Preliminary Foundation Recommendations
Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Northwest Corridor Project
GDOT Project No. NH000-0073-03(242), PI No. 714130
Cobb County, Georgia

WILLMER ENGINEERING INC.
Project No. ATL-171-3463BFI

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Prepared For

GEORGIA TRANSPORTATION PARTNERS
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PWR AND AUGER REFUSAL ELEVATIONS (feet)			
Bent No.	Reference Boring No.	Top of PWR	Auger Refusal
1	B-81	895.5	893
2	B-82	916	-
3	B-83	861	851
4	B-84	861	
5	B-85	861	856
6	B-86	864	-
7	B-86	884	863
8	B-87	885	-
9	B-88	880	878
10	B-89	922	909
11	B-90	951	-
12	B-91	954	948
13	B-92	912	-
14	B-93	904	-
15	B-94	879	-
16	B-95	907	-
17	B-96	915	909
18	B-97	913	911
19	B-98	921	920
20-Left	B-99A	950	949
20-Right	B-99B	-	948
21	B-100	912	909
22	B-100/A-1	912/940	909/928
23	A-1	940	928
24	A-2	942	929

MAXIMUM PILE DESIGN LOADS

Pile Type	Load Transfer (%)		Design Load
	Friction	End Bearing	
H-Piles	20-80	20-80	HP 10x42 = 55 Tons
			HP 12x53 = 70 Tons
			HP 14x73 = 96 Tons
			HP 14x89 = 117 Tons

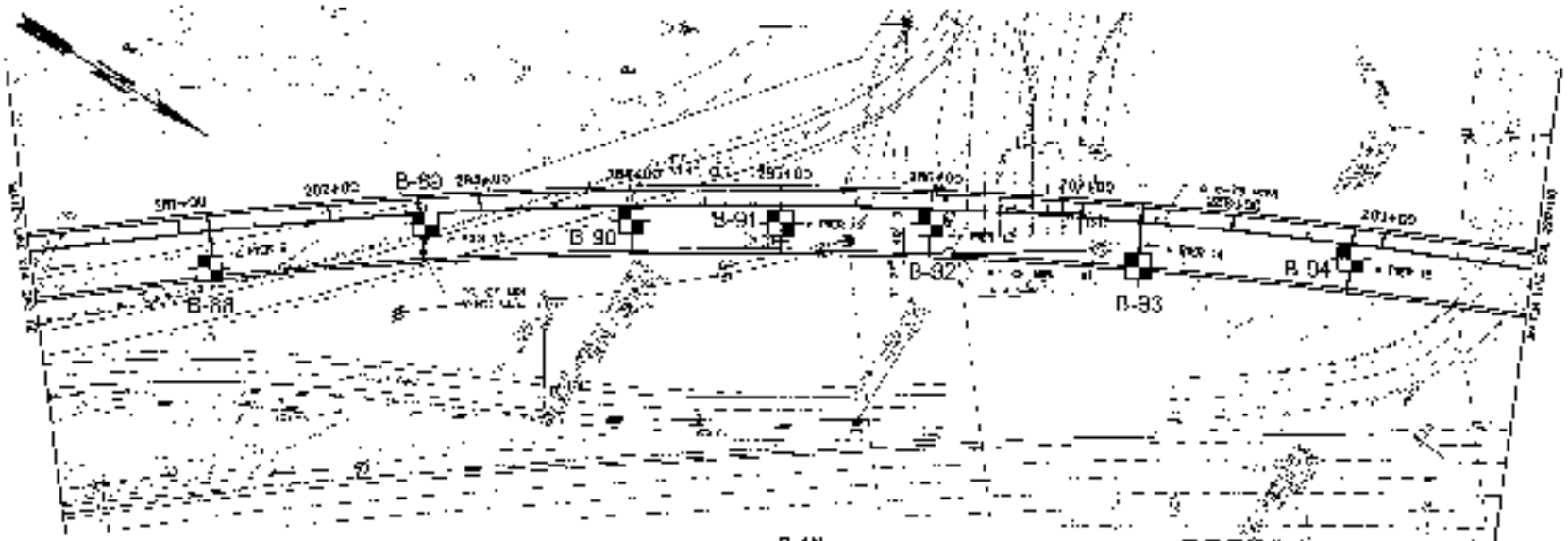
FOUNDATION RECOMMENDATIONS

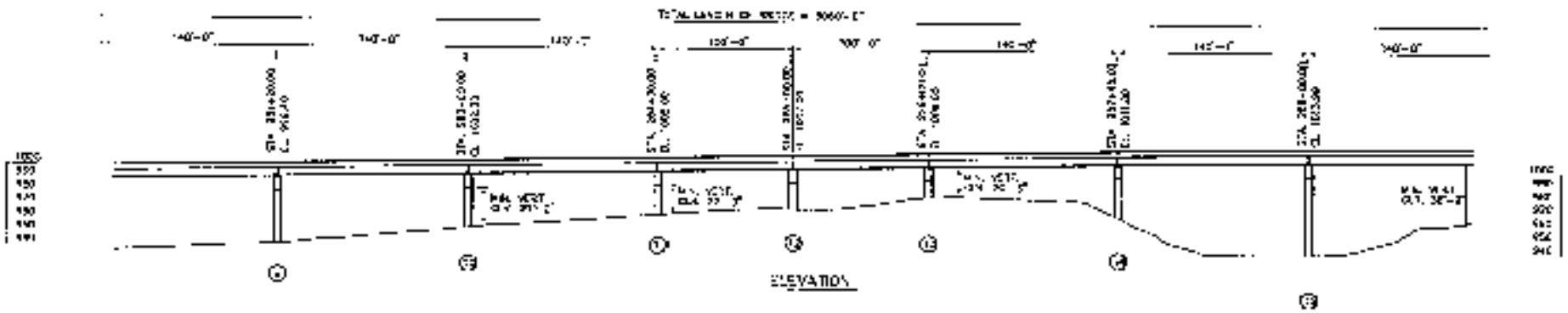
Bent No.	Drilled Shaft Skin Friction (ksf) PWR	Drilled Shaft Skin Friction (ksf) Rock	End Bearing (ksf)	Spread Footing (Bearing) (ksf)	Pile Footing (Type)	Pile Bent (Type)
1						H
2					H	
3					H	
4					H	
5	2	5	60		H(ALT)	
6					H	
7					H	
8					H	
9					H	
10					H	
11					H	
12				10 ksf on PWR	H(ALT)	
13					H	
14					H	
15					H	
16					H	
17					H	
18					H	
19					H	
20-Left				20 ksf on rock		
20-Right					H	
21					H	
22					H	
23					H	
24						H

Bent No.	Reference Boring No.	ELEVATIONS (feet) Bottom of Drilled Shaft[1]	Bottom of Spread Footing	H-Pile Minimum Tip	H-Pile Estimated Tip
1	B-81			914±	912±
2	B-82			915±	913±
3	B-83			860±	858±
4	B-84			860±	858±
5	B-85	851 or below		860±(ALT)[2]	858± (ALT)[2]
6	B-86			864±	862±
7	B-86			884±	882±
8	B-87			864±	862±
9	B-88			879±	878±
10	B-89			921±	919±
11	B-90			949+	947±
12	B-91		932 or below	953±(ALT)	95[illegible] ± (ALT)
13	B-92			911±	909±
14	B-93			907±	904±
15	B-94			887±	885±
16	B-95			906±	904±
17	B-96			914±	912±
18	B-97			912±	911±
19	B-98			920±	920±
20-Left	B-99A		948 or below		
20-Right	B-99B			948+	946±
21	B-100			912±	912±
22	B-100/A-1			927±	925±
23	A-1			942±	940±
24	A-2			955±	953±

Notes:

1. Based on information provided by the Structural Engineer, the required minimum diameter of drilled shafts is 7 feet and the maximum axial load for the shafts is about 2,400 kips. The recommended bottom elevation of drilled shaft is for a shaft diameter of 7 feet and an axial load capacity of 3,000 kips.
2. Pile points will be required if H-piles are used at Bent 5 to ensure penetration through possible boulders in the existing fill soils.





LEGEND:

BORING LOCATION

B-88

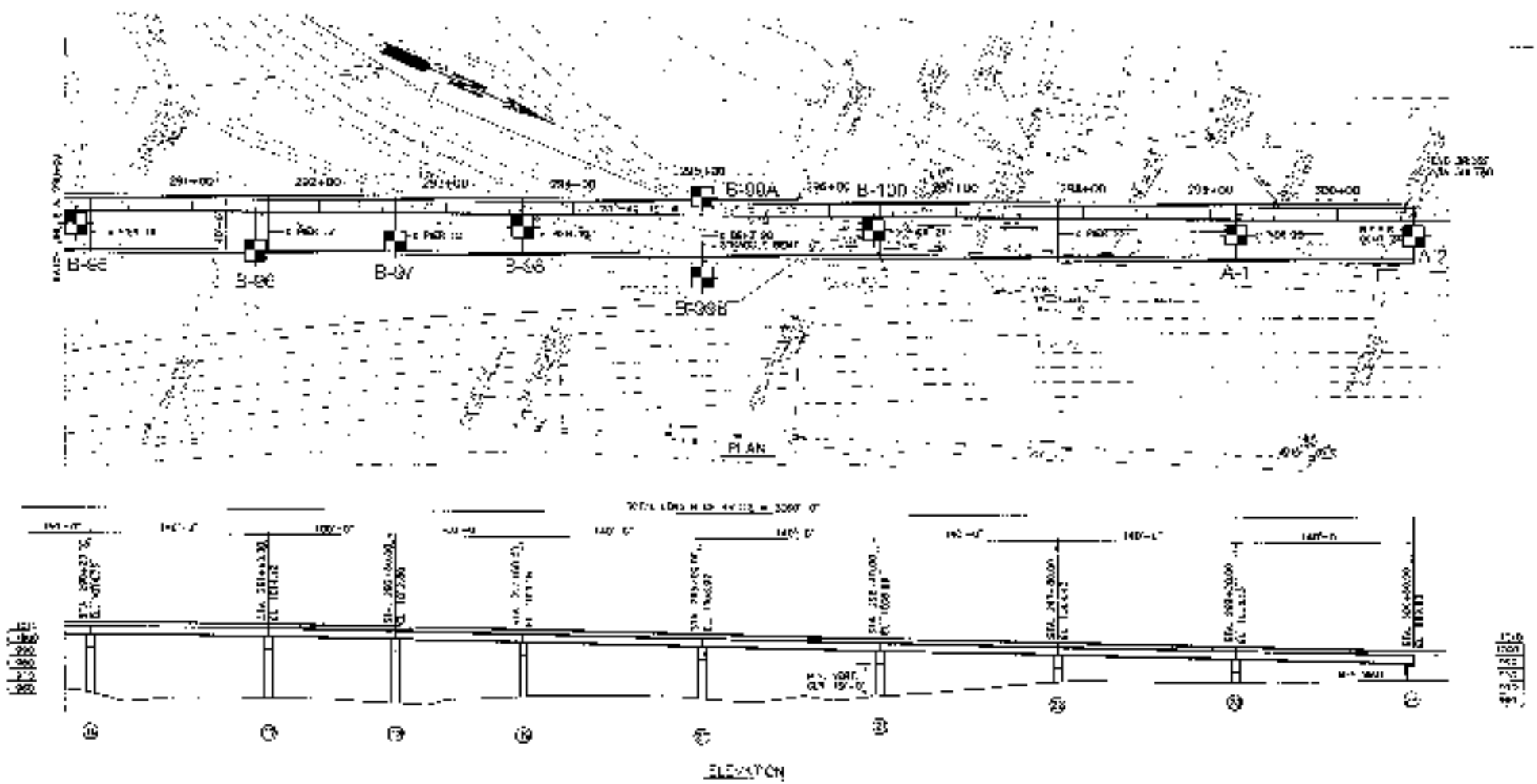
NOTE: BRIDGE PLAN AND PROFILE PROVIDED BY GEORGIA TRANSPORTATION PARTNERS

SCALE: 1" = 120'	
DATE: 1/22/2009	
DRAWN BY: [illegible]	
REVIEWED BY: MK	

GEOTECHNICAL ENGINEERING, HOUSING, RIGHT OF WAY SERVICES
ENVIRONMENTAL SERVICES AND PROGRAMMING
[illegible] PLEASANTDALE ROAD, SUITE [illegible]
ATLANTA, GA 30[illegible]

GDOT PROJECT NUMBER
NH000 0078-03(247)
PI No. 714730

BORING LOCATION PLAN (SHEET 2 OF 3)
BRIDGE 13: I-75 REVERSIBLE LANES OVER
WINDY HILL ROAD
NORTH-WEST CORRIDOR PPG, EU
COBB COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-[illegible]



LEGEND.

BORING LOCATION

B-95

NOTE: BRIDGE PLAN AND PROFILE PROVIDED BY GEORGIA TRANSPORTATION PARTNERS

SCALE: 1" = 120'	
DATE: 10/22/2008	
DRAWN BY: MLW	
REVIEWED BY: MK	

GDOT PROJECT NUMBER
[illegible]
[illegible]

BORING LOCATION PLAN (SHEET 3 OF 5)
BRIDGE 13: I-75 REVERSIBLE LANES OVER
WINDY HILL ROAD
NORTHWEST CORRIDOR PROJECT
COBB COUNTY, GEORGIA
WILLMER PROJECT NO. ATL-171-[illegible]

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFIS: GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-81

Sheet 1 of 2

Location: BENT - 1

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 944.00 Station: ST 270+00, 20' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Sizes: NA Samples: 13 Overburden (ft): 51 Rock (ft): NA Total Depth (ft): 51.0

Logged by: PT Date Drilled: 9/16/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY / RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/6in)	N-VALUE
		SS		FILL: Medium dense reddish brown to brown silty medium to fine **SAND** with rock fragments	FILL	944.0		19
		SS		RESIDUUM: Medium dense reddish brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	SM	940		21
5		SS						26
		SS				935		22
10								
		SS		Dense to very dense reddish brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	SM	930		47
15								
		SS				925		72
20								
		SS		Medium dense brown and gray silty medium to fine **SAND** (slightly micaceous)	SM	920		23
25								
		SS		PARTIALLY WEATHERED ROCK: Sampled as very dense dark gray and brown silty medium to fine **SAND** with rock fragments (micaceous)	PWR	915		77/0"
30								
		SS				910		50/2"
35								
		SS		RESIDUUM: Medium dense reddish brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	SM	905		23
40								
		SS		Very dense gray and black silty medium to fine **SAND** (slightly micaceous)	SM	900		53
45								
		SS		PARTIALLY WEATHERED ROCK: Sampled as very dense dark gray and black silty medium to fine **SAND** with rock fragments	PWR	895		50/2"
50		SS						50/0"

Auger refusal was encountered at 51 feet

Continued Next Page

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-81

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463B/FI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-81
Sheet 2 of 2
Location: BENT - 1

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	% CORE	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					below the existing ground surface.			
					Ground water was encountered at 43 feet below the existing ground surface 24 hours after boring completion.			

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1 7/8"
NX - Rock Core, 2-1/8"
CJ - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-81

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-82

Sheet 1 of 1

Location: BENT - 2

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 930.30 Station: ST 271+40, 6' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Barrel: NA Samples: 9 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 33.5

Logged By: PT Date Drilled: 10/6/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY %	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 25 40 60 80	N-VALUE
		SS			TOPSOIL - 3 inches	FILL	930.3		
					FILL: Very loose gray and brown silty medium to fine **SAND** (slightly micaceous)	SM			0
5		SS					925		53
		SS			No recovery				50/5"
					RESIDUUM: Very dense gray and brown silty medium to fine **SAND**	PWR / SM			21
10		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense dark brown and gray silty medium to fine **SAND**		920		
15		SS			RESIDUUM: Medium dense gray and brown silty medium to fine **SAND** (very micaceous)	PWR	915		50/4"
20		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown and gray silty medium to fine **SAND**		910		50/3"
					RESIDUUM: Very dense brown silty medium to fine **SAND** (slightly micaceous)	SM			
25		SS					905		50
					PARTIALLY WEATHERED ROCK: Sampled as very dense brown and gray silty medium to fine **SAND** with rock fragments	PWR			
30		SS					900		50/2"
		SS			Boring was terminated at 33.5 feet below the existing ground surface.				50/1"
					No ground water was encountered at the time of boring.				

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core 1-7/8"
NX - Rock Core 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Drilling Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-82

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road	**HOLE No. B-83**
Location: Cobb County, Georgia	Sheet 1 of 2
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130	Location: BENT - 3

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 916.90 Station: ST 272+84, BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 16 Overburden (ft): 66 Rock (ft): NA Total Depth (ft): 66.0

Logged By: PT Date Drilled: 9/16/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY %	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			FILL: Loose and medium dense reddish brown, brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	916.9		
5		SS					915		16
		SS							19
		SS					910		10
10		SS							12
							905		
15		SS							19
							900		
20		SS							11
							895		
25		SS							13
							890		
30		SS							10
							885		
35		SS							11
							880		
40		SS							16
							875		
45		SS			-with root fragments				16
							870		
50		SS			Loose dark gray silty coarse to fine **SAND** with rock fragments	FILL			10
					RESIDUUM: Dense black, gray and brown silty medium to fine **SAND** with rock fragments (micaceous)	SM	865		
55		SS							35

Continued Next Page

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NX - Rock Core, 2-1/8"
NU - Rock Core, 1-7/8"
CU - Cuttings
C - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-83

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130**

HOLE No. B-83

Sheet 2 of 2

Location: **BENT - 3**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION (Continued)		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					PARTIALLY WEATHERED ROCK: Sampled as very dense reddish brown and gray silty medium to fine SAND with rock fragments (slightly micaceous)	PWR	860		
10		SS					855		50/0.3'
		SS							50/0.3'
65		SS							50/0.1'
					Auger refusal was encountered at 66 feet below the existing ground surface				
					Groundwater was encountered at 51 feet below the existing ground surface at the time of boring completion and at 24 hours after boring completion.				

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Trace

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-83

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-84

Sheet: 1 of 2
Location: BENT - 4

Azimuth: — Angle from Horizontal: 90 Surface Elevation (ft): 920.28 Station: ST 274+20, 6' Rt. of BL
Drilling Equipment: CME550/MACTEC Drilling Method: HSA/RW Auto Hammer
Core Barrel: NA Samples: 17 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 74.5
Logged By: PL Date Drilled: 9/8/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)
		SS			FILL: Very loose tan and brown silty medium to fine **SAND** with root fragments	FILL	920.3
5		SS			Medium dense brown, white and gray silty medium to fine **SAND** with rock fragments	FILL	915
		SS					
10		SS					910
15		SS					905
20		SS					900
25		SS			Medium dense brown and gray silty medium to fine **SAND** with rock fragments	FILL	895
30		SS					890
35		SS			- with wood fragments		885
40		SS					880
45		SS			Medium dense gray silty medium to fine **SAND** with clay lens, rock fragments, wood fragments and organic material	FILL	875
50		SS			ALLUVIUM: Medium dense brown silty medium to fine **SAND** with rock fragments	SM	870
55		SS			Loose gray silty coarse to fine **SAND**	SM	

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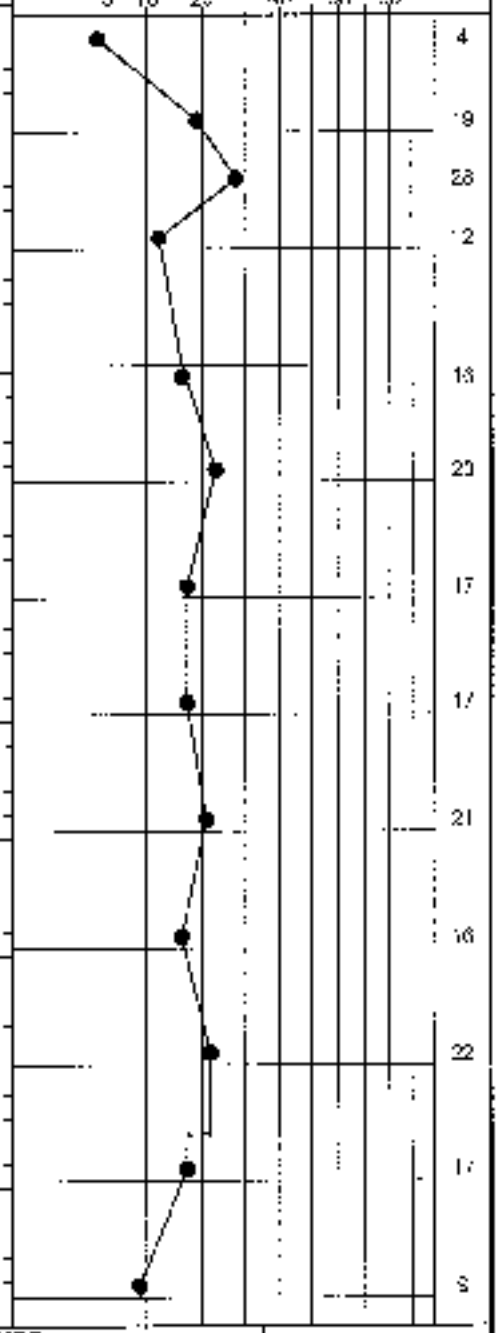
STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-84

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-84

Location: BENT - 4

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC %	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N VALUE
60		SS			PARTIALLY WEATHERED ROCK PWR Sampled as very dense gray, black and green silty medium to fine SAND with rock fragments (slightly micaceous)	660		[illegible]
65		SS				655		[illegible]
70		SS				650		24/8"
		SS						70/1"

Boring was terminated at 74.5 feet below the existing ground surface.

Ground water was encountered at 53 feet below the existing ground surface at the time of boring completion and at 24 hours after boring completion.

An offset boring was performed 5 feet north of the original location as the original boring encountered auger refusal at 25 feet below the existing ground surface. The soil profile below 25 feet is from the offset boring.

SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	B-84
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Auger	RC - Rock Core	
NO - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130**

HOLE No. B-85

Sheet 1 of 2

Location: **BENT - 5**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **919.48** Station: **ST 275+60, 17' Rt. of BL**

Drilling Equipment: **CME550/ Gable Drilling Co., Inc.** Drilling Method: **HSA/RW -Auto Hammer**

Core Boxes: **2** Samples: **19** Overburden (ft): **63** Rock (ft): **13.75** Total Depth (ft): **76.8**

Logged By: **PT** Date Drilled: **7/16/09**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)
		SS			TOPSOIL - 1 inch	FILL
		SS			FILL: Loose to medium dense gray to brown silty medium to fine **SAND**	
5		SS				
		SS				
10		SS				
					ROCK CORE: BOULDER - Medium hard to soft dark gray **GNEISS** with probable soft zones	
15		RC	6	0		
20		SS			FILL: Medium dense to dense brown to reddish brown silty medium to fine **SAND** with rock fragments and trace of roots (slightly micaceous)	FILL
		SS				
25		SS				
30		SS				
35		SS				
40		SS				
45		SS				
50		SS				
55		SS			ALLUVIUM: Medium dense gray clayey	SC

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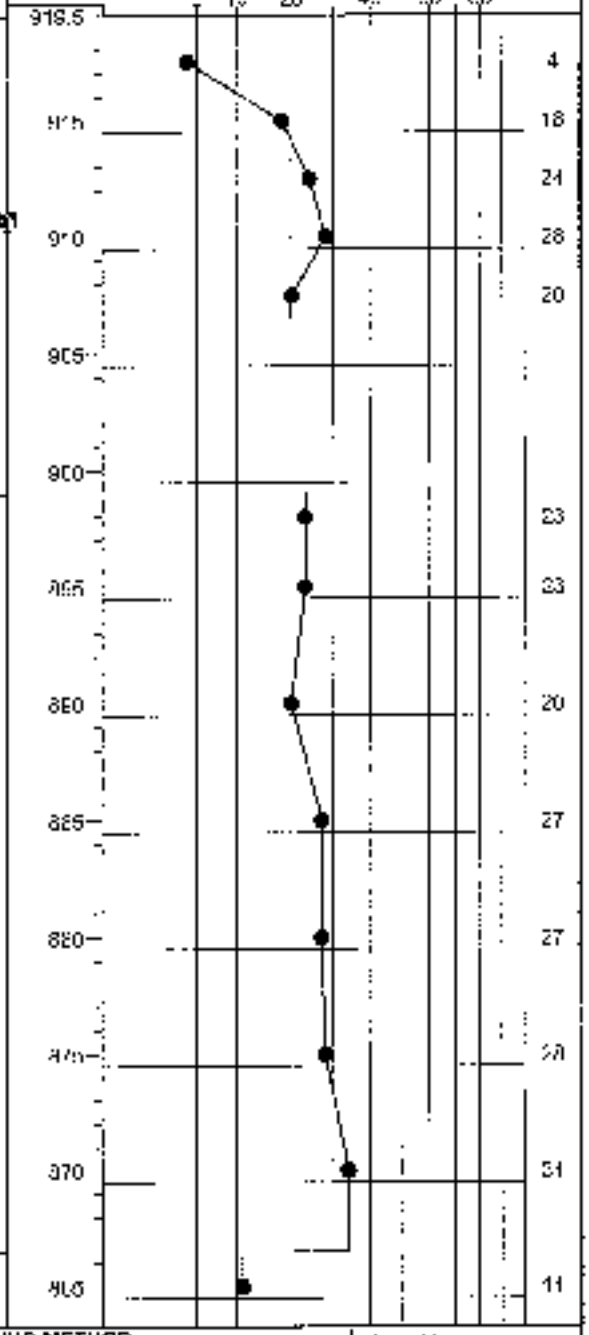
STANDARD PENETRATION TEST DATA (blows/foot)



N-VALUE

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Page No.

B-85

Project: Bridge #3: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BF13; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-85

Sheet 2 of 2

Location: BENT - 5

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)
					medium to fine SAND with roots	
80		SS			PARTIALLY WEATHERED ROCK; Sampled as very dense black to dark gray silty medium to fine SAND with rock fragments (micaceous) PWR	860
85		RC	31	0	ROCK CORE: Dark green to black GNEISS	855
70		RC	40	0	63'-66.75': Hard with probable soft zones 66.75'-71.75': Hard with probable soft zones	850
75		RC	42	0	71.75'-76.75': Hard with probable soft zones	845

Auger refusal encountered at 83 feet below the existing ground surface

Coring was terminated at 76.75 feet below the existing ground surface

Auger refusal was encountered at 4 to 6 feet below the existing ground surface at three other borings performed within a 10 foot radius of the staked location

Groundwater could not be recorded as the boring was performed using rotary wash method and the boring caved in at 9 feet below the existing ground surface at 24 hours after boring completion.

STANDARD PENETRATION TEST DATA (blows/foot)

5 10 20 40 80 40

N-VALUE

50/3"

50/2"

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Drive Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-85

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BF3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-80

Sheet 1 of 2

Location: BENT - 6

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 933.26 Station: ST 277+00, 13' Rt. of BL

Drilling Equipment: CME 550/MACTEC Drilling Method: HSA Auto Hammer

Core Boxes: NA Samples: 19 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 83.5

Logged By: PT Date Drilled: 9/11/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			FILL - Loose, medium dense and dense reddish brown and brown silty medium to fine SAND with rock fragments (slightly micaceous) FILL	933.3		7
		SS				930		10
		SS						11
10		SS				925		20
						920		20
15		SS						
						915		29
20		SS						
						910		31
25		SS						
						905		23
30		SS						
						900		24
35		SS						
						895		28
40		SS						
						890		18
45		SS						
						885		12
50		SS						
					50	880		14
55		SS						

Continued Next Page

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Form No. B-80

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-80

Sheet 2 of 2

Location: BENT - 6

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECS%	RQD %	MATERIAL DESCRIPTION (Continued)		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/foot) 5 10 20 40 60 80	N-VALUE
					RESIDUUM: Medium dense reddish brown and tan clayey medium to fine **SAND**	SM	875		33
60		SS			Dense reddish brown and gray silty medium to fine **SAND**				
65		SS					870		45
							865		
70		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray and black silty medium to fine **SAND** with rock fragments	PWR			50/5.5"
75		SS					860		50/2"
		SS					855		50/4"
80		SS			Boring was terminated at 83.5 feet below the existing ground surface.		850		50/2"

Ground water was encountered at 54 feet below the existing ground surface at the time of boring.

Boring caved in to 26 feet below the existing ground surface 24 hours after boring completion.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

SA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-80

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road	**HOLE No. B-86**
Location: Cobb County, Georgia	Sheet 1 of 2
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130	Location: BENT - 7

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 933.21 Station: ST 278+40, 14' RT of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 17 Overburden (ft): 70 Rock (ft): NA Total Depth (ft): 70.0

Logged By: PT Date Drilled: 9/14/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RESIST	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			FILL: Loose reddish brown, brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	933.2		8
5		SS			Dense to very dense reddish brown, brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	930		40
		SS							32
10		SS			Medium dense and dense reddish brown, brown and gray silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	925		25
15		SS					920		23
20		SS					915		20
25		SS					910		37
30		SS					905		18
35		SS					900		27
40		SS			Blow count was magnified by boulder		895		50/2"
45		SS			RESIDUUM: Stiff reddish brown and brown medium to fine sandy **SILT**	ML	890		13
50		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense black, gray and green silty medium to fine **SAND** with rock fragments	PWR	885		50/5.5"
55		SS				SM	880		58

Continued Next Page

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **B-86**

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-86

Sheet 2 of 2

Location: BENT - 7

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RQD %	RQD %	MATERIAL DESCRIPTION (Continued)		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N VALUE
					RESIDUUM: Very dense gray, green and brown silty fine **SAND**		875		
171		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray and green silty medium to fine **SAND** with rock fragments	PWR			50/3"
							870		
65		SS							52/9"
							865		54/3"
		SS							
70		SS			Auger refusal was encountered at 70 feet below the existing ground surface.				50/1"
					Ground water was encountered at 50 feet below the existing ground surface at 24 hours after boring completion.				

SAMPLER TYPE

SS - Split Spoon
S - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CL - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-86

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-87

Sheet: 1 of 2

Location: BENT - 8

Azimuth: – Angle from Horizontal: 90 Surface Elevation (ft): 939.65 Station: ST 279+85, 20' RT of BL

Drilling Equipment: CME 550/MACTEC Drilling Method: HSA-Auto Hammer

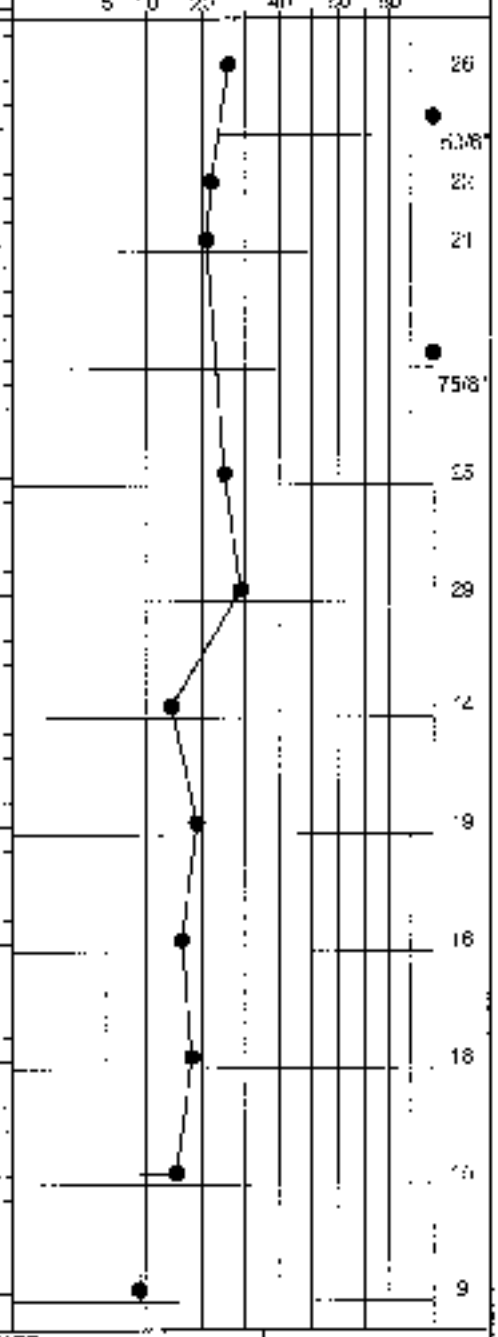
Core Boxes: NA Samples: 19 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 84.0

Logged By: CO Date Drilled: 9/23/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV. (%)	MATERIAL DESCRIPTION		ELEVATION (feet)
		SS		FILL: Medium dense and very dense white, orange, and brown silty medium to fine **SAND** with rock fragments	FILL	939.7
5		SS				935
		SS				930
10		SS				
15		SS				925
20		SS				920
25		SS				915
30		SS		Medium dense reddish brown and brown: silty medium to fine **SAND** (micaceous)	FILL	910
35		SS				905
40		SS		- with rock fragments		900
45		SS				895
50		SS		RESIDUUM: Medium dense to loose reddish brown and red with black specks silty medium to fine **SAND** with coal fragments (micaceous)	SM	890
55		SS				885

Continued Next Page

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-87

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-87

Sheet 2 of 2

Location: BENT - 8

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RQD%	RQD %	MATERIAL DESCRIPTION (Continued)		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N VALUE
50		SS			Medium dense orange silty medium to fine **SAND** with rock fragments	SM	880		13
65		SS					875		13
70		SS					870		25
75		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense dark gray and white silty medium to fine **SAND**	PWR	865		50/3
80		SS					860		50/2
		SS			Boring was terminated at 84 feet below the existing ground surface.				50/4

Ground water was encountered at 60 feet below the existing ground surface at the time of boring completion and at 39.5 feet below the existing ground surface at 24 hours after boring completion.

An offset boring was drilled 5 feet north of the original boring location which encountered auger refusal at 15.5 feet below the existing ground surface. The soil profile below 15.5 feet is from the offset boring.

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-87

SFTN 171-3463BFI3 PI 0073

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-88

Sheet 1 of 2

Location: BENT - 9

Azimuth: — Angle from Horizontal: 90 Surface Elevation (ft): 949.56 Station: ST 281+18, 25' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA Auto Hammer

Core Boxes: NA Samples: 17 Overburden (ft): 71 Rock (ft): NA Total Depth (ft): 71.0

Logged By: PT Date Drilled: 9/4/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	% CORE	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			FILL: Loose brown and reddish brown silty medium to fine **SAND** with rock fragments	FILL	949.5		9
5		SS			Loose and medium dense brown, reddish brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	FILL	945		16
		SS							30
10		SS					940		10
15		SS					935		24
20		SS					930		20
25		SS			Medium dense reddish brown silty medium to fine **SAND** with rock fragments	FILL	925		15
30		SS					920		11
					Loose brown and reddish brown clayey medium to fine **SAND** with rock fragments and rock fragments	FILL	915		8
35		SS							
40		SS			RESIDUUM: Medium dense to loose reddish brown silty medium to fine **SAND** with quartz fragments (micaceous)	SM	910		14
45		SS					905		15
50		SS					900		13
55		SS					895		11

Continued Next Page

BAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1 7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-88

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BF13; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-88

Sheet 2 of 2

Location: BENT - 9

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RF (%)	RQD (%)	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 10 20 40 60 80	N-VALUE
					(Continued)			
60		SS			Medium dense to dense reddish brown and black silty medium to fine SAND with rock fragments (slightly micaceous) SM	860		24
65		SS				855		42
		SS			PARTIALLY WEATHERED ROCK. Sampled as very dense gray and brown silty medium to fine SAND (micaceous) PWR	850		50/2"
70		SS						50/0"

Auger refusal was encountered at 71 feet below the existing ground surface.

Ground water was encountered at 56 feet below the existing ground surface at the time of boring completion.

This is an offset boring performed 2 feet south and 1 foot east of the original boring location, which encountered auger refusal at 3 feet below the existing ground surface.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NX - Rock Core, 2-1/8"
NQ - Rock Core, 1-7/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-88

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-89

Sheet 1 of 2

Location: **BENT - 10**

Azimuth: -- | Angle from Horizontal: 90 | Surface Elevation (ft): 956.60 | Station: ST 282+63, 7' Rt. of BL

Drilling Equipment: CME550/MACTEC | Drilling Method: HSA Auto Hammer

Core Boxes: NA | Samples: 13 | Overburden (ft): 47 | Rock (ft): NA | Total Depth (ft): 47.0

Logged By: PT | Date Drilled: 9/4/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RF%	RQD %	MATERIAL DESCRIPTION	
		SS			FILL: Loose to medium dense reddish brown, brown, and gray silty medium to fine **SAND** with rock and root fragments (micaceous)	FILL
5		SS				
		SS			Medium dense brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	FILL
10		SS				
		SS			* - Blow count was magnified by boulder* Medium dense brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	FILL
15		SS				
20		SS			Loose reddish brown clayey medium to fine **SAND**	FILL
25		SS			RESIDUUM: Medium dense orange brown and gray silty medium to fine **SAND** (micaceous)	SM
30		SS				
35		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray and brown silty medium to fine **SAND** (micaceous)	PWR
40		SS			- with medium dense zone	
		SS				
45		SS				
		SS			Auger refusal was encountered at 47 feet below the existing ground surface.	

Boring was offset 3 feet north of the original boring which encountered auger refusal at 11 feet below the existing ground surface. The soil

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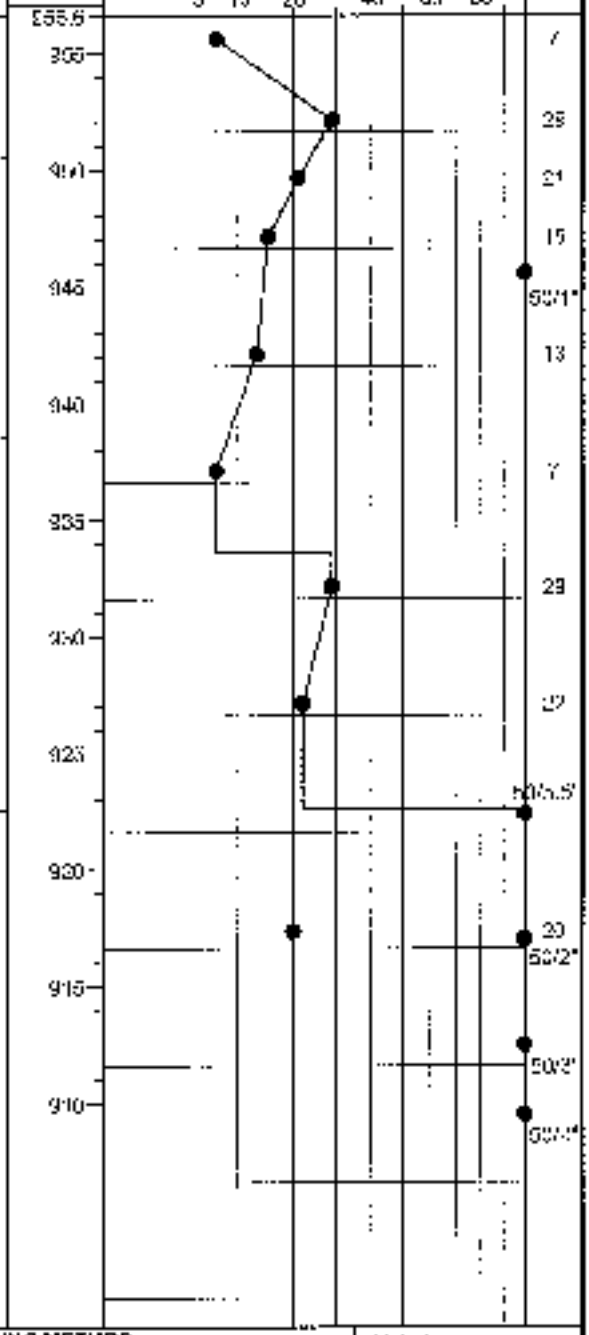

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-89

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-89
Sheet 2 of 2
Location: BENT - 10

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/6in) 5 10 20 40 60 80	WATER LEVEL
					profile below 10 feet is from the offset boring.			
					No ground water was encountered at the time of boring completion.			

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Log No.
B-89

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130**

HOLE No. B-90

Sheet 1 of 2

Location: **BENT - 11**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **965.16** Station: **ST 284+00, 10' Rt. of BL**

Drilling Equipment: **CME550/MACTEC** Drilling Method: **HSA/RC/RW Auto Hammer**

Core Boxes: **1** Samples: **13** Overburden (ft): **53.5** Rock (ft): **10** Total Depth (ft): **53.5**

Logged By: **PT** Date Drilled: **9/3/09**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD%	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					TOPSOIL - 1 foot	FILL	965.2		
		SS			FILL: Loose reddish brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	SM			5
5		SS			RESIDUUM: Medium dense brown and reddish brown silty medium to fine **SAND** (micaceous)		960		22
		SS							30
10		SS					955		20
15		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown and gray silty medium to fine **SAND**	PWR	950		50/4"
20		SS			ROCK CORE: Hard to soft, gray and brown **SCHIST** with probable soft zones		945		50/4
25		RC	2'	10			940		
30		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense orange brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	PWR	935		50/1"
35		SS			Very dense gray silty medium to fine **SAND** with rock fragments	PWR	930		50/2"
40		SS					925		50/1"
45		SS					920		50/1"
50		SS					915		50/0"
		SS			Boring was terminated at 53.5 feet below				50/1"

Continued Next Page

SAMPLER TYPE

SS - Spit Spoon
S - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
GC - Grab
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-90

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3483BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-90
Sheet 2 of 2
Location: **BENT - 11**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RQD%	REC%	MATERIAL DESCRIPTION (Continued)	ELEVATION (ft)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					the existing ground surface.			
					Ground water was encountered at 20 feet below the existing ground surface 24 hours after boring completion.			

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
GL - Grab Liner
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-90

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3483BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-91

Sheet 1 of 1

Location: BENT - 12

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 988.55 Station: ST 285+00, 12Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA Auto Hammer

Core Hours: NA Samples: 7 Overburden (ft): 20 Rock (ft): NA Total Depth (ft): 20.0

Logged By: PT Date Drilled: 9/2/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			TOPSOIL - 1 inch	FILL	988.55		
		SS			FILL: Medium dense reddish brown silty medium to fine SAND with rock fragments (slightly micaceous)	SM	985		12
5		SS			RESIDUUM: Very dense brown silty medium to fine SAND	PWR			56
		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown silty medium to fine SAND with rock fragments (micaceous)	SM	980		50/2"
10		SS			RESIDUUM: Very dense to dense brown silty medium to fine SAND with rock fragments (micaceous)	PWR	975		76
		SS							31
15		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown and gray silty medium to fine SAND with rock fragments (micaceous)		970		50/4"
		SS					965		50/3"
20		SS							50/1"

Auger refusal was encountered at 20 feet below the existing ground surface.

Groundwater was not encountered at the time of boring completion.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-91

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-92

Sheet 1 of 2

Location: BENT - 13

Azimuth: — Angle from Horizontal: 90 Surface Elevation (ft): 960.63 Station: ST 286+00, 10' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA Auto Hammer

Core Boxes: NA Samples: 19 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 83.5

Logged By: PT Date Drilled: 9/2/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/foot)	N-VALUE
		SS			FILL: Loose to medium dense reddish brown silty medium to fine SAND with rock/concrete fragments (slightly micaceous)	FILL	960.8		
5		SS					950		10
		SS					940		5
		SS			- Blow count was magnified by boulder/concrete		930		4
10		SS					920		50/4"
		SS					910		50/5"
15		SS					900		15
							890		15
20		SS					880		
					RESIDUUM: Medium dense to dense brown silty medium to fine SAND with rock fragments (micaceous)	SM	870		23
25		SS					860		36
30		SS					850		
							840		40
35		SS					830		
					Medium dense and dense gray, brown and tan silty medium to fine SAND (micaceous)	SM	820		14
40		SS					810		
							800		22
45		SS					790		
							780		31
50		SS					770		
							760		13
55		SS							

Continues Next Page

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core 1.875"
NX - Rock Core 2-1/8"
CL - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-92

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3483BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-92

Sheet 2 of 2

Location: BENT - 13

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC %	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (ft)	STANDARD PENETRATION PET DATA (blows/foot)	N VALUE
					Medium dense and dense grey, brown and tan silty medium to fine SAND (micaceous)	930		
60		SS				925		19
65		SS				915		26
70		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray silty medium to fine SAND with rock fragments (slightly micaceous) PWR	910		92/0.1'
75		SS				905		71/0'
80		SS				900		50/1'
		SS			Boring was terminated at 83.5 feet below the existing ground surface.			50/1'

Ground water was encountered at 65 feet below the existing ground surface at the time of boring completion and at 65 feet below the existing ground surface 24 hours after boring completion

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
RC - Rock Core, 1-7/8"
RX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-92

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-93

Sheet 1 of 2

Location: BENT - 14

Azimuth: -- Angle from horizontal: 90 Surface Elevation (ft): 962.91 Station: ST 287+40, 30'Rt of BL

Drilling Equipment: CME 550/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 17 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 74.0

Logged By: CO Date Drilled: 9/22/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/foot)	N-VALUE
		SS			FILL: Very dense to medium dense reddish brown and brown silty medium to fine SAND	952.9 FILL		59
5		SS				950		14
		SS			- becoming micaceous	955		11
10		SS						15
						950		
15		SS			RESIDUUM: Loose to very dense reddish brown, brown and tan silty medium to fine SAND SM			10
						945		6
20		SS						
						940		13
25		SS						
						935		10
30		SS						
						930		31
35		SS			- becoming micaceous			
						925		31
40		SS						
						920		18
45		SS						
						915		45
50		SS						
						910		67
55		SS						

Continued Next Page

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-93

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-93

Sheet 2 of 2

Location: **BENT - 14**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD%	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/foot) 5 10 20 40 80 90	VALUE
60		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense black, white, and brown silty medium to fine **SAND** (micaceous) PWR	900		50/5"
65		SS				900		50/0"
70		SS				890		50/7"
		SS			Boring was terminated at 74 feet below the existing ground surface.	881		50/3"

Ground water was encountered at 13 feet below the existing ground surface at the time of boring completion and at 31 feet below the existing ground surface at 24 hours after boring completion.

An offset boring was performed 5 feet east of the original boring location, which encountered auger refusal at 12.5 feet below the existing ground surface. The soil profile below 12.5 feet is from the offset boring.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core 1-7/8"
NX - Rock Core 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Drilling Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-93

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFIS; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-94
Sheet 1 of 2
Location: BENT - 15

Azimuth: — Angle from Horizontal: 90 Surface Elevation (ft): 938.14 Station: ST 288+80, 10' Rt. of BL
Drilling Equipment: CME550/MACTEC Drilling Method: HSA Auto Hammer
Core Boxes: NA Samples: 17 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 69.0
Logged By: PT Date Drilled: 9/3/09

VERTICAL DEPTH (ft)	GROUP LOG	SAMPLE TYPE	REC %	RQD %	MATERIAL DESCRIPTION		ELEVATION (ft)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					TOPSOIL - 3 inches	/FILL	938.1		
		SS			FILL: Loose reddish brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	/FILL	935		10
5		SS							11
		SS			Medium dense gray and brown silty medium to fine **SAND** with rock fragments (micaceous)		930		17
10		SS							13
		SS			- Blow count was magnified by boulder	SM	925		50/2"
15		SS			RESIDUUM: Loose to medium dense gray silty medium to fine **SAND** (slightly micaceous)				17
							920		6
20		SS							
							915		4
25		SS							
							910		9
30		SS							
							905		13
35		SS							
							900		18
40		SS							
					Dense to very dense gray and white silty medium to fine **SAND** (slightly micaceous)	SM	895		38
45		SS							
							890		55
50		SS							
							885		60
55		SS							

Continued Next Page

SAMPLER TYPE
SS - Split Spoon
S - Shelby Tube
NX - Rock Core, 2-1/8"
CU - Cuttings
NQ - Rock Core, 1-7/8"
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-94

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-94

Sheet 2 of 2

Location: **BENT - 15**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
80		SS		PARTIALLY WEATHERED ROCK: Sampled as very dense gray silty medium to fine SAND (slightly micaceous) PWR	880		55/11"
85		SS			875		9-11-15
		SS			870		50/2"

Boring was terminated at 69 feet below the existing ground surface.

This is an offset boring performed 5 feet north of the original location where refusal was encountered at 12.5 feet below the existing ground surface.

Ground water was encountered at 17 feet below the existing ground surface 24 hours after boring completion.

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CJ - Cutting
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-94

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-95

Sheet 1 of 2

Location: **BENT - 16**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **959.96** Station: **ST 290+09, 10' Rt. of BL**

Drilling Equipment: **CME 550/MACTEC** Drilling Method: **HSA/RC/RW Auto Hammer**

Core Barrel: **NA** Samples: **18** Overburden (ft): **NA** Rock (ft): **NA** Total Depth (ft): **64.5**

Logged By: **CO** Date Drilled: **9/11/09**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)
0		SS			FILL: Loose and medium dense reddish brown and brown silty medium to fine **SAND** (micaceous)	FILL	960.0
5		SS					955
		SS					
10		SS					950
		SS			Medium dense brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	
15		SS					945
20		SS					940
25		RC	85	55	ROCK CORE: BOULDER Very hard to hard gray **GNEISS**		935
		SS			FILL: Loose and medium dense gray and brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	
30		SS					930
35		SS					925
40		SS					920
45		SS					915
50		SS			Stiff gray and brown medium to fine sandy **CLAY** with root and plant fragments and rock fragments	FILL	910
55		SS				PWR	905

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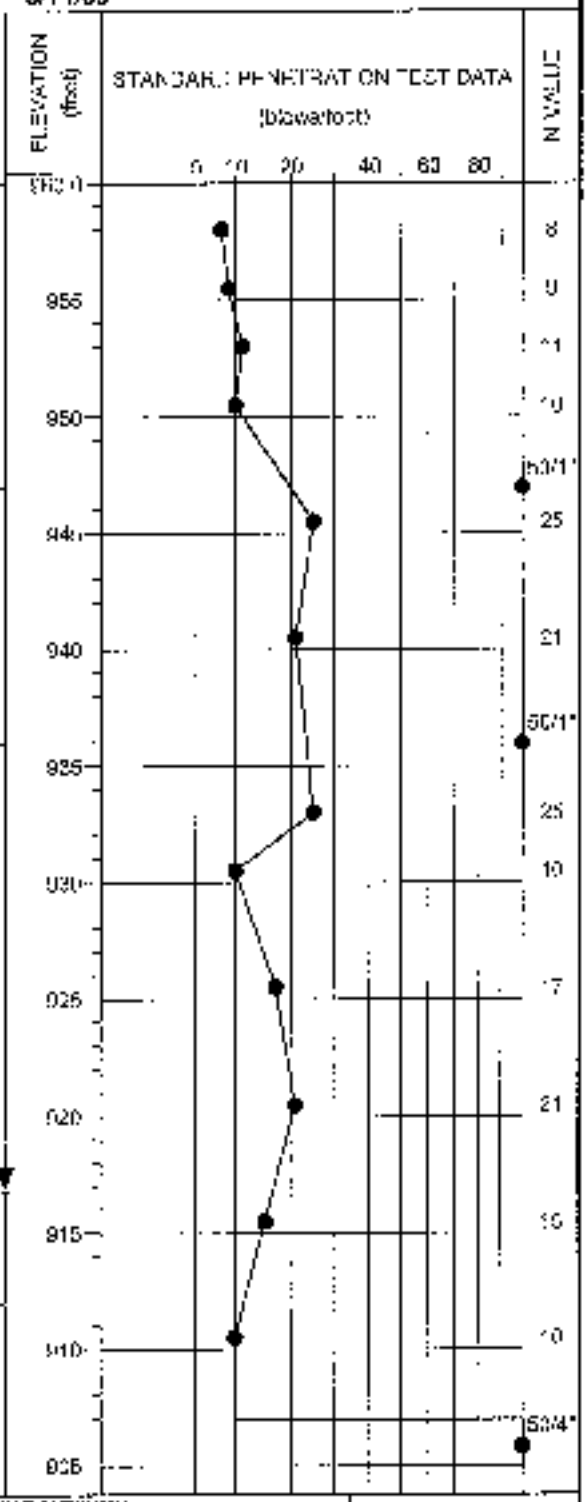

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **B-95**

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-95

Sheet 2 of 2

Location: BENT - 16

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 25 40 60	N VALUE
50		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense grey, white and tan silty medium to fine **SAND** with rock fragments	500		50/1"
		SS			Boring was terminated at 64.5 feet below the existing ground surface.			50/3"
					Ground water was encountered at 43 feet below the existing ground surface at 24 hours after boring completion.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1 7/8"
NX - Rock Core, 2 1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-95

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-96

Sheet 1 of 2

Location: **BENT - 17**

Azimuth: -- Angle from Horizontal: **90** Surface Elevation (ft): **959.08** Station: **291+50, 30' Rt. of BL**

Drilling Equipment: **CME550/MACTEC** Drilling Method: **HSA/RW Auto Hammer**

Core Boxes: **NA** Samples: **12** Overburden (ft): **49.5** Rock (ft): **NA** Total Depth (ft): **49.5**

Logged By: **PT** Date Drilled: **8/19/09**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)
		SS			TOPSOIL - 1 inch	FILL	959.1
		SS			FILL: Loose to very dense reddish brown silty medium to fine **SAND** with rock and asphalt fragments		
5		SS					955
		SS			- Blow count was magnified by boulder		
10		SS					950
15		SS					945
20		SS			Medium dense brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	FILL	940
25		SS			Medium dense reddish brown to orange brown silty medium to fine **SAND** with rock fragments	FILL	935
30		SS			- Clay layers and wood fragments		930
35		SS			- Blow count was magnified by boulder		925
40		SS					920
45		SS			PARTIALLY WEATHERED ROCK: Very dense orange brown and gray silty medium to fine **SAND** (micaceous)	PWR	915
		SS			Auger refusal was encountered 49.5 feet below the existing ground surface.		910
					Ground water table was not recorded at		

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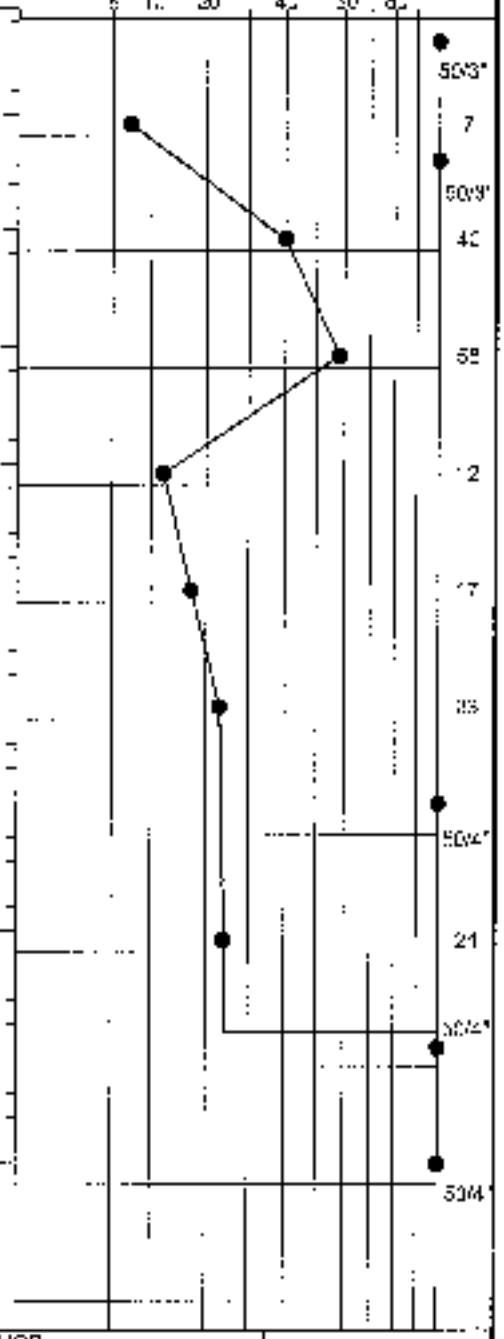
STANDARD PENETRATION TEST DATA (blows/6in)



SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **B-96**

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. # : NH009-0073-03(242); PI #: 714130

HOLE No. B-96

Sheet 2 of 2

Location: BENT - 17

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV. RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N VALUE
				the time of boring completion.			
				This boring was drilled 10 feet south and 20 feet east of the original boring location. The original boring encountered auger refusal at 8 feet below the existing ground surface.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CI - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-96

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-97

Sheet 1 of 2

Location: BENT - 18

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 960.00 Station: ST 292+60, 22' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA/RW Auto Hammer

Core Barrel: NA Samples: 12 Overburden (ft): 49 Rock (ft): NA Total Depth (ft): 49.0

Logged By: PT Date Drilled: 8/19/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60	N-VALUE
		SS			TOPSOIL- 2 Inches /FILL	960.0		28
		SS			FILL: Loose and medium dense reddish brown silty medium to fine SAND with rock, concrete, and asphalt fragments	955		7
5		SS						24
		SS			- Blow count magnified due to boulder/concrete/asphalt	950		100/10"
10								
		SS				945		23
15								
		SS				940		19
20								
		SS				935		11
25								
		SS				930		21
30								
		SS				925		17
35								
		SS				920		30
40								
		SS				915		12
45								
					PARTIALLY WEATHERED ROCK: No recovery /PWR			50/0
					Auger refusal was encountered at 49 feet below the existing ground surface.			
					Ground water was not encountered at this			

Continued Next Page

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Drive Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-97

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BF13; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-97

Sheet 2 of 2

Location: **BENT - 18**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					time of boring completion.			
					This boring was drilled 12 feet east of the original staked location. Three other borings were performed within a 15 foot radius of the original location; these borings encountered auger refusal at 2 to 11 feet below the existing ground surface.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NC - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

B-97

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-98

Sheet 1 of 1

Location: BENT - 19

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 958.95 Station: ST 293+60, 10' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 10 Overburden (ft): 39 Rock (ft): NA Total Depth (ft): 39.0

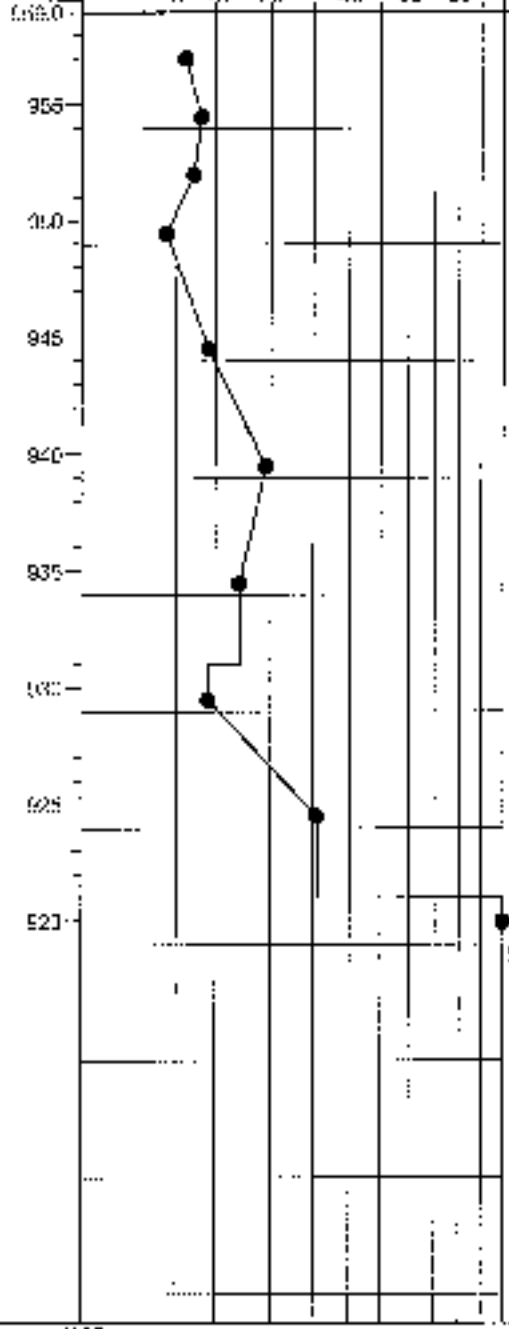
Logged By: PT Date Drilled: 8/19/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOVERY %	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)
		SS			TOPSOIL - 2 inch	FILL	958.0
		SS			FILL: Loose reddish brown and gray silty medium to fine **SAND** with rock fragments		955
		SS					
5		SS			Very loose reddish brown and white silty medium to fine **SAND** with wood fragments	FILL	950
10		SS			Loose and medium dense reddish brown and gray silty medium to fine **SAND** with rock fragments	FILL	945
15		SS					
20		SS					940
25		SS					935
30		SS			RESIDUUM: Loose gray and reddish brown silty medium to fine **SAND** (slightly micaceous)	SM	930
35		SS			Dense gray and reddish brown silty medium to fine **SAND** with rock fragments (micaceous)	SM	925
		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray and brown silty medium to fine **SAND** with rock fragments (slightly micaceous)	PWR	920

Auger refusal was encountered at 39 feet below the existing ground surface.

No ground water was encountered at the time of boring.

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE: SS - Split Spoon; ST - Shelby Tube; NQ - Rock Core 1-7/8"; NX - Rock Core 2-1/8"; CU - Cuttings; CT - Continuous Tube

DRILLING METHOD: HSA - Hollow Stem Auger; CFA - Continuous Flight Auger; DC - Drive Casing; RW - Rotary Wash; RC - Rock Core

Hole No. B-98

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BF3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. B-99A

Sheet 1 of 1

Location: **BENT - 20 LEFT**

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 958.51 Station: ST 295+00, 16' Lt. of BL

Drilling Equipment: CME 550/Gable Drilling Co., Inc. Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 4 Overburden (ft): 7.5 Rock (ft): NA Total Depth (ft): 7.5

Logged By: CO Date Drilled: 7/24/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N VALUE
					CONCRETE - 6 inches	958.5		
		SS			FILL: Loose brown silty medium to fine SAND with rock fragments	FILL 955		10
5		SS						8
		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown silty medium to fine SAND with rock fragments	PWR 950		50/1.5"
		SS						50/2"
					Auger refusal encountered at 7.5 feet below the existing ground surface.			
					Groundwater was not encountered at the time of boring completion.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **B-99A**

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BH3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. B-99B

Sheet 1 of 1

Location: BENT - 20 RIGHT

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 964.52 Station: ST 295+00, 48' Rt. of BL

Drilling Equipment: CME75/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: 1 Samples: 4 Overburden (ft): 16.5 Rock (ft): 10 Total Depth (ft): 26.5

Logged By: PL Date Drilled: 8/21/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)
					TOPSOIL - 2 inches	964.5
		SS			FILL: Loose to medium dense brown silty medium to fine **SAND**	FILL
5		SS				960
		SS				
10		SS			RESIDUUM: Medium dense gray, brown and tan silty medium to fine **SAND**	SM 955
15						950
		RC	90	70	ROCK CORE: Hard to medium hard light gray **GNEISS**	945
20						
25		RC	95	29		940

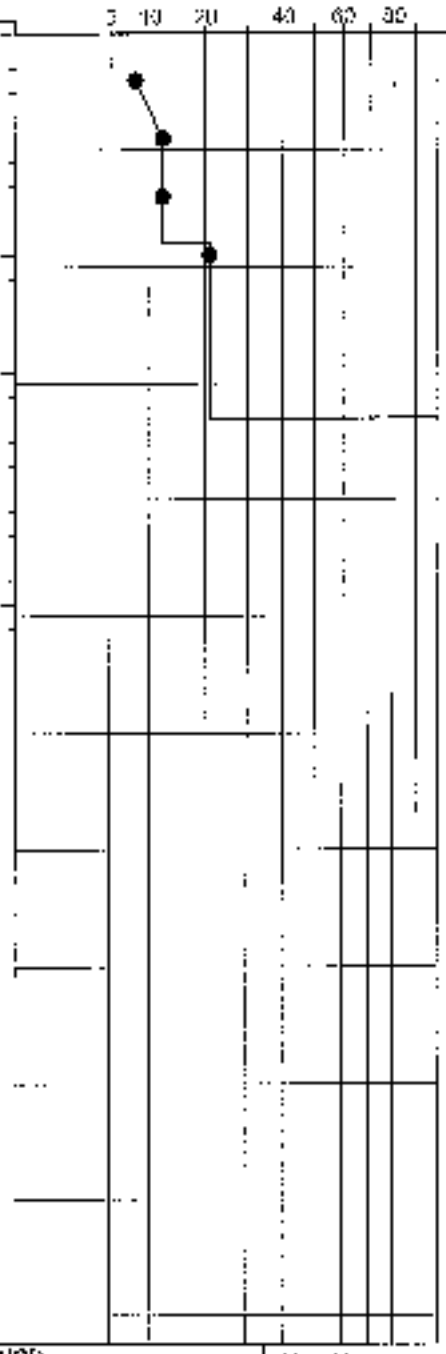
Auger refusal was encountered at 16.5 feet below the existing ground surface.

Coring was terminated at 26.5 feet below the existing ground surface.

Groundwater was not encountered at the time of boring completion.

Two offset borings were performed within 15 foot radius of this boring location and auger refusals were encountered at 12 and 12.5 feet below the existing ground surface.

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. B-99B

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road	**HOLE No. B-100**
Location: Cobb County, Georgia	Sheet 1 of 2
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130	Location: BENT - 21

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 965.52 Station: ST 296+35, 10' Rt. of BL

Drilling Equipment: CME550/MACTEC Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 14 Overburden (ft): 56.5 Rock (ft): NA Total Depth (ft): 56.5

Logged By: CO Date Drilled: 8/25/09

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RPCS	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			RESIDUUM: Medium dense reddish brown silty medium to fine **SAND** (slightly micaceous)	SM	965.5		13
5		SS							28
		SS			Medium dense and dense orange, reddish brown, black and white silty medium to fine **SAND** (micaceous)	SM	960		19
10		SS					955		19
15		SS					950		26
20		SS					945		31
25		SS					940		27
30		SS					935		28
35		SS			Dense to medium dense reddish brown, brown and black silty medium to fine **SAND** (micaceous)	SM	930		47
40		SS					925		17
45		SS			Dense white, orange and brown silty medium to fine **SAND** (micaceous)	SM	920		40
50		SS					915		41
55		SS				PWR			50/1.5"

Continued Next Page

SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
ND - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		B-100

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130

HOLE No. B-100
Sheet 2 of 2
Location: **BENT - 21**

MATERIAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	NP(%)	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (Blows/foot) 0 10 20 40 60 80	N VALUE
		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense reddish brown, brown and gray silty medium to fine **SAND** with rock fragments (micaceous)	910		50/0"
					Auger refusal was encountered at 56.5 feet below the existing ground surface.			
					Ground water was encountered at 34 feet below the existing ground surface at the time of boring completion and at 22 feet below the existing ground surface at 24 hours after boring completion.			

SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
B-100

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road	**HOLE No. A-1**
Location: Cobb County, Georgia	Sheet 1 of 2
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130	Location: BENT - 23
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 974.30 Station: ST 299+20, 10' Rt of BL	
Drilling Equipment: CME 550/Gable Drilling Method: HSA-Auto Hammer	
Core Boxes: NA Samples: 11 Overburden (ft): 46.5 Rock (ft): NA Total Depth (ft): 46.5	
Logged By: MT Date Drilled: 9/28/09	

Vertical Depth (ft)	Graphic Log	Sample Type	RQD	RQD %	Material Description	Elevation (feet)	Standard Penetration Test Data (blows/foot)	N-Value
		SS			FILL: Medium dense reddish brown and dark brown fine sandy SILT with root fragments (FILL)	974.3		11
5		SS, SS, SS			RESIDUUM: Dense and very dense tan and reddish brown silty medium to fine SAND (micaceous) (SM)	970		40, 30, 34
10						965		
15		SS				960		41
20		SS			Medium dense and very dense dark brown and tan silty medium to fine SAND (very micaceous) (SM)	955		51
25		SS				950		15
30		SS				945		62
35		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense dark gray and dark brown silty coarse to fine SAND with rock fragments (slightly micaceous) (PWR)	940		50/5"
40		SS				935		50/4"
45		SS				930		50/2.5"

Auger refusal was encountered at 46.5 feet below the existing ground surface.

Ground water was encountered at 21 feet below the existing ground surface at the time of boring completion.

Continued Next Page

SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2 1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	A-1
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1 7/8"	CT - Continuous Tube	CC - Driving Casing		

Project: Bridge 13: I-75 Reversible Lanes over Windy Hill Road

Location: Cobb County, Georgia

Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. A-1

Sheet 2 of 2

Location: BENT - 23

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N VALUE
					Boring caved in at 22 feet below the existing ground surface at 24 hours after boring completion.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2 1/8"
CJ - Cutting
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. A-1

Project: Bridge 13; I-75 Reversible Lanes over Windy Hill Road
Location: Cobb County, Georgia
Project Number: 171-3463BFI3; GDOT Proj. #: NH000-0073-03(242); PI #: 714130

HOLE No. A-2

Sheet 1 of 2

Location: BENT - 24

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 975.20 Station: ST 300+60, 10' Rt of BL

Drilling Equipment: CME 550/Gable Drilling Method: HSA-Auto Hammer

Core Boxes: NA Samples: 11 Overburden (ft): 46 Rock (ft): NA Total Depth (ft): 46.0

Logged By: MT Date Drilled: 9/28/09

Elevation (ft)	Depth (ft)	Graphic Log	Sample Type	Recov.	RQD %	Material Description	Elevation (feet)	Standard Penetration Test Data (blows/foot)	N Value
			SS			FILL: Loose reddish brown silty medium to fine **SAND** with root and rock fragments (slightly micaceous) — FILL	975.20		
			SS			RESIDUUM: Dense tan silty medium to fine **SAND** — SM			9
	1		SS				970		43
			SS						43
	10		SS				965		45
	15		SS			Dense to medium dense brown and dark brown silty medium to fine **SAND** (slightly micaceous) — SM	960		45
	20		SS				955		44
			SS			PARTIALLY WEATHERED ROCK: Sampled as very dense dark brown, orange, and tan silty medium to fine **SAND** — PWR / SM			50/4"
	25		SS			RESIDUUM: Dense reddish brown to brown and tan silty medium to fine **SAND** (micaceous)	950		37
	30		SS				945		41
						PARTIALLY WEATHERED ROCK: Sampled as very dense dark brown, black, grey, white and orange silty coarse to fine **SAND** with rock fragments — PWR			50/4"
	35		SS				940		
	40		SS				935		50/5"
	45		SS				930		50/1"

Auger refusal was encountered at 46 feet below the existing ground surface.

Ground water was encountered at 29 feet below the existing ground surface at the time of boring completion.

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SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Core

DRILLING METHOD
HSA - Hollow Stem Auger
CFA - Continuous Flight Augers
DC - Drive Casing
RW - Rotary Wash
RC - Rock Core

Hole No.
A-2

Project: **Bridge 13: I-75 Reversible Lanes over Windy Hill Road**

Location: **Cobb County, Georgia**

Project Number: **171-3463BFI3; GDOT Proj. # : NH000-0073-03(242); PI #: 714130**

HOLE No. A-2

Sheet 2 of 2

Location: **BENT - 24**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RECOV.	RQD %	MATERIAL DESCRIPTION (Continued)	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 10 20 40 60 80	N-VALUE
					Boring caved in at 21 feet below the existing ground surface at 24 hours after boring completion.			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

DRILLING METHOD

HSA - Hollow Stem Auger
CFA - Continuous Flight Auger
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No.

A-2