

**NORTH CAROLINA Turnpike Authority** **NCTA BORELOG REPORT**

PROJECT NO. 39942.1.TA1	ID. U-4763B	COUNTY Wake/Durham	GEOLOGIST K. Plummer
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40			GROUND WTR (ft)
BORING NO. B- 92	STATION 219+35	OFFSET 36ft LT	ALIGNMENT -L-
COLLAR ELEV. 261.5 ft	TOTAL DEPTH 25.2 ft	NORTHING 779,454	EASTING 2,037,389
DRILL MACHINE Mobile B-57	DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash&NQ2 Core Barrel	HAMMER TYPE Manual	
START DATE 04/10/08	COMP. DATE 04/10/08	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 5.2 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						
265																
260																
258.0	261.5	3.5														
256.3	261.5	5.2	2	7	11											
255			60/0.0													
250																
245																
240																
235																
230																
225																
220																
215																
210																
205																
200																
195																
190																
185																

NCDOT BORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08



- 1) Advanced 3-1/4" HSA to 5.2 feet.
- 2) Advanced NQ-2 core barrel from 5.2 to 25.2 feet.
- 3) Creek water used as drilling fluid.
- 4) Approximate drilling fluid density 62.4 pcf.
- 5) No loss of drilling fluid was observed.



NORTH CAROLINA

Turnpike Authority

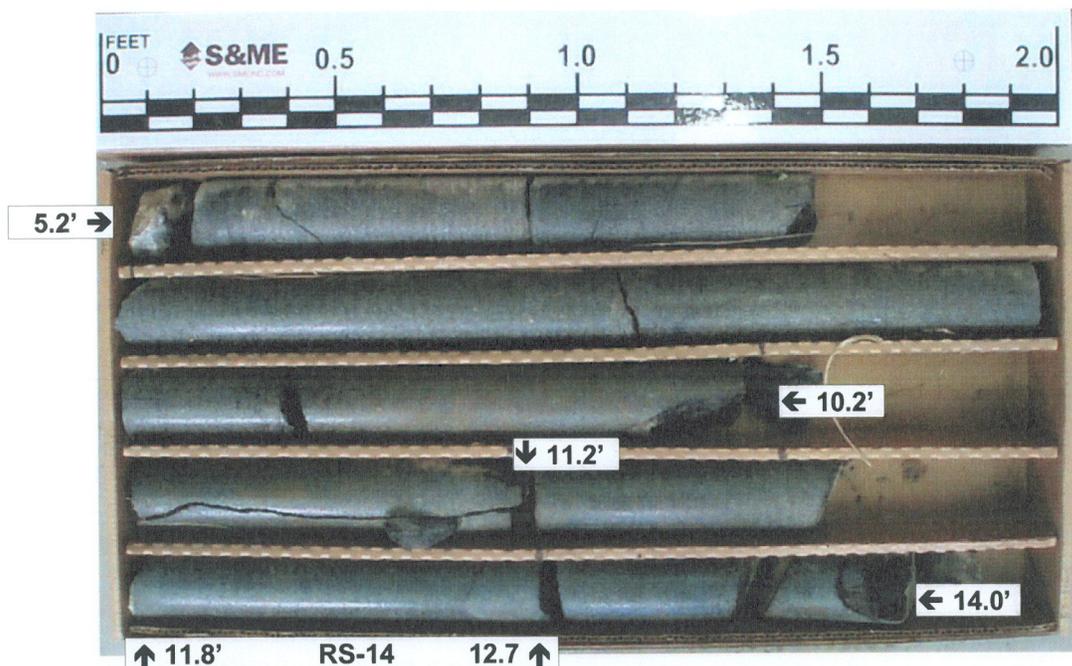
**NCTA**  
**CORE BORING REPORT**

PROJECT NO. 39942.1.TA1		ID. U-4763B		COUNTY Wake/Durham		GEOLOGIST K. Plummer						
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40							GROUND WTR (ft)					
BORING NO. B- 92		STATION 219+35		OFFSET 36ft LT		ALIGNMENT -L-	0 HR. Cl@5.0'					
COLLAR ELEV. 261.5 ft		TOTAL DEPTH 25.2 ft		NORTHING 779,454		EASTING 2,037,389	24 HR. Dry					
DRILL MACHINE Mobile B-57		DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash&NQ2 Core Barrel				HAMMER TYPE Manual						
START DATE 04/10/08		COMP. DATE 04/10/08		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 5.2 ft						
CORE SIZE NQ-2		TOTAL RUN 20.0 ft		DRILLER M. Moseley								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)	
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %				
	256.3											
255	256.3	5.2	5.0	N=60/0.0 1:30 2:15 2:00 2:00 1:45	(4.7) 94%	(4.5) 90%	(19.2) 96%	(16.8) 84%		256.3	5.2	
	251.3	10.2								<p><b>Begin Coring @ 5.2 ft</b></p> <p><b>Crystalline Rock:</b> Very Hard to Hard Fresh to Very Slightly Weathered Gray Diorite Dike With Close to Wide Fracture Spacing. Vertical Fracture from 10.0 to 11.2 feet, 5 Joints from 10 to 20 Degrees, 2 Joints at 30 Degrees, 5 Joints from 40 to 50 Degrees, 2 Joints at 60 Degrees (RS-14 11.8'-12.7')</p>		
250	250.3	11.2	1.0	1:00	(0.8) 80%	(0.0) 0%						
			5.0	1:40	(4.8) 96%	(4.2) 84%					RS-14	
245	245.3	16.2		1:20 1:20 1:50 1:40								
			5.0	1:40	(4.9) 98%	(4.9) 98%						
240	240.3	21.2		2:00 2:00 1:30								
			4.0	3:06	(4.0) 100%	(3.2) 80%						
				2:25 2:20 2:40								
235	236.3	25.2										236.3
230											<p>Boring Terminated at Elevation 236.3 ft in Crystalline Rock: Very Hard to Hard Fresh to Very Slightly Weathered Gray Diorite Dike.</p> <p>1) Advanced 3-1/4" HSA to 5.2 feet. 2) Advanced NQ-2 core barrel from 5.2 to 25.2 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 62.4 pcf. 5) No loss of drilling fluid was observed.</p>	
225												
220												
215												
210												
205												
200												
195												
190												
185												
180												

NCDOT CORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

## CORE PHOTOS

Project No.: 39942.1.TA1	ID No.: U-4763B	Location: Wake/Durham Co., NC	Boring No.: B-92
Site Description: Triangle Parkway Extension of NC 147 Between I-540 and I-40			Driller: M. Moseley
Collar Elev.: 261.5 ft.	Core Size: NQ-2	Equipment: Mobile B-57	Geologist: K. Plummer
Elev. at T.D.: 236.3 ft.	Total Depth: 25.2 ft.	Total Run: 20.0 ft.	Date: 4/10/2008



Box 1 of 3  
Top of Box @ 5.2 feet; Bottom of Box @ 14.0 feet



Box 2 of 3  
Top of Box @ 14.0 feet; Bottom of Box @ 21.2 feet

## CORE PHOTOS

<i>Project No.:</i> 39942.1.TA1	<i>ID No.:</i> U-4763B	<i>Location:</i> Wake/Durham Co., NC	<i>Boring No.:</i> B-92
<i>Site Description:</i> Triangle Parkway Extension of NC 147 Between I-540 and I-40			<i>Driller:</i> M. Moseley
<i>Collar Elev.:</i> 261.5 ft.	<i>Core Size:</i> NQ-2	<i>Equipment:</i> Mobile B-57	<i>Geologist:</i> K. Plummer
<i>Elev. at T.D.:</i> 236.3 ft.	<i>Total Depth:</i> 25.2 ft.	<i>Total Run:</i> 20.0 ft.	<i>Date:</i> 4/10/2008



Box 3 of 3

Top of Box @ 21.2 feet; Bottom of Box @ 25.2 feet

**NORTH CAROLINA Turnpike Authority** **NCTA BORELOG REPORT**

PROJECT NO. 39942.1.TA1	ID. U-4763B	COUNTY Wake/Durham	GEOLOGIST K. Plummer	
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40				GROUND WTR (ft)
BORING NO. B- 93	STATION 219+10	OFFSET 39ft RT	ALIGNMENT -L-	0 HR. N/A
COLLAR ELEV. 262.8 ft	TOTAL DEPTH 34.4 ft	NORTHING 779,464	EASTING 2,037,467	24 HR. 4.0
DRILL MACHINE Mobile B-57	DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash & NQ2 Core Barrel		HAMMER TYPE Manual	
START DATE 04/11/08	COMP. DATE 04/11/08	SURFACE WATER DEPTH N/A		DEPTH TO ROCK 22.9 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					
265															
262.8														GROUND SURFACE	0.0
260	258.9	3.9											M	Triassic Residual: Stiff Brown Clayey SILT (A-4)	
255	253.9	8.9	3	4	6								M	Very Stiff Tan-Gray Fine Sandy CLAY (A-6)	8.0
250	248.9	13.9	5	7	9								D	Weathered Rock: (Brown Triassic Siltstone)	13.0
245	243.9	18.9											D		
240	239.9	22.9								100/0.5			D		
235													D		
238.7														Non-Crystalline Rock: Hard Fresh Gray and Red Triassic Sandstone With Moderately Close Fracture Spacing	24.1
237.5															25.3
236.4														Triassic Residual: Very Soft Very Severely to Completely Weathered Brown Clayey SILT (A-4)	26.4
238.7														Non-Crystalline Rock: Hard Fresh Gray and Red Triassic Sandstone With Moderately Close Fracture Spacing (RS-15 25.3'-26.4')	
228.4														Non-Crystalline Rock: Hard Slightly to Very Slightly Weathered Red-Brown Triassic Sandstone With Close to Moderately Close Fracture Spacing, 1 Joint at 60 Degrees	34.4
														Boring Terminated at Elevation 228.4 ft in Non-Crystalline Rock: Hard Slightly to Very Slightly Weathered Red-Brown Triassic Sandstone.	
														1) Advanced 3-1/4" HSA to 22.9 feet.	
														2) Advance NQ-2 core barrel from 22.9 to 34.4 feet.	
														3) Creek water used as drilling fluid.	
														4) Approximate drilling fluid density 64.2 pcf.	
														5) No loss of drilling fluid was observed.	

NCDOT BORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

**NORTH CAROLINA Turnpike Authority NCTA CORE BORING REPORT**

PROJECT NO. 39942.1.TA1		ID. U-4763B		COUNTY Wake/Durham		GEOLOGIST K. Plummer						
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40							GROUND WTR (ft)					
BORING NO. B- 93		STATION 219+10		OFFSET 39ft RT		ALIGNMENT -L-	0 HR. N/A					
COLLAR ELEV. 262.8 ft		TOTAL DEPTH 34.4 ft		NORTHING 779,464		EASTING 2,037,467	24 HR. 4.0					
DRILL MACHINE Mobile B-57		DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash & NQ2 Core Barrel				HAMMER TYPE Manual						
START DATE 04/11/08		COMP. DATE 04/11/08		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 22.9 ft						
CORE SIZE NQ-2		TOTAL RUN 11.5 ft		DRILLER M. Moseley								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
	239.9										Begin Coring @ 22.9 ft	
	239.9	22.9	3.5	N=60/0.0 2:00 2:10 2:15	(2.8) 80%	(2.3) 66%		(1.2) 100%	(1.2) 100%		Non-Crystalline Rock: Hard Fresh Gray and Red Triassic Sandstone With Moderately Close Fracture Spacing	22.9 24.1
	236.4	26.4					RS-15	(0.5) 42%	N/A		Triassic Residual Very Soft Very Severely to Completely Weathered Brown Clayey SILT (A-4)	25.3 26.4
235			5.0	1:00/0.5 2:00 2:30 2:15 2:30 2:30	(5.0) 100%	(4.9) 98%		(1.1) 100%	(1.1) 100%		Non-Crystalline Rock: Hard Fresh Gray and Red Triassic Sandstone With Moderately Close Fracture Spacing (RS-15 25.3'-26.4')	
	231.4	31.4						(8.0) 100%	(7.9) 99%		Non-Crystalline Rock: Hard Slightly to Very Slightly Weathered Red-Brown Triassic Sandstone With Close to Moderately Close Fracture Spacing, 1 Joint at 60 Degrees	
230			3.0	1:00 1:40 2:20	(3.0) 100%	(3.0) 100%						
	228.4	34.4									Boring Terminated at Elevation 228.4 ft in Non-Crystalline Rock: Hard Slightly to Very Slightly Weathered Red-Brown Triassic Sandstone.	34.4
225											1) Advanced 3-1/4" HSA to 22.9 feet. 2) Advance NQ-2 core barrel from 22.9 to 34.4 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 64.2 pcf. 5) No loss of drilling fluid was observed.	
220												
215												
210												
205												
200												
195												
190												
185												
180												
175												
170												
165												
160												

NCDOT CORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

## CORE PHOTOS

<i>Project No.:</i> 39942.1.TA1	<i>ID No.:</i> U-4763B	<i>Location:</i> Wake/Durham Co., NC	<i>Boring No.:</i> B-93
<i>Site Description:</i> Triangle Parkway Extension of NC 147 Between I-540 and I-40			<i>Driller:</i> M. Moseley
<i>Collar Elev.:</i> 262.8 ft.	<i>Core Size:</i> NQ-2	<i>Equipment:</i> Mobile B-57	<i>Geologist:</i> K. Plummer
<i>Elev. at T.D.:</i> 228.4 ft.	<i>Total Depth:</i> 34.4 ft.	<i>Total Run:</i> 11.5 ft.	<i>Date:</i> 4/11/2008



Box 1 of 2  
Top of Box @ 22.9 feet; Bottom of Box @ 31.4 feet



Box 2 of 2  
Top of Box @ 31.4 feet; Bottom of Box @ 34.4 feet

**NORTH CAROLINA Turnpike Authority** **NCTA BORELOG REPORT**

PROJECT NO. 39942.1.TA1	ID. U-4763B	COUNTY Wake/Durham	GEOLOGIST N. Bradley
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40			GROUND WTR (ft)
BORING NO. B- 94	STATION 220+17	OFFSET 34ft LT	ALIGNMENT -L-
COLLAR ELEV. 260.8 ft	TOTAL DEPTH 25.6 ft	NORTHING 779,529	EASTING 2,037,354
DRILL MACHINE CME-550X	DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash & NQ Core Barrel	HAMMER TYPE Automatic	
START DATE 04/09/08	COMP. DATE 04/09/08	SURFACE WATER DEPTH N/A	DEPTH TO ROCK 13.7 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					
260	260.8	0.0	3	5	6								GROUND SURFACE	0.0	
255	257.2	3.6	2	2	2							M	Triassic Residual: Stiff to Soft Brown Fine Sandy CLAY (A-7-5)	6.0	
250	252.2	8.6	2	6	7							M	Stiff Brown Fine Sandy SILT (A-4)	13.7	
245	247.2	13.6	60/0.1										D	Crystalline Rock: Hard to Very Hard Fresh to Very Slightly Weathered Gray and Black Diorite Dike With Very Close to Moderately Close Fracture Spacing, 4 Joints from 10 to 20 Degrees, 6 Joints from 30 to 40 Degrees, 2 Joints from 50 to 60 Degrees (RS-16 20.6'-21.4')	25.6
235														Boring Terminated at Elevation 235.2 ft in Crystalline Rock: Hard Fresh Gray-Black Diorite Dike.	
230														1) Advanced 3-1/4" HSA to 13.6 feet.	
225														2) Advanced NQ core barrel from 13.7 to 25.6 feet.	
220														3) Creek water used as drilling fluid.	
215														4) Approximate drilling fluid density 62.4 pcf.	
210														5) No loss of drilling fluid was observed.	
205															
200															
195															
190															
185															

NCDOT BORE SINGLE 079TP.GPJ NC\_DOT\_GDI 4/23/08

**NORTH CAROLINA Turnpike Authority** **NCTA CORE BORING REPORT**

PROJECT NO. 39942.1.TA1		ID. U-4763B		COUNTY Wake/Durham		GEOLOGIST N. Bradley					
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40							GROUND WTR (ft)				
BORING NO. B- 94		STATION 220+17		OFFSET 34ft LT		ALIGNMENT -L-	0 HR. N/A				
COLLAR ELEV. 260.8 ft		TOTAL DEPTH 25.6 ft		NORTHING 779,529		EASTING 2,037,354	24 HR. 6.0				
DRILL MACHINE CME-550X		DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash & NQ Core Barrel				HAMMER TYPE Automatic					
START DATE 04/09/08		COMP. DATE 04/09/08		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 13.7 ft					
CORE SIZE NQ		TOTAL RUN 11.9 ft		DRILLER R. Norwood							
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %	REC. (ft) %	RQD (ft) %			
	247.1										
	247.1	13.7	1.9	1:30	(1.8)	(1.8)	(9.8)	(7.9)		Begin Coring @ 13.7 ft <b>Crystalline Rock:</b> Hard to Very Hard Fresh to Very Slightly Weathered Gray and Black Diorite Dike With Very Close to Moderately Close Fracture Spacing, 4 Joints from 10 to 20 Degrees, 6 Joints from 30 to 40 Degrees, 2 Joints from 50 to 60 Degrees (RS-16 20.6'-21.4')	13.7
245	245.2	15.6	5.0	1:30/0.9	95%	95%	82%	66%			
				3:00	(4.6)	(3.9)					
				5:00	92%	78%					
240	240.2	20.6	5.0	6:00							
				4:00							
				4:30							
				3:00	(3.4)	(2.2)			Boring Terminated at Elevation 235.2 ft in Crystalline Rock: Hard Fresh Gray-Black Diorite Dike.  1) Advanced 3-1/4" HSA to 13.6 feet. 2) Advanced NQ core barrel from 13.7 to 25.6 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 62.4 pcf. 5) No loss of drilling fluid was observed.		
				3:00	68%	44%					
				2:00							
235	235.2	25.6		3:30							25.6
				3:30							
230											
225											
220											
215											
210											
205											
200											
195											
190											
185											
180											
175											
170											

NCDOT CORE SINGLE 079TP.GPJ NC\_DOT\_GDT 4/23/08

## CORE PHOTOS

Project No.: 39942.1.TA1	ID No.: U-4763B	Location: Wake/Durham Co., NC	Boring No.: B-94
Site Description: Triangle Parkway Extension of NC 147 Between I-540 and I-40			Driller: R. Norwood
Collar Elev.: 260.8 ft.	Core Size: NQ	Equipment: CME-550X	Geologist: N. Bradley
Elev. at T.D.: 235.2 ft.	Total Depth: 25.6 ft.	Total Run: 11.9 ft.	Date: 4/9/2008



Box 1 of 2  
Top of Box @ 13.7 feet; Bottom of Box @ 20.6 feet



Box 2 of 2  
Top of Box @ 20.6 feet; Bottom of Box @ 25.6 feet



**NORTH CAROLINA Turnpike Authority** **NCTA CORE BORING REPORT**

PROJECT NO. 39942.1.TA1		ID. U-4763B		COUNTY Wake/Durham		GEOLOGIST N. Bradley						
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40							GROUND WTR (ft)					
BORING NO. B- 95		STATION 220+09		OFFSET 39ft RT		ALIGNMENT -L-	0 HR. N/A					
COLLAR ELEV. 261.1 ft		TOTAL DEPTH 26.6 ft		NORTHING 779,554		EASTING 2,037,423	24 HR. N/A					
DRILL MACHINE CME-550X		DRILL METHOD 3-1/4" H.S.Augers w/Rotary Wash & NQ Core Barrel				HAMMER TYPE Automatic						
START DATE 04/10/08		COMP. DATE 04/10/08		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 9.6 ft						
CORE SIZE NQ		TOTAL RUN 17.0 ft		DRILLER R. Norwood								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN REC. (ft) %	RUN RQD (ft) %	SAMP. NO.	STRATA REC. (ft) %	STRATA RQD (ft) %	LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
	251.5										Begin Coring @ 9.6 ft	
250	251.5	9.6	5.0	2:30 4:30	(5.0) 100%	(4.1) 82%		(1.1) 100%	(1.1) 100%		Non-Crystalline Rock: Moderately Hard to Hard Slightly Weathered Red-Brown Triassic Sandstone With Moderately Close Fracture Spacing, 1 Joint at 10 Degrees	9.6 10.7
				1:45 2:00				(0.9) 100%	N/A (4.3) 80%		Triassic Residual: Very Severe to Completely Weathered Very Stiff to Hard Red-Brown Fine Sandy SILT (A-4)	11.6
245	246.5	14.6	5.0	2:00 2:00	(4.6) 92%	(3.9) 78%		(5.0) 93%	(8.0) 80%		Non-Crystalline Rock Moderately Hard to Hard Slight to Very Slightly Weathered Red-Brown Triassic Sandstone With Close to Moderately Close Fracture Spacing	17.0
				2:30 3:00			RS-17	(9.5) 99%	(8.0) 83%		Non-Crystalline Rock: Moderately Hard to Hard Slight to Very Slightly Weathered Red-Brown Triassic Siltstone With Close to Moderately Close Fracture Spacing With Soil Seam Between 22.9 to 23.7 Feet, 2 Joints at 10 to 20 Degrees (RS-17 18.3'-19.4')	
240	241.5	19.6	5.0	3:00 2:30	(5.0) 100%	(4.0) 80%						
				3:45 3:30								
235	236.5	24.6	2.0	2:30 3:00	(1.9) 95%	(1.4) 70%						
	234.5	26.6									Boring Terminated at Elevation 234.5 ft in Non-Crystalline Rock: Hard Very Slightly Weathered Red-Brown Triassic Siltstone.	26.6
230											1) Advanced 3-1/4" HSA 8.5 feet. 2) Advanced NQ core barrel from 9.6 to 26.6 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 62.4 pcf. 5) No loss of drilling fluid was observed.	
225												
220												
215												
210												
205												
200												
195												
190												
185												
180												
175												

NCDOT CORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

## CORE PHOTOS

Project No.: 39942.1.TA1	ID No.: U-4763B	Location: Wake/Durham Co., NC	Boring No.: B-95
Site Description: Triangle Parkway Extension of NC 147 Between I-540 and I-40			Driller: R. Norwood
Collar Elev.: 261.1 ft.	Core Size: NQ	Equipment: CME-550X	Geologist: N. Bradley
Elev. at T.D.: 234.5 ft.	Total Depth: 26.6 ft.	Total Run: 17.0 ft.	Date: 4/10/2008



Box 1 of 2  
Top of Box @ 9.6 feet; Bottom of Box @ 19.6 feet



Box 2 of 2  
Top of Box @ 19.6 feet; Bottom of Box @ 26.6 feet

**NORTH CAROLINA Turnpike Authority** **NCTA BORELOG REPORT**

<b>PROJECT NO.</b> 39942.1.TA1	<b>ID.</b> U-4763B	<b>COUNTY</b> Wake/Durham	<b>GEOLOGIST</b> N. Bradley
<b>SITE DESCRIPTION</b> Triangle Parkway Extension of N.C. 147 Between I-540 and I-40			<b>GROUND WTR (ft)</b>
<b>BORING NO.</b> B-103	<b>STATION</b> 243+21	<b>OFFSET</b> 7ft RT	<b>ALIGNMENT</b> -L-
<b>COLLAR ELEV.</b> 282.4 ft	<b>TOTAL DEPTH</b> 25.3 ft	<b>NORTHING</b> 781,699	<b>EASTING</b> 2,036,674
<b>DRILL MACHINE</b> CME-550X	<b>DRILL METHOD</b> 3-1/4" H.S. Augers w/Rotary Wash & NQ Core Barrel		<b>HAMMER TYPE</b> Automatic
<b>START DATE</b> 04/10/08	<b>COMP. DATE</b> 04/10/08	<b>SURFACE WATER DEPTH</b> N/A	<b>DEPTH TO ROCK</b> 12.8 ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
285																	
282.4		0.0													282.4	GROUND SURFACE	0.0
280			2	2	5	7							M	280.9	<b>Diabase Residual:</b> Medium Stiff Brown Fine Sandy CLAY (A-7-5)	1.5	
275		3.4	9	12	12	24							M		Medium Dense to Dense Brown Clayey Fine to Coarse SAND (A-2-6) With Trace of Rock Fragments		
270		8.4	23	28	21	49							D				
265		13.4	60/0.1							60/0.1			D	269.6	<b>Crystalline Rock:</b> Hard Gray Diorite Dike	12.8	
260														268.9	<b>Crystalline Rock:</b> Hard Gray Diorite Dike	13.5	
255															Boring Terminated at Elevation 257.1 ft in Crystalline Rock: Hard Very Slightly Weathered Dark Gray Diorite Dike.		
250															1) Advanced 3-1/4" HSA to 13.5 feet. 2) Advanced NQ core barrel to 25.3 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 62.4 pcf. 5) No loss of drilling fluid was observed.		
245																	
240																	
235																	
230																	
225																	
220																	
215																	
210																	
205																	

NCDOT BORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

**NORTH CAROLINA**  
**Turnpike Authority** **NCTA**  
**CORE BORING REPORT**

PROJECT NO. 39942.1.TA1		ID. U-4763B		COUNTY Wake/Durham		GEOLOGIST N. Bradley					
SITE DESCRIPTION Triangle Parkway Extension of N.C. 147 Between I-540 and I-40							GROUND WTR (ft)				
BORING NO. B-103		STATION 243+21		OFFSET 7ft RT		ALIGNMENT -L-					
COLLAR ELEV. 282.4 ft		TOTAL DEPTH 25.3 ft		NORTHING 781,699		EASTING 2,036,674					
DRILL MACHINE CME-550X		DRILL METHOD 3-1/4" H.S. Augers w/Rotary Wash & NQ Core Barrel				HAMMER TYPE Automatic					
START DATE 04/10/08		COMP. DATE 04/10/08		SURFACE WATER DEPTH N/A		DEPTH TO ROCK 12.8 ft					
CORE SIZE NQ		TOTAL RUN 11.8 ft		DRILLER R. Norwood							
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC (ft) %	RQD (ft) %	REC (ft) %	RQD (ft) %			
	268.9										
	268.9	13.5	2.5	1:30	(2.0)	(1.6)	(6.6)	(3.0)		268.9 <b>Crystalline Rock:</b> Hard to Moderately Hard Very Slightly to Moderately Weathered Dark Gray Diorite Dike With Close to Very Close Fracture Spacing, 2 Joints from 10 to 30 Degrees, 2 Joints from 30 to 60 Degrees, Vertical Fractures Between 24.5 to 25.3 feet (RS-18 15.3'-16.0')	13.5
	266.4	16.0		1:30	80%	64%					
265			5.0	1:00/0.5	(2.6)	(0.8)					
				1:30	52%	16%					
				2:30							
	261.4	21.0		3:00							
260			4.3	4:00							
				1:30	(2.0)	(0.6)					
				2:00	47%	14%					
				1:30							
	257.1	25.3		1:45						257.1	25.3
255				4:00/0.3						Boring Terminated at Elevation 257.1 ft in Crystalline Rock: Hard Very Slightly Weathered Dark Gray Diorite Dike.	
										1) Advanced 3-1/4" HSA to 13.5 feet. 2) Advanced NQ core barrel to 25.3 feet. 3) Creek water used as drilling fluid. 4) Approximate drilling fluid density 62.4 pcf. 5) No loss of drilling fluid was observed.	
250											
245											
240											
235											
230											
225											
220											
215											
210											
205											
200											
195											
190											

NCDOT CORE SINGLE 079TP.GPJ NC\_DOT.GDT 4/23/08

## CORE PHOTOS

<i>Project No.:</i> 39942.1.TA1	<i>ID No.:</i> U-4763B	<i>Location:</i> Wake/Durham Co., NC	<i>Boring No.:</i> B-103
<i>Site Description:</i> Triangle Parkway Extension of NC 147 Between I-540 and I-40			<i>Driller:</i> R. Norwood
<i>Collar Elev.:</i> 282.4 ft.	<i>Core Size:</i> NWD4	<i>Equipment:</i> CME-550X	<i>Geologist:</i> N. Bradley
<i>Elev. at T.D.:</i> 257.1 ft.	<i>Total Depth:</i> 25.3 ft.	<i>Total Run:</i> 11.8 ft.	<i>Date:</i> 4/10/2008



Box 1 of 1  
 Top of Box @ 13.5 feet; Bottom of Box @ 25.3 feet