET 12 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 744.1 ft		TOTAL DEPTH 38.9 ft		NORTHING 900,624		EASTING 1,577,706										
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 08/21/19		COMP. DATE 08/21/19		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)		
745														744.1	0.0	GROUND SURFACE
																ALLUVIAL Tan and Brown Silty SAND (A-2-4)
740	739.7	4.4	1	1	1							D				
735	734.7	9.4	1	1	2							D				
730	729.7	14.4	1	1	1							M		729.7	14.4	Gray, Sandy Silty CLAY (A-7) with Trace of Organic Matter (Roots/Leaves)
725														725.9 724.9	18.2 19.2	WEATHERED ROCK Gray and White GRANITIC GNEISS Gray, White and Black GRANITIC GNEISS to BIOTITE GNEISS
720																
715												RS-7				
710																
																Boring Terminated at Elevation 705.2 ft in CRYSTALLINE ROCK: GRANITIC GNEISS

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B7-A		STATION 38+15		OFFSET 12 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 744.1 ft		TOTAL DEPTH 38.9 ft		NORTHING 900,624		EASTING 1,577,706						
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic						
DRILLER Smith, C. L.		START DATE 08/21/19		COMP. DATE 08/21/19		SURFACE WATER DEPTH N/A						
CORE SIZE NQ				TOTAL RUN 19.7 ft								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %		ELEV. (ft)	DEPTH (ft)
724.9	724.9	19.2	1.7		(1.5)	(0.7)		(19.1)	(17.9)			Begin Coring @ 19.2 ft
	723.2	20.9	5.0		88%	41%		97%	91%			Fresh, Very Hard, Gray, White and Black GRANITIC GNEISS to BIOTITE GNEISS with Close to Wide Fracture Spacing
720					(5.0)	(4.6)						GSI = 92 to 95
	718.2	25.9	5.0		100%	92%						
715					(4.9)	(4.9)				RS-7		
	713.2	30.9	5.0		98%	98%						
710					(4.9)	(4.9)						
	708.2	35.9	3.0		98%	98%						
	705.2	38.9			(2.8)	(2.8)						
					93%	93%						
												Boring Terminated at Elevation 705.2 ft in CRYSTALLINE ROCK: GRANITIC GNEISS

CORE PHOTOGRAPHS

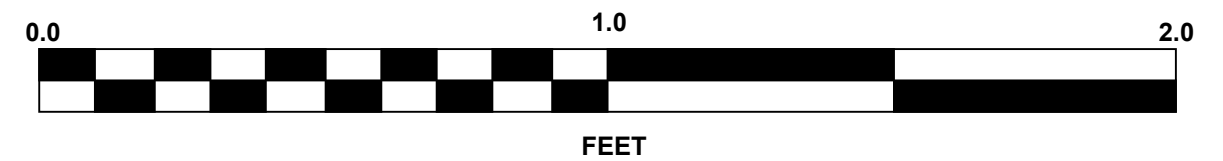
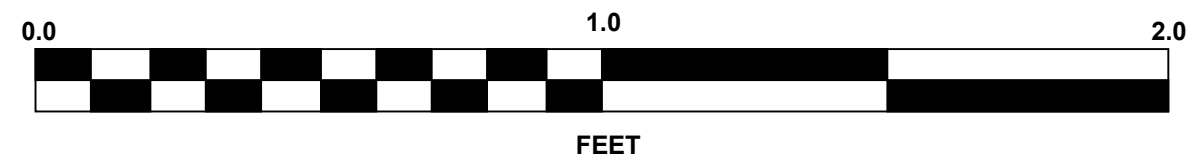
B7-A

BOX 1: 19.2 - 29.7 FEET



B7-A

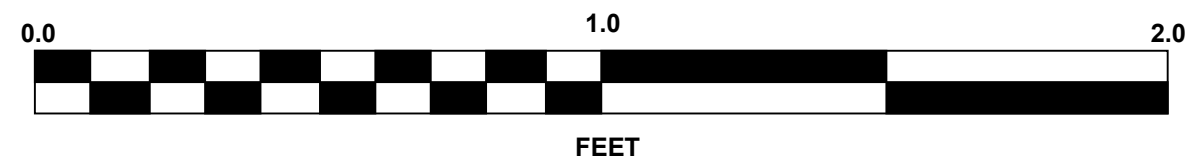
BOX 2: 29.7 - 38.9 FEET



CORE PHOTOGRAPHS

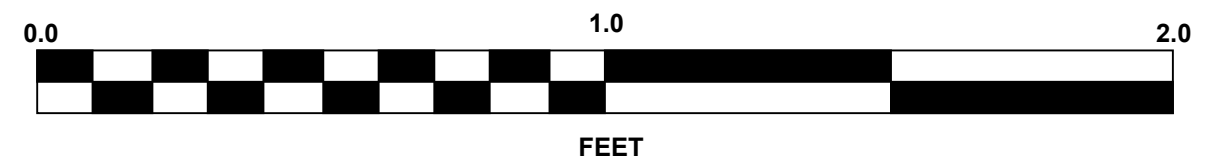
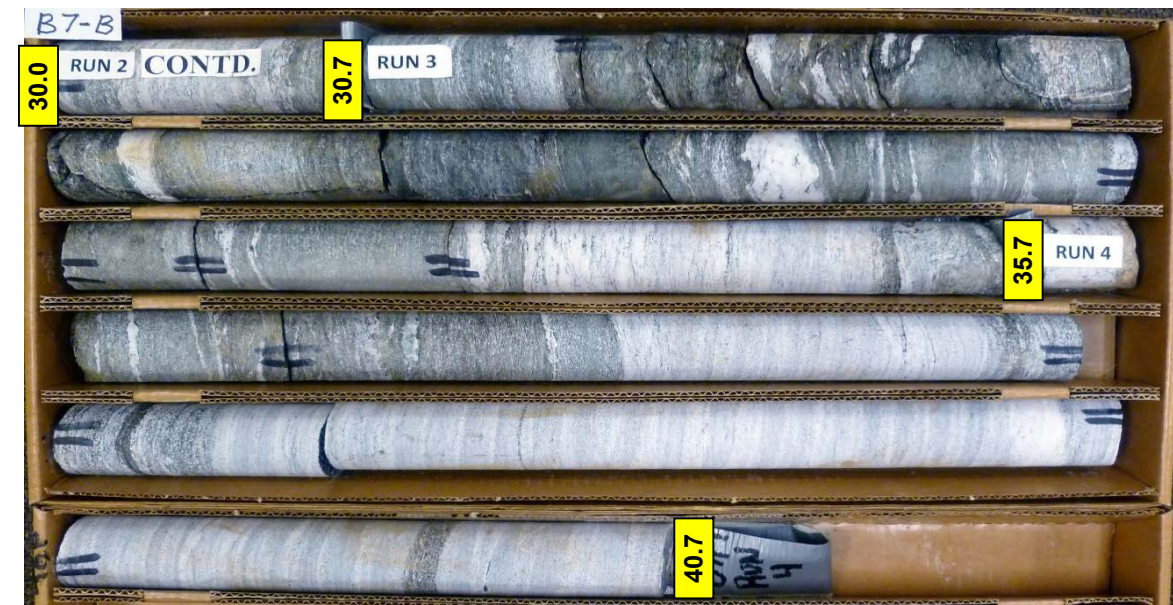
B7-B

BOX 1: 20.5 - 30.0 FEET



B7-B

BOX 2: 30.0 - 40.7 FEET



GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT CORE LOG

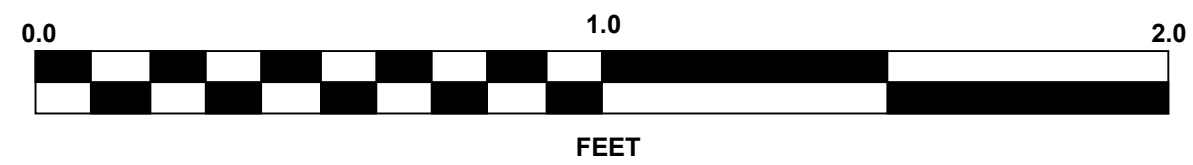
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. B8-A		STATION 39+33		OFFSET 15 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 741.5 ft		TOTAL DEPTH 35.4 ft		NORTHING 900,591		EASTING 1,577,819									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic									
DRILLER Smith, C. L.		START DATE 08/22/19		COMP. DATE 08/22/19		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					
745															
740															
735	737.4	4.1	WOH	1	0										
730	732.4	9.1	WOH	WOH	WOH										
725	727.4	14.1													
720															
715															
710															

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.						
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)					
BORING NO. B8-A		STATION 39+33		OFFSET 15 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 741.5 ft		TOTAL DEPTH 35.4 ft		NORTHING 900,591		EASTING 1,577,819						
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic						
DRILLER Smith, C. L.		START DATE 08/22/19		COMP. DATE 08/22/19		SURFACE WATER DEPTH N/A						
CORE SIZE NQ				TOTAL RUN 20.3 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) %			
726.4	726.4	15.1	5.3		(5.0) 94%	(4.3) 81%						
725												
720	721.1	20.4	5.0		(4.6) 92%	(3.9) 78%						
715	716.1	25.4	5.0		(4.4) 88%	(4.0) 80%						
710	711.1	30.4	5.0		(5.0) 100%	(4.8) 96%						
	706.1	35.4										

CORE PHOTOGRAPHS

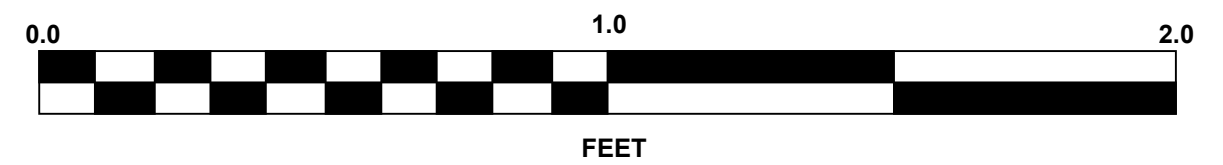
B8-A

BOX 1: 15.1 - 25.4 FEET



B8-A

BOX 2: 25.4 - 35.4 FEET



GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT CORE LOG

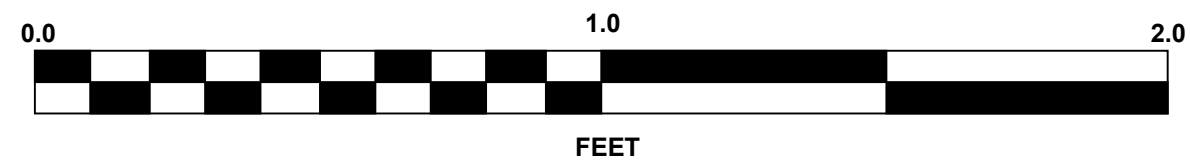
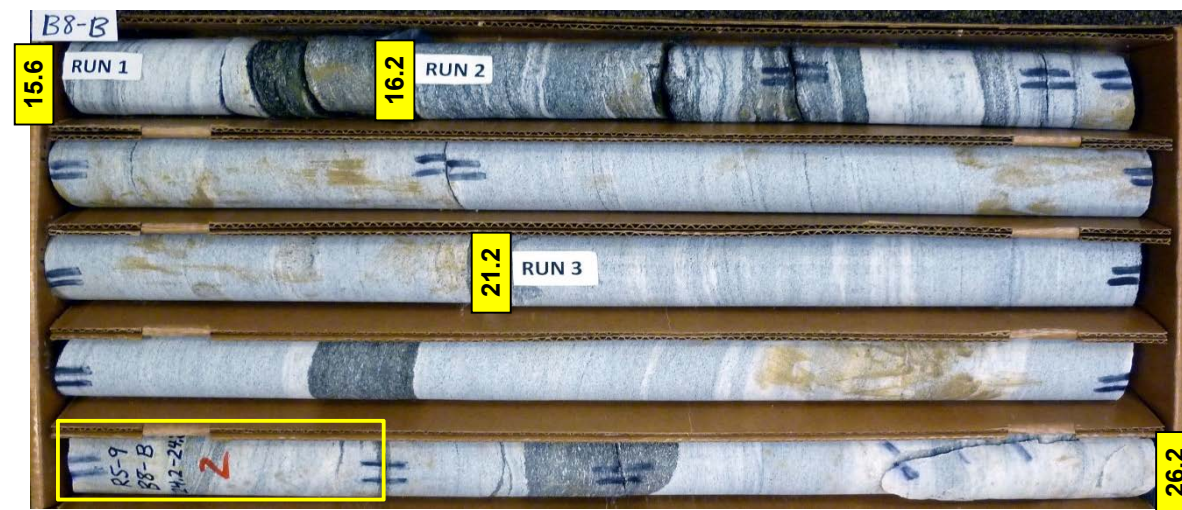
WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. B8-B		STATION 39+34		OFFSET 19 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 742.1 ft		TOTAL DEPTH 36.2 ft		NORTHING 900,558		EASTING 1,577,810									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic									
DRILLER Smith, C. L.		START DATE 08/22/19		COMP. DATE 08/22/19		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					
745															
														742.1	GROUND SURFACE
740															ALLUVIAL Gray, Sandy, Silty CLAY (A-7) with Trace Mica
735	737.3	4.8	1	0	0										
730	732.3	9.8	WOH	WOH	WOH										
725	727.3	14.8												727.5	WEATHERED ROCK Gray and White GRANITIC GNEISS
														727.3	CRYSTALLINE ROCK Gray, White and Black GRANITIC AND BIOTITE GNEISS
720															
715															
710															
														705.9	Boring Terminated at Elevation 705.9 ft in CRYSTALLINE ROCK: GRANITIC AND BIOTITE GNEISS

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.		
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)	
BORING NO. B8-B		STATION 39+34		OFFSET 19 ft RT		ALIGNMENT -L-		
COLLAR ELEV. 742.1 ft		TOTAL DEPTH 36.2 ft		NORTHING 900,558		EASTING 1,577,810		
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing W/SPT & Core			HAMMER TYPE Automatic		
DRILLER Smith, C. L.		START DATE 08/22/19		COMP. DATE 08/22/19		SURFACE WATER DEPTH N/A		
CORE SIZE NQ		TOTAL RUN 20.6 ft		L O G		DESCRIPTION AND REMARKS		
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	
726.5	726.5	15.6	0.6		(0.6) 100%	(0.0) 0%		
725	725.9	16.2	5.0		(4.1) 82%	(4.0) 80%		
720	720.9	21.2	5.0		(5.0) 100%	(5.0) 100%		
715	715.9	26.2	5.0		(5.0) 100%	(4.3) 86%	RS-9	
710	710.9	31.2	5.0		(4.9) 98%	(4.6) 92%		
	705.9	36.2						
							705.9	Boring Terminated at Elevation 705.9 ft in CRYSTALLINE ROCK: GRANITIC AND BIOTITE GNEISS

CORE PHOTOGRAPHS

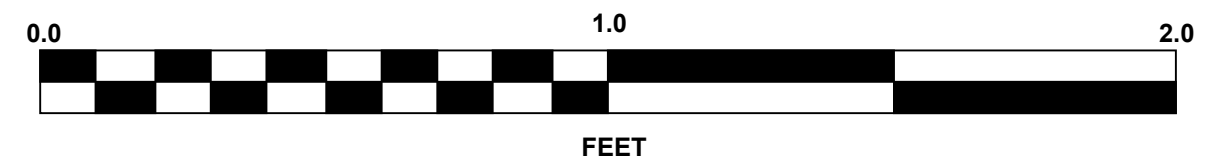
B8-B

BOX 1: 15.6 - 26.2 FEET



B8-B

BOX 2: 26.2 - 36.2 FEET



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 39+96		OFFSET 45 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 742.2 ft		TOTAL DEPTH 14.3 ft		NORTHING 900,600		EASTING 1,577,889									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 08/29/19		COMP. DATE 08/29/19		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					
745															
740	738.5	3.7	1	1	2									742.2	GROUND SURFACE
735	733.5	8.7	2	4	4									734.2	ALLUVIAL Tan and Orange, Silty SAND (A-2-4)
730	728.5	13.7	10	90/0.1										731.9	Gray Sandy Silty CLAY (A-7) with Mica
														728.5	Gravel (A-1)
														727.9	WEATHERED ROCK Gray and White GRANITIC ROCK Boring Terminated by Auger Refusal at Elevation 727.9 ft on CRYSTALLINE ROCK: GRANITIC GNEISS

WBS 45778.1.1		TIP B-5825		COUNTY YADKIN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 35 on NC 67 over Yadkin River							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 40+03		OFFSET 35 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 769.8 ft		TOTAL DEPTH 46.2 ft		NORTHING 900,522		EASTING 1,577,871									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 92% 08/15/2018		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic											
DRILLER Smith, C. L.		START DATE 08/29/19		COMP. DATE 08/29/19		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					
770														769.8	GROUND SURFACE
765	765.6	4.2	4	3	4										ROADWAY EMBANKMENT Gray, White, Tan and Orange, Silty Fine SAND (A-2-4) with Trace Gravel and Mica
760	760.6	9.2	3	4	4										
755	755.6	14.2	3	5	5										
750	750.6	19.2	4	3	4										
745	745.6	24.2	2	2	3									745.6	ALLUVIAL Gray, Silty, Sandy CLAY (A-6)
740	740.6	29.2	1	2	1									741.7	Gravel Layer (A-1)
														740.6	Tan and Brown, Sandy Silty CLAY (A-7)
735	735.6	34.2	16	12	8										
730	730.6	39.2	100/0.2											731.8	WEATHERED ROCK Gray and White GRANITIC GNEISS
														725.6	CRYSTALLINE ROCK Gray and White GRANITIC GNEISS
725	725.6	44.2	60/0.0											723.6	Boring Terminated by Auger Refusal at Elevation 723.6 ft on CRYSTALLINE ROCK: GRANITIC GNEISS

NCDOT BORE DOUBLE B5825 GEO_BRDG_GINT_GPJ_NC_DOT.GDT 11/10/19

LABORATORY SUMMARY SHEET FOR ROCK CORE SAMPLES

PROJECT NO.: 45778.1.1 (B-5825)

SHEET 46

COUNTY: FORSYTH/YADKIN

REPLACE BRIDGE NO. 35 ON NC 67 OVER YADKIN RIVER STA. 34+65.50

Sample No.	Boring #	Depth (ft)	Rock Type	Geologic Map Unit	Run RQD	Length (in)	Diameter (in)	Unit Weight (PCF)	Unconfined Compressive Strength (ksi)	Young's Modulus (MPSI)	Splitting Tensile Strength (PSI)	Remarks
RS-1	B5-A	10.2 - 10.7	Granitic Gneiss	Vg	92	3.93	1.98	165.6	17.41	3.59	N/A	
RS-2	B3-B	29.7 - 30.2	Granitic Gneiss	Vg	94	3.93	1.98	162.8	18.77	4.91	N/A	
RS-4	B6-A	10.7 - 11.4	Granitic Gneiss	Vg	98	3.89	1.98	174.6	10.57	3.77	N/A	
RS-5	B2-A	29.3 - 29.7	Granitic Gneiss	Vg	84	3.75	1.98	155.6	14.24	4.64	N/A	
RS-6	B4-A	27.5 - 28.1	Granitic Gneiss	Vg	94	3.89	1.87	165.0	14.29	4.93	N/A	
RS-7	B7-A	28.2 - 28.6	Biotite Gneiss	Vg	98	3.35	1.87	161.5	6.29	1.188	N/A	
RS-8	B1-A	43.5 - 43.9	Granitic Gneiss	Vg	92	3.92	1.87	165.3	10.53	5.52	N/A	
RS-9	B8-B	24.2 - 24.8	Granitic Gneiss	Vg	100	3.90	1.87	167.8	12.39	2.68	N/A	