

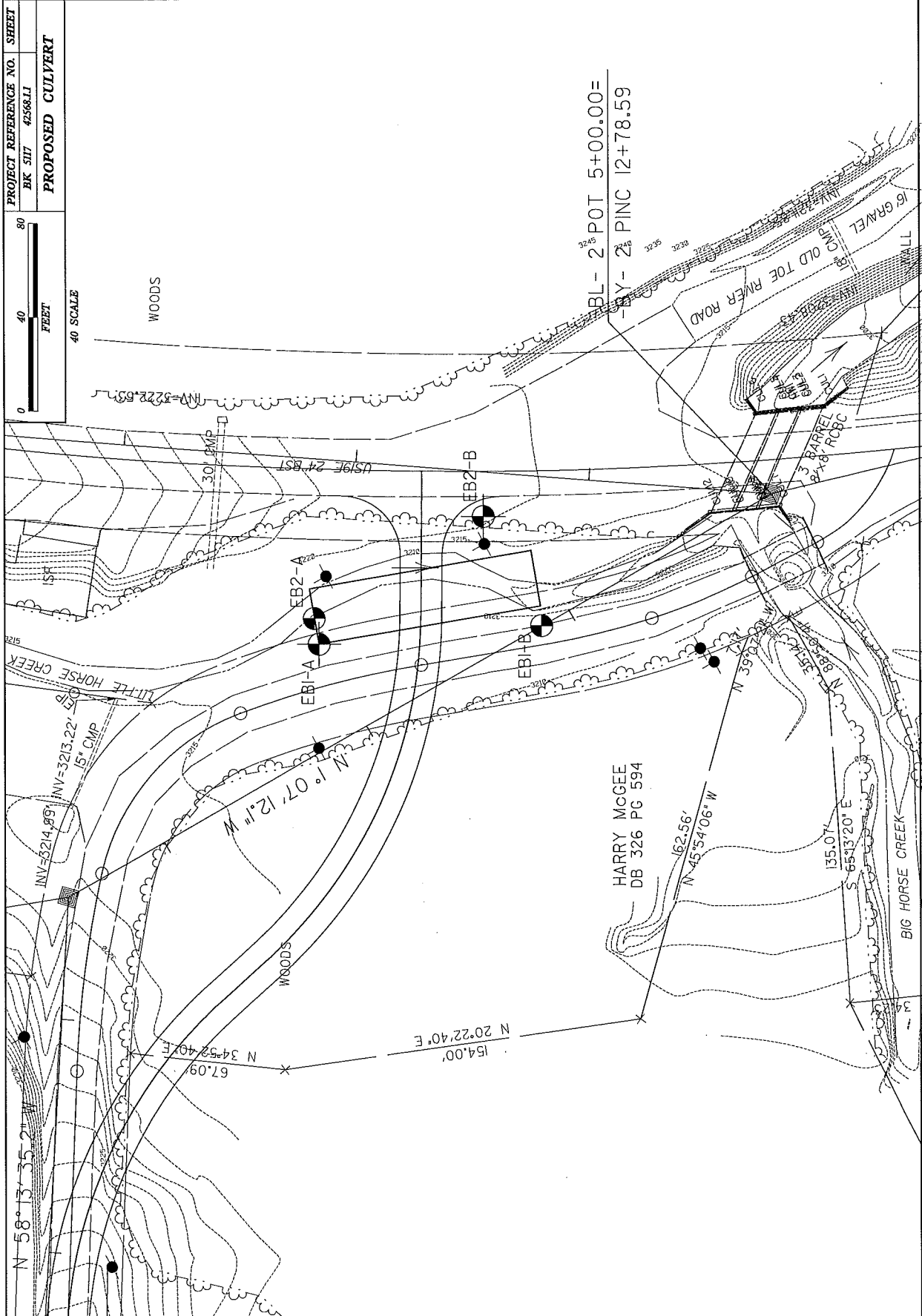
**ATTACHMENT B**  
**GEOTECHNICAL**

**The following Geotechnical Bore Holes Sections are for information only and are not a part of this contract. This information is for investigation only and no accuracy is implied or guaranteed. No claim will be allowed as a result of the use of this information.**

PROJECT REFERENCE NO. SHEET  
BK 517 4258.L1  
**PROPOSED CULVERT**



40 SCALE  
FEET



BL-2 POT 5+00.00=  
-BY-2 PINC 12+78.59

HARRY MCGEE  
DB 326 PG 594

N 58° 13' 35" W

INV=3214.89'

INV=3213.22'

N 34° 52' 40" E  
67.09'

N 1° 07' 12.1" W

N 20° 22' 40" E  
154.00'

N 45° 54' 06" W  
162.56'

S 65° 13' 20" E  
135.07'

N 39° 17' 30" W

N 35° 17' 30" W

N 88° 56' 30" W

WOODS

WOODS

EB1-A

EB1-B

EB2-A

EB2-B

OLD TOE RIVER ROAD

16 GRAVEL

3 BARREL CULVERT

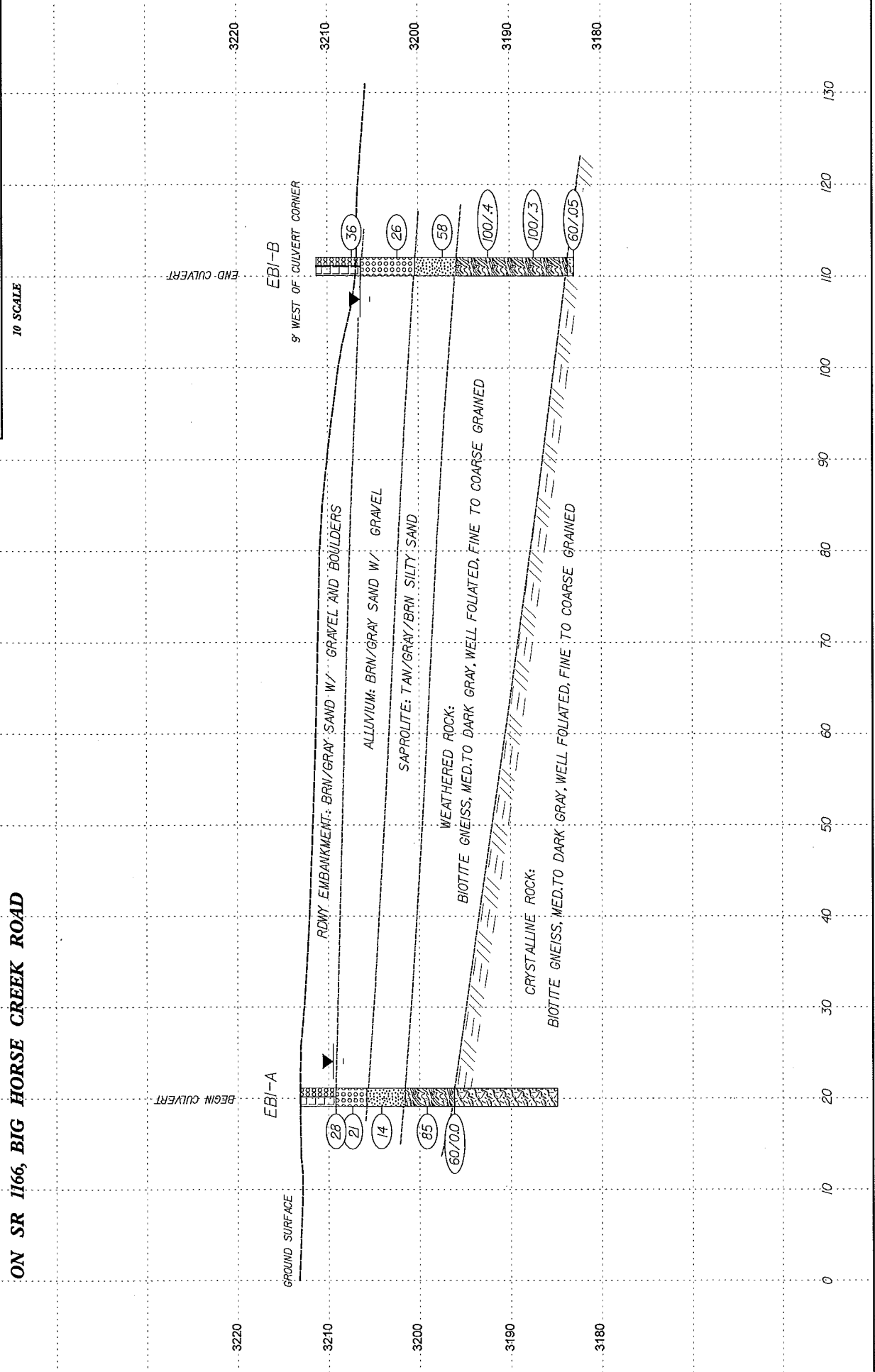
BIG HORSE CREEK

LITTLE HORSE CREEK

**PROFILE ALONG EBI OF PROPOSED CULVERT  
ON SR 1166, BIG HORSE CREEK ROAD**

PROJECT REFERENCE NO. SHEET  
BK-5117 42568.11  
CULVERT

0 10 20  
FEET  
VE = 1H:1V  
10 SCALE





# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 42568.1.1	ID. BK 5117	COUNTY Avery	GEOLOGIST Kuhne, J. C.
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK			GROUND WTR (ft)
BORING NO. EB1A	STATION N/A	OFFSET N/A	ALIGNMENT L-REV
COLLAR ELEV. 3,213.5 ft	TOTAL DEPTH 28.2 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME-550	DRILL METHOD NW Casing w/ SPT Core	HAMMER TYPE Automatic	
START DATE 04/27/09	COMP. DATE 04/27/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 16.9 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							
3215														3,213.5	GROUND SURFACE	0.0	
3210	3,209.6	3.9												3,209.6	ROADWAY EMBANKMENT BRN/GRAY SAND W/ GRAVEL	3.9	
	3,207.8	5.7	4	6	22									3,206.2	ALLUVIAL BRN/GRAY SAND W/ GRAVEL	7.3	
3205	3,204.8	8.9												3,202.0	SAPROLITE TAN/ ORANGE/GRAY SILTY SAND	11.5	
3200	3,199.8	13.9	14	52	33									3,196.6	WEATHERED ROCK DK. GRAY WEATHERED BIOTITE GNEISS W/ SAPROLITE SEAMS	16.9	
3195	3,196.6	16.9	60/0.0												CRYSTALLINE ROCK LT. TO DK. GRAY, WELL FOLIATED, FINE TO CARSE GRAINED BIOTITE GNEISS		
3190																	
3185														3,185.3	Boring Terminated WITH CASING ADVANCER REFUSAL at Elevation 3,185.3 ft IN CRYSTALLINE ROCK, MIGMATITC BIOTITE GNEISS	28.2	
3180																	
3175																	
3170																	
3165																	
3160																	
3155																	
3150																	
3145																	
3140																	
3135																	

NCDOT BORE SINGLE BK5117\_BORELOGS.GPJ NC\_DOT\_GDT\_05/19/09



# NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

PROJECT NO. 42568.1.1		ID. BK 5117		COUNTY Avery		GEOLOGIST Kuhne, J. C.						
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK							GROUND WTR (ft)					
BORING NO. EB1A		STATION N/A		OFFSET N/A		ALIGNMENT L-REV		0 HR. N/A				
COLLAR ELEV. 3,213.5 ft		TOTAL DEPTH 28.2 ft		NORTHING N/A		EASTING N/A		24 HR. 3.9				
DRILL MACHINE CME-550		DRILL METHOD NW Casing w/ SPT Core				HAMMER TYPE Automatic						
START DATE 04/27/09		COMP. DATE 04/27/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 16.9 ft						
CORE SIZE NXWL		TOTAL RUN 11.3 ft		DRILLER Coffey, Jr., C.								
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) %			
3196.57	3,196.6	16.9	1.3	1:59/1.3	(0.9)	(0.0)					Begin Coring @ 16.9 ft	
3195	3,195.3	18.2	5.0	N=60/0.0	72%	0%					CRYSTALLINE ROCK	16.9
				1:12/1.0		(0.4)						
				1:28/1.0	(3.3)	(0.4)						
				1:08/1.0	66%	8%						
3190	3,190.3	23.2		1:17/1.0								
			5.0	1:19/1.0								
				1:21/1.0	(3.3)	(0.0)						
				1:19/1.0	66%	0%						
3185	3,185.3	28.2		1:10/1.0								
				1:09/1.0								
				1:15/1.0								28.2
											Boring Terminated WITH CASING ADVANCER REFUSAL at Elevation 3,185.3 ft IN CRYSTALLINE ROCK, MIGMATITC BIOTITE GNEISS	
3180												
3175												
3170												
3165												
3160												
3155												
3150												
3145												
3140												
3135												
3130												
3125												
3120												

NCDOT CORE SINGLE BK5117\_BORELOGS.GPJ NC\_DOT\_GDT\_05/19/09



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 42568.1.1	ID. BK 5117	COUNTY Avery	GEOLOGIST Kuhne, J. C.
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK			GROUND WTR (ft)
BORING NO. EB1B	STATION N/A	OFFSET N/A	ALIGNMENT L-REV
COLLAR ELEV. 3,211.3 ft	TOTAL DEPTH 28.4 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME-550	DRILL METHOD NW Casing w/ SPT	HAMMER TYPE Automatic	
START DATE 04/29/09	COMP. DATE 04/29/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 28.4 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			ELEV. (ft)	DEPTH (ft)		
3215																
3210														3,211.3	0.0	GROUND SURFACE
																ROADWAY EMBANKMENT DK GRAY SAND W/ GRAVEL AND BOULDERS
	3,207.4	3.9												3,206.4	4.9	ALLUVIAL DK. BRN GRAVELLY SAND
3205			16	15	21											
	3,202.4	8.9												3,200.3	11.0	SAPROLITE GRAY/BRN SILTY SAND
3200			10	13	13											
	3,197.4	13.9												3,195.6	15.5	WEATHERED ROCK DK. GRAY WEATHERED BIOTITE GNEISS
3195			18	16	42											
	3,192.4	18.9														
3190			100/4													
	3,187.4	23.9														
3185			100/3													
	3,183.0	28.3												3,183.6	27.7	CRYSTALLINE ROCK GRAY BIOTITE GNEISS
			60/05											3,182.9	28.4	Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 3,182.9 ft ON CRYSTALLINE ROCK, MIGMATITIC BIOTITE GNEISS
3180																
3175																
3170																
3165																
3160																
3155																
3150																
3145																
3140																
3135																

NCDOT BORE SINGLE BK5117\_BORELOGS.GPJ NC\_DOT\_GDT 05/19/09



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 42568.1.1	ID. BK 5117	COUNTY Avery	GEOLOGIST Kuhne, J. C.
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK			GROUND WTR (ft)
BORING NO. EB2A	STATION N/A	OFFSET N/A	ALIGNMENT L-REV
COLLAR ELEV. 3,210.7 ft	TOTAL DEPTH 21.7 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME-550	DRILL METHOD NW Casing w/ SPT	HAMMER TYPE Automatic	
START DATE 04/29/09	COMP. DATE 04/29/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 21.7 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			ELEV. (ft)	DEPTH (ft)	
3215															
3210													3,210.7	GROUND SURFACE	0.0
3205	3,207.0	3.7	15	25	39							M	3,204.5	ALLUVIAL DK. BRN SANDY GRAVEL W/ COBBLES AND BOULDERS	6.2
3200	3,202.0	8.7	35	35	50							M	3,200.0	SAPROLITE BRN/OLIVE SANDY W/ W. ROCK SEAMS	10.7
3195	3,197.0	13.7	18	32	31							M	3,192.0	WEATHERED ROCK DK. BRN/OLIVE GNEISSIC WEATHERED ROCK W/ SAPROLITE SEAMS	18.7
3190	3,192.0	18.7	60/0.0										3,189.1	CRYSTALLINE ROCK CRYSTALLINE ROCK, GRAY, WELL FOLIATED BIOTITE GNEISS	21.7
3185	3,189.1	21.6	60/0.05											Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 3,189.1 ft IN CRYSTALLINE ROCK, MIGMITIZED BIOTITE GNEISS	
3180															
3175															
3170															
3165															
3160															
3155															
3150															
3145															
3140															
3135															

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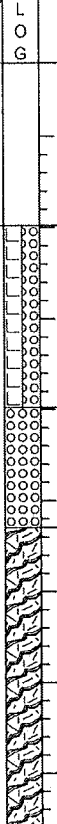
# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 42568.1.1	ID. BK 5117	COUNTY Avery	GEOLOGIST Kuhne, J. C.
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK			GROUND WTR (ft)
BORING NO. EB2B	STATION N/A	OFFSET N/A	ALIGNMENT L-REV
COLLAR ELEV. 3,220.1 ft	TOTAL DEPTH 33.2 ft	NORTHING N/A	EASTING N/A
DRILL MACHINE CME-550	DRILL METHOD NW Casing w/ SPT Core	HAMMER TYPE Automatic	
START DATE 04/30/09	COMP. DATE 04/30/09	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 16.6 ft

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						
3225																
3220														3,220.1	0.0	
3215																
3210	3,211.1	9.0	1	1	2								M	3,210.1	10.0	
3205	3,206.1	14.0	2	12	14								M			
3200	3,201.1	19.0	60/05												3,203.5	16.6
3195																
3190																
3185																
3180																
3175																
3170																
3165																
3160																
3155																
3150																
3145																

NCDOT BORE SINGLE BK5117\_BORELOGS.GPJ NC\_DOT.GDT 05/19/09



GROUND SURFACE  
ROADWAY EMBANKMENT  
GRAY SAND

ALLUVIAL  
DK. BRN/GRAY CLAYEY SAND W/  
GRAVEL, COBBLES AND BOULDERS

CRYSTALLINE ROCK  
MED. TO DARK GRAY, WELL FOLIATED,  
FINE TO COARSE GRAINED BIOTITE  
GNEISS

Boring Terminated WITH CASING  
ADVANCER REFUSAL at Elevation 3,186.9  
ft IN CRYSTALLINE ROCK, MIGMATITIC  
BIOTITE GNEISS





# NCDOT GEOTECHNICAL ENGINEERING UNIT CORE BORING REPORT

PROJECT NO. 42568.1.1		ID. BK 5117		COUNTY Avery		GEOLOGIST Kuhne, J. C.					
SITE DESCRIPTION BR. NO. 016 ON SR 1166 OVER LITTLE HORSE CREEK							GROUND WTR (ft)				
BORING NO. EB2B		STATION N/A		OFFSET N/A		ALIGNMENT L-REV					
COLLAR ELEV. 3,220.1 ft		TOTAL DEPTH 33.2 ft		NORTHING N/A		EASTING N/A					
DRILL MACHINE CME-550		DRILL METHOD NW Casing w/ SPT Core				HAMMER TYPE Automatic					
START DATE 04/30/09		COMP. DATE 04/30/09		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 16.6 ft					
CORE SIZE NXWL		TOTAL RUN 12.6 ft		DRILLER Coffey, Jr., C.							
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		L O G	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %	REC. (ft) %	ROD (ft) %			
3199.52										Begin Coring @ 20.6 ft	
	3,199.5	20.6	2.6	1:41/1.0 2:34/1.6	(2.3) 88%	(0.6) 23%					
	3,196.9	23.2							CRYSTALLINE ROCK (continued)		
3195			5.0	1:28/1.0 1:22/1.0 1:30/1.0 1:17/1.0 1:20/1.0	(5.0) 100%	(2.8) 56%					
	3,191.9	28.2									
3190			5.0	1:18/1.0 1:21/1.0 1:14/1.0 1:37/1.0 1:19/1.0	(4.4) 88%	(0.8) 16%					
	3,186.9	33.2								3,186.9	33.2
3185										Boring Terminated WITH CASING ADVANCER REFUSAL at Elevation 3,186.9 ft IN CRYSTALLINE ROCK, MIGMATITIC BIOTITE GNEISS	
3180											
3175											
3170											
3165											
3160											
3155											
3150											
3145											
3140											
3135											
3130											
3125											
3120											

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