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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Parks										
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River							GROUND WATER (ft)									
BORING NO. MB-1		BORING LOCATION		OFFSET		ALIGNMENT -L-										
COLLAR ELEV. 6.7 ft		NORTHING 830,802		US ft		EASTING 2,608,471										
TOTAL DEPTH 100.1 ft		DRILL MACHINE CME 550		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual										
DATE STARTED 10/2/04		COMPLETED 10/3/04		SURFACE WATER DEPTH NA												
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100						
																0.0
	0.0	1	12	12								1	M		Alluvium: Light gray to gray, f. sandy SILT (A-4)	3.6
	3.6	1	5	10								2	W		Alluvium: Tan brown to gray, silty f. to cse. SAND (A-2-6)	7.0
	8.6	1	2	1								3	M		CPU: Gray blue, silty CLAY (A-6)	
	13.6											4	M			
	18.6	1	1	1								5	M			
	23.6	2	2	2								6	W		CPU: Dark gray to brown, silty, f. SAND (A-2-4) with trace mica	27.0
	28.6	2	3	4								7	M		CPU: Gray blue to brown and light gray, f. sandy, silty CLAY (A-7-6) with trace organics, mica and wood fragments	42.0
	33.6	1	3	4								8	M			
	38.6	1	3	3								9	M			
	43.6	2	4	8								10	W		CPU: Light gray to gray, silty, f. to cse. SAND (A-2-4) with trace mica and interbedded gray clay (A-7-6) lenses	51.0
	48.6	8	8	9								11	W			
	53.6	6	8	9								12	W		CPU: Gray, silty, f. to cse. SAND (A-3) with trace mica and interbedded gray CLAY (A-7-6) lenses	67.0
	58.6	6	5	20								13	W			
	63.6	9	23	30								14	W			
	68.6	19	26	23								15	W		Yorktown Fm.: Green to dark green, silty, f. SAND (A-2-4) with trace mica and shell fragments	72.0
	73.6	6	8	10								16	M		Yorktown Fm.: Green to bright green, clayey SILT (A-5) with trace mica	
		9	14	14												

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BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Parks							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River							GROUND WATER (ft)						
BORING NO. MB-1		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 6.7 ft		NORTHING 830.802 US ft		EASTING 2.608.471 US ft		0 HR. 0.0							
TOTAL DEPTH 100.1 ft		DRILL MACHINE CME 550		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/2/04		COMPLETED 10/3/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
					Continued from previous page								
	78.6	24	9	22	●31					17	M	Yorktown Fm.: Light gray to green, silty CLAY (A-7-6) with trace mica and shell fragments	
	83.6	12	23	29	●52					18	W	Yorktown Fm.: Green to dark green, clayey, silty, f. SAND (A-2-4) with trace to little shell fragments	
	88.6	19	27	28	●55					19	W	Yorktown Fm.: Light gray to green and brown, silty, f. to cse. SAND (A-2-4) with trace mica and trace to little shell fragments	
	93.6	24	27	23	●50					20	W		
	98.6	28	31	15	●46					21	W		
Boring terminated at 100.1 ft (Elev. -93.4 ft.) in Yorktown Fm.: Light gray to green and brown, silty, f. to cse. SAND (A-2-4) with trace mica and trace to little shell fragments Bits used: 0.3' Side-discharge finger bit and 0.3" Roller cone Drilling fluid: Water Boring Terminated at Depth 100.1 ft													

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BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-2		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 1.0 ft		NORTHING 830,774 US ft		EASTING 2,608,397 US ft		0 HR. 24 HR.							
TOTAL DEPTH 100.7 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/1/04		COMPLETED 10/1/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	1	0	1	●1					1	W		Alluvium: Brown and gray, silty CLAY (A-7-6) with roots
	4.3	2	4	4	●8					2	M		CPU: Orange and gray, silty CLAY (A-7-6) with trace organics
	9.2	7	7	8	●15					3	M		CPU: Gray, f. SAND (A-3)
	14.2	2	1	3	●4					4	W		CPU: Gray, silty CLAY (A-7-6)
	19.2	8	8	14	●22					5	W		CPU: Gray, silty, f. to cse. SAND (A-2-4) with trace wood fragments
	24.2	10	15	17	●32					6	W		CPU: Gray, micaceous, f. SAND (A-3) with trace organics
	29.2	7	15	22	●37					7	W		
	34.2	12	16	9	●25					8	W		
	39.2	12	11	12	●23					9	W		CPU: Gray, micaceous, f. SAND (A-3) with thinly bedded gray silty CLAY (A-7-6)
	44.2	6	5	10	●15					10	W		
	49.2	15	27	52	●79					11	W		CPU: Gray, micaceous, f. to cse. SAND (A-3)
	54.2	11	18	22	●40					12	W		
	59.2	3	7	4	●11					13	W		Mixed new mud - Gravel in wash advanced to 59.2 ft.
	64.2	8	13	13	●26					14	M		CPU: Gray, micaceous, f. to cse. SAND (A-2-4) with trace gravel and thinly bedded clay
	69.2	7	21	79/3						15	M		Yorktown Fm.: Gray, f. sandy, silty CLAY (A-6) with trace shell fragments
	74.2												Yorktown Fm.: Gray, silty CLAY (A-7-6)
													Yorktown Fm.: Gray to blue green, f. to cse. sandy, clayey SILT (A-4) at 74.2 feet with trace shell fragments and moderately indurated limestone fragments
													Hard drilling from 76 ft. to 77 ft.

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BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald					
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft) 0 HR. 24 HR.					
BORING NO. MB-2		BORING LOCATION		OFFSET				ALIGNMENT -L-			
COLLAR ELEV. 1.0 ft		NORTHING 830,774 US ft		EASTING 2,608,397 US ft							
TOTAL DEPTH 100.7 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual					
DATE STARTED 10/1/04		COMPLETED 10/1/04		SURFACE WATER DEPTH NA							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft 0.5ft 0.5ft			BLOWS PER FOOT 0 20 40 60 80 100			SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
					Continued from previous page						
	79.2	20	80	20/2				16	M		Yorktown Fm.: Gray to blue green, f. to cse. sandy, clayey SILT (A-4) at 74.2 feet with trace shell fragments and moderately indurated limestone fragments
	84.2	22	32	61				17	M		Hard drilling from 76 ft. to 77 ft. (continued) 82.5
	89.2	20	40	48				18	M		Yorktown Fm.: Blue-green, silty, f. SAND (A-2-4) with trace shell fragments
	94.2	15	24	23				19	M		
	99.2	17	24	26				20	M		
		11	10	15				21	M		Yorktown Fm.: Blue-green, f. sandy, silty CLAY (A-6) 97.5 100.7
Boring terminated at 100.7 ft (Elev. -99.7 ft) in Yorktown Fm.: Blue-green, f. sandy, silty CLAY (A-6) Bit used: 0.22' Roller cone Drill fluid: Water Boring Terminated at Depth 100.7 ft											

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BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-3		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 2.2 ft		NORTHING 830,721 US ft		EASTING 2,608,293 US ft		0 HR. 0.5							
TOTAL DEPTH 101.2 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/1/04		COMPLETED 10/2/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	1	2	3	●5						1	W	Alluvium: Tan and gray, silty f. SAND (A-2-4) with roots
	5.1												
	9.7	5	7	8	●15						2	W	CPU: Gray, f. SAND (A-3)
	14.7	5	6	7	●13						3	W	
	19.7	5	10	13	●23						4	W	
	24.7	6	8	9	●17						5	W	CPU: Gray, f. to cse. SAND (A-2-4) with gravel
	29.7	3	4	6	●10						6	W	
	34.7	7	10	13	●23						7	W	CPU: Gray, micaceous, f. to cse. SAND (A-3) at 39.7 ft. with thinly bedded, gray, silty CLAY (A-7-6) and trace organics
	39.7	9	9	12	●21						8	W	
	44.7	7	8	8	●16						9	W	
	49.7	3	3	7	●10						10	W	
	54.7	5	5	9	●14						11	W	
	59.7	9	12	17	●29						12	W	CPU: Gray and white, f. to cse. SAND and GRAVEL (A-1-b)
	64.7	16	6	5	●11						13	W	
	69.7	4	4	7	●11						14	M	Yorktown Fm.: Gray, f. sandy CLAY (A-6)
	74.7	8	13	28	●41						15	M	Yorktown Fm.: Gray to blue green and white, f. to cse. sandy, clayey SILT (A-4) with trace and little shell fragments

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BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald								
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)								
BORING NO. MB-3		BORING LOCATION		OFFSET		ALIGNMENT -L-								
COLLAR ELEV. 2.2 ft		NORTHING 830,721 US ft		EASTING 2,608,293 US ft		0 HR. 0.5								
TOTAL DEPTH 101.2 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual								
DATE STARTED 10/1/04		COMPLETED 10/2/04		SURFACE WATER DEPTH NA										
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	MOI		G	
					Continued from previous page									
	79.7	16	28	41	●69					16	M	Yorktown Fm.: Gray to blue green and white, f. to cse. sandy, clayey SILT (A-4) with trace and little shell fragments (continued)		
	84.7	20	49	27	●76					17	M			
	89.7	19	26	34	●60					18	M			
	94.7	17	16	23	●39					19	M	Yorktown Fm.: Blue green, silty, f. to cse. SAND (A-2-4) with trace shell fragments		
	99.7	7	16	21	●37					20	M			
		13	13	19	●32					21	M	98.0	99.0	101.2
Boring terminated at 101.2 ft (Elev. -99 ft) in Yorktown Fm.: Gray-green, silty, f. sandy CLAY (A-6)														
Bit used: 0.22' Roller cone														
Drill Fluid: Water														
Boring Terminated at Depth 101.2 ft														

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BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1				ID. R-2404A				COUNTY BERTIE				GEOLOGIST M. Lear					
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River												GROUND WATER (ft)					
BORING NO. MB-10				BORING LOCATION				OFFSET				ALIGNMENT -L-				0 HR. Water	
COLLAR ELEV. -5.0 ft				NORTHING 830,271 US ft				EASTING 2,607,244 US ft								24 HR. Boring	
TOTAL DEPTH 102.2 ft				DRILL MACHINE CME 55 Barge				DRILL METHOD Mud Rotary				HAMMER TYPE 140-lb Manual					
DATE STARTED 10/2/04				COMPLETED 10/3/04				SURFACE WATER DEPTH 5.8									
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	▼	LOG	SOIL AND ROCK DESCRIPTION			
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.					MOI	
																0.0	
	0.0	WOR	WOR	WOR	●0						1	Sat.		MUCK		2.5	
	6.2													Alluvium: Gray-tan, f. to cse. SAND (A-3) with trace organic debris			
		2	3	5	●8						2	Sat.					
	11.3																
		4	5	4	●9						3	Sat.				13.0	
	16.0													CPU: Dark gray-brown, micaceous, silty CLAY (A-7-6) with trace organic debris			
		2	2	4	●6						4	W				20.0	
	21.0													CPU: Brown PEAT		23.0	
		2	2	3	●5						5	Sat.					
	25.7													CPU: Gray, silty, CLAY (A-7-6) with trace organics		29.0	
		2	2	2	●4						6	W					
	31.0													Yorktown Fm: Light gray-green, thin to thinly interbedded, f. sandy, silty CLAY (A-6) and silty, f. to csc. SAND (A-3)			
	36.0													Weak artesian condition observed, static head measured inside casing at 3.5 ft. msl.			
		5	5	5	●10						8	W					
	40.7																
		4	7	27	●34						9	W				43.5	
	45.7													Yorktown Fm: Gray, f. sandy, silty CLAY (A-7-6)		48.5	
		3	4	5	●9						10	W					
	50.7													Yorktown Fm: Gray, clayey, silty, f. to cse. SAND (A-3) with trace to little gravel		54.0	
		8	14	20	●34						11	W					
	55.9													Yorktown Fm: Dark green glauconitic, f. sandy CLAY (A-4)		59.0	
		7	8	12	●20						12	W					
	60.8													Yorktown Fm: Dark green, gray and white, glauconitic, silty, clayey, f. SAND (A-2-6) with trace very thinly bedded and friable sandstone layers and trace shell fragments		69.0	
		8	18	38	●56						13	W					
	65.2																
		20	31	32	●63						14	W					
	70.7													Yorktown Fm.: Dark green to gray, glauconitic, silty, f. to cse. SAND (A-3) with trace shell fragments			
		18	27	26	●53						15	W					

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BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST M. Lear							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-10		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. -5.0 ft		NORTHING 830,271 US ft		EASTING 2,607,244 US ft		0 HR. Water							
TOTAL DEPTH 102.2 ft		DRILL MACHINE CME 55 Barge		DRILL METHOD Mud Rotary		24 HR. Boring							
DATE STARTED 10/2/04		COMPLETED 10/3/04		SURFACE WATER DEPTH 5.8									
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	20	40	60	80	100			
					Continued from previous page								
	75.7	17	22	26	●48.					16	W	[Pattern]	Yorktown Fm.: Dark green to gray, glauconitic, silty, f. to cse. SAND (A-3) with trace shell fragments (continued)
	80.7	22	15	15	●30					17	W		
	85.7	15	15	15	●30					18	W		
	90.7	51	46	16	●62.					19	M	[Pattern]	Yorktown Fm.: Dark gray-brown, clayey, f. to cse. sandy SILT (A-4) with trace very thinly bedded indurated limestone layers and shell fragments
	95.7	6	5	7	●12.					20	M		
	100.7	10	14	18	●32.					21	M		
													102.2
Boring terminated at 102.2 feet (Elev. -107.2 ft.) in Yorktown Fm.: Hard, clayey, f. to cse. sandy SILT (A-4) with trace thinly bedded indurated limestone layers and shell fragments													
Bits used: 3" Side-discharge finger bit													
Drilling fluid: Water													
Boring Terminated at Depth 102.2 ft													

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BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST M. Lear							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-11		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. -10.4 ft		NORTHING 830,251 US ft		EASTING 2,607,195 US ft		0 HR. Water							
TOTAL DEPTH 101.9 ft		DRILL MACHINE CME 55 Barge		DRILL METHOD Mud Rotary		24 HR. Boring							
DATE STARTED 10/2/04		COMPLETED 10/2/04		SURFACE WATER DEPTH 11.2									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	2	2	3	5						1	Sat.	CPU: White and gray, f. to cse. SAND (A-3) with trace organics and gravel
	5.6	8	5	5	10						2	Sat.	
	10.8	2	3	3	6						3	W	CPU: Dark gray, micaceous, silty CLAY (A-7-6) with trace to little organics oriented parallel to bedding
	15.8	5	5	7	12						4	W	
	20.4	3	3	4	7						5	W	
	25.4	4	6	5	11						6	W	Yorktown Fm.: Light gray green, f. sandy silty CLAY (A-6)
	30.4	7	7	11	16						7	W	Yorktown Fm.: Light gray green, silty, f. to cse. SAND (A-3) with thinly bedded clay layers (A-6)
	35.4	4	14	11	25						8	W	Yorktown Fm.: Gray, clayey, silty, f. SAND (A-2-4)
	40.4	10	9	13	22						9	W	Yorktown Fm.: Gray, silty, f. to cse. SAND (A-3)
	45.4	4	13	21	34						10	W	
	50.4	7	11	15	26						11	W	Yorktown Fm.: Dark gray green, glauconitic, f. sandy, clayey SILT (A-4)
	55.4	3	8	15	25						12	W	Yorktown Fm.: White and dark green, glauconitic, f. to cse. sandy, silty CLAY (A-6)
	60.4	36	45	55/4							13	W	Yorktown Fm.: Gray-white to dark green, glauconitic, f. to cse. sandy, silty CLAY (A-6) and very thin friable, moderately indurated, calcite cemented shell sandstone
	65.4	26	30	41	71						14	W	Yorktown Fm.: Gray-green, glauconitic, silty, f. to cse. SAND (A-3) with trace shell fragments
	70.4	24	76/4								15	W	

NCDOT BORE SINGLE 0808 GP: NC DOT.GDT 10/5/04



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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST M. Lear									
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)									
BORING NO. MB-11		BORING LOCATION		OFFSET		ALIGNMENT -L-									
COLLAR ELEV. -10.4 ft		NORTHING 830,251 US ft		EASTING 2,607,195 US ft		0 HR. Water									
TOTAL DEPTH 101.9 ft		DRILL MACHINE CME 55 Barge		DRILL METHOD Mud Rotary		24 HR. Boring									
DATE STARTED 10/2/04		COMPLETED 10/2/04		SURFACE WATER DEPTH 11.2											
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
					Continued from previous page										
	75.4	11	16	17	●33					16	W		Yorktown Fm.: Gray-green, glauconitic, silty, f. to cse. SAND (A-3) with trace shell fragments (continued)		
	80.4	17	23	28	●51					17	W				
	85.4	10	6	7	●13					18	W		Yorktown Fm.: Dark gray, glauconitic, silty, clayey, f. to cse. SAND (A-2-6) with trace shell fragments		
	90.4	5	6	10	●16					19	W				
	95.4	7	8	9	●17					20	W		Yorktown Fm.: Dark gray-green, f. sandy, clayey SILT (A-4) with trace shell fragments		
	100.4	6	5	7	●12					21	W				
DRAFT															
													Boring terminated at 101.9 ft. (Elev. -112.53 ft) in Yorktown Fm.: Dark gray-green, f. sandy, clayey SILT (A-4) with trace shell fragments		
Bit used: 3" Side-discharge finger bit															
Drilling fluid: Water															
Boring Terminated at Depth 101.9 ft															

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BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST M. Lear							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-12		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. -5.7 ft		NORTHING 830,223 US ft		EASTING 2,607,138 US ft		0 HR. Water							
TOTAL DEPTH 101.5 ft		DRILL MACHINE CME 55 Barge		DRILL METHOD Mud Rotary		24 HR. Boring							
DATE STARTED 10/1/04		COMPLETED 10/1/04		SURFACE WATER DEPTH 6.5									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	1	2	3	●5						1	Sat.	Alluvium: Gray, brown and white, silty, f. to cse. SAND (A-3) with trace gravel and organic debris
	5.5	2	5	10	●15						2	W	
	10.0	3	5	4	●9						3	W	
	15.0	2	3	4	●7						4	M	CPU: Dark brown green, micaceous, f. sandy, silty CLAY (A-6) with trace to little organic debris
	20.0	3	4	5	●9						5	M	CPU: Dark brown-green, micaceous, f. sandy, silty CLAY (A-7-6) with very thinly to thinly bedded peat layers
	25.0	5	4	7	●11						6	M	CPU: Dark brown, sandy clayey PEAT
	30.0	5	6	5	●11						7	W	Yorktown Fm.: Light gray-green, f. sandy, silty CLAY (A-6) with thinly bedded f. to cse. SAND (A-3) and trace gravel layers
	35.0	3	4	13	●17						8	W	
	40.0	4	8	6	●14						9	W	
	45.0	5	9	10	●19						10	W	Yorktown Fm.: Gray, f. to cse. SAND (A-3) with trace gravel
	50.0	19	13	12	●25						11	W	
	55.0	7	9	13	●22						12	M	Yorktown Fm.: Gravel (Not sampled) Yorktown Fm.: Dark gray-green, glauconitic, f. sandy, silty CLAY (A-4)
	60.0	16	22	39	●61						13	M	Yorktown Fm.: Gray-white and dark green glauconitic, f. sandy, silty CLAY (A-6) with trace shell fragments
	65.0	60/0									14	W	Yorktown Fm.: Very thinly to thinly bedded, friable to indurated calcite cemented sandstone with shell fragments
	70.0	28	56	40/4							15	W	Yorktown Fm.: Gray-green, glauconitic, clayey, silty, f. to cse. SAND (A-2-4) with trace shell fragments
	75.0												

NCDOT BORE SINGLE 0808.GPJ NC DOT.GBT 10/5/04



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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST M. Lear							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-12		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. -5.7 ft		NORTHING 830,223 US ft		EASTING 2,607,138 US ft		0 HR. Water							
TOTAL DEPTH 101.5 ft		DRILL MACHINE CME 55 Barge		DRILL METHOD Mud Rotary		24 HR. Boring							
DATE STARTED 10/1/04		COMPLETED 10/1/04		SURFACE WATER DEPTH 6.5									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
					Continued from previous page								
	80.0	26	23	24	●47					16	W	Yorktown Fm.: Dark gray green, glauconitic, f. to cse. SAND (A-3) with trace shell fragments	
	85.0	18	23	27	●50					17	W		
	90.0	19	21	25	●46					18	W		
	95.0	15	8	9	●17					19	W	Yorktown Fm.: Dark gray-green, glauconitic, silty, clayey, f. to cse. SAND (A-2-6) with trace shell fragments	
	100.0	5	5	8	●13					20	M	Yorktown Fm.: Dark gray-green, glauconitic, f. sandy, clayey, SILT (A-4)	
		6	6	5	●11					21	M		
DRAFT													
Boring terminated at 101.5 ft. (Elev. -107.2 ft.) in Yorktown Fm.: Dark gray-green, glauconitic, f. sandy, clayey, SILT (A-4)													
Bit used: 3" Side-discharge finger bit													
Fluid used: Water													
Boring Terminated at Depth 101.5 ft													



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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Parks							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-13		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 7.8 ft		NORTHING 830,749 US ft		EASTING 2,608,493 US ft		0 HR. 0.5							
TOTAL DEPTH 99.9 ft		DRILL MACHINE CME 550		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/1/04		COMPLETED 10/2/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	3	4	3	●7					1	M	Alluvium: Tan brown to brown, f. sandy SILT (A-4) with trace organics	
	3.1	2	5	6	●11					2	M	Alluvium: Tan brown, f. sandy clayey SILT (A-5)	
	8.4	7	7	9	●16					3	M	Alluvium: Tan brown, f. sandy, silty CLAY (A-7-6) with trace wood fragments	
	13.4	1	1	1	●2					4	M	Alluvium: Gray to white, f. to cse. SAND (A-3)	
	18.4	1	1	2	●3					5	M	CPU: Gray blue, silty CLAY (A-6)	
	23.4	1	2	4	●5					6	M	CPU: Grayish blue, f. sandy, clayey SILT (A-5) with trace mica	
	28.4	2	2	4	●6					7	M	CPU: Grayish blue, silty CLAY (A-7-6) with trace organics	
	33.4	2	3	4	●7					8	W	CPU: Blue to gray, f. sandy clayey SILT (A-5) with trace mica and organics	
	38.4	4	5	6	●11					9	W	CPU: Dark gray, silty, f. to cse. SAND (A-2-4) with trace mica	
	43.4	5	8	9	●17					10	W	CPU: Dark gray, f. sandy, silty CLAY (A-7-6) with trace mica	
	48.4	2	5	6	●11					11	W	CPU: Gray, silty, f. to cse. SAND (A-2-4) with trace mica	
	53.4	5	12	14	●26					12	W	CPU: Gray, silty CLAY (A-6)	
	58.4	5	9	13	●22					13	W	CPU: Gray, silty, f. to cse. SAND (A-3) with trace mica	
	63.4	15	19	20	●39					14	W	CPU: Gray, silty, f. to cse. SAND (A-2-4) with trace mica and gray CLAY (A-7-6) interbedded lenses	
	68.4	2	3	4	●7					15	W	CPU: Gray, f. to cse. SAND (A-3)	
	73.4	8	11	14	●25					16	M	Yorktown Fm.: Grayish green, clayey, silty f. to cse. SAND (A-2-6) with trace mica and shell fragments	
												Yorktown Fm.: Green, f. sandy, silty CLAY (A-7-6)	

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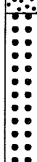
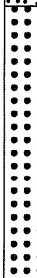


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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1				ID. R-2404A				COUNTY BERTIE				GEOLOGIST B. Parks					
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River												GROUND WATER (ft)					
BORING NO. MB-14				BORING LOCATION				OFFSET				ALIGNMENT -L-				0 HR. 0.6	
COLLAR ELEV. 1.0 ft				NORTHING 830,717 US ft				EASTING 2,608,401 US ft				24 HR.					
TOTAL DEPTH 100.1 ft				DRILL MACHINE CME 550				DRILL METHOD Mud Rotary				HAMMER TYPE 140-lb Manual					
DATE STARTED 10/3/04				COMPLETED 10/4/04				SURFACE WATER DEPTH NA									
ELEV.	DEPTH	BLOW COUNT			BLOWS PER FOOT						SAMP.	LOG	SOIL AND ROCK DESCRIPTION				
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	20	40	60	80	100	NO.						
	0.9													0.0			
	3.6	1	1	1	●2						1	M		Alluvium: Light gray to brown, f. sandy, silty CLAY (A-7-6) with trace organics			
											2	M					
	8.6	2	3	5	●8									9.1			
		woh	3	5	●8						3	M		Alluvium: Tan brown to gray, silty, f. to cse. SAND (A-2-4) with trace mica			
	13.6														12.0		
	18.6	4	6	4	●10						4	W		Alluvium: Gray to white and gray, f. to cse. SAND (A-3)			
	23.6	4	6	10	●16						5	W					
	28.6	14	18	24	●42						6	W		Alluvium: Dark gray to blue and brown, silty, f. SAND (A-2-4) with trace mica and wood fragments			
															24.0		
	33.6	12	14	15	●29						7	W					
	38.6	20	29	30	●59						8	W		CPU: Dark gray to gray, silty, f. to cse. SAND (A-3) with trace mica			
															33.6		
	43.6	10	13	13	●26						9	W					
	48.6	6	8	12	●20						10	W		CPU: Gray, silty, f. to cse. SAND (A-2-4) with trace mica and interbedded gray CLAY (A-7-6) lenses			
															42.0		
	53.6	5	17	26	●43						11	W		CPU: Gray, silty, f. to cse. SAND (A-3) with organic matter (Peat) and gray CLAY (A-7-6) interbedded			
															47.0		
	58.6	11	12	18	●30						12	W					
	63.6	16	18	23	●41						13	W					
	68.6	15	15	36	●51						14	M		Yorktown Fm.: Dark gray grayish green, f. sandy, silty CLAY (A-7-6) with trace mica and shell fragments			
															62.0		
	73.6	9	16	25	●41						15	M					
		60	36	67/0.3							16	W		73.6			

NCDOT BORE SINGLE 0808 GFI NC DOT.GDT 10/5/04



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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 2 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Parks							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-14		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 1.0 ft		NORTHING 830,717 US ft		EASTING 2,608,401 US ft		0 HR. 0.6							
TOTAL DEPTH 100.1 ft		DRILL MACHINE CME 550		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/3/04		COMPLETED 10/4/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
					Continued from previous page								
	78.6												
		15	25	33	●58					17	M	Yorktown Fm.: Light green to green, silty f. SAND (A-2-4) with trace mica and little shell fragments with cemented lenses (continued)	
	83.6												
		19	29	37	●66					18	W	Yorktown Fm.: Light green to green, clayey, f. sandy SILT (A-5) with trace to little shell fragments	
	88.6												
		43	32	27	●59					19	W	Yorktown Fm.: Dark green and green, clayey, silty, f. SAND (A-2-4) with trace to some shell fragments and trace mica and cemented lenses	
	93.6												
		60	17	14	●31					20	W		
	98.6												
		16	18	19	●37					21	W		
DRAFT												Boring terminated at 100.1 ft. (Elev. -99.1) in Yorktown Fm.: Dark green and green, clayey, silty, f. SAND (A-2-4) with trace to some shell fragments and trace mica and cemented lenses	
												Bits used: 0.3' Side-discharge finger bit and 0.3' Roller cone	
												Drilling fluid: Water	
												Boring Terminated at Depth 100.1 ft	



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N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-15		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 0.5 ft		NORTHING 830,647 US ft		EASTING 2,608,257 US ft		0 HR. Water 24 HR. Boring							
TOTAL DEPTH 101.3 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/2/04		COMPLETED 10/3/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	1	0	1	●1						1	Sat.	0.0
	4.7	1	1	2	●3						2	W	2.5
	9.7	4	5	8	●13						3	Sat.	9.0
	14.8	5	8	7	●15						4	Sat.	11.0
	19.8	10	12	15	●27						5	W	13.0
	24.8	7	11	16	●27						6	W	18.0
	29.8	11	15	19	●34						7	W	28.0
	34.8	9	13	16	●29						8	W	38.0
	39.8	woh	2	3	●5						9	W	48.0
	44.8	1	2	1	●3						10	W	48.0
	49.8	5	10	13	●23						11	W	
	54.8	19	21	24	●45						12	W	58.0
	59.8	5	6	3	●9						13	Sat.	
	64.8	6	7	11	●18						14	W	
	69.8	100/5									15	M	
	74.8												

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PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Deobald							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-15		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 0.5 ft		NORTHING 830,647 US ft		EASTING 2,608,257 US ft		0 HR. Water							
TOTAL DEPTH 101.3 ft		DRILL MACHINE CME 45 on Buggy		DRILL METHOD Mud Rotary		24 HR. Boring							
DATE STARTED 10/2/04		COMPLETED 10/3/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
					Continued from previous page								
	79.8	18	66	34/1	●					16	W		Yorktown Fm.: Gray to blue-green, f. sandy, clayey SILT (A-4) with trace shell fragments (continued) 78.0
	84.8	30	33	40	●73.					17	W		Yorktown Fm.: Blue-green, silty, f. to cse. SAND (A-2-4) with trace shell fragments
	89.8	25	42	50	●92.					18	W		
	94.8	12	14	18	●32.					19	W		
	99.8	14	20	27	●47.					20	W		
		12	14	17	●31.					21	W		Yorktown Fm.: Gray-green, f. sandy, silty CLAY (A-6) 98.0
Boring terminated at 101.3 ft (Elev. -100.8 ft) in Yorktown Fm.: Gray-green, f. sandy, silty CLAY (A-6) 101.3													
Bits used: 0.22' Roller cone													
Drilling fluid: Water													
Boring Terminated at Depth 101.3 ft													

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**MACTEC****DRAFT**N.C.D.O.T. GEOTECHNICAL UNIT
BORING LOG

SHEET 1 OF 2

PROJECT NO. 34424.1.1		ID. R-2404A		COUNTY BERTIE		GEOLOGIST B. Parks							
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River						GROUND WATER (ft)							
BORING NO. MB-23		BORING LOCATION		OFFSET		ALIGNMENT -L-							
COLLAR ELEV. 6.8 ft		NORTHING 830,691 US ft		EASTING 2,608,531 US ft		0 HR. 0.4							
TOTAL DEPTH 100.3 ft		DRILL MACHINE CME 550		DRILL METHOD Mud Rotary		HAMMER TYPE 140-lb Manual							
DATE STARTED 10/1/04		COMPLETED 10/1/04		SURFACE WATER DEPTH NA									
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100			
	0.0	1	1	3	●4						1	M	Alluvium: Tan brown to brown, f. to cse. sandy, silty, CLAY (A-7-6) with trace organics and mica
	3.8		11	6	●13						2	W	
	8.8	woh	woh	woh	●0						3	M	CPU: Dark gray to blue, silty CLAY (A-6)
	13.8		1	2	●3						4	M	
	18.8		1	2	●4						5	M	
	23.8		2	2	●5						6	M	
	28.8		3	4	●9						7	M	CPU: Tan brown to brown, f. sandy SILT (A-4) with wood fragments and trace mica
	33.8		14	9	●17						8	M	CPU: Blue gray, silty CLAY (A-7-6) with trace organics and mica
	38.8		12	9	●19						9	W	CPU: Dark gray, silty, f. to cse. SAND (A-2-4) with trace mica and gray CLAY (A-7-6) interbedded
	43.8		7	10	●19						10	W	CPU: Gray, cse. to f. SAND (A-3) with trace mica
	48.8		9	10	●18						11	W	CPU: Gray, silty, CLAY (A-7-6) with trace mica
	53.8		12	14	●37						12	W	Yorktown Fm.: Gray, silty, f. to cse. SAND (A-3) with trace mica and few thinly bedded gray, CLAY (A-7-6) lenses
	58.8		20	22	●46						13	W	
	63.8		19	21	●43						14	W	
	68.8		4	8	●17						15	W	
	73.8		8	10	●22						16	M	Yorktown Fm.: Green, f. sandy, silty CLAY (A-7-6) with trace mica
													Yorktown Fm.: Dark green, f. sandy, clayey, SILT (A-5)

NCDOT BORE SINGLE 0808.GPJ NC DOT.GDT 10/5/04



DRAFT

SHEET 2 OF 2

PROJECT NO. 34424.1.1				ID. R-2404A				COUNTY BERTIE				GEOLOGIST B. Parks			
SITE DESCRIPTION Dual Structures on US 17 (Windsor Bypass) over Cashie River												GROUND WATER (ft)			
BORING NO. MB-23				BORING LOCATION				OFFSET				ALIGNMENT -L-			
COLLAR ELEV. 6.8 ft				NORTHING 830,691 US ft				EASTING 2,608,531 US ft				24 HR.			
TOTAL DEPTH 100.3 ft				DRILL MACHINE CME 550				DRILL METHOD Mud Rotary				HAMMER TYPE 140-lb Manual			
DATE STARTED 10/1/04				COMPLETED 10/1/04				SURFACE WATER DEPTH NA							
ELEV. (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT						SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
		0.5ft	0.5ft	0.5ft	0	20	40	60	80	100					
					Continued from previous page										
	78.8													Yorktown Fm.: Dark green, f. sandy, clayey, SILT (A-5) (continued)	
		8	16	60/1							17	M		78.8	
	83.8													Yorktown Fm.: Green to white, f. sandy, clayey, SILT (A-4) with trace mica and shell fragments and shell hash GRAVEL (A-1-b) interbedded	
		16	68	34/3							18	W		87.0	
	88.8													Yorktown Fm.: Light gray to dark green, silty, f. SAND (A-2-4) with trace mica and trace to little shell fragments and cemented lenses	
		22	27	32							19	W			
	93.8														
		31	27	30							20	W			
	98.8														
		35	7	14							21	W		100.3	
Boring terminated at 100.3 ft. (Elev. -93.49 ft) in Yorktown Fm.: Light gray to dark green, silty, f. SAND (A-2-4) with trace mica and trace to little shell fragments and cemented lenses Bits Used: 0.3' Side-discharge finger bit and 0.3' roller cone Fluid used: Water Boring Terminated at Depth 100.3 ft															

NC DOT BORE SINGLE 0808.GPJ NC DOT.GDT 10/5/04