



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.125			ID. R-2248E			COUNTY MECK			GEOLOGIST Stickney, J. K.					
SITE DESCRIPTION BRIDGE ON -Y10- OVER -Y11-									GROUND WTR (ft)					
BORING NO. B-1			STATION N/A			OFFSET N/A			ALIGNMENT -Y10-					
COLLAR ELEV. 826.2 ft			TOTAL DEPTH 60.6 ft			NORTHING 593,479			EASTING 1,457,248					
DRILL MACHINE CME-550X			DRILL METHOD H.S. Augers						HAMMER TYPE Automatic					
START DATE 02/25/10			COMP. DATE 02/25/10			SURFACE WATER DEPTH N/A			DEPTH TO ROCK 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)
830														
825													826.2	0.0
	822.1	4.1												
820			1	2	2									
	817.1	9.1												
815			4	5	7								816.1	10.1
	812.1	14.1												
810			4	8	9									
	807.1	19.1												
805			5	10	16									
	802.1	24.1												
800			8	16	16									
	797.1	29.1												
795			5	13	17									
	792.1	34.1												
790			7	27	48									
	787.1	39.1												
785			6	11	16									
	782.1	44.1												
780			5	16	26									
	777.1	49.1												
775			13	35	45									
	772.1	54.1												
770			11	20	31									
	767.1	59.1												
765			27	37	63/5								766.6	59.6
													765.6	60.6
760														
755														
750														

GROUND SURFACE

ALLUVIAL
ORANGE-GRAY TO BRN-BLUE-GRAY
MED. STIFF TO STIFF MOIST SANDY
SILTY CLAY (A-7)

RESIDUAL
TAN-BRN-WHITE MED. DENSE TO V.
DENSE WET TO DRY CLAYEY SILTY
SAND (A-2)

RESIDUAL
GRAY-WHITE HARD TO V. STIFF MOIST
CLAYEY SANDY SILT (A-4)

RESIDUAL
TAN-BRN-WHITE DENSE TO V. DENSE
DRY CLAYEY SILTY SAND (A-2)

WEATHERED ROCK
SEVERELY WEATHERED CRYSTALLINE
ROCK
Boring Terminated at Elevation 765.6 ft IN
SEVERELY WEATHERED CRYSTALLINE
ROCK
B-1 LOCATED AT -Y10- METRIC STA.
20+63.00 8.5m RT

NCDOT BORE SINGLE KZZ48E GEO 2010BH MECKLENBURG.GPJ NC DOT GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.125				ID. R-2248E				COUNTY MECK				GEOLOGIST Stickney, J. K.					
SITE DESCRIPTION BRIDGE ON -Y10- OVER -Y11-												GROUND WTR (ft)					
BORING NO. B-2				STATION N/A				OFFSET N/A				ALIGNMENT -Y10-				0 HR. 0.0	
COLLAR ELEV. 826.6 ft				TOTAL DEPTH 69.9 ft				NORTHING 593,551				EASTING 1,457,386				24 HR. 0.0	
DRILL MACHINE CME-550X				DRILL METHOD H.S. Augers								HAMMER TYPE Automatic					
START DATE 02/23/10				COMP. DATE 02/23/10				SURFACE WATER DEPTH N/A				DEPTH TO ROCK 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				ELEV. (ft)			
830																	
825														826.6	GROUND SURFACE	0.0	
820	822.4	4.2	0	0	3	3					SS-1	M			ALLUVIAL GRAY TO BRN-BLUE-GRAY SOFT TO MED. STIFF MOIST SANDY SILTY CLAY (A-7)		
815	817.4	9.2	3	2	3	5					SS-2	M		816.4		10.2	
810	812.4	14.2	1	3	3	6						M			RESIDUAL BRN-GRAY-GREEN-WHITE LOOSE TO MED. DENSE MOIST CLAYEY SILTY SAND (A-2)		
805	807.4	19.2	1	2	4	6					SS-3	M					
800	802.4	24.2	4	6	8	14						M					
795	797.4	29.2	1	3	4	7					SS-4	M		798.6	RESIDUAL BRN-GREEN-WHITE MED. STIFF TO STIFF MOIST SANDY CLAYEY SILT (A-4)	28.0	
790	792.4	34.2	3	5	9	14						M					
785	787.4	39.2	4	6	9	15						M					
780	782.4	44.2	8	12	16	28					SS-5	M		783.6	RESIDUAL BRN-WHITE TO GRAY-WHITE MED. DENSE TO V. DENSE MOIST CLAYEY SILTY SAND (A-2)	43.0	
775	777.4	49.2	5	8	12	20						M					
770	772.4	54.2	12	24	29	53						M					
765	767.4	59.2	10	30	38	68						M					
760	762.4	64.2	11	24	37	61						M					
755	757.4	69.2	34	66/2		100/7						D		757.4 756.7	WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK Boring Terminated at Elevation 756.7 ft IN SEVERELY WEATHERED CRYSTALLINE ROCK	69.2 69.9	
750																	

NCDOT BORE SINGLE R2248E GEO 2010BH_MECKLENBURG.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.							
SITE DESCRIPTION BRIDGE ON -Y10- OVER -Y11-							GROUND WTR (ft) 0 HR. 0.0 24 HR. 0.0						
BORING NO. B-2		STATION N/A		OFFSET N/A		ALIGNMENT -Y10-							
COLLAR ELEV. 826.6 ft		TOTAL DEPTH 69.9 ft		NORTHING 593,551		EASTING 1,457,386							
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers					HAMMER TYPE Automatic						
START DATE 02/23/10		COMP. DATE 02/23/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT		SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			
750						Match Line							B-2 LOCATED AT -Y10- METRIC STA. 21+08.00 7.0m LT
745													
740													
735													
730													
725													
720													
715													
710													
705													
700													
695													
690													
685													
680													
675													
670													

NCDOT BORE SINGLE R2248E_GEO_2010BH_MECKLENBURG.GPJ NC DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.	
SITE DESCRIPTION BRIDGE ON -Y1- OVER -L-							GROUND WTR (ft)
BORING NO. B-13		STATION N/A		OFFSET N/A		ALIGNMENT -Y1-	
COLLAR ELEV. 831.0 ft		TOTAL DEPTH 77.6 ft		NORTHING 593,709		EASTING 1,461,506	
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic	
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 77.6 ft	

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					
835															
830														831.0	GROUND SURFACE 0.0
825	826.7	4.3	1	3	3									823.0	RESIDUAL RED-BRN MED. STIFF MOIST SILTY CLAY (A-7) 8.0
820	821.7	9.3	2	3	4										RESIDUAL RED-ORANGE MED. STIFF TO STIFF MOIST SANDY SILTY CLAY (A-7)
815	816.7	14.3	3	4	5										
810	811.7	19.3	2	4	4										
805	806.7	24.3	2	2	3									808.0	RESIDUAL TAN-BRN MED. STIFF TO SOFT MOIST CLAYEY SILT (A-4) 23.0
800	801.7	29.3	1	2	3										
795	796.7	34.3	1	2	2										
790	791.7	39.3	1	2	3										
785	786.7	44.3	2	1	2										
780	781.7	49.3	1	1	1									783.0	RESIDUAL BRN-GRAY-WHITE V. LOOSE TO LOOSE MOIST SILTY CLAYEY SAND (A-2) 48.0
775	776.7	54.3	2	2	3									774.0	RESIDUAL GRAY-WHITE MED. DENSE TO DENSE MOIST CLAYEY SILTY SAND (A-2) 57.0
770	771.7	59.3	4	8	12										
765	766.7	64.3	8	15	24										
760	761.7	69.3	5	12	18										
755	756.7	74.3	22	44	56/5									756.2	74.8

NCDOT BORE SINGLE R2248E_GEO_BH_BRDGONY1.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE ON -Y1- OVER -L-							GROUND WTR (ft)									
BORING NO. B-13		STATION N/A		OFFSET N/A		ALIGNMENT -Y1-										
COLLAR ELEV. 831.0 ft		TOTAL DEPTH 77.6 ft		NORTHING 593,709		EASTING 1,461,506										
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic										
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 77.6 ft										
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)	
755						Match Line										
750															753.4	77.6
745															WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK (continued)	
740															Boring Terminated BY AUGER REFUSAL at Elevation 753.4 ft ON CRYSTALLINE ROCK	
735															B-13 LOCATED @ METRIC STA. 12+19-Y1- 10m LT	
730																
725																
720																
715																
710																
705																
700																
695																
690																
685																
680																
675																

NCDOT BORE SINGLE R2248E GEO_BH_BRDGONY1.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.							
SITE DESCRIPTION BRIDGE ON -Y1- OVER -L-						GROUND WTR (ft)							
BORING NO. B-14		STATION N/A		OFFSET N/A		ALIGNMENT -Y1-							
COLLAR ELEV. 826.9 ft		TOTAL DEPTH 85.0 ft		NORTHING 593,591		EASTING 1,461,617							
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic							
START DATE 02/17/10		COMP. DATE 02/17/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 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)
830													
												826.9	0.0
825											M	GROUND SURFACE	
												RESIDUAL	
820												RED-BRN MED. STIFF MOIST SILTY CLAY (A-7)	
815													
810													
805												803.9	23.0
												RESIDUAL	
800												TAN-BRN MED. STIFF MOIST CLAYEY SILT (A-4)	
795												793.9	33.0
	792.4	34.5	1	2	4						M	RESIDUAL	
790												BRN-GRAY-WHITE LOOSE TO V. DENSE MOIST TO DRY CLAYEY SILTY SAND (A-2)	
	787.4	39.5	2	4	4						M		
785													
	782.4	44.5	4	5	6						M		
780													
	777.4	49.5	3	5	7						M		
775													
	772.4	54.5	5	7	8						M		
770													
	767.4	59.5	5	8	11						M		
765													
	762.4	64.5	5	8	16						M		
760													
	757.4	69.5	7	11	14						M		
755													
	752.4	74.5	18	44	47						D		
750													

NCDOT BORE SINGLE R2248E GEO BH BRDGOVY1.GPJ NC DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.								
SITE DESCRIPTION BRIDGE ON -Y1- OVER -L-						GROUND WTR (ft)								
BORING NO. B-14		STATION N/A		OFFSET N/A		ALIGNMENT -Y1-								
COLLAR ELEV. 826.9 ft		TOTAL DEPTH 85.0 ft		NORTHING 593,591		EASTING 1,461,617								
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic								
START DATE 02/17/10		COMP. DATE 02/17/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 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)	
750						Match Line								
	747.4	79.5	36	42	51	93					D		RESIDUAL BRN-GRAY-WHITE LOOSE TO V. DENSE MOIST TO DRY CLAYEY SILTY SAND (A-2) (continued)	
745														
	742.4	84.5	100/5			100/5					D		742.4	84.5
740													741.9	85.0
													WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK Boring Terminated at Elevation 741.9 ft IN SEVERELY WEATHERED CRYSTALLINE ROCK B-14 LOCATED @ METRIC STA. 12+66-Y1- 10m LT	
735														
730														
725														
720														
715														
710														
705														
700														
695														
690														
685														
680														
675														
670														

NCDOT BORE SINGLE R2248E GEO. BH. BRDGONY1.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE ON -Y1- OVER -L-						GROUND WTR (ft)									
BORING NO. B-15		STATION N/A		OFFSET N/A		ALIGNMENT -Y1-									
COLLAR ELEV. 822.3 ft		TOTAL DEPTH 57.8 ft		NORTHING 593,472		EASTING 1,461,728									
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic									
START DATE 02/16/10		COMP. DATE 02/16/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 57.8 ft									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT			SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)	
825															
													822.3	0.0	
820													GROUND SURFACE		
													RESIDUAL		
													RED-BRN MED. STIFF MOIST SILTY CLAY (A-7)		
815	818.2	4.1	1	4	4							SS-1	M	814.3	8.0
810	813.2	9.1	5	6	7							SS-2	M		
805	808.2	14.1	3	2	5								M		
800	803.2	19.1	1	3	3							SS-3	W	804.3	18.0
795	798.2	24.1	2	4	4							SS-4	Sat.	799.3	23.0
790	793.2	29.1	1	3	5								Sat.		
785	788.2	34.1	3	6	9							SS-5	W		
780	783.2	39.1	7	9	14								M		
775	778.2	44.1	4	10	15								M		
770	773.2	49.1	5	20	32								D		
765	768.2	54.1	8	21	32								D		
760														765.7	56.6
														764.5	57.8
755														WEATHERED ROCK	
														SEVERELY WEATHERED CRYSTALLINE ROCK	
750														Boring Terminated BY AUGER REFUSAL at Elevation 764.5 ft ON CRYSTALLINE ROCK	
														B-15 LOCATED @ METRIC STA. 13+18 -Y1- 10m LT	
745															

NCDOT BORE SINGLE R2248E GEO. BH. BRD GONY1.GPJ NC DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.	
SITE DESCRIPTION -L- OVER UNKNOWN CREEK							GROUND WTR (ft)
BORING NO. B-23		STATION N/A		OFFSET N/A		ALIGNMENT -L-	
COLLAR ELEV. 700.8 ft		TOTAL DEPTH 34.3 ft		NORTHING 592,138		EASTING 1,476,835	
DRILL MACHINE CME-550X		DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core				HAMMER TYPE Automatic	
START DATE 02/23/10		COMP. DATE 02/23/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 12.3 ft	

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						
705																
700																
695	695.8	5.0	1	1	1											
690	690.8	10.0														
685																
680																
675																
670																
665																
660																
655																
650																
645																
640																
635																
630																
625																

GROUND SURFACE 700.8 0.0

ALLUVIAL
BROWN & GRAY VERY LOOSE WET
CLAYEY SANDY SILT W/ GRAVEL LAYER
9.4-9.8 (A-4)

WEATHERED ROCK
SEVERELY WEATHERED CRYSTALLINE
ROCK

CRYSTALLINE ROCK
MODERATELY SEVERELY TO SLIGHTLY
WEATHERED MEDIUM HARD TO HARD
GRANO DIORITE

CRYSTALLINE ROCK
MODERATELY SEVERE TO MODERATELY
WEATHERED MEDIUM TO MODERATELY
HARD GRANO DIORITE

CRYSTALLINE ROCK
MODERATELY WEATHERED TO FRESH
MODERATELY HARD TO VERY HARD
GRANO DIORITE

CRYSTALLINE ROCK
VERY HARD FRESH GRANO DIORITE

Boring Terminated at Elevation 666.5 ft in
crystalline rock

METRIC STATION: 447+20 15.5 LT -L-

NCDOT BORE SINGLE R-2248E GEO. BH DESIGN BUILD MECKLENBURG GPJ NC DOT GDT 03/03/10



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.1.25				ID. R-2248E				COUNTY MECKLENBURG				GEOLOGIST Todd, R. W.			
SITE DESCRIPTION -L- OVER UNKNOWN CREEK												GROUND WTR (ft)			
BORING NO. B-23				STATION N/A				OFFSET N/A				ALIGNMENT -L-		0 HR. 5.9	
COLLAR ELEV. 700.8 ft				TOTAL DEPTH 34.3 ft				NORTHING 592,138				EASTING 1,476,835		24 HR. 1.0	
DRILL MACHINE CME-550X				DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core								HAMMER TYPE Automatic			
START DATE 02/23/10				COMP. DATE 02/23/10				SURFACE WATER DEPTH N/A				DEPTH TO ROCK 12.3 ft			
CORE SIZE NXWL				TOTAL RUN 22.0 ft				DRILLER Smith, M. L.							
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 (%)						
688.48											Begin Coring @ 12.3 ft				
685	688.5	12.3	7.4	NM	(6.1) 83%	(2.0) 27%					CRYSTALLINE ROCK MODERATELY SEVERELY TO SLIGHTLY WEATHERED MEDIUM HARD TO HARD GRANO DIORITE FRACTURE SPACING = VERY CLOSE TO CLOSE	12.3			
680	681.1	19.7	5.0	NM	(3.3) 66%	(0.4) 8%	RS-7				CRYSTALLINE ROCK MODERATELY SEVERE TO MODERATELY WEATHERED MEDIUM TO MODERATELY HARD GRANO DIORITE FRACTURE SPACING = VERY CLOSE	19.7			
675	676.1	24.7	4.9	1.5/1.0	(4.9) 100%	(4.1) 84%	RS-8				CRYSTALLINE ROCK MODERATELY WEATHERED TO FRESH MODERATELY HARD TO VERY HARD GRANO DIORITE FRACTURE SPACING = VERY CLOSE TO MODERATELY CLOSE	24.7			
670	671.2	29.6	4.8	1.5/1.0	(4.8) 100%	(4.8) 100%	RS-9				CRYSTALLINE ROCK VERY HARD FRESH GRANO DIORITE FRACTURE SPACING = MODERATELY CLOSE TO WIDE	29.6			
665	666.5	34.3									Boring Terminated at Elevation 666.5 ft in crystalline rock	34.3			
660											METRIC STATION: 447+20 15.5 LT -L-				
655															
650															
645															
640															
635															
630															
625															
620															
615															
610															

NCDOT CORE SINGLE R-2248E GEO_BH DESIGN BUILD MECKLENBURG GPJ NC_DOT_GDT 03/03/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.								
SITE DESCRIPTION -L- OVER UNKNOWN CREEK						GROUND WTR (ft)								
BORING NO. B-24		STATION N/A		OFFSET N/A		ALIGNMENT -L-								
COLLAR ELEV. 698.8 ft		TOTAL DEPTH 11.0 ft		NORTHING 592,025		EASTING 1,477,072								
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic								
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 11.0 ft								
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)
700														
	696.6	2.3											698.8	0.0
695			1	2	1									
	691.6	7.3												
690			17	7	8									
													687.8	11.0
685													Boring Terminated by Auger Refusal at Elevation 687.8 ft on crystalline rock	
													METRIC STATION: 448+00 16.5 LT -L-	
680														
675														
670														
665														
660														
655														
650														
645														
640														
635														
630														
625														
620														

NCDOT BORE SINGLE R-2248E GEO BH DESIGNBUILD MECKLENBURG.GPJ NC DOT GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25			ID. R-2248E			COUNTY MECKLENBURG			GEOLOGIST Todd, R. W.		
SITE DESCRIPTION -L- OVER UNKNOWN CREEK									GROUND WTR (ft)		
BORING NO. B-25			STATION N/A			OFFSET N/A			ALIGNMENT -L-		
COLLAR ELEV. 698.8 ft			TOTAL DEPTH 26.4 ft			NORTHING 591,949			EASTING 1,476,998		
DRILL MACHINE CME-550X			DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core						HAMMER TYPE Automatic		
START DATE 02/19/10			COMP. DATE 02/19/10			SURFACE WATER DEPTH N/A			DEPTH TO ROCK 12.5 ft		

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)	
700															
	698.8	2.0	1	1	1									698.8	GROUND SURFACE 0.0
695															
	691.8	7.0	1	1	1										
690															
	688.7	10.1	17	19	5										
685															
														687.0	11.8
														686.3	12.5
680														683.8	15.0
														679.0	19.8
675														674.4	24.4
														672.4	26.4
670															
665															
660															
655															
650															
645															
640															
635															
630															
625															
620															

GROUND SURFACE 0.0

ALLUVIAL BROWN SOFT MOIST TO WET CLAYEY SANDY SILT W/ GRAVEL LAYER 9.4-11.8 (A-4)

RESIDUAL GRAY-OLIVE-TAN MED. STIFF DRY SILTY SANDY CLAY (A-6)

CRYSTALLINE ROCK VERY SLIGHTLY WEATHERED HARD GRANITE

CRYSTALLINE ROCK FRESH VERY HARD GRANITE

CRYSTALLINE ROCK FRESH VERY HARD GRANITE

CRYSTALLINE ROCK FRESH VERY HARD GRANITE

Boring Terminated at Elevation 672.4 ft in crystalline rock


METRIC STATION: 447+90 14.0 RT -L-

NCDOT BORE SINGLE R-2248E GEO_BH_DESIGNBUILD_MECKLENBURG.GPJ NC_DOT.GDT 03/03/10



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.1.25				ID. R-2248E				COUNTY MECKLENBURG				GEOLOGIST Todd, R. W.					
SITE DESCRIPTION -L- OVER UNKNOWN CREEK												GROUND WTR (ft)					
BORING NO. B-25				STATION N/A				OFFSET N/A				ALIGNMENT -L-				0 HR. 2.6	
COLLAR ELEV. 698.8 ft				TOTAL DEPTH 26.4 ft				NORTHING 591,949				EASTING 1,476,998				24 HR. NM	
DRILL MACHINE CME-550X				DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core								HAMMER TYPE Automatic					
START DATE 02/19/10				COMP. DATE 02/19/10				SURFACE WATER DEPTH N/A				DEPTH TO ROCK 12.5 ft					
CORE SIZE NXWL				TOTAL RUN 13.9 ft				DRILLER Smith, M. L.									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN ROD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA ROD (ft) %	L O G	DESCRIPTION AND REMARKS					DEPTH (ft)	
686.32											Begin Coring @ 12.5 ft						
685	686.3	12.5	2.5	3.0/1.0	(2.1) 84%	(0.4) 16%					686.3	CRYSTALLINE ROCK			12.5		
	683.8	15.0					RS-10				683.8	VERY SLIGHTLY WEATHERED HARD GRANITE FRACTURE SPACING = CLOSE			15.0		
			4.8	2.5/1.0	(4.8) 100%	(3.8) 80%						CRYSTALLINE ROCK FRESH VERY HARD GRANITE FRACTURE SPACING = MODERATELY CLOSE					
680	679.0	19.8									679.0	CRYSTALLINE ROCK FRESH VERY HARD GRANITE FRACTURE SPACING = MODERATELY CLOSE			19.8		
			4.6	6.7/1.0	(4.6) 100%	(4.6) 100%	RS-11					CRYSTALLINE ROCK FRESH VERY HARD GRANITE FRACTURE SPACING = MODERATELY CLOSE					
675	674.4	24.4									674.4	CRYSTALLINE ROCK FRESH VERY HARD GRANITE FRACTURE SPACING = MODERATELY CLOSE			24.4		
	672.4	26.4	2.0	18.0/1.0	(2.0) 100%	(2.0) 100%					672.4	CRYSTALLINE ROCK FRESH VERY HARD GRANITE FRACTURE SPACING = MODERATELY CLOSE			26.4		
670											Boring Terminated at Elevation 672.4 ft in crystalline rock						
											METRIC STATION: 447+90 14.0 RT -L-						
665																	
660																	
655																	
650																	
645																	
640																	
635																	
630																	
625																	
620																	
615																	
610																	

NCDOT CORE SINGLE R-2248E GEO. BH DESIGN BUILD MECKLENBURG GPJ NC_DOT_GDT 03/03/10





NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.							
SITE DESCRIPTION -L- OVER UNKNOWN CREEK						GROUND WTR (ft)							
BORING NO. B-26		STATION N/A		OFFSET N/A		ALIGNMENT -L-							
COLLAR ELEV. 698.2 ft		TOTAL DEPTH 8.4 ft		NORTHING 591,893		EASTING 1,477,117							
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic							
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 7.4 ft							
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			
700													
	698.2	2.0											
695			1	1	1								
	691.2	7.0											
690			2	100/1									
685													
680													
675													
670													
665													
660													
655													
650													
645													
640													
635													
630													
625													
620													

GROUND SURFACE 0.0

ALLUVIAL BROWN SOFT WET CLAYEY SANDY SILT (A-4)

690.7 7.4

689.8 8.4

CRYSTALLINE ROCK

Boring Terminated by Auger Refusal at Elevation 689.8 ft in crystalline rock

METRIC STATION: 448+30 13.5 RT -L-

NCDOT BORE SINGLE R-2248E GEO_BH_DESIGNBUILD_MECKLENBURG.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.								
SITE DESCRIPTION -Y22-OVER -L-						GROUND WTR (ft)								
BORING NO. B-27		STATION N/A		OFFSET N/A		ALIGNMENT -Y22-								
COLLAR ELEV. 723.1 ft		TOTAL DEPTH 21.2 ft		NORTHING 591,169		EASTING 1,478,477								
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic								
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 21.2 ft								
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		MOI	ELEV. (ft)	DEPTH (ft)
725													723.1	0.0
720	720.6	2.5	2	3	4							M		
715	715.6	7.5	29	71/2								D		
710	710.6	12.5	21	27	27							D		
705	705.6	17.5	100/5									D		
700														
695														
690														
685														
680														
675														
670														
665														
660														
655														
650														
645														

723.1 GROUND SURFACE 0.0

RESIDUAL BROWN-TAN MED. STIFF MOIST SANDY SILTY CLAY (A-6)

716.9 6.2

WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK

713.6 9.4

RESIDUAL OLIVE-TAN-GRAY HARD DRY CLAYEY SANDY SILT (A-4)

706.7 16.4

WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK

701.9 21.2

Boring Terminated by Auger Refusal at Elevation 701.9 ft on crystalline rock

METRIC STATION: 19+32 C/L -Y22-

NCDOT BORE SINGLE R-2248E GEO BH DESIGNBUILD MECKLENBURG.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.	
SITE DESCRIPTION -Y22-OVER -L-							GROUND WTR (ft)
BORING NO. B-28		STATION N/A		OFFSET N/A		ALIGNMENT -Y22-	
COLLAR ELEV. 726.4 ft		TOTAL DEPTH 29.8 ft		NORTHING 591,235		EASTING 1,478,554	
DRILL MACHINE CME-550X		DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core				HAMMER TYPE Automatic	
START DATE 02/17/10		COMP. DATE 02/17/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 15.1 ft	

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						
730																
725																
720	721.3	5.1	11	15	16										GROUND SURFACE	0.0
715	716.3	10.1	75	25/1											RESIDUAL OLIVE-TAN-GRAY MED. DENSE TO DENSE CLAYEY SANDY SILT (A-4)	
710	711.3	15.1	100/0												WEATHERED ROCK SEVERELY WEATHERED CRYSTALLINE ROCK	7.5
705															CRYSTALLINE ROCK MODERATELY SEVERELY WEATHERED MEDIUM HARD GRANITE	15.1
700															CRYSTALLINE ROCK MODERATELY SEVERELY WEATHERED MEDIUM HARD GRANITE	19.8
695															CRYSTALLINE ROCK MODERATELY TO SLIGHTLY WEATHERED HARD GRANITE	24.8
690															Boring Terminated at Elevation 696.6 ft in crystalline rock	29.8
685															METRIC STATION: 19+63 C/L -Y22-	
680																
675																
670																
665																
660																
655																

NCDOT BORE SINGLE R-2248E GEO BH B23-B29 MECKLENBURG.GPJ NC DOT GDT 03/04/10



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.1.25				ID. R-2248E				COUNTY MECKLENBURG				GEOLOGIST Todd, R. W.					
SITE DESCRIPTION -Y22-OVER -L-												GROUND WTR (ft)					
BORING NO. B-28				STATION N/A				OFFSET N/A				ALIGNMENT -Y22-				0 HR. NM	
COLLAR ELEV. 726.4 ft				TOTAL DEPTH 29.8 ft				NORTHING 591,235				EASTING 1,478,554				24 HR. 32.8	
DRILL MACHINE CME-550X				DRILL METHOD NW Casing / Tri-Cone Roller bit W/SPT & Core								HAMMER TYPE Automatic					
START DATE 02/17/10				COMP. DATE 02/17/10				SURFACE WATER DEPTH N/A				DEPTH TO ROCK 15.1 ft					
CORE SIZE NXWL				TOTAL RUN 14.3 ft				DRILLER Smith, M. L.									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %		RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %		RQD (ft) %	L O G	DESCRIPTION AND REMARKS ELEV. (ft) DEPTH (ft)				
710.96													Begin Coring @ 15.4 ft				
710	711.0	15.4	4.4	1.7/1.0	(3.6)	(0.0)							CRYSTALLINE ROCK MODERATELY SEVERELY WEATHERED MEDIUM HARD GRANITE FRACTURE SPACING = VERY CLOSE (continued)				
	706.6	19.8											706.6	19.8			
705			5.0	1.8/1.0	(3.4)	(0.4)								CRYSTALLINE ROCK MODERATELY SEVERELY WEATHERED MEDIUM HARD GRANITE FRACTURE SPACING = VERY CLOSE			
	701.6	24.8											701.6	24.8			
700			5.0	1.5/1.0	(4.7)	(3.5)		RS-12						CRYSTALLINE ROCK MODERATELY TO SLIGHTLY WEATHRED HARD GRANITE FRACTURE SPACING = VERY CLOSE TO CLOSE			
	696.6	29.8						RS-13					696.6	29.8			
695														Boring Terminated at Elevation 696.6 ft in crystalliner rock			
														METRIC STATION: 19+63 C/L -Y22-			
690																	
685																	
680																	
675																	
670																	
665																	
660																	
655																	
650																	
645																	
640																	
635																	

NCDOT CORE SINGLE R-2248E_GEO_BH_DESIGNBUILD_MECKLENBURG.GPJ NC_DOT_GDT 03/03/10



RUN #1

RUN #2

RUN-3

RS-12

25.5

126

127

28

291

RS-13

296

29

Box R3

0'

0.5'

1.0'

1.5'

2.0'

B 28
19+63-422-
Q



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY MECKLENBURG		GEOLOGIST Todd, R. W.										
SITE DESCRIPTION -Y22-OVER -L-						GROUND WTR (ft)										
BORING NO. B-29		STATION N/A		OFFSET N/A		ALIGNMENT -Y22-										
COLLAR ELEV. 730.3 ft		TOTAL DEPTH 9.0 ft		NORTHING 591,297		EASTING 1,478,626										
DRILL MACHINE CME-550X		DRILL METHOD H.S. Augers				HAMMER TYPE Automatic										
START DATE 02/18/10		COMP. DATE 02/18/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 9.0 ft										
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)	
735																
730																
	728.3	2.0		18	41	47										
725																
	723.4	7.0		75	25/1											
720																
715																
710																
705																
700																
695																
690																
685																
680																
675																
670																
665																
660																

GROUND SURFACE 730.3 0.0

RESIDUAL
BROWN-TAN HARD DRY SLIGHTLY MICA.
CLAYEY SANDY SILT (A-4)

723.4 7.0

WEATHERED ROCK
SEVERELY WEATHERED CRYSTALLINE
ROCK

721.3 9.0

Boring Terminated by Auger Refusal at
Elevation 721.3 ft on crystalline rock

METRIC STATION: 19+92 C/L -Y22-

NCDOT BORE SINGLE R-2248E GEO_BH DESIGNBUILD_MECKLENBURG.GPJ NC_DOT.GDT 03/01/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY Mecklenburg		GEOLOGIST Nash, A. A.								
SITE DESCRIPTION Bridge on -Y22- (Mallard Creek Road) over tributary to Stone Creek						GROUND WTR (ft)								
BORING NO. B-32		STATION 16+40		OFFSET 11 ft LT		ALIGNMENT -Y22-								
COLLAR ELEV. 647.7 ft		TOTAL DEPTH 12.4 ft		NORTHING 180,007		EASTING 450,411								
DRILL MACHINE Diedrich D-50		DRILL METHOD 2-15/16" tri-cone with rotary wash				HAMMER TYPE Automatic								
DRILLER Duggins, W. T.		START DATE 03/02/10		COMP. DATE 03/03/10		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT			SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)
650														
	647.7	0.0											647.7	0.0
			WOH	WOH	1								GROUND SURFACE	
645													645.7	2.0
	644.3	3.4											Brown & Gray Very Soft Slightly Fine Sandy Silty CLAY (A-7-5), with Little Organic Matter	
			3	4	4								RESIDUAL	
640													Gray, Brown, & Orange Medium Stiff Silty Fine Sandy CLAY (A-7-5)	7.4
	639.3	8.4											WEATHERED ROCK	
			100/0.5										(Gray Metamorphosed Rock)	
	635.3	12.4											635.3	12.4
635			60/0										Boring Terminated by Tri-cone Refusal at Elevation 635.3 ft on Crystalline Rock: Gray Metamorphosed Rock	
630													1) Station and offset are in METRIC	
													2) Advanced a 2-15/16" tri-cone to a depth of 12.4 feet.	
625													3) Set HW casing to 4.0 feet below the existing ground.	
													4) Used swamp water as drilling fluid.	
620														
615														
610														
605														
600														
595														
590														
585														
580														
575														
570														

NCDOT BORE SINGLE 10-0045.GPJ NC_DOT.GDT 3/3/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY Mecklenburg		GEOLOGIST Nash, A. A.										
SITE DESCRIPTION Bridge on -Y22- (Mallard Creek Road) over tributary to Stone Creek							GROUND WTR (ft)									
BORING NO. B-33		STATION 16+70		OFFSET 11 ft LT		ALIGNMENT -Y22-		0 HR. N/A								
COLLAR ELEV. 647.0 ft		TOTAL DEPTH 31.7 ft		NORTHING 180,026		EASTING 450,434		24 HR. N/A								
DRILL MACHINE Diedrich D-50		DRILL METHOD 2-15/16" tri-cone with rotary wash					HAMMER TYPE Automatic									
DRILLER Duggins, W. T.		START DATE 03/01/10		COMP. DATE 03/02/10		SURFACE WATER DEPTH 0.0ft										
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)	
650																
645											S-5	W		647.0	WATER SURFACE (03/01/10)	0.0
														645.5	ALLUVIAL Brown & Gray Very Soft Fine Sandy Silty CLAY (A-7-5), Moderately Organic	1.5
	643.4	3.6														
640											SS-6	W		640.6	RESIDUAL Tan Very Stiff Fine Sandy SILT (A-4), with Trace Coarse Sand & Rock Fragments	6.4
	638.4	8.6												638.4	WEATHERED ROCK (Gray Metamorphosed Rock)	8.6
											SS-7					
635																
630																
625																
620																
615														615.3		31.7
												No Return				
610																
605																
600																
595																
590																
585																
580																
575																
570																

NCDOT BORE SINGLE 10-0045.GPJ NC_DOT.GDT 3/2/10

- Boring Terminated at Elevation 615.3 ft in Crystalline Rock: Gray Metamorphosed Rock
- 1) Station and offset are in METRIC
 - 2) Advanced a 2-15/16" tri-cone to a depth of 9.7 feet.
 - 3) Set HW casing to 4.0 feet below the existing ground.
 - 4) Set NW casing to 8.0 feet below the existing ground.
 - 5) Advanced a NQ2 core barrel between 9.7 to 31.7 feet.
 - 6) Used swamp water as drilling fluid.



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY Mecklenburg		GEOLOGIST Nash, A. A.							
SITE DESCRIPTION Bridge on -Y22- (Mallard Creek Road) over tributary to Stone Creek							GROUND WTR (ft)						
BORING NO. B-33		STATION 16+70		OFFSET 11 ft LT		ALIGNMENT -Y22-							
COLLAR ELEV. 647.0 ft		TOTAL DEPTH 31.7 ft		NORTHING 180,026		EASTING 450,434							
DRILL MACHINE Diedrich D-50		DRILL METHOD 2-15/16" tri-cone with rotary wash				HAMMER TYPE Automatic							
DRILLER Duggins, W. T.		START DATE 03/01/10		COMP. DATE 03/02/10		SURFACE WATER DEPTH 0.0ft							
CORE SIZE NQ		TOTAL RUN 22.0 ft											
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) % ROD (ft) %		STRATA REC. (ft) % ROD (ft) %		L O G	DESCRIPTION AND REMARKS	DEPTH (ft)		
637.3										Begin Coring @ 9.7 ft			
635	637.3	9.7	3.5	3:14/1.0 9:13/1.0 12:53/1.0 4:34/0.5	(1.8) 51%	(0.0) 0%					Gray, Fresh to Very Slightly Weathered, Hard to Very Hard, Moderately Close to Closely Fractured Spacing, Very Thickly Bedded, Metamorphosed Rock (continued)		
630	633.8	13.2	5.0	5:55/1.0 6:48/1.0 6:26/1.0 6:20/1.0 9:15/1.0	(4.8) 96%	(4.0) 80%							
625	628.8	18.2	5.0	7:02/1.0 5:45/1.0 6:06/1.0 5:05/1.0 6:31/1.0	(5.0) 100%	(3.0) 60%							
620	623.8	23.2	5.0	5:38/1.0 4:15/1.0 3:45/1.0 4:45/1.0 6:06/1.0	(5.0) 100%	(4.7) 94%							
615	618.8	28.2	3.5	6:45/1.0 5:25/1.0 4:36/1.0 3:54/0.5	(3.5) 100%	(3.5) 100%							
	615.3	31.7										615.3	31.7
610												Boring Terminated at Elevation 615.3 ft in Crystalline Rock: Gray Metamorphosed Rock	
605												1) Station and offset are in METRIC 2) Advanced a 2-15/16" tri-cone to a depth of 9.7 feet. 3) Set HW casing to 4.0 feet below the existing ground. 4) Set NW casing to 8.0 feet below the existing ground. 5) Advanced a NQ2 core barrel between 9.7 to 31.7 feet. 6) Used swamp water as drilling fluid.	
600													
595													
590													
585													
580													
575													
570													
565													
560													

NCDOT CORE SINGLE 10-0045.GPJ NC_DOT.GDT 3/2/10



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.1.25		ID. R-2248E		COUNTY Mecklenburg		GEOLOGIST Nash, A. A.								
SITE DESCRIPTION Bridge on -Y22- (Mallard Creek Road) over tributary to Stone Creek						GROUND WTR (ft)								
BORING NO. B-34		STATION 16+97		OFFSET 11 ft LT		ALIGNMENT -Y22-								
COLLAR ELEV. 646.5 ft		TOTAL DEPTH 9.9 ft		NORTHING 180,044		EASTING 450,454								
DRILL MACHINE Diedrich D-50		DRILL METHOD 2-15/16" tri-cone with rotary wash				HAMMER TYPE Automatic								
DRILLER Duggins, W. T.		START DATE 03/01/10		COMP. DATE 03/01/10		SURFACE WATER DEPTH 0.4ft								
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)
650														
645													646.5	0.0
													645.5	1.0
	642.6	3.9												
640			3	7	20									
	637.6	8.9												
	636.6	9.9	60	40/0.3										
635			60/0										640.3	6.2
													636.6	9.9
630														
625														
620														
615														
610														
605														
600														
595														
590														
585														
580														
575														
570														

NCDOT BORE SINGLE 10-0045.GPJ NC_DOT.GDT 3/1/10

- 1) Station and offset are in METRIC
2) Advanced a 2-15/16" tri-cone to a depth of 9.9 feet.
3) Set HW casing to 3.0 feet below the existing ground.
4) Used swamp water as drilling fluid.



NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Todd, R. W.	
SITE DESCRIPTION -L- OVER UNKNOWN CREEK							GROUND WTR (ft)
BORING NO. B43		STATION N/A		OFFSET N/A		ALIGNMENT -L-	
COLLAR ELEV. 696.9 ft		TOTAL DEPTH 20.7 ft		NORTHING 591,999		EASTING 1,476,835	
DRILL MACHINE CME-550X		DRILL METHOD NW Casing W/SPT & Core				HAMMER TYPE Automatic	
START DATE 02/26/10		COMP. DATE 02/26/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 8.1 ft	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
700																
695																
	691.8	5.1														
690			1	1	0											
685																
680																
675																
670																
665																
660																
655																
650																
645																
640																
635																
630																
625																
620																

GROUND SURFACE 0.0

ALLUVIAL
BRN., V. SOFT, WET, CLAYEY SILT (A-4)

689.2 7.7

688.8 8.1

WEATHERED ROCK
SEVERLY WEATHERED CRYSTALLINE
ROCK

682.4 14.5

CRYSTALLINE ROCK
GRAY, SLI. WEATH., V. HARD GRANITE.
FS = CLOSE

677.2 19.7

676.2 20.7

CRYSTALLINE ROCK
GRAY, FRESH, V. HARD, GRANITE. FS =
CLOSE TO MOD. CLOSE

Boring Terminated at Elevation 676.2 ft IN
FRESH, V. HARD, GRANITE

B-43 LOCATED AT METRIC STATION
447+40 -L-, 17.0M RT.

NCDOT BORE SINGLE R2248E_GEO 2010BH_MECKLENBURG GPJ NC_DOT_GDT 03/04/10



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.125				ID. R-2248E				COUNTY MECK				GEOLOGIST Todd, R. W.			
SITE DESCRIPTION -L- OVER UNKNOWN CREEK												GROUND WTR (ft)			
BORING NO. B43				STATION N/A				OFFSET N/A				ALIGNMENT -L-			
COLLAR ELEV. 696.9 ft				TOTAL DEPTH 20.7 ft				NORTHING 591,999				EASTING 1,476,835			
DRILL MACHINE CME-550X				DRILL METHOD NW Casing W/SPT & Core								HAMMER TYPE Automatic			
START DATE 02/26/10				COMP. DATE 02/26/10				SURFACE WATER DEPTH N/A				DEPTH TO ROCK 8.1 ft			
CORE SIZE NW				TOTAL RUN 12.6 ft				DRILLER Smith, M. L.							
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) %						
688.75															
	688.8	8.1	6.4	2:20/1.0 2:20/1.0 00:30/1.0 1:00/1.0 2:10/1.0 2:10/1.4	(5.0) 78%	(2.5) 39%	RS-1 RS-2	(5.0) 78%	(2.5) 39%		Begin Coring @ 8.1 ft CRYSTALLINE ROCK GRAY, SLI. WEATH., V. HARD GRANITE. FS = CLOSE	8.1			
685															
	682.4	14.5													
680			5.2	2:30/1.0 6:00/1.0 10:00/1.0 15:00/1.0 30:00/1.2	(5.0) 96%	(4.0) 77%	RS-3	(5.0) 96%	(4.0) 77%		CRYSTALLINE ROCK GRAY, FRESH, V. HARD, GRANITE. FS = CLOSE TO MOD. CLOSE	14.5			
	677.2	19.7													
	676.2	20.7	1.0	60:00/1.0	(1.0) 100%	(1.0) 100%		(1.0) 100%	(1.0) 100%		CRYSTALLINE ROCK GRAY, FRESH, V. HARD, GRANITE. FS = CLOSE TO MOD. CLOSE Boring Terminated at Elevation 676.2 ft IN FRESH, V. HARD, GRANITE	19.7 20.7			
675															
670															
665															
660															
655															
650															
645															
640															
635															
630															
625															
620															
615															
610															

NCDOT CORE SINGLE R2248E_GEO_20108H_MECKLENBURG.GPJ NC_DOT_GDT 03/04/10





NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Todd, R. W.	
SITE DESCRIPTION -L- OVER UNKNOWN CREEK							GROUND WTR (ft)
BORING NO. B44		STATION N/A		OFFSET N/A		ALIGNMENT -L-	
COLLAR ELEV. 697.3 ft		TOTAL DEPTH 31.5 ft		NORTHING 591,645		EASTING 1,477,098	
DRILL MACHINE CME-550X		DRILL METHOD NW Casing W/SPT & Core				HAMMER TYPE Automatic	
START DATE 02/25/10		COMP. DATE 02/25/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 10.2 ft	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
700															
695															
692.1	692.1	5.2	1	2	1									GROUND SURFACE	0.0
690														ALLUVIAL BRN., SOFT, WET, CLAYEY SILT (A-4)	
689.8															7.5
687.1														WEATHERED ROCK SEVERLY WEATHERED CRYSTALLINE ROCK	10.2
682.5														CRYSTALLINE ROCK GRAY, MOD. SEV. TO MOD. WEATH., MED. TO MOD. HARD, GRANITE. FS = V. CLOSE TO CLOSE	14.8
677.5														CRYSTALLINE ROCK GRAY, MOD. TO SLI. WEATH., HARD TO V. HARD, GRANITE. FS = CLOSE	19.8
672.5														CRYSTALLINE ROCK GRAY, FRESH, V. HARD GRANITE TO 20.9', THEN GRAY, MOD. WEATH., MOD. HARD TO V. HARD, META VOLCANIC. FS = V. CLOSE TO CLOSE.	24.8
667.5														CRYSTALLINE ROCK GRAY, MOD. TO SLI. WEATH., MOD. HARD TO HARD, META VOLCANIC. FS = V. CLOSE TO CLOSE.	29.8
665.8														CRYSTALLINE ROCK AS ABOVE TO 30.1', THEN GRAY, SLI. WEATH., HARD, GRANITE. FS = V. CLOSE	31.5
														Boring Terminated at Elevation 665.8 ft IN FRESH, HARD, GRANITE	
														B-44 LOCATED AT METRIC STATION 15+35 -RPCY22-, 5M LT.	



NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

SHEET

PROJECT NO. 34410.125		ID. R-2248E		COUNTY MECK		GEOLOGIST Todd, R. W.						
SITE DESCRIPTION -L- OVER UNKNOWN CREEK							GROUND WTR (ft)					
BORING NO. B44		STATION N/A		OFFSET N/A		ALIGNMENT -L-						
COLLAR ELEV. 697.3 ft		TOTAL DEPTH 31.5 ft		NORTHING 591,645		EASTING 1,477,098						
DRILL MACHINE CME-550X		DRILL METHOD NW Casing W/SPT & Core				HAMMER TYPE Automatic						
START DATE 02/25/10		COMP. DATE 02/25/10		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 10.2 ft						
CORE SIZE NW		TOTAL RUN 21.3 ft		DRILLER Smith, M. L.								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	RQD (ft) %	L O G	DESCRIPTION AND REMARKS	DEPTH (ft)
687.1											Begin Coring @ 10.2 ft	
685	687.1	10.2	4.6		(4.5) 97%	(0.8) 17%					CRYSTALLINE ROCK	10.2
	682.5	14.8									GRAY, MOD. SEV. TO MOD. WEATH., MED. TO MOD. HARD, GRANITE. FS = V. CLOSE TO CLOSE	
680			5.0		(4.6) 92%	(3.7) 74%					CRYSTALLINE ROCK	14.8
							RS-4				GRAY, MOD. TO SLI. WEATH., HARD TO V. HARD, GRANITE. FS = CLOSE	
	677.5	19.8									CRYSTALLINE ROCK	19.8
675			5.0		(5.0) 100%	(2.8) 56%					GRAY, FRESH, V. HARD GRANITE TO 20.9', THEN GRAY, MOD. WEATH., MOD. HARD TO V. HARD, META VOLCANIC. FS = V. CLOSE TO CLOSE.	
	672.5	24.8									CRYSTALLINE ROCK	24.8
670			5.0		(4.9) 98%	(2.6) 52%					GRAY, MOD. TO SLI. WEATH., MOD. HARD TO HARD, META VOLCANIC. FS = V. CLOSE TO CLOSE.	
	667.5	29.8					RS-6					29.8
665	665.8	31.5	1.7		(1.7) 100%	(0.5) 30%					CRYSTALLINE ROCK	31.5
											AS ABOVE TO 30.1', THEN GRAY, SLI. WEATH., HARD, GRANITE. FS = V. CLOSE	
											Boring Terminated at Elevation 665.8 ft IN FRESH, HARD, GRANITE	
											B-44 LOCATED AT METRIC STATION 15+35 -RPCY22-, 5M LT.	



RUN #3

201

RS-5

1
205

121

221

24

RUN-4

125

126

271

0'

0.5'

1.0'

1.5'

2.0'

B 44

