

PROJECT: 38550.1.1 ID: B-4779

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	38550.1.1 (B-4779)	1	33

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STRUCTURE
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 38550.1.1 (B-4779) F.A. PROJ. BRSTP-29(39)
COUNTY MECKLENBURG
PROJECT DESCRIPTION REPLACE BRIDGE 147 (SBL) AND
BRIDGE 140 (NBL) OVER MALLARD CREEK ON US 29

SITE DESCRIPTION _____

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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 RELED 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 THIS 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.

PERSONNEL

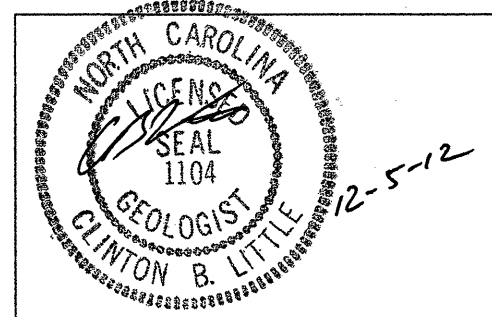
AMERIDRILL

INVESTIGATED BY J.E. BEVERLY

CHECKED BY C.B. LITTLE

SUBMITTED BY C.B. LITTLE

DATE NOVEMBER 2012



DRAWN BY: J.K. McCLURE

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

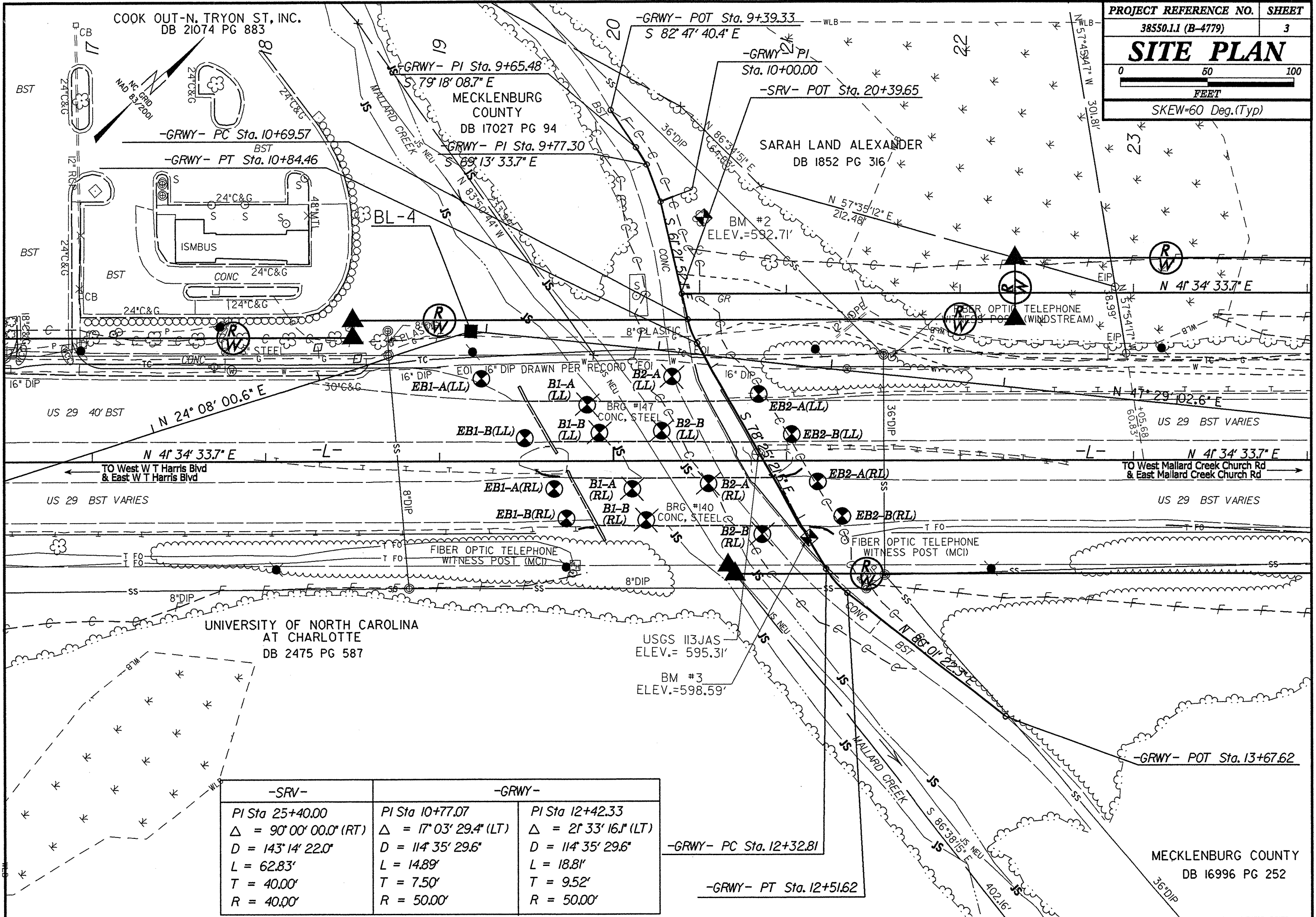
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table containing SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION, and ROCK HARDNESS.



-SRV-	-GRWY-	
PI Sta 25+40.00	PI Sta 10+77.07	PI Sta 12+42.33
$\Delta = 90^{\circ} 00' 00.0''$ (RT)	$\Delta = 17^{\circ} 03' 29.4''$ (LT)	$\Delta = 2^{\circ} 33' 16.1''$ (LT)
D = 143' 14' 22.0"	D = 114' 35' 29.6"	D = 114' 35' 29.6"
L = 62.83'	L = 14.89'	L = 18.81'
T = 40.00'	T = 7.50'	T = 9.52'
R = 40.00'	R = 50.00'	R = 50.00'

COOK OUT-N. TRYON ST, INC.
DB 21074 PG 883

MECKLENBURG COUNTY
DB 17027 PG 94

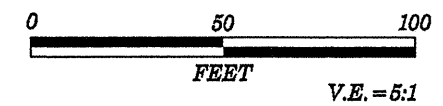
SARAH LAND ALEXANDER
DB 1852 PG 316

UNIVERSITY OF NORTH CAROLINA
AT CHARLOTTE
DB 2475 PG 587

MECKLENBURG COUNTY
DB 16996 PG 252

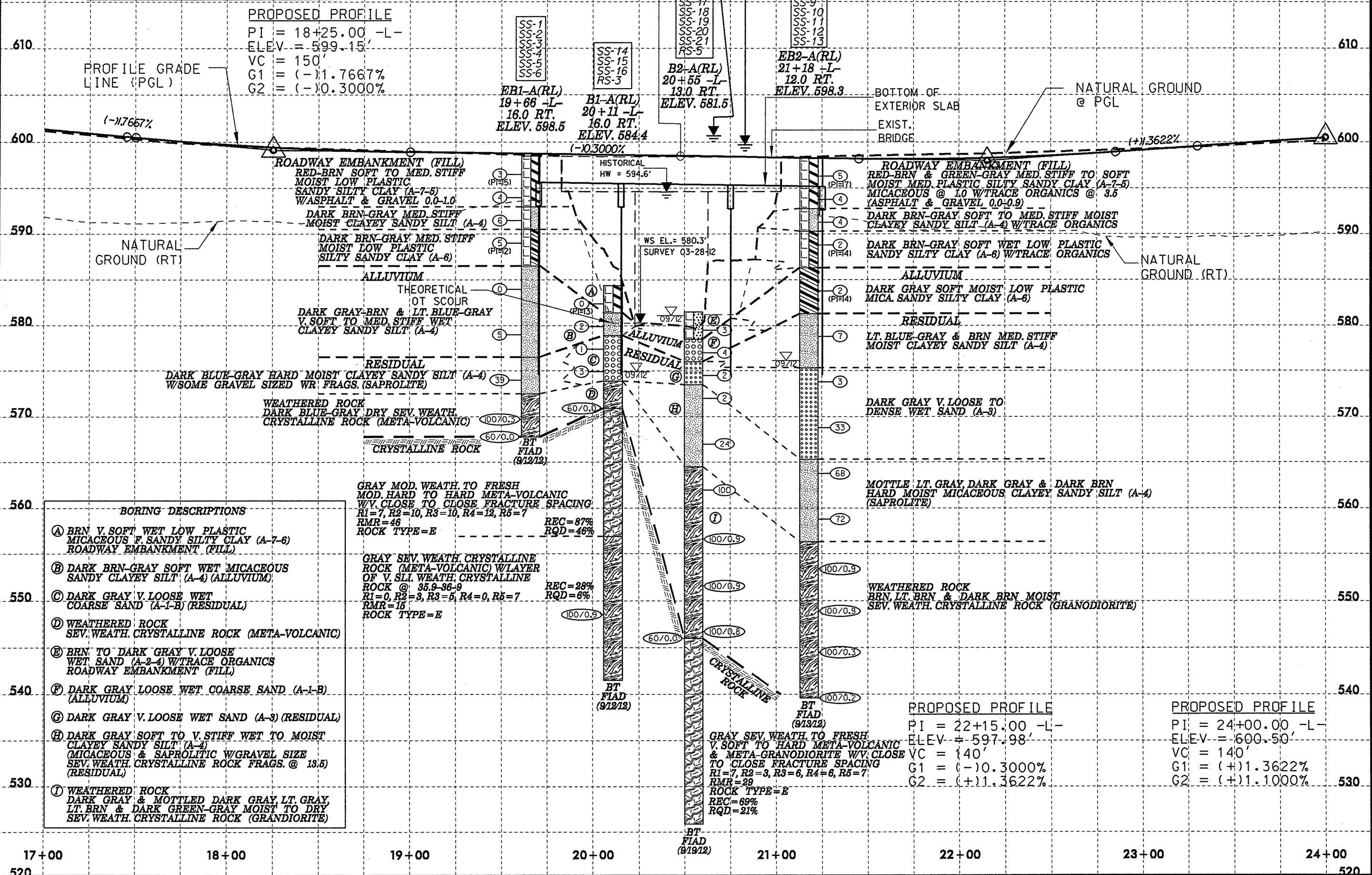
NBL PROFILE

CL BRIDGE STA. = 20+47.50 -L-
 1 @ 45'-0", 1 @ 60'-0", 1 @ 50'-0"
 24" CORED SLAB SECTIONS
 SKEW = 60°
 CROWN GRADE ELEV. = 598.5'



PROJECT REFERENCE NO.	SHEET
38550.1.1 (B-4779)	4
Profile -L- Bridge No. 140 over Mallard Creek on US 29	

PROPOSED PROFILE
 PI = 18+25.00 -L-
 ELEV = 599.15'
 VC = 150'
 G1 = (-)1.7667%
 G2 = (-)0.3000%



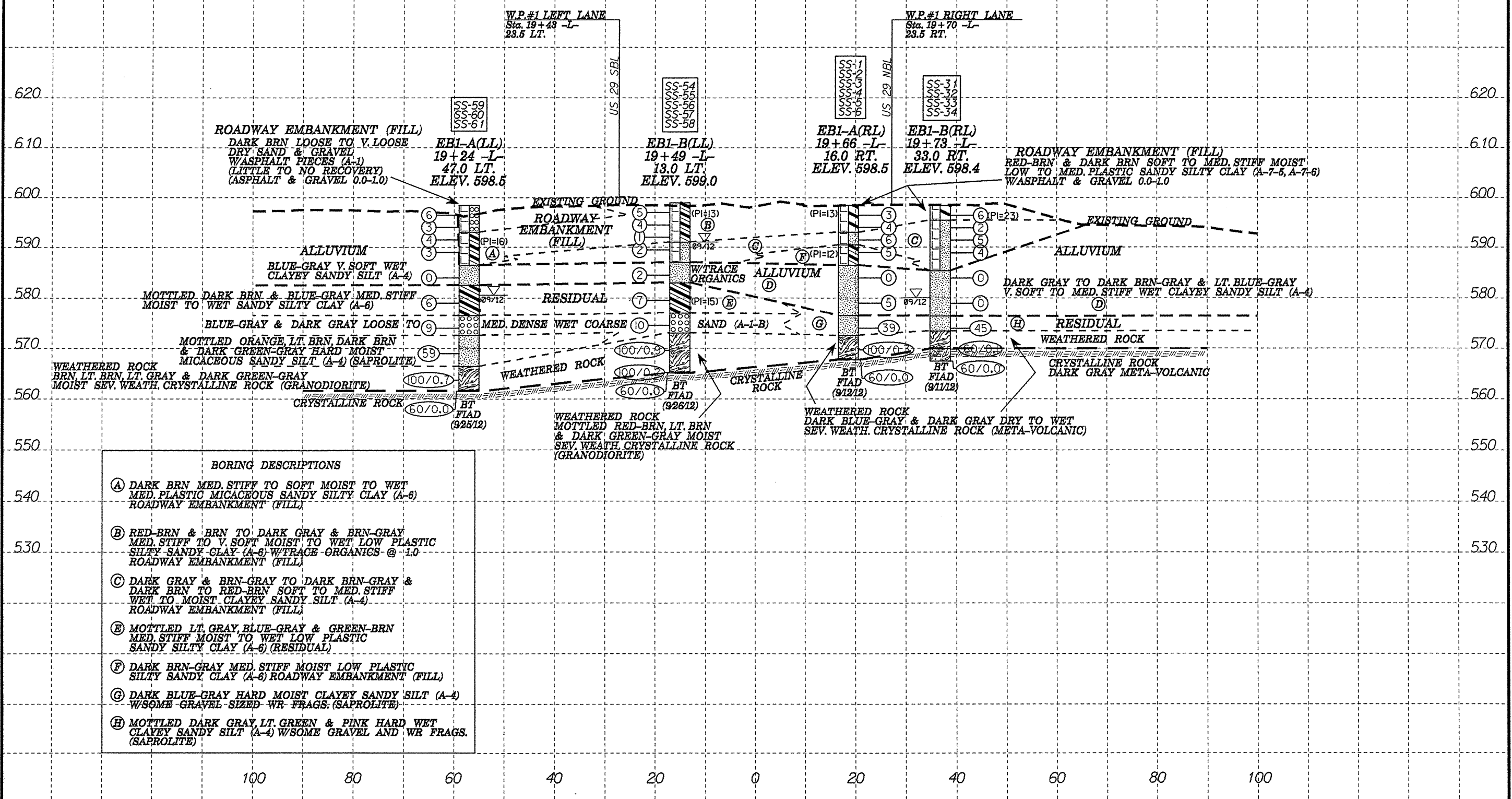
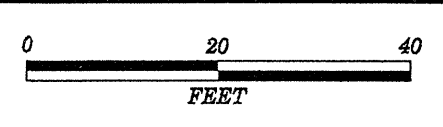
BORING DESCRIPTIONS

(A) BRN V. SOFT WET LOW PLASTIC MICACEOUS F. SANDY SILTY CLAY (A-7-6) ROADWAY EMBANKMENT (FILL)
(B) DARK BRN-GRAY SOFT WET MICACEOUS SANDY CLAYEY SILT (A-4) (ALLUVIUM)
(C) DARK GRAY V. LOOSE WET COARSE SAND (A-1-B) (RESIDUAL)
(D) WEATHERED ROCK SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC)
(E) BRN TO DARK GRAY V. LOOSE WET SAND (A-2-4) W/TRACE ORGANICS ROADWAY EMBANKMENT (FILL)
(F) DARK GRAY LOOSE WET COARSE SAND (A-1-B) (ALLUVIUM)
(G) DARK GRAY V. LOOSE WET SAND (A-3) (RESIDUAL)
(H) DARK GRAY SOFT TO V. STIFF WET TO MOIST CLAYEY SANDY SILT (A-4) (MICACEOUS & SAPROLITIC W/GRAVEL SIZE SEV. WEATH. CRYSTALLINE ROCK FRAGS. @ 13.5) (RESIDUAL)
(I) WEATHERED ROCK DARK GRAY & MOTTLED DARK GRAY, LT. GRAY, LT. BRN & DARK GREEN-GRAY MOIST TO DRY SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)

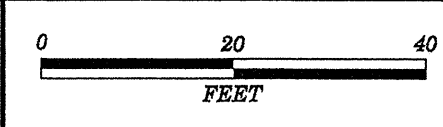
GRAY MOD. WEATH. TO FRESH MOD. HARD TO HARD META-VOLCANIC W/V. CLOSE TO CLOSE FRACTURE SPACING.
 R1=7, R2=10, R3=10, R4=12, R5=7
 RMR=48
 ROCK TYPE=E
 REC=87%
 RQD=46%

GRAY SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC) W/LAYER OF V. SLI. WEATH. CRYSTALLINE ROCK @ 35.9-36.9
 R1=0, R2=3, R3=5, R4=0, R5=7
 RMR=15
 ROCK TYPE=E
 REC=28%
 RQD=6%

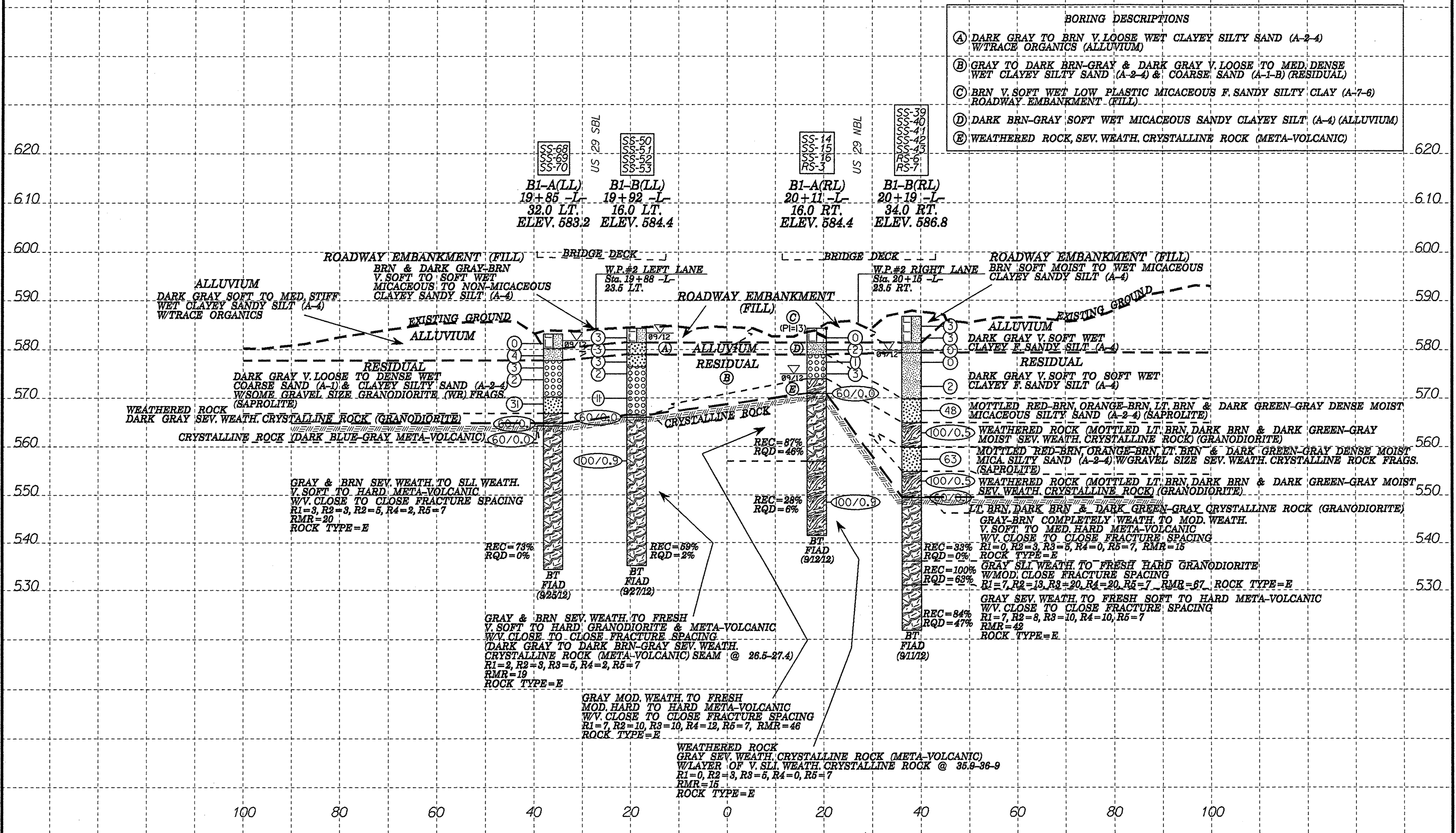
GRAY SEV. WEATH. TO FRESH V. SOFT TO HARD META-VOLCANIC & META-GRANODIORITE W/V. CLOSE TO CLOSE FRACTURE SPACING
 R1=7, R2=3, R3=6, R4=6, R5=7
 RMR=29
 ROCK TYPE=E
 REC=69%
 RQD=21%

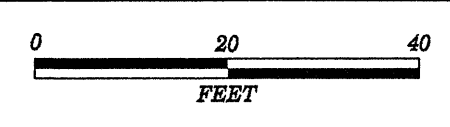


- BORING DESCRIPTIONS**
- (A) DARK BRN MED. STIFF TO SOFT MOIST TO WET MED. PLASTIC MICACEOUS SANDY SILTY CLAY (A-6) ROADWAY EMBANKMENT (FILL)
 - (B) RED-BRN & BRN TO DARK GRAY & BRN-GRAY MED. STIFF TO V. SOFT MOIST TO WET LOW PLASTIC SILTY SANDY CLAY (A-6) W/TRACE ORGANICS @ -1.0 ROADWAY EMBANKMENT (FILL)
 - (C) DARK GRAY & BRN-GRAY TO DARK BRN-GRAY & DARK BRN TO RED-BRN SOFT TO MED. STIFF WET TO MOIST CLAYEY SANDY SILT (A-4) ROADWAY EMBANKMENT (FILL)
 - (E) MOTTLED LT. GRAY, BLUE-GRAY & GREEN-BRN MED. STIFF MOIST TO WET LOW PLASTIC SANDY SILTY CLAY (A-6) (RESIDUAL)
 - (F) DARK BRN-GRAY MED. STIFF MOIST LOW PLASTIC SILTY SANDY CLAY (A-6) ROADWAY EMBANKMENT (FILL)
 - (G) DARK BLUE-GRAY HARD MOIST CLAYEY SANDY SILT (A-4) W/SOME GRAVEL-SIZED WR FRAGS. (SAPROLITE)
 - (H) MOTTLED DARK GRAY, LT. GREEN & PINK HARD WET CLAYEY SANDY SILT (A-4) W/SOME GRAVEL AND WR FRAGS. (SAPROLITE)

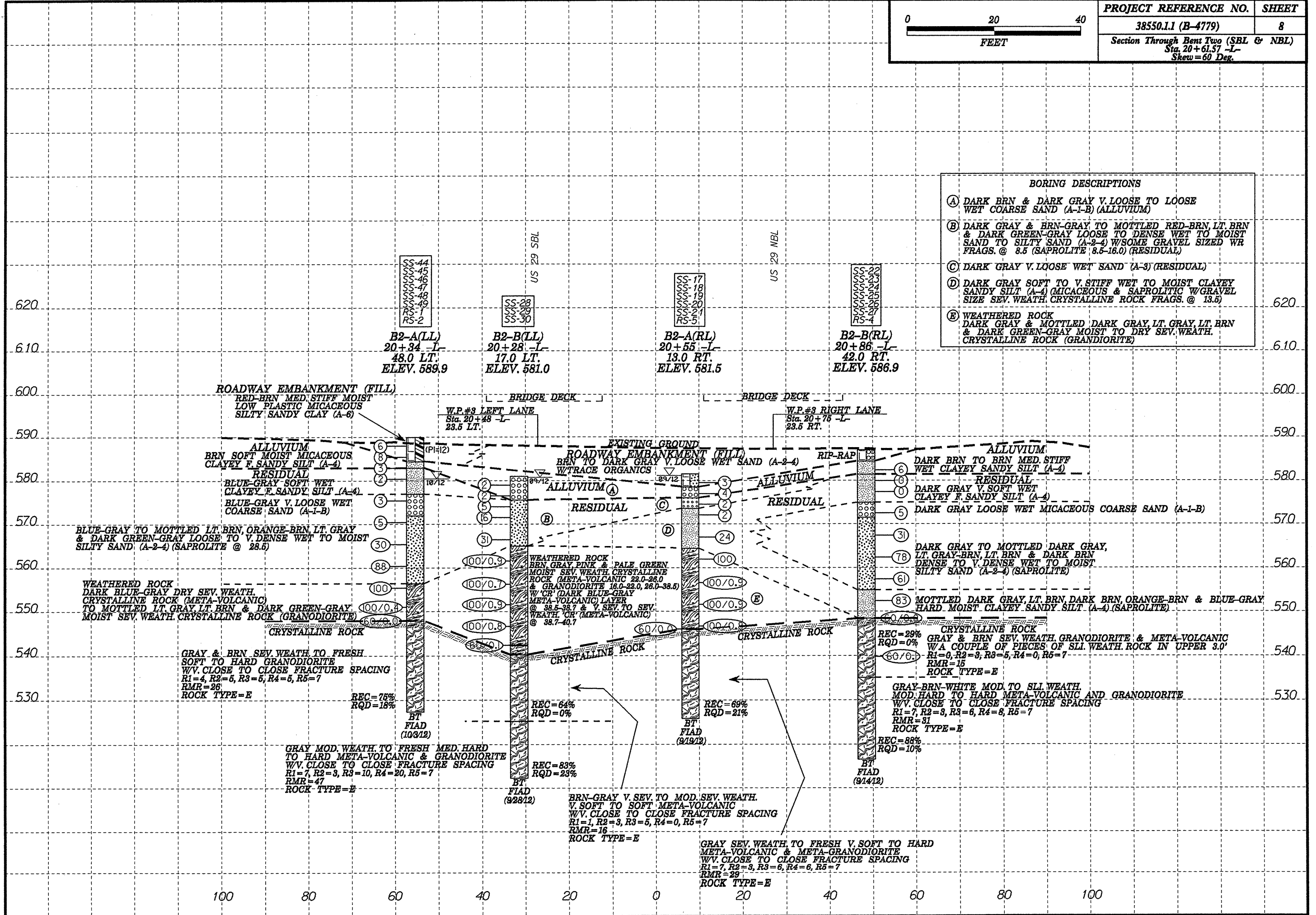


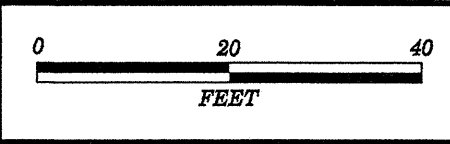
- BORING DESCRIPTIONS**
- (A) DARK GRAY TO BRN V. LOOSE WET CLAYEY SILTY SAND (A-2-4) W/TRACE ORGANICS (ALLUVIUM)
 - (B) GRAY TO DARK BRN-GRAY & DARK GRAY V. LOOSE TO MED. DENSE WET CLAYEY SILTY SAND (A-2-4) & COARSE SAND (A-1-B) (RESIDUAL)
 - (C) BRN V. SOFT WET LOW PLASTIC MICACEOUS F. SANDY SILTY CLAY (A-7-6) ROADWAY EMBANKMENT (FILL)
 - (D) DARK BRN-GRAY SOFT WET MICACEOUS SANDY CLAYEY SILT (A-4) (ALLUVIUM)
 - (E) WEATHERED ROCK, SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC)





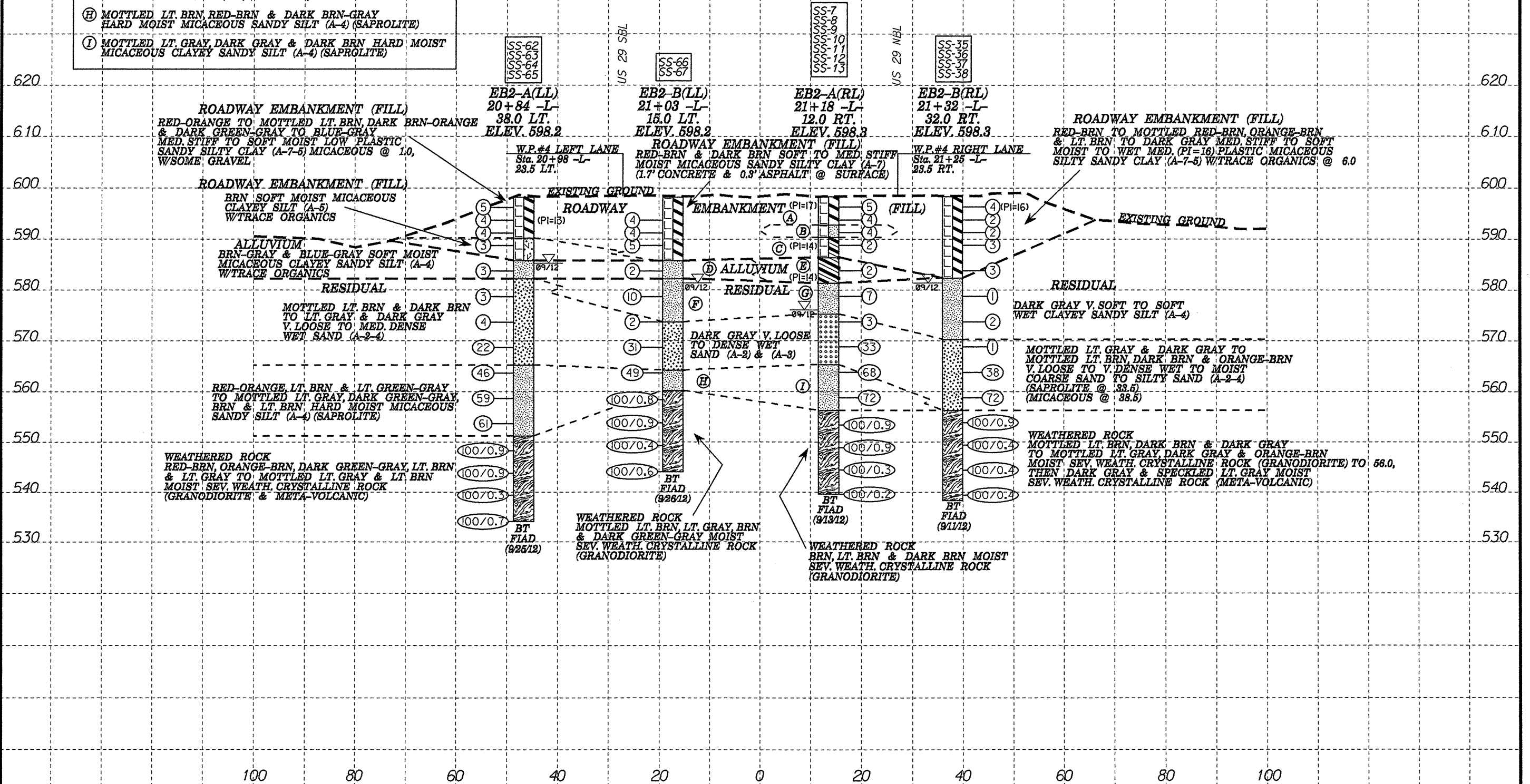
- BORING DESCRIPTIONS**
- (A) DARK BRN & DARK GRAY V. LOOSE TO LOOSE WET COARSE SAND (A-1-B) (ALLUVIUM)
 - (B) DARK GRAY & BRN-GRAY TO MOTTLED RED-BRN, LT BRN & DARK GREEN-GRAY LOOSE TO DENSE WET TO MOIST SAND TO SILTY SAND (A-2-4) W/SOME GRAVEL SIZED WR FRAGS. @ 8.5 (SAPROLITE 3.5-16.0) (RESIDUAL)
 - (C) DARK GRAY V. LOOSE WET SAND (A-3) (RESIDUAL)
 - (D) DARK GRAY SOFT TO V. STIFF WET TO MOIST CLAYEY SANDY SILT (A-4) (MICACEOUS & SAPROLITIC W/GRAVEL SIZE SEV. WEATH. CRYSTALLINE ROCK FRAGS. @ 13.5)
 - (E) WEATHERED ROCK DARK GRAY & MOTTLED DARK GRAY, LT. GRAY, LT. BRN & DARK GREEN-GRAY MOIST TO DRY SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)





BORING DESCRIPTIONS

- (A) RED-BRN & GREEN-GRAY MED. STIFF TO SOFT MOIST MED. PLASTIC SILTY SANDY CLAY (A-7-5) MICACEOUS @ 1.0 W/TRACE ORGANICS @ 3.5 (ASPHALT & GRAVEL 0.0-0.9) ROADWAY EMBANKMENT (FILL)
- (B) DARK BRN-GRAY SOFT TO MED. STIFF MOIST CLAYEY SANDY SILT (A-4) W/TRACE ORGANICS ROADWAY EMBANKMENT (FILL)
- (C) DARK BRN-GRAY SOFT WET LOW PLASTIC SANDY SILTY CLAY (A-6) W/TRACE ORGANICS ROADWAY EMBANKMENT (FILL)
- (D) DARK GRAY SOFT WET CLAYEY SANDY SILT (A-4) (ALLUVIUM)
- (E) DARK GRAY SOFT MOIST LOW PLASTIC MICACEOUS SANDY SILTY CLAY (A-6) (ALLUVIUM)
- (F) MOTTLED LT. GRAY, RED-BRN & DARK BRN STIFF TO SOFT WET CLAYEY SANDY SILT (A-4) (RESIDUAL)
- (G) LT. BLUE-GRAY & BRN MED. STIFF MOIST CLAYEY SANDY SILT (A-4) (RESIDUAL)
- (H) MOTTLED LT. BRN, RED-BRN & DARK BRN-GRAY HARD MOIST MICACEOUS SANDY SILT (A-4) (SAPROLITE)
- (I) MOTTLED LT. GRAY, DARK GRAY & DARK BRN HARD MOIST MICACEOUS CLAYEY SANDY SILT (A-4) (SAPROLITE)



WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. EB1-A(RL)	STATION 19+66	OFFSET 16 ft RT	ALIGNMENT -L-
COLLAR ELEV. 598.5 ft	TOTAL DEPTH 30.7 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/12/12	COMP. DATE 09/12/12	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					
600														GROUND SURFACE	0.0
595	597.5	1.0	4	1	2						SS-1	M		ROADWAY EMBANKMENT RED-BRN SOFT TO MED. STIFF MOIST LOW (PI=15) PLASTIC SANDY SILTY CLAY (A-7-5) W/ ASPHALT & GRAVEL 0.0-1.0	5.5
590	592.5	6.0	2	3	3						SS-2	M		ROADWAY EMBANKMENT DARK BRN-GRAY MED. STIFF MOIST CLAYEY SANDY SILT (A-4)	8.0
585	586.5	12.0	2	2	3						SS-3	M		ROADWAY EMBANKMENT DARK BRN-GRAY MED. STIFF MOIST LOW (PI=12) PLASTIC SILTY SANDY CLAY (A-6)	12.0
580	580.0	18.5	0	3	2						SS-4	W		ALLUVIAL DARK GRAY-BRN & LT. BLUE-GRAY V. SOFT TO MED. STIFF WET CLAYEY SANDY SILT (A-4)	22.0
575	575.0	23.5	11	15	24						SS-5	W		RESIDUAL DARK BLUE-GRAY HARD MOIST CLAYEY SANDY SILT (A-4) W/ SOME GRAVEL SIZED WR FRAGS. (SAPROLITE)	26.0
570	570.0	28.5	100/0.3								SS-6	M		WEATHERED ROCK DARK BLUE-GRAY DRY SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC)	30.7
	567.8	30.7	60/0.0											Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 567.8 ft ON CRYSTALLINE ROCK (META-VOLCANIC)	

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. EB1-B(RL)	STATION 19+73	OFFSET 33 ft RT	ALIGNMENT -L-
COLLAR ELEV. 598.4 ft	TOTAL DEPTH 30.9 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/11/12	COMP. DATE 09/11/12	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					
600														GROUND SURFACE	0.0
595	597.4	1.0	6	3	3						SS-31	M		ROADWAY EMBANKMENT DARK BRN TO RED-BRN MED. STIFF MOIST MED. (PI=23) PLASTIC SANDY SILTY CLAY (A-7-6) W/ ASPHALT & GRAVEL 0.0-1.0	3.0
590	592.4	6.0	2	2	3						SS-32	M		ROADWAY EMBANKMENT DARK BRN & RED-BRN TO DARK GRAY & DARK BRN-GRAY SOFT TO MED. STIFF MOIST CLAYEY SANDY SILT (A-4)	13.0
585	584.9	13.5	0	0	0						SS-33	W		ALLUVIAL DARK GRAY TO DARK BRN-GRAY V. SOFT WET CLAYEY SANDY SILT (A-4)	22.0
580	579.9	18.5	0	0	0							W		RESIDUAL MOTTLED DARK GRAY, LT. GREEN & PINK HARD WET CLAYEY SANDY SILT (A-4) W/ SOME GRAVEL AND WR FRAGS. (SAPROLITE)	25.0
575	574.9	23.5	16	26	19						SS-34	W		WEATHERED ROCK DARK GRAY WET SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC)	28.5
570	569.9	28.5	60/0.1									W		CRYSTALLINE ROCK DARK GRAY META-VOLCANIC Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 567.5 ft IN CRYSTALLINE ROCK (META-VOLCANIC)	30.9
	567.5	30.9	60/0.0												

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT.GDT 10/30/12

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT.GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK									
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)								
BORING NO. B1-A(RL)		STATION 20+11		OFFSET 16 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 584.4 ft		TOTAL DEPTH 42.9 ft		NORTHING N/A		EASTING N/A									
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic											
DRILLER AMERIDRILL		START DATE 09/12/12		COMP. DATE 09/12/12		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					
585														584.4	0.0
	583.4	1.0	0	0	0									581.4	3.0
580	580.9	3.5	1	1	1									578.9	5.5
	578.4	6.0	0	0	1									573.9	10.5
575	575.9	8.5	0	1	2									570.9	13.5
	570.9	13.5	60/0.0											570.9	13.5
565														556.9	27.5
560														556.9	27.5
555														556.9	27.5
550	549.9	34.5	3	21	79/0.4									541.5	42.9
545														541.5	42.9
														541.5	42.9

NCDOT BORE SINGLE B4779_GEO_BH_BRDG0140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK						
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)					
BORING NO. B1-A(RL)		STATION 20+11		OFFSET 16 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 584.4 ft		TOTAL DEPTH 42.9 ft		NORTHING 575,255		EASTING 1,481,779						
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic								
DRILLER AMERIDRILL		START DATE 09/12/12		COMP. DATE 09/12/12		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 (%)			
570.9												
570	570.9	13.5	3.0	N=60/0.0	(3.0)	(2.6)		(12.2)	(6.4)		Begin Coring @ 13.5 ft	13.5
	567.9	16.5	5.0		(3.5)	(0.5)	RS-3				CRYSTALLINE ROCK	
565					(70%)	(10%)					GRAY MOD. WEATH. TO FRESH MOD. HARD TO HARD	
	562.9	21.5	5.0		(4.7)	(2.3)					META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	
	562.9	21.5	5.0		(94%)	(46%)					R1=7, R2=10, R3=10, R4=12, R5=7	
560					(36%)	(20%)					RMR=46	
	557.9	26.5	5.0		(1.8)	(1.0)		(4.3)	(0.9)		ROCK TYPE=E	
555					(9%)	(0%)					WEATHERED ROCK	
	552.9	31.5	4.4		(0.4)	(0.0)					GRAY SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC) W/	
	548.5	35.9	2.0	N=100/0.9	(55%)	(43%)					LAYER OF V. SLI. WEATH. CRYSTALLINE ROCK @ 35.9-36.9	
	546.5	37.9	5.0		(2.0)	(0.0)					R1=0, R2=3, R3=5, R4=0, R5=7	
545					(40%)	(0%)					RMR=15	
	541.5	42.9									Boring Terminated at Elevation 541.5 ft IN SEV. WEATH. CRYSTALLINE	42.9
											ROCK (META-VOLCANIC)	

NCDOT CORE SINGLE B4779_GEO_BH_BRDG0140&0147_MECKLENBURG.GPJ NC_DOT_GDT 11/28/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK									
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)								
BORING NO. B1-B(RL)		STATION 20+19		OFFSET 34 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 586.8 ft		TOTAL DEPTH 65.0 ft		NORTHING N/A		EASTING N/A									
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic											
DRILLER AMERIDRILL		START DATE 09/10/12		COMP. DATE 09/11/12		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	ELEV. (ft)	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75						
590													GROUND SURFACE	586.8	0.0
585	585.8	1.0	1	1	2							M	ROADWAY EMBANKMENT BRN SOFT MOIST TO WET MICACEOUS CLAYEY SANDY SILT (A-4)		
	583.3	3.5	2	1	2							SS-39			
580	580.8	6.0	0	0	0							SS-40	ALLUVIAL DARK GRAY V. SOFT WET CLAYEY F. SANDY SILT (A-4)	581.3	5.5
	578.3	8.5	0	0	0							SS-41	RESIDUAL DARK GRAY V. SOFT TO SOFT WET CLAYEY F. SANDY SILT (A-4)	579.3	7.5
575	573.3	13.5	0	1	1							W			
570	568.3	18.5	13	22	26							SS-42	RESIDUAL MOTTLED RED-BRN, ORANGE-BRN, LT. BRN & DARK GREEN-GRAY DENSE MOIST MICACEOUS SILTY SAND (A-2-4) (SAPROLITE)	569.8	17.0
565	563.3	23.5	100/0.5									M	WEATHERED ROCK MOTTLED LT. BRN, DARK BRN & DARK GREEN-GRAY MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	564.8	22.0
560	558.3	28.5	37	24	39							M	RESIDUAL MOTTLED RED-BRN, ORANGE-BRN, LT. BRN & DARK GREEN-GRAY DENSE MOIST MICACEOUS SILTY SAND (A-2-4) W/ GRAVEL SIZE SEV. WEATH. CRYSTALLINE ROCK FRAGS. (SAPROLITE)	559.8	27.0
555	553.3	33.5	100/0.5									M	WEATHERED ROCK MOTTLED LT. BRN, DARK BRN & DARK GREEN-GRAY MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	554.8	32.0
550	549.5	37.3	60/0.1									M	CRYSTALLINE ROCK LT. BRN, DARK BRN & DARK GREEN-GRAY CRYSTALLINE ROCK (GRANODIORITE)	549.5 549.4	37.3 37.4
545													CRYSTALLINE ROCK GRAY-BRN COMPLETELY WEATH. TO MOD. WEATH. V. SOFT TO MED. HARD META-VOLCANIC W/V. CLOSE TO CLOSE FRACTURE SPACING		
540													CRYSTALLINE ROCK GRAY SLI. WEATH. TO FRESH HARD GRANODIORITE W/ MOD. CLOSE FRACTURE SPACING		
535												RS-6		535.9	50.9
530													CRYSTALLINE ROCK GRAY SEV. WEATH. TO FRESH SOFT TO HARD METAVOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	531.0	55.8
525												RS-7			
														521.8	65.0
Boring Terminated at Elevation 521.8 ft IN CRYSTALLINE ROCK (META-VOLCANIC)															

NCDOT BORE SINGLE B4779 GEO. BH. BRDG0140&0147_MECKLENBURG.GPJ_NC_DOT.GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK						
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)					
BORING NO. B1-B(RL)		STATION 20+19		OFFSET 34 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 586.8 ft		TOTAL DEPTH 65.0 ft		NORTHING 575,249		EASTING 1,481,797						
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic								
DRILLER AMERIDRILL		START DATE 09/10/12		COMP. DATE 09/11/12		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 (%)			
549.4											Begin Coring @ 37.4 ft	
	549.4	37.4	2.6		(0.9)	(0.0)		(4.5)	(0.0)		CRYSTALLINE ROCK	37.4
	546.8	40.0			35%	0%		33%	0%		GRAY-BRN COMPLETELY WEATH. TO MOD. WEATH. V. SOFT TO MED. HARD META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	
545			5.0		(0.9)	(0.0)					R1=0, R2=3, R3=5, R4=0, R5=7 RMR=15 ROCK TYPE=E	
	541.8	45.0										
540			5.0		(1.8)	(0.0)						
	536.8	50.0			36%	0%						
535			5.0		(4.3)	(3.1)		(4.9)	(3.1)		CRYSTALLINE ROCK	50.9
	531.8	55.0			86%	62%		100%	63%		GRAY SLI. WEATH. TO FRESH HARD GRANODIORITE W/ MOD. CLOSE FRACTURE SPACING	
	531.0	55.0									R1=7, R2=13, R3=20, R4=20, R5=7 RMR=67 ROCK TYPE=E	55.8
530			5.0		(3.8)	(0.5)		(7.7)	(4.3)		CRYSTALLINE ROCK	
	526.8	60.0			76%	10%		84%	47%		GRAY SEV. WEATH. TO FRESH SOFT TO HARD META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	
	522.8	65.0			(4.7)	(3.8)					R1=7, R2=8, R3=10, R4=10, R5=7 RMR=42 ROCK TYPE=E	
	521.8	65.0			94%	76%						
Boring Terminated at Elevation 521.8 ft IN CRYSTALLINE ROCK (META-VOLCANIC)												

NCDOT CORE SINGLE B4779 GEO. BH. BRDG0140&0147_MECKLENBURG.GPJ_NC_DOT.GDT 11/28/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK								
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)							
BORING NO. B2-A(RL)		STATION 20+55		OFFSET 13 ft RT		ALIGNMENT -L-								
COLLAR ELEV. 581.5 ft		TOTAL DEPTH 55.6 ft		NORTHING N/A		EASTING N/A								
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic										
DRILLER AMERIDRILL		START DATE 09/19/12		COMP. DATE 09/19/12		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
585														
580	580.5	1.0	1	2	1						SS-17	W	ROADWAY EMBANKMENT BRN TO DARK GRAY V. LOOSE WET SAND (A-2-4) W/ TRACE ORGANICS	3.0
	578.0	3.5	5	2	2						SS-18	W	ALLUVIAL DARK GRAY LOOSE WET COARSE SAND (A-1-B)	5.5
575	575.5	6.0	1	1	1						SS-19	W	RESIDUAL DARK GRAY V. LOOSE WET SAND (A-3)	8.0
	573.0	8.5	1	1	1						SS-20	W	RESIDUAL DARK GRAY SOFT TO V. STIFF WET TO MOIST CLAYEY SANDY SILT (A-4) (MICACEOUS & SAPROLITIC W/ GRAVEL SIZE SEV. WEATH. CRYSTALLINE ROCK FRAGS. @ 13.5)	17.0
570	568.0	13.5	2	7	17						SS-21	M	WEATHERED ROCK DARK GRAY & MOTTLED DARK GRAY, LT. GRAY, LT. BRN & DARK GREEN-GRAY MOIST TO DRY SEV. WEATH. CRYSTALLINE ROCK (GRANDIORITE)	35.5
565	563.0	18.5	22	37	63/0.5							M		
560	558.0	23.5	26	43	57/0.4							M		
555	553.0	28.5	26	40	60/0.4							M		
550	548.0	33.5	40	58	42/0.3							D		
545	546.0	35.5	60/0.0								RS-5		CRYSTALLINE ROCK GRAY SEV. WEATH. TO FRESH V. SOFT TO HARD META-VOLCANIC & META-GRANDIORITE W/ V. CLOSE TO CLOSE FRACTURE SPACING	55.6
540														
535														
530														
Boring Terminated at Elevation 525.9 ft IN CRYSTALLINE ROCK (META-GRANDIORITE)														

NCDOT BORE SINGLE B4779 GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK						
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)					
BORING NO. B2-A(RL)		STATION 20+55		OFFSET 13 ft RT		ALIGNMENT -L-						
COLLAR ELEV. 581.5 ft		TOTAL DEPTH 55.6 ft		NORTHING 575,290		EASTING 1,481,805						
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic								
DRILLER AMERIDRILL		START DATE 09/19/12		COMP. DATE 09/19/12		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. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
546												
545	546.0	35.5	4.5	N=60/0.0	(2.1) 47%	(0.4) 9%		(13.9) 69%	(4.2) 21%		Begin Coring @ 35.5 ft CRYSTALLINE ROCK GRAY SEV. WEATH. TO FRESH V. SOFT TO HARD META-VOLCANIC & META-GRANDIORITE W/ V. CLOSE TO CLOSE FRACTURE SPACING R1=7, R2=3, R3=6, R4=6, R5=7 RMR=29 ROCK TYPE=E	35.5
540	541.5	40.0	5.0		(4.0) 80%	(0.5) 9%						
535	536.5	45.0	4.6		(3.1) 67%	(1.2) 26%						
530	531.9	49.6	6.0		(4.7) 78%	(2.1) 35%						
	525.9	55.6									Boring Terminated at Elevation 525.9 ft IN CRYSTALLINE ROCK (META-GRANDIORITE)	55.6

NCDOT CORE SINGLE B4779 GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 11/28/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK									
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)								
BORING NO. EB1-A(LL)		STATION 19+24		OFFSET 47 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 598.5 ft		TOTAL DEPTH 36.9 ft		NORTHING N/A		EASTING N/A									
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER AMERIDRILL		START DATE 09/25/12		COMP. DATE 09/25/12		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75					100	
600													598.5	GROUND SURFACE	0.0
	597.5	1.0	3	3	3									ROADWAY EMBANKMENT	
	595.0	3.5	2	1	2									DARK BRN LOOSE TO V. LOOSE DRY SAND & GRAVEL W/ ASPHALT PIECES (A-1) (LITTLE TO NO RECOVERY) (ASPHALT & GRAVEL 0.0-1.0)	5.5
	592.5	6.0	1	2	2									ROADWAY EMBANKMENT	
	590.0	8.5	1	2	1									DARK BRN MED. STIFF TO SOFT MOIST TO WET MED. (PI=16) PLASTIC MICACEOUS SANDY SILTY CLAY (A-6)	12.0
	585.0	13.5	0	0	0									ALLUVIAL	
	582.5													BLUE-GRAY V. SOFT WET CLAYEY SANDY SILT (A-4)	16.0
	580.0	18.5	2	3	3									RESIDUAL	
	576.5													MOTTLED DARK BRN & BLUE-GRAY MED. STIFF MOIST TO WET SANDY SILTY CLAY (A-6)	22.0
	575.0	23.5	2	1	8									RESIDUAL	
	572.5													BLUE-GRAY LOOSE WET COARSE SAND (A-1)	26.0
	570.0	28.5	35	25	34									RESIDUAL	
	566.5													MOTTLED ORANGE, LT. BRN, DARK BRN & DARK GREEN-GRAY HARD MOIST MICACEOUS SANDY SILT (A-4) (SAPROLITE)	32.0
	565.0	33.5	33	47	53/0.2									WEATHERED ROCK	
	561.6	36.9												BRN, LT. BRN, LT. GRAY & DARK GREEN-GRAY MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	36.9
														Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 561.6 ft ON CRYSTALLINE ROCK (GRANODIORITE)	

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK									
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)								
BORING NO. EB1-B(LL)		STATION 19+49		OFFSET 13 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 599.0 ft		TOTAL DEPTH 33.8 ft		NORTHING N/A		EASTING N/A									
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER AMERIDRILL		START DATE 09/26/12		COMP. DATE 09/26/12		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75					100	
600													599.0	GROUND SURFACE	0.0
	598.0	1.0	2	2	3									ROADWAY EMBANKMENT	
	595.5	3.5	2	2	2									RED-BRN & BRN TO DARK GRAY & BRN-GRAY MED. STIFF TO V. SOFT MOIST TO WET LOW (PI=13) PLASTIC SILTY SANDY CLAY (A-6) W/ TRACE ORGANICS @ 1.0	8.0
	593.0	6.0	0	0	1									ROADWAY EMBANKMENT	
	590.5	8.5	2	1	1									DARK GRAY & BRN-GRAY SOFT WET CLAYEY SANDY SILT (A-4)	12.0
	585.5	13.5	0	1	1									ALLUVIAL	
	582.5													DARK GRAY SOFT WET CLAYEY SANDY SILT (A-4) W/ TRACE ORGANICS	16.0
	580.5	18.5	2	4	3									RESIDUAL	
	577.0													MOTTLED LT. GRAY, BLUE-GRAY & GREEN-BRN MED. STIFF MOIST TO WET LOW (PI=15) PLASTIC SANDY SILTY CLAY (A-6)	22.0
	575.5	23.5	2	2	8									RESIDUAL	
	573.0													DARK GRAY LOOSE TO MED. DENSE WET COARSE SAND (A-1-B)	26.0
	570.5	28.5	100/0.9											WEATHERED ROCK	
	565.2	33.8	100/0.2											MOTTLED RED-BRN, LT. BRN & DARK GREEN-GRAY MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	33.8
														Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 565.2 ft ON CRYSTALLINE ROCK (GRANODIORITE)	

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. B1-A(LL)	STATION 19+85	OFFSET 32 ft LT	ALIGNMENT -L- 0 HR. 1.4
COLLAR ELEV. 583.2 ft	TOTAL DEPTH 49.0 ft	NORTHING 575,267	EASTING 1,481,725 24 HR. FIAD
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/24/12	COMP. DATE 09/25/12	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
585													GROUND SURFACE	583.2	0.0
	582.2	1.0	0	0	0							W	ROADWAY EMBANKMENT BRN V. SOFT WET MICACEOUS CLAYEY SANDY SILT (A-4)	580.2	3.0
580	579.7	3.5	0	2	2							W	ALLUVIAL DARK GRAY SOFT TO MED. STIFF WET CLAYEY SANDY SILT (A-4) W/ TRACE ORGANICS	577.7	5.5
	577.2	6.0	1	1	2							W	RESIDUAL DARK GRAY V. LOOSE TO LOOSE WET COARSE SAND (A-1) W/ SOME GRAVEL SIZE GRANODIORITE (WR) FRAGS. (SAPROLITE)	570.2	13.0
575	574.7	8.5	1	1	1							W	RESIDUAL DARK GRAY DENSE WET CLAYEY SILTY SAND (A-2-4) W/ SOME GRAVEL SIZE GRANODIORITE (WR) FRAGS. (SAPROLITE)	566.7	16.5
	569.7	13.5	2	5	26							W	WEATHERED ROCK DARK GRAY SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	564.7	18.5
570	569.7	13.5										W	CRYSTALLINE ROCK DARK BLUE-GRAY META-VOLCANIC	564.2	19.0
565	564.7	18.5											CRYSTALLINE ROCK GRAY & BRN SEV. WEATH. TO SLI. WEATH. V. SOFT TO HARD META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	534.2	49.0
	564.2	19.0	60/0.1												
560															
555															
550															
545															
540															
535															

Boring Terminated at Elevation 534.2 ft IN CRYSTALLINE ROCK (META-VOLCANIC)

NCDOT BORE SINGLE B4779_GEO_BH_BRD0140&0147_MECKLENBURG.GPJ NC_DOT_GDT 11/13/12

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. B1-A(LL)	STATION 19+85	OFFSET 32 ft LT	ALIGNMENT -L- 0 HR. 1.4
COLLAR ELEV. 583.2 ft	TOTAL DEPTH 49.0 ft	NORTHING N/A	EASTING N/A 24 HR. FIAD
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/24/12	COMP. DATE 09/25/12	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 (%)			
564.24											Begin Coring @ 19.0 ft	
	564.2	19.0	2.0	N=60/0.0	(2.0)	(0.0)		(21.9)	(0.0)		CRYSTALLINE ROCK	19.0
	562.2	21.0	5.0		(2.5)	(0.0)		73%	0%		GRAY & BRN SEV. WEATH. TO SLI. WEATH. V. SOFT TO HARD META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING R1=3, R2=3, R2=5, R4=2, R5=7 RMR=20 ROCK TYPE=E	
560												
	557.2	26.0	5.0		(4.6)	(0.5)						
555					92%	9%						
	552.2	31.0	5.0		(4.8)	(0.0)						
550					96%	0%						
	547.2	36.0	5.0		(3.4)	(0.0)						
545					68%	0%						
	542.2	41.0	5.0		(2.8)	(0.0)						
540					56%	0%						
	537.2	46.0	3.0		(1.8)	(0.0)						
535					60%	0%						
	534.2	49.0										

Boring Terminated at Elevation 534.2 ft IN CRYSTALLINE ROCK (META-VOLCANIC)

NCDOT CORE SINGLE B4779_GEO_BH_BRD0140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. B1-B(LL)	STATION 19+92	OFFSET 16 ft LT	ALIGNMENT -L-
COLLAR ELEV. 584.4 ft	TOTAL DEPTH 49.4 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/27/12	COMP. DATE 09/27/12	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				
585													GROUND SURFACE	0.0
	583.4	1.0											ROADWAY EMBANKMENT	
	580.9	3.5	0	1	2						SS-50	W	BRN TO DARK GRAY-BRN SOFT WET CLAYEY SANDY SILT (A-4)	3.0
580													ALLUVIAL	
	578.4	6.0	1	2	1						SS-51	W	DARK GRAY TO BRN V. LOOSE WET CLAYEY SILTY SAND (A-2-4) W/ TRACE ORGANICS	5.5
	575.9	8.5	0	0	2						SS-52	W	RESIDUAL	8.0
575													GRAY TO DARK BRN-GRAY V. LOOSE WET CLAYEY SILTY SAND (A-2-4)	
	570.9	13.5	6	4	7						SS-53	W	RESIDUAL	
570													GRAY TO DARK BRN-GRAY V. LOOSE TO MED. DENSE WET CSE. SAND (A-1-B)	
	565.9	18.5	60/0.0										CRYSTALLINE ROCK	18.0
565													CRYSTALLINE ROCK	18.5
	557.9	26.5	19	81/0.4									GRAY & BRN SEV. WEATH. TO FRESH V. SOFT TO HARD GRANODIORITE & META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING (DARK GRAY TO DARK BRN-GRAY SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC) SEAM @ 26.5-27.4)	
560														
555														
550														
545														
540														
535														

Boring Terminated at Elevation 535.0 ft IN CRYSTALLINE ROCK (GRANODIORITE)

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. B1-B(LL)	STATION 19+92	OFFSET 16 ft LT	ALIGNMENT -L-
COLLAR ELEV. 584.4 ft	TOTAL DEPTH 49.4 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core	HAMMER TYPE Automatic
DRILLER AMERIDRILL	START DATE 09/27/12	COMP. DATE 09/27/12	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. (ft)	RQD (ft)		REC. (%)	RQD (%)			
565.85											Begin Coring @ 18.5 ft	
565	565.9	18.5	3.0	N=60/0.0	(1.8)	(0.5)		(18.1)	(0.6)		CRYSTALLINE ROCK	18.5
	562.9	21.5	5.9		(1.3)	(0.0)					GRAY & BRN SEV. WEATH. TO FRESH V. SOFT TO HARD GRANODIORITE & META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING (DARK GRAY TO DARK BRN-GRAY SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC) SEAM @ 26.5-27.4)	
560											R1=2, R2=3, R3=5, R4=2, R5=7	
	557.0	27.4	5.0	N=100/0.9	(3.1)	(0.0)					RMR=19	
555					(62%)	(0.0)					ROCK TYPE=E	
	552.0	32.4	5.0		(2.7)	(0.0)						
550					(54%)	(0.0)						
	547.0	37.4	5.0		(3.7)	(0.0)						
545					(74%)	(0.0)						
	542.0	42.4	5.0		(4.0)	(0.0)						
540					(80%)	(0.0)						
	537.0	47.4	2.0		(1.5)	(0.0)						
535	535.0	49.4	2.0		(75%)	(0.0)						

Boring Terminated at Elevation 535.0 ft IN CRYSTALLINE ROCK (GRANODIORITE)

NCDOT CORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ NC_DOT_GDT 10/30/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK								
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)							
BORING NO. B2-B(LL)		STATION 20+28		OFFSET 17 ft LT		ALIGNMENT -L-								
COLLAR ELEV. 581.0 ft		TOTAL DEPTH 68.7 ft		NORTHING 575,289		EASTING 1,481,765								
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic										
DRILLER AMERIDRILL		START DATE 09/28/12		COMP. DATE 09/28/12		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75					
585													581.0	0.0
580	580.0	1.0	0	1	1						SS-28	W		
	577.5	3.5	0	0	2						W			
575	575.0	6.0	2	2	3						SS-29	W	575.5	5.5
	572.5	8.5	3	5	11						W			
570														
	567.5	13.5	13	15	16									
565														
	562.5	18.5	36	64/0.4										
560														
	557.5	23.5	24	56	44/0.2									
555														
	552.5	28.5	37	63/0.4										
550														
	547.5	33.5	51	49/0.3										
545														
	542.5	38.5	60/0.1											
540														
	542.5	38.5											542.5	38.5
	542.3	38.7											542.3	38.7
540													540.3	40.7
535														
530														
525													525.3	55.7
520														
515														
													512.3	68.7

NCDOT BORE SINGLE B4779_GEO_BH_BRD0140&0147_MECKLENBURG.GPJ_NC_DOT.GDT_11/8/12

WBS 38550.1.1		TIP B-4779		COUNTY MECKLENBURG		GEOLOGIST J. HVOZDIK						
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29							GROUND WTR (ft)					
BORING NO. B2-B(LL)		STATION 20+28		OFFSET 17 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 581.0 ft		TOTAL DEPTH 68.7 ft		NORTHING N/A		EASTING N/A						
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X		DRILL METHOD H.S. Augers/ Casing/ Core		HAMMER TYPE Automatic								
DRILLER AMERIDRILL		START DATE 09/28/12		COMP. DATE 09/28/12		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 (%)			
540.25												
	540.3	40.7	5.0		(2.9)	(0.0)		(9.6)	(0.0)		Begin Coring @ 40.7 ft	40.7
	535.3	45.7	5.0		(3.3)	(0.0)		64%	0%		CRYSTALLINE ROCK	
535					(66%)	0%					BRN-GRAY V. SEV. TO MOD. SEV. WEATH. V. SOFT TO SOFT META-VOLCANIC W/ V. CLOSE TO CLOSE FRACTURE SPACING	
											R1=1, R2=3, R3=5, R4=0, R5=7	
											RMR=16	
											ROCK TYPE=E	
530					(3.4)	(0.0)						
	530.3	50.7	5.0		(68%)	0%						
525					(3.1)	(0.0)						
	525.3	55.7	5.0		(62%)	0%		(10.8)	(3.0)		CRYSTALLINE ROCK	55.7
								83%	23%		GRAY MOD. WEATH. TO FRESH MED. HARD TO HARD META-VOLCANIC & GRANODIORITE W/ V. CLOSE TO CLOSE FRACTURE SPACING	
											R1=7, R2=3, R3=10, R4=20, R5=7	
											RMR=47	
											ROCK TYPE=E	
520					(4.7)	(2.2)						
	520.3	60.7	5.0		(94%)	(44%)						
515					(3.0)	(0.8)						
	515.3	65.7	3.0		(100%)	(25%)						
	512.3	68.7									Boring Terminated at Elevation 512.3 ft IN CRYSTALLINE ROCK (META-VOLCANIC & GRANODIORITE)	68.7

NCDOT CORE SINGLE B4779_GEO_BH_BRD0140&0147_MECKLENBURG.GPJ_NC_DOT.GDT_10/30/12

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. EB2-A(LL)	STATION 20+84	OFFSET 38 ft LT	ALIGNMENT -L-
COLLAR ELEV. 598.2 ft	TOTAL DEPTH 64.2 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X			DRILL METHOD H.S. Augers
DRILLER AMERIDRILL			HAMMER TYPE Automatic
START DATE 09/25/12		COMP. DATE 09/25/12	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				
600													GROUND SURFACE	0.0
595	597.2	1.0	6	2	3							M	ROADWAY EMBANKMENT RED-ORANGE TO MOTTLED LT. BRN, DARK BRN-ORANGE & DARK GREEN-GRAY TO BLUE-GRAY MED. STIFF TO SOFT MOIST LOW (PI=13) PLASTIC SANDY SILTY CLAY (A-7-5)	
	594.7	3.5	2	2	2						SS-62	M	MICACEOUS @ 1.0, W/ SOME GRAVEL & TRACE ORGANICS @ 6.0 (0.8' CONCRETE & 0.25' ASPHALT @ SURFACE)	8.0
590	592.2	6.0	2	2	2							M	ROADWAY EMBANKMENT BRN SOFT MOIST MICACEOUS CLAYEY SILT (A-5) W/ TRACE ORGANICS	12.5
	589.7	8.5	2	2	1							M	ALLUVIAL BRN-GRAY & BLUE-GRAY SOFT MOIST MICACEOUS CLAYEY SANDY SILT (A-4) W/ TRACE ORGANICS	16.0
585	584.7	13.5	0	1	2						SS-63	M	RESIDUAL MOTTLED LT. BRN & DARK BRN TO LT. GRAY & DARK GRAY V. LOOSE TO MED. DENSE WET SAND (A-2-4)	
580	579.7	18.5	0	1	2						SS-64	W		
575	574.7	23.5	1	2	2							W		
570	569.7	28.5	7	11	11							W		
565	564.7	33.5	15	23	23						SS-65	M	RESIDUAL RED-ORANGE, LT. BRN & LT. GREEN-GRAY TO MOTTLED LT. GRAY, DARK GREEN-GRAY, BRN & LT. BRN HARD MOIST MICACEOUS SANDY SILT (A-4) (SAPROLITE)	33.0
560	559.7	38.5	14	27	32							M		
555	554.7	43.5	29	24	37							M		
550	549.7	48.5	33	45	55/0.4							M	WEATHERED ROCK RED-BRN, ORANGE-BRN, DARK GREEN-GRAY, LT. BRN & LT. GRAY TO MOTTLED LT. GRAY & LT. BRN MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE & META-VOLCANIC)	47.0
545	544.7	53.5	36	64/0.4								M		
540	539.7	58.5	100/0.3									D		
535	534.7	63.5	67	33/0.2								D		
													Boring Terminated at Elevation 534.0 ft IN SEV. WEATH. CRYSTALLINE ROCK (META-VOLCANIC)	64.2

WBS 38550.1.1	TIP B-4779	COUNTY MECKLENBURG	GEOLOGIST J. HVOZDIK
SITE DESCRIPTION BRIDGE NO. 140 & 147 OVER MALLARD CREEK ON US 29			GROUND WTR (ft)
BORING NO. EB2-B(LL)	STATION 21+03	OFFSET 15 ft LT	ALIGNMENT -L-
COLLAR ELEV. 598.2 ft	TOTAL DEPTH 54.1 ft	NORTHING N/A	EASTING N/A
DRILL RIG/HAMMER EFF./DATE 93550 CME-550X			DRILL METHOD H.S. Augers
DRILLER AMERIDRILL			HAMMER TYPE Automatic
START DATE 09/26/12		COMP. DATE 09/26/12	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				
600													GROUND SURFACE	0.0
595	594.7	3.5	2	2	2							M	ROADWAY EMBANKMENT RED-BRN & DARK BRN SOFT TO MED. STIFF MOIST MICACEOUS SANDY SILTY CLAY (A-7) (1.7' CONCRETE & 0.3' ASPHALT @ SURFACE)	
590	592.2	6.0	2	2	2							M		
	589.7	8.5	2	2	3							M		
585	584.7	13.5	1	1	1						SS-66	W	ALLUVIAL DARK GRAY SOFT WET CLAYEY SANDY SILT (A-4)	12.5
580	579.7	18.5	3	5	5						SS-67	W	RESIDUAL MOTTLED LT. GRAY, RED-BRN & DARK BRN STIFF TO SOFT WET CLAYEY SANDY SILT (A-4)	16.0
575	574.7	23.5	2	1	1							W	RESIDUAL DARK GRAY V. LOOSE TO DENSE WET SAND (A-2)	24.5
570	569.7	28.5	3	3	28							W		
565	564.7	33.5	16	22	27							W	RESIDUAL MOTTLED LT. BRN, RED-BRN & DARK BRN-GRAY HARD MOIST MICACEOUS SANDY SILT (A-4) (SAPROLITE)	34.0
560	559.7	38.5	32	55	45/0.3							M	WEATHERED ROCK MOTTLED LT. BRN, LT. GRAY, BRN & DARK GREEN-GRAY MOIST SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	38.0
555	554.7	43.5	30	70/0.4								M		
550	549.7	48.5	100/0.4									M		
545	544.7	53.5	78	22/0.1								M		
													Boring Terminated at Elevation 544.1 ft IN SEV. WEATH. CRYSTALLINE ROCK (GRANODIORITE)	54.1

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ_NC_DOT_GDT_10/30/12

NCDOT BORE SINGLE B4779_GEO_BH_BRD00140&0147_MECKLENBURG.GPJ_NC_DOT_GDT_10/30/12

TEST RESULTS

PROJECT: 38550.1.1 (B-4779)

COUNTY: MECKLENBURG

SITE DESCRIPTION: BRIDGE NO. 140(NBL) & 147(SBL) OVER MALLARD CREEK ON US 29

SOIL SAMPLE RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	N	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC	UNIT WT. (d)	VOID RATIO
								C. SAND	F. SAND	SILT	CLAY	10	40	200				
EB1-A(RL)																		
SS-1	16' RT	19+66 -L-	1.0-2.5	A-7-5(12)	3	48	15	13.9	14.3	29.4	42.3	97	90	73	-	-		
SS-2	16' RT	19+66 -L-	6.0-7.5	A-4(1)	6	27	8	28.6	25.8	21.4	24.2	100	82	50	-	-		
SS-3	16' RT	19+66 -L-	8.5-10.0	A-6(4)	5	33	12	29.2	17.5	23.0	30.2	100	78	57	-	-		
SS-4	16' RT	19+66 -L-	13.5-15.0	A-4(3)	0	27	9	8.9	38.3	24.6	28.2	100	98	58	-	-		
SS-5	16' RT	19+66 -L-	18.5-20.0	A-4(2)	5	28	8	11.7	38.3	25.8	24.2	100	96	57	-	-		
SS-6	16' RT	19+66 -L-	23.5-25.0	A-4(0)	39	29	NP	16.1	23.0	48.8	12.1	64	57	44	-	-		
EB1-B(RL)																		
SS-31	33' RT	19+73	1.0-2.5	A-7-6(20)	6	51	23	9.1	12.4	19.6	58.9	100	96	81	-	-		
SS-32	33' RT	19+73	3.5-5.0	A-4(4)	2	27	10	8.9	33.1	29.5	28.4	100	96	66	-	-		
SS-33	33' RT	19+73	13.5-15.0	***	0	-	-	38.6	22.1	21.0	18.3	20	14	9	-	-		
SS-34	33' RT	19+73	23.5-25.0	A-4(1)	45	34	6	17.9	37.2	22.6	22.3	98	92	51	-	-		
B1-A(RL)																		
SS-14	16' RT	20+11	1.0-2.5	A-7-6(10)	0	41	13	4.6	29.6	39.5	26.2	100	99	73	-	-		
SS-15	16' RT	20+11	3.5-5.0	A-4(5)	2	31	10	16.5	19.0	30.2	34.3	100	90	69	-	-		
SS-16	16' RT	20+11	6.0-7.5	A-1-b(0)	1	21	NP	67.8	19.1	8.1	5.0	89	46	13	-	-		
B1-B(RL)																		
SS-39	34' RT	20+19	3.5-5.0	A-4(0)	3	27	8	45.1	20.7	18.0	16.2	96	64	36	-	-		
SS-40	34' RT	20+19	6.0-7.5	A-4(1)	0	24	5	8.7	43.5	25.5	22.3	100	96	57	-	-		
SS-41	34' RT	20+19	8.5-10.0	A-4(0)	0	23	5	14.6	42.2	24.9	18.3	100	96	52	-	-		
SS-42	34' RT	20+19	18.5-20.0	A-2-4(0)	48	23	NP	42.0	34.9	15.9	7.1	98	72	28	-	-		
SS-43	34' RT	20+19	28.5-30.0	A-2-4(0)	63	26	3	46.3	24.8	20.8	8.1	78	51	26	-	-		
B2-A(RL)																		
SS-17	13' RT	20+55	1.0-2.5	A-2-4(0)	3	26	NP	49.1	38.2	7.7	5.0	98	74	15	-	-		
SS-18	13' RT	20+55	3.5-5.0	A-1-b(0)	4	19	NP	77.1	13.9	5.9	3.0	70	26	8	-	-		
SS-19	13' RT	20+55	6.0-7.5	A-3(0)	2	24	NP	59.3	33.5	4.2	3.0	97	70	9	-	-		
SS-20	13' RT	20+55	8.5-10.0	A-4(0)	2	21	NP	26.2	42.5	15.1	16.1	100	93	37	-	-		
SS-21	13' RT	20+55	13.5-15.0	A-4(0)	24	28	NP	13.7	35.7	40.5	10.1	99	90	63	-	-		
B2-B(RL)																		
SS-22	42' RT	20+86	3.5-5.0	A-4(1)	6	24	5	14.0	34.3	23.2	28.4	100	96	57	-	-		
SS-23	42' RT	20+86	6.0-7.5	A-4(0)	0	23	2	15.4	44.7	21.6	18.3	100	96	46	-	-		
SS-24	42' RT	20+86	8.5-10.0	A-4(0)	0	24	NP	24.0	45.3	18.6	12.2	100	92	37	-	-		
SS-25	42' RT	20+86	13.5-15.0	A-1-b(0)	5	19	NP	76.3	15.2	4.4	4.1	78	32	8	-	-		
SS-26	42' RT	20+86	18.5-20.0	A-2-4(0)	31	23	NP	37.8	34.9	19.2	8.1	80	62	27	-	-		
SS-27	42' RT	20+86	33.5-35.0	A-4(0)	83	25	1	21.3	37.6	31.0	10.2	92	81	46	-	-		
EB2-A(RL)																		
SS-7	12' RT	21+18	1.0-2.5	A-7-5(12)	5	50	17	17.7	18.8	25.2	38.3	100	90	68	-	-		
SS-8	12' RT	21+18	6.0-7.5	A-4(0)	4	27	7	26.6	34.9	18.3	20.2	100	87	42	-	-		
SS-9	12' RT	21+18	8.5-10.0	A-6(13)	2	40	14	5.6	11.1	34.9	48.4	100	98	86	-	-		
SS-10	12' RT	21+18	13.5-15.0	A-6(9)	2	34	14	3.4	30.8	33.5	32.3	100	100	74	-	-		
SS-11	12' RT	21+18	18.5-20.0	A-4(2)	7	27	8	6.5	45.6	23.8	24.2	100	99	56	-	-		
SS-12	12' RT	21+18	23.5-25.0	A-3(0)	3	21	NP	72.6	19.0	3.4	5.0	100	62	10	-	-		
SS-13	12' RT	21+18	33.5-35.0	A-4(0)	68	27	NP	31.4	34.2	24.4	10.1	99	78	40	-	-		

NOTE: *** = INSUFFICIENT MATERIAL TO SAMPLE

ROCK SAMPLE RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	RQD	UNIT WT (pcf)	Q(ksf)	E(MPsi)
B1-A(RL)							
RS-3	16.0 RT.	20+11 -L-	16.5-17.0	10%	176.2	1414.08	6.28
B1-B(RL)							
RS-6	34.0 RT.	20+19 -L-	52.3-52.6	62%	187.8	1663.2	9.6
RS-7	34.0 RT.	20+19 -L-	60.4-60.8	76%	171.5	1488.96	14.38
B2-A(RL)							
RS-5	13.0 RT.	20+55 -L-	36.7-37.0	9%	187.8	1719.36	26.7
B2-B(RL)							
RS-4	42.0 RT.	20+86 -L-	51.8-52.3	8%	179.5	1287.36	5.27
B2-A(LL)							
RS-1	48.0 LT.	20+34 -L-	51.3-51.6	10%	165.1	813.6	0.873
RS-2	48.0 LT.	20+34 -L-	55.5-56.0	20%	195	1412.64	5.25

TEST RESULTS

PROJECT: 38550.1.1 (B-4779)

COUNTY: MECKLENBURG

SITE DESCRIPTION: BRIDGE NO. 140(NBL) & 147(SBL) OVER MALLARD CREEK ON US 29

SOIL SAMPLE RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	N	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC	UNIT WT. (d)	VOID RATIO
								C. SAND	F. SAND	SILT	CLAY	10	40	200				
EB2-B(LL)																		
SS-66	15' LT	21+03	13.5-15.0	A-4(0)	2	23	4	12.6	42.2	26.9	18.3	97	92	51	-	-		
SS-67	15' LT	21+03	18.5-20.0	A-4(2)	10	26	10	32.7	20.5	26.5	20.3	100	80	52	-	-		

ROCK SAMPLE RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	RQD	UNIT WT (pcf)	Q(ksf)	E(MPsi)
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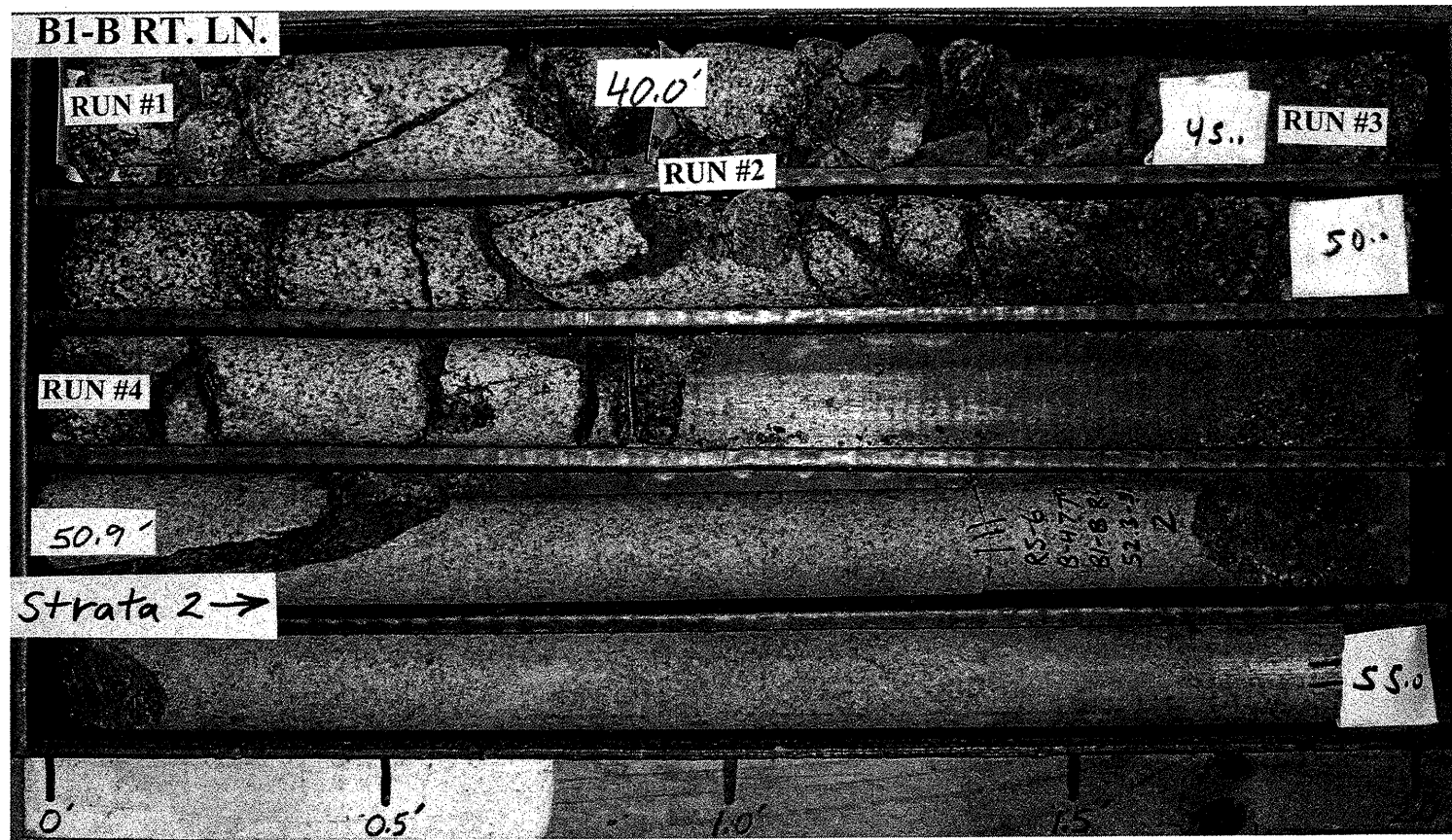
38550.1.1 (B-4779)
MECKLENBURG COUNTY
REPLACE BRIDGE 147 (SBL) AND BRIDGE 140 (NBL) OVER MALLARD CREEK ON US 29

CORE PHOTOS



38550.1.1 (B-4779)
MECKLENBURG COUNTY
REPLACE BRIDGE 147 (SBL) AND BRIDGE 140 (NBL) OVER MALLARD CREEK ON US 29

CORE PHOTOS



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REPLACE BRIDGE 147 (SBL) AND BRIDGE 140 (NBL) OVER MALLARD CREEK ON US 29

CORE PHOTOS



Aerial Photo

