BRIDGE AND RETAINING WALL
FOUNDATION INVESTIGATION REPORT
I-575 over SR CR 171 (Big Shanty Road)
Northwest Corridor Project

GDOT Project No. CSNHS-0008-00(256), PI No. 0008256
Cobb County, Georgia

WILLMER ENGINEERING INC.
Project No. ATL-171-3099C

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Issue Date: August 22, 2008
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Prepared For

GEORGIA TRANSPORTATION PARTNERS
Atlanta, Georgia

Prepared By

WILLMER ENGINEERING INC.
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770.939.0089

August 22, 2008

VIA COURIER

Pete M. McMahon, PE
Georgia Transportation Partners
c/o PBS&J, Inc.
5665 New Northside Drive, Suite 400
Atlanta, Georgia 30328

SUBJECT: Bridge and Retaining Wall Foundation Investigation Report
I-575 over CR 171 (Big Shanty Road)
Northwest Corridor Project
GDOT Project No. CSNHS-0008-00(256), PI No. 0008256
Cobb County, Georgia
Willmer Project No. ATL-171-3099C

Dear Mr. McMahon:

Willmer Engineering Inc. (Willmer) is pleased to provide this Bridge and Retaining Wall Foundation Investigation (BFI and WFI) report for the proposed widening of I-575 bridge over CR 171 (Big Shanty Road) in Cobb County, Georgia. The BFI and WFI were performed in general accordance with our contract with Georgia Transportation Partners (GTP), dated May 12, 2007. The objective of this investigation was to gather sufficient geotechnical information to support the costing plans to be developed by GTP. Additional borings will be performed in the design/build phase of the project to provide additional information as required. This report was prepared in general accordance with Georgia Department of Transportation (GDOT) guidance documents for bridge and retaining wall foundation investigation. This report was revised to incorporate GTP comments dated December 18, 2007, and GDOT comments dated July 18, 2008.

The attached summary presents the site and subsurface conditions along the proposed bridge and retaining wall alignments, and our geotechnical recommendations related to foundation design and construction.

We appreciate the opportunity to be of service to you on this project and look forward to a continuing relationship. Please contact us if you have any questions concerning this report or require further assistance.

Sincerely,

WILLMER ENGINEERING INC.

Murthy S. Kotha
Project Engineer

Sujit K. Bhowmik, PhD, PE
Chief Engineer

James L. Willmer, PE
Executive Vice President/Principal Consultant

MSK/SKB/JLW:ks
I:\Word Processing\Projects\171-GEO\171-3099 Northwest Corridor Project (Bechtel)\Reports\3099 C - Big Shanty Road\171-3099C REVISED BFI - RWI Report - I-575 over CR 171 (Big Shanty Road) 8-22-08.doc

Attachments: **Bridge and Retaining Wall Foundation Investigations**

Figures

Figure 1 Project Location Map
Figure 2A Boring Location Plan (Bridge)
Figure 2B Boring Location Plan (Wall Nos. 2 and 3)
Figure 2C Boring Location Plan (Wall Nos. 4 and 5)
Figure 3 Generalized Subsurface Profile Section A-A' (Lt. Bridge)
Figure 4 Generalized Subsurface Profile Section B-B' (Lt. Bridge)
Figure 5 Generalized Subsurface Profile Section C-C' (Rt. Bridge)
Figure 6 Generalized Subsurface Profile Section D-D' (Rt. Bridge)
Figure 7 Generalized Subsurface Profile Section E-E' (Wall Nos. 2 & 3)
Figure 8 Generalized Subsurface Profile Section F-F' (Wall Nos. 4 & 5)

Appendix I

Boring Record Legend
Unified Soil Classification System Reference Sheet
Engineering Description of Rock Hardness
Boring Records: BB-1 through BB-4, and W-1 through W-9 (New Borings)
Laboratory Test Results

Appendix II

Boring Records: B-1 through B-12 (Borings from Existing GDOT BFI Report)

Revision History:

Revision	Issue Date	Document Status
A	December 5, 2007	Issued for Review
0	January 7, 2008	Issued for Use
1	August 22, 2008	Issued for Use

BRIDGE FOUNDATION INVESTIGATION	
Willmer Project Number	ATL-171-3099C
GDOT Project Number	CSNHS-0008-00(256)
Project P.I. Number	0008256
Location	I-575 Bridge over CR 171 (Big Shanty Road), Cobb County, Georgia (see Figure 1)
GENERAL INFORMATION	
Project Description	The existing I-575 bridges over CR 171 (Big Shanty Road) are planned to be replaced with two new parallel bridges as part of the proposed I-575 widening over Big Shanty Road. The bridges will be single span, 115 feet long reinforced concrete structures. New high occupancy vehicle (HOV) ramps from I-575 down to Big Shanty Road will be constructed between the two bridges. The existing bridges have three spans and are supported on H-pile bents at the end bents and H-pile footings at the intermediate bents. The BFI report for the existing bridges was obtained from GDOT, and it includes twelve borings performed by GDOT in 1976. Subsurface information from those twelve borings was used along with four new borings performed as part of the present study.
Geologic Information	The project alignment is geologically sited within the Piedmont Physiographic Province of Georgia, and is underlain by Metamorphosed Maffic Rock Formations which include amphibolite, mica schist, hornblende gneiss and biotite gneiss.
Subsurface Features	Subsurface information for this project was obtained from four borings (BB-1 through BB-4) performed by Willmer as part of the present study (see Appendix I) and twelve borings (B-1 through B-12) performed by GDOT in 1976 as part of the BFI for the existing bridges (see Appendix II). The subsurface profile is generally comprised of fill and residuum underlain by partially weathered rock and parent bedrock. It should be noted that the available logs for borings B-1 through B-12 do not differentiate between fill and residuum in the soil description. The fill material consists of loose to medium dense silty sand. The residual soils consist of loose to dense silty sand and/or very soft to firm sandy silt. During the present field investigation ground water was encountered at all boring locations between elevations 925 and 935 feet, and during the field investigation by GDOT in 1976, ground water was encountered between elevations 949 and 951 feet.

PWR AND AUGER REFUSAL ELEVATIONS (feet)				
Bridge	**Bent No.**	**Reference Boring No.**	**Top of PWR**	**Auger Refusal**
Left	1	BB-1	910	906
		B-2	912	*
		B-3	928	913
	2	BB-2	915	914
		B-4	912	905
		B-5	919	*
Right	1	B-8	922	*
		B-8A	920	*
		B-9	919	912
		BB-3	918	910
	2	B-10	908	*
		B-11	907	*
		BB-4	905	904

* Boring was not extended to auger refusal.

MAXIMUM PILE DESIGN LOADS			
Pile Type	**Load Transfer (%)**		**Design Load**
	Friction	**End Bearing**	
H-Piles	20	80	10 BP 42 = 55 Tons
			12 BP 53 = 70 Tons
			14 BP 73 = 96 Tons
			14 BP 89 = 117 Tons

FOUNDATION RECOMMENDATIONS			
Bridge	**Bent No.**	**Pile Footing (Type)**	**Pile Bent (Type)**
Left	1		H
	2		H
Right	1		H
	2		H

PILE TIP ELEVATIONS (feet)				
Bridge	**Bent No.**	**Reference Boring No.**	**H-Pile**	
			Minimum Tip	**Estimated Tip**
Left	1-Left	BB-1	915±	910±
	1-Center	B-2	918±	915±
	1-Right	B-3	925±	925±
	2-Left	BB-2	914±	914±
	2-Center	B-4	911±	909±
	2-Right	B-5	915±	909±
Right	1-Left	B-8	925±	918±
	1-Center	B-9	918±	918±
	1-Right	BB-3	915±	915±
	2-Left	B-10	920±	910±
	2-Center	B-11	919±	910±
	2-Right	BB-4	904±	904±

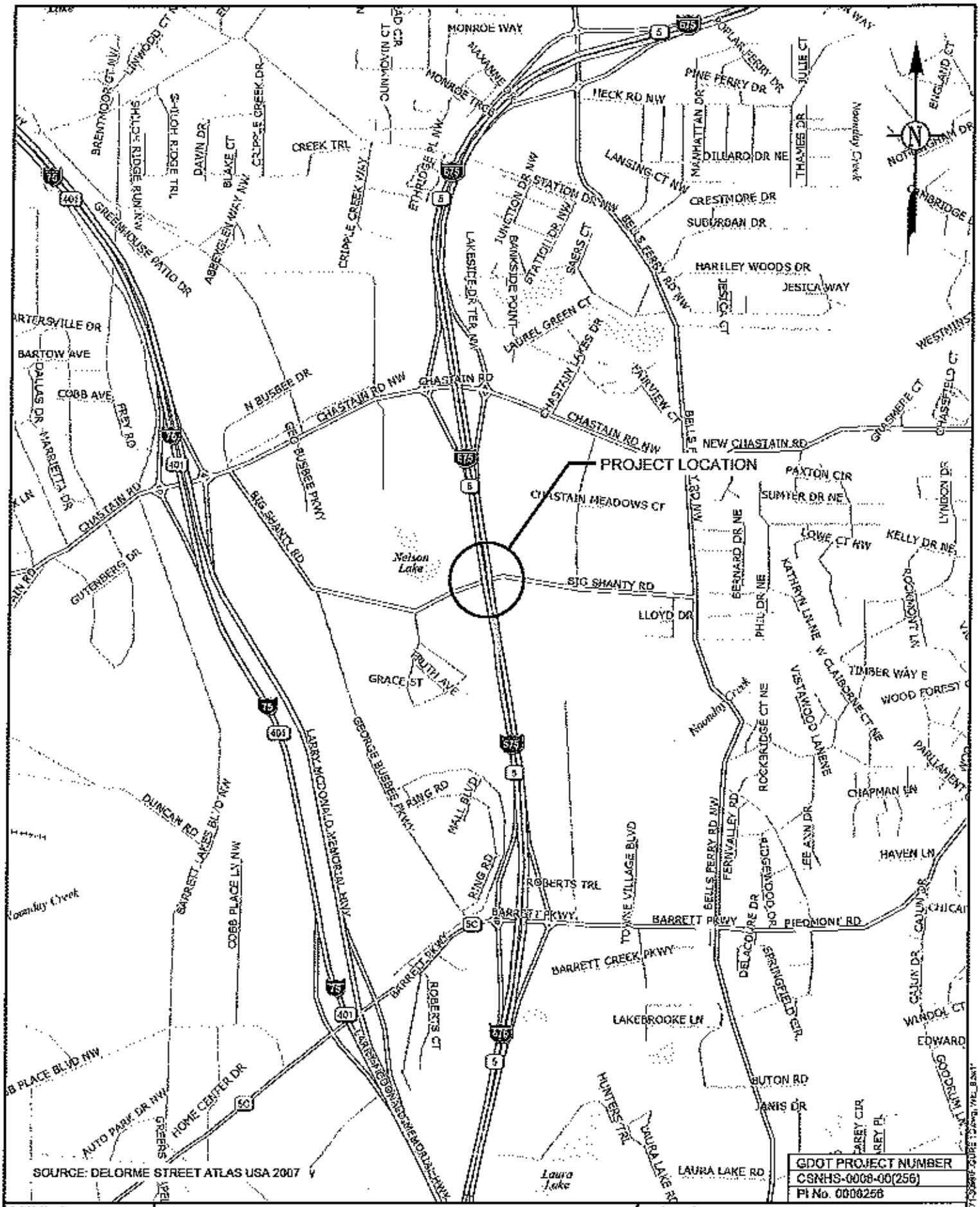
NOTES	
Elevations	All elevations referenced in this report are based on Control Points No. 508 (5/8" rebar, EL. 944.63 feet), No. 252 (60D Traverse, EL. 967.18 feet), No. 148 (1/2" rebar, EL. 956.41 feet) and No. 9203 (1/2" rebar, EL. 965.23 feet) established by the surveyors.
PDO	Driving resistance after Minimum Tip Elevations are achieved.
Points	Pile points are recommended for piles driven at all bents to insure adequate penetration into dense/very dense soils and PWR. The use of points should be at the direction of the project Geotechnical Engineer.
Down-drag Protection	To avoid inducing down-drag loads onto the piles from potential settlement of the loose to very loose silty sand and soft to very soft sandy silt layers during construction of the MSE wall, we recommend that the piles at both bents be protected from down-drag by using Jackets or other approved measures.
Waiting Period	None required (see MSE wall recommendations)
Special Problems	None.
As-built Information	As-built information should be forwarded to the Geotechnical Engineering Bureau upon completion of the foundation system.

RETAINING WALL INVESTIGATION	
Location and Description	Four retaining walls are proposed for the bridge abutments and new HOV ramps from I-575 down to CR 171 (Big Shanty Road). Wall Nos. 2 and 3 extend from Station 130+00 along the two sides of the proposed HOV ramp to the bridge abutment (approximate Station 137+75) and then wrap around to form the abutment and wing walls (see Figure 2B). Wall Nos. 4 and 5 extend from Station 146+00 along the two sides of the proposed HOV ramp to the bridge abutment (approximate station 139+55) and then wrap around to form the abutment and wing walls (see Figure 2C). The total length of each of Wall Nos. 2 and 3 is 930 feet, and the total length of each of Wall Nos. 4 and 5 is 810 feet. The maximum height of Wall Nos. 2 and 3 is about 28 feet with bottom elevations ranging from 950 to 939 feet and top elevations ranging from 957 to 967 feet. The maximum height of Wall Nos. 4 and 5 is about 29 feet with bottom elevations ranging from 967 to 941 feet and top elevations ranging from 973 to 970 feet. It is our understanding that MSE walls are planned for the abutment and wing walls. The type of wall to be used for the HOV ramps will be decided based on ease of construction and construction cost.
Subsurface Features	The subsurface profile (see Figures 7 and 8 and boring logs for W-1 through W-9) along the proposed walls is comprised of fill and residuum underlain by partially weathered rock (PWR). The fill consists of loose to medium dense silty sand and/or soft to stiff sandy silt. Fill material was not encountered at borings W-3, W-8 and W-9. The residual soils consist of very loose to dense silty sand and/or soft to stiff sandy silt underlain by partially weathered rock. Ground water was encountered at borings W-4, W-5 and W-7 between elevations 925 and 934 feet. It should be noted that the borings were performed during an extended dry period, and ground water may be encountered at a higher elevation during construction.

Soil Parameters	The following soil design parameters are recommended for use for the proposed retaining walls: Soil Unit Weight γ = 125 pcf Cohesion c = 0 psf Angle of Internal Friction ϕ = 28 degrees Coefficient of Sliding Friction μ = 0.40 (MSE wall) Coefficient of Sliding Friction μ = 0.30 (Cantilever Retaining wall) The above design parameters assume the backfill material behind the retaining wall (or MSE wall reinforced fill) to consist of silty sand compacted to the specified density, and the subgrade prepared as recommended below.
Recommendations	(i) Soft to very soft sandy silt and loose to very loose silty sand were encountered at or near the retaining wall bottom elevation at a number of locations. Any soft/loose soils from beneath the wall should be over-excavated to a minimum depth of three feet below the wall bottom and replaced with compacted wall backfill material. The exact depth and extent of over-excavation should be determined by the project Geotechnical Engineer. (ii) A maximum allowable bearing pressure of 2,000 psf is recommended for all retaining walls. (iii) It should be noted that the borings for this study were performed during an extended dry period, and ground water may be encountered at or near the wall bottom elevation at some locations. If ground water is encountered, underdrains will be required. The need for any underdrains should be evaluated during construction by the project Geotechnical Engineer. (continued)

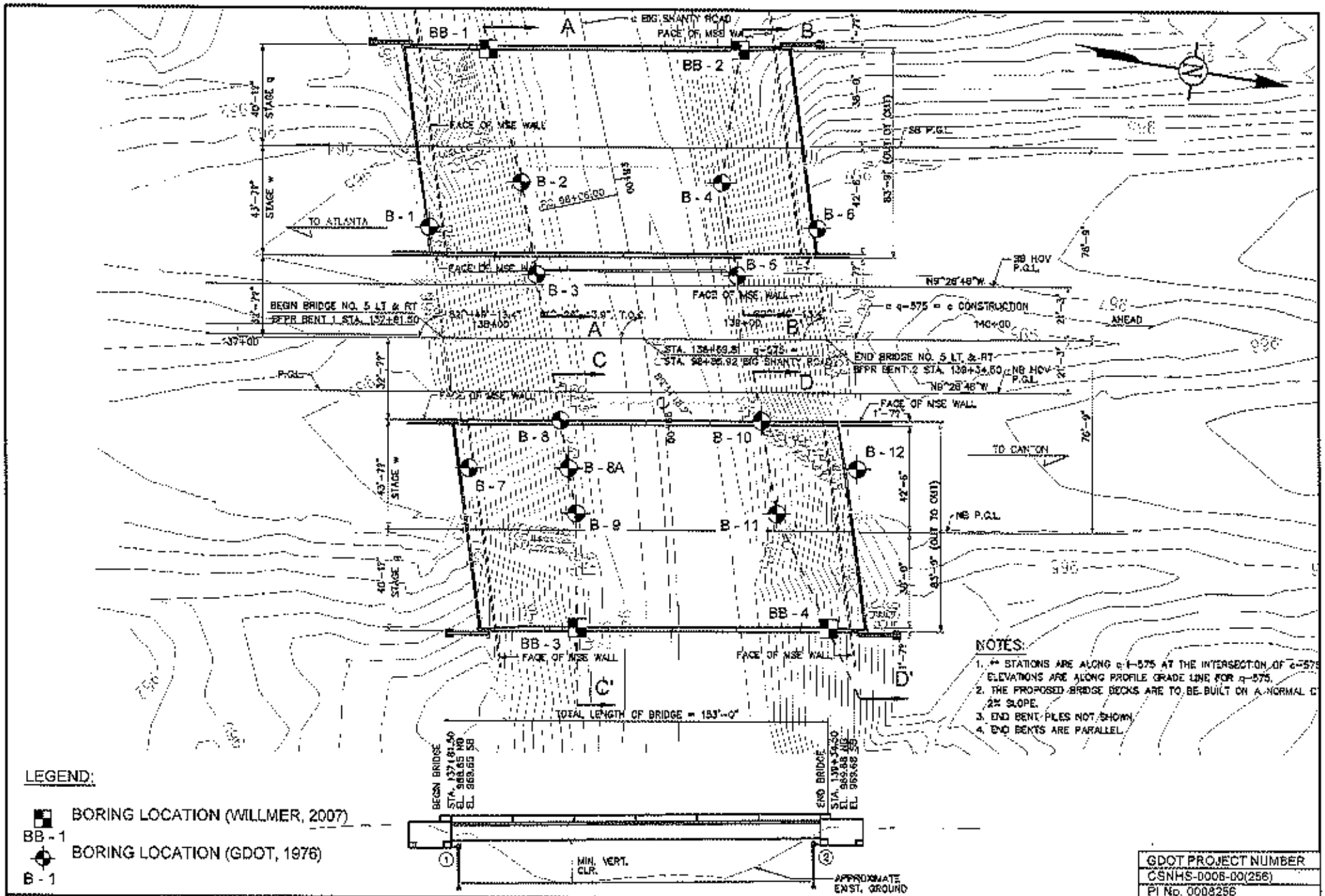
Recommendations (continued)	(iv) At the location of maximum wall height, the design bearing pressure for the MSE walls will exceed the above recommended maximum allowable bearing pressure. Therefore, we recommend that the MSE walls be constructed in two stages to minimize differential settlement along the walls. In the first stage, the wall should be constructed to half of its final height. A minimum 45-day waiting period should be allowed after the first stage before beginning the second stage of construction. Settlement of the MSE walls should be monitored upon completion of the first stage of construction. The length of the waiting period may be increased or decreased based on the settlement monitoring data, at the discretion of the project Geotechnical Engineer. After the waiting period, the MSE wall should be constructed to the final height. (v) The backfill materials and drainage measures for the retaining walls should conform to GDOT standard specifications.
Prepared By	Murthy S. Kotha / Sujit K. Bhowmik, PhD, PE
Senior Review By	James L. Willmer, PE

FIGURES



GDOT PROJECT NUMBER	
CSNHS-0008-00(256)	
PI No. 0008256	

SCALE: 1" = 2000'		FIGURE 1 PROJECT LOCATION MAP I-575 OVER CR 171 (BIG SHANTY ROAD) NORTHWEST CORRIDOR PROJECT COBB COUNTY, GEORGIA WILLMER PROJECT No. ATL-171-3099C
DATE: 11/29/2007	WE GEOTECHNICAL ENGINEERING CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 185 ATLANTA, GA 30340-4270	
DRAWN BY: MDB		
REVIEWED BY: MK		



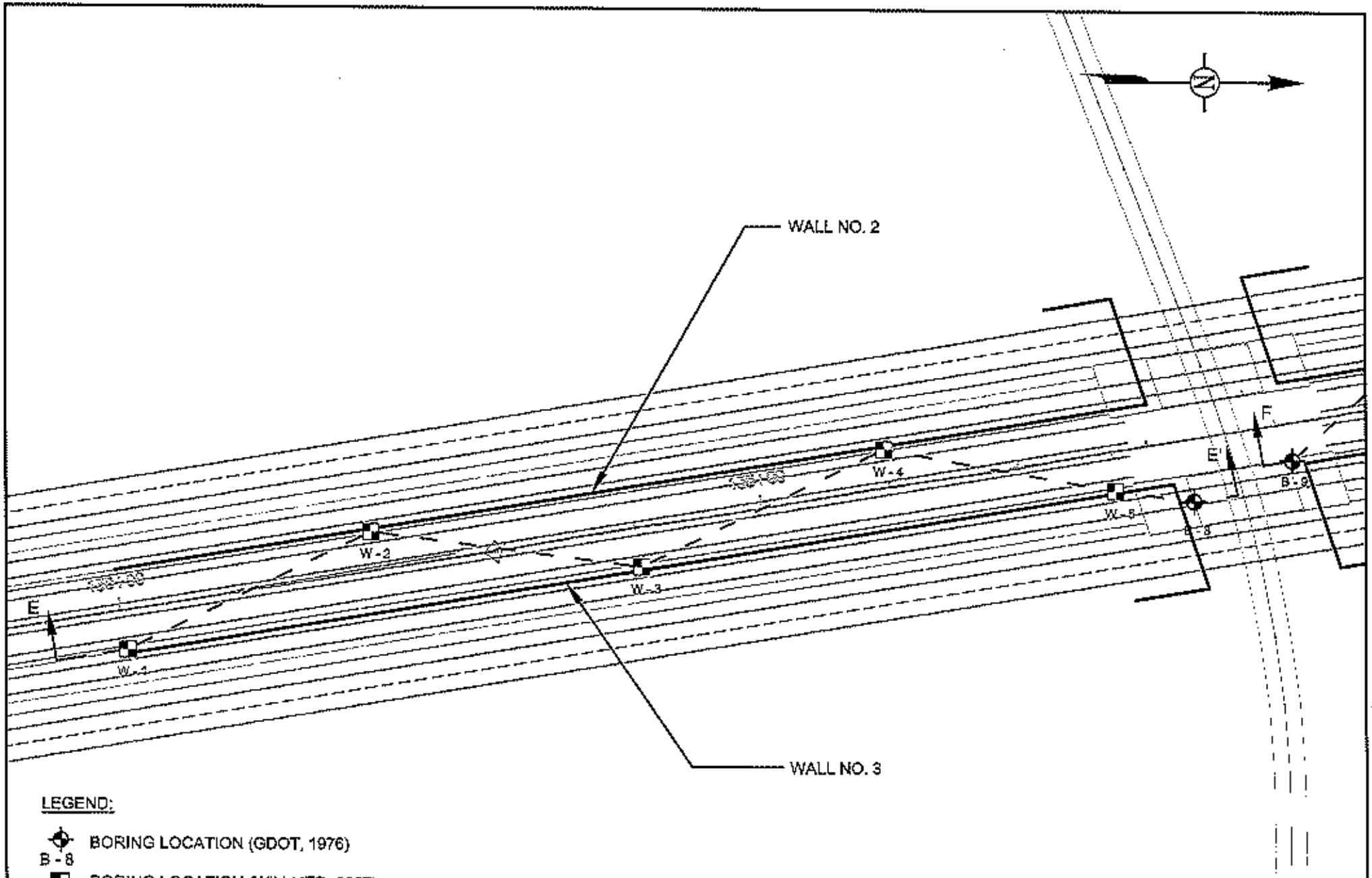
GDOT PROJECT NUMBER
CSNHS-0008-00(256)
PI No. 0008256

SCALE: 1" = 60'	
DATE: 8/13/2008	
DRAWN BY: CBS	
REVIEWED BY: MK	

WILLMER ENGINEERING, INC. WE

GEOTECHNICAL ENGINEERING • CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 185
ATLANTA, GA 30340-4270

FIGURE 2A
BORING LOCATION PLAN (BRIDGE)
I-575 OVER CR 171 (BIG SHANTY ROAD)
NORTHWEST CORRIDOR PROJECT
COBB COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-3099C



LEGEND:

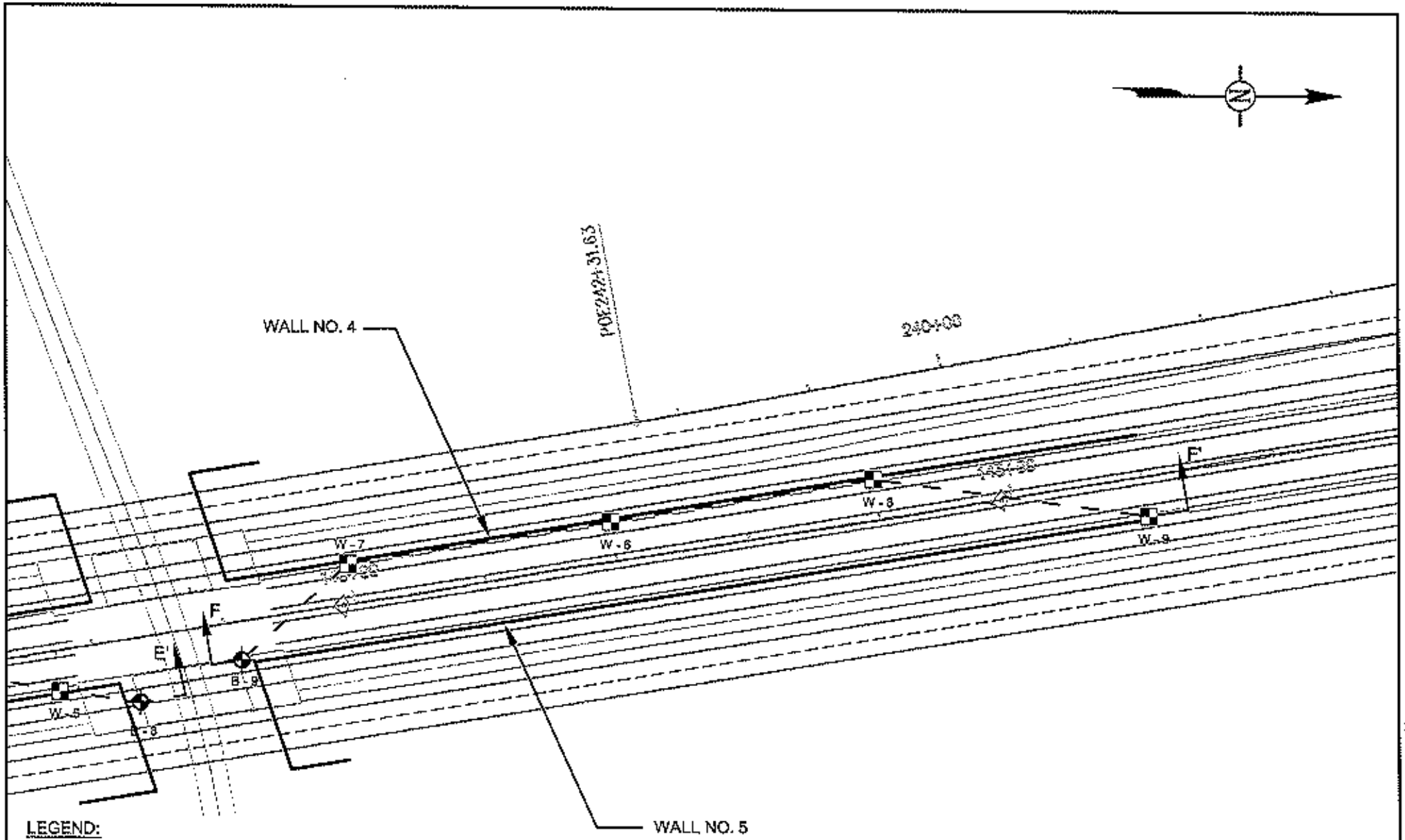
B - 8 BORING LOCATION (GDOT, 1976)

W - 1 BORING LOCATION (WILLMER, 2007)

GDOT PROJECT NUMBER
CSNHS-0008-00(256)
PI No. 0008256

SCALE: 1" = 100'	WILLMER ENGINEERING, INC.	GEOTECHNICAL ENGINEERING & CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 155 ATLANTA, GA 30340-4270
DATE: 12/4/2007		
DRAWN BY: MDB		
REVIEWED BY: MK		

FIGURE 28
BORING LOCATION PLAN (WALL Nos. 2 & 3)
I-575 OVER CR 171 (BIG SHANTY ROAD)
NORTHWEST CORRIDOR PROJECT
COBB COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-3099C



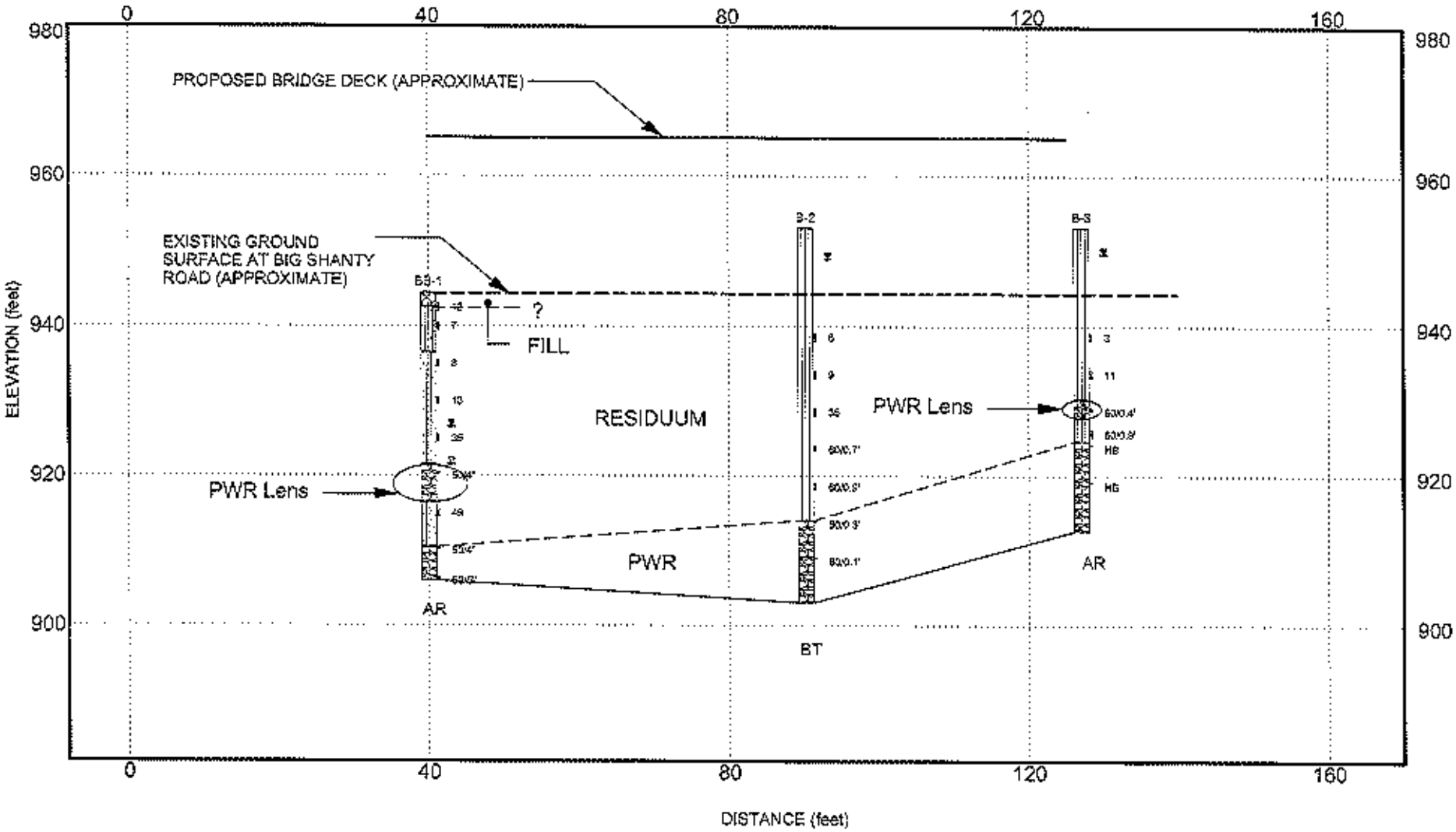
LEGEND:

B - 9 BORING LOCATION (GDOT, 1976)

W - 9 BORING LOCATION (WILLMER, 2007)

GDOT PROJECT NUMBER
CSNHS-0008-00(256)
PI No. 0008256

SCALE: 1" = 100'	WILLMER ENGINEERING, INC.	WE	GEOTECHNICAL ENGINEERING • CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 155 ATLANTA, GA 30340-4276
DATE: 12/4/2007			FIGURE 2C BORING LOCATION PLAN (WALL Nos. 4 & 5) I-575 OVER CR 171 (BIG SHANTY ROAD) NORTHWEST CORRIDOR PROJECT COBB COUNTY, GEORGIA WILLMER PROJECT No. ATL-171-3099C
DRAWN BY: MDB			
REVIEWED BY: MK			



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring
AR - Auger Refusal
BT - Boring Terminated
PWR - Partially Weathered Rock
HB - Hammer Bounce

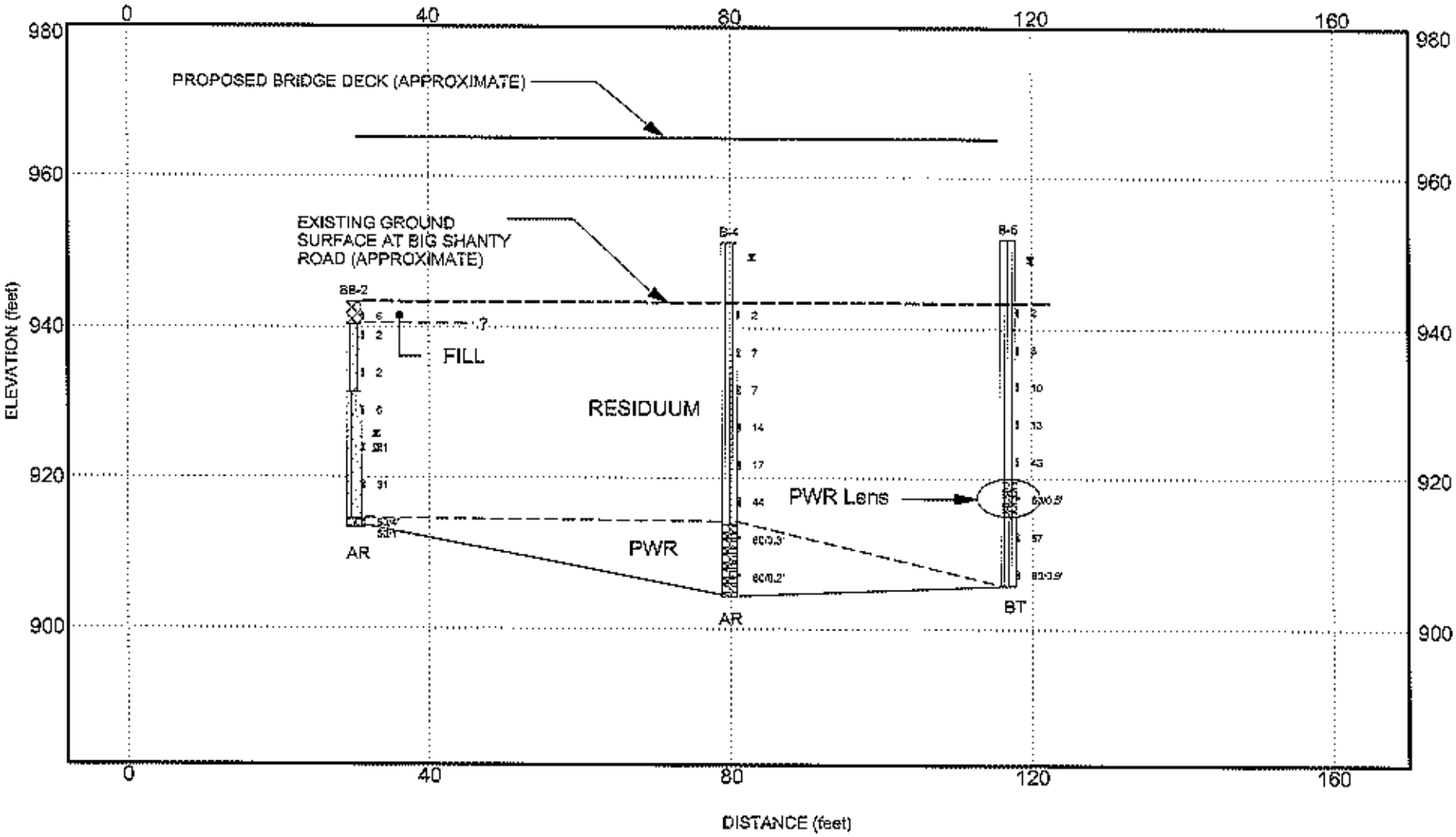
SCALE : 1 inch = 20 feet (vertical)
1 inch = 20 feet (horizontal)

NOTE: Borings B-2 and B-3 were performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE
SECTION A-A' (LT. BRIDGE)

I-575 over CR 171 (Big Shanty Road)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Nov 29, 2007	3



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring
AR - Auger Refusal
BT - Boring Terminated
PWR - Partially Weathered Rock

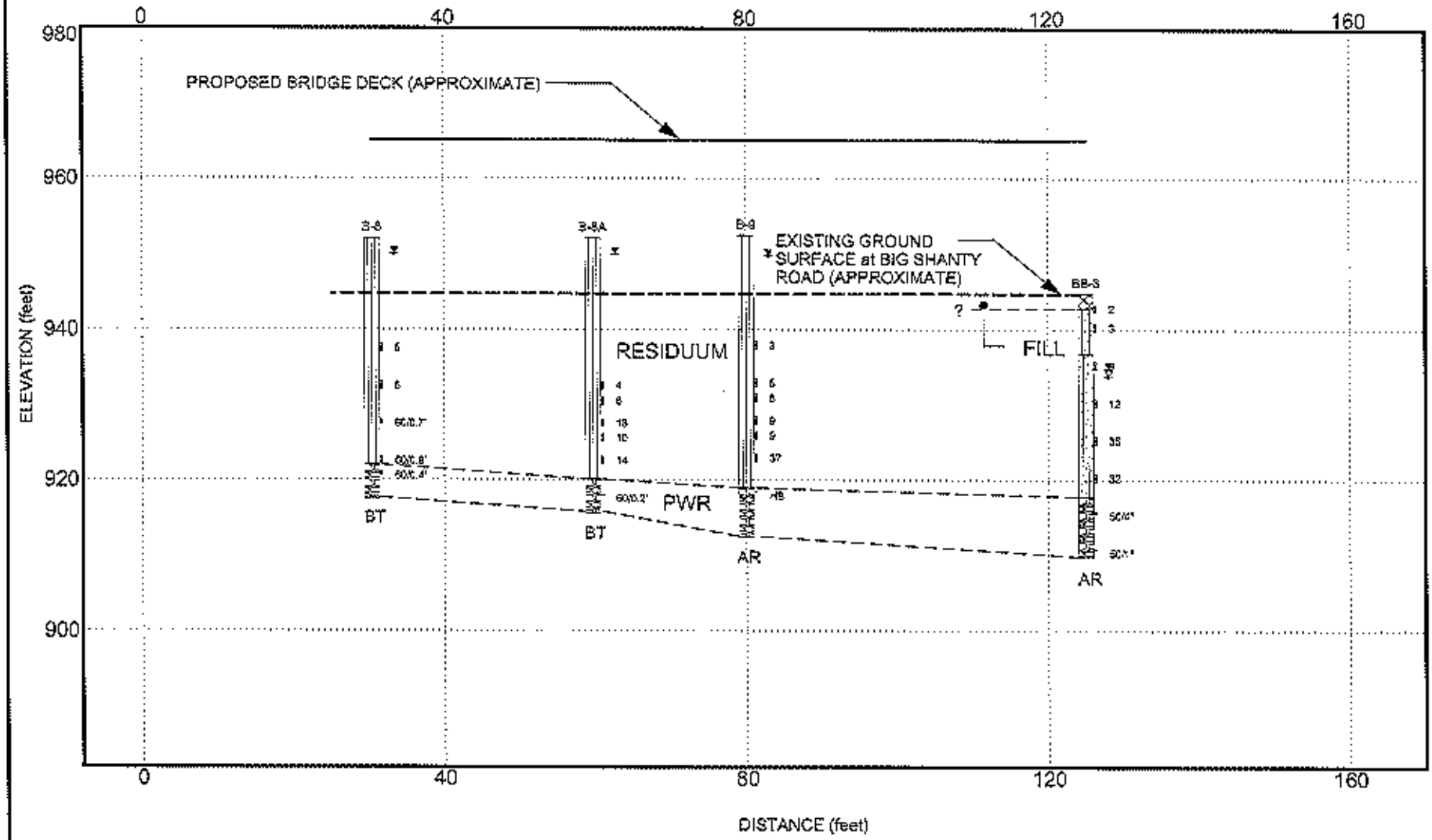
SCALE : 1 inch = 20 feet (vertical)
1 inch = 20 feet (horizontal)

NOTE: Borings B-4 and B-5 were performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE SECTION B-B' (LT. BRIDGE)

I-575 over CR 171 (Big Shanty Road)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Nov 29, 2007	4



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring
AR - Auger Refusal
BT - Boring Terminated
PWR - Partially Weathered Rock
HB - Hammer Bounce

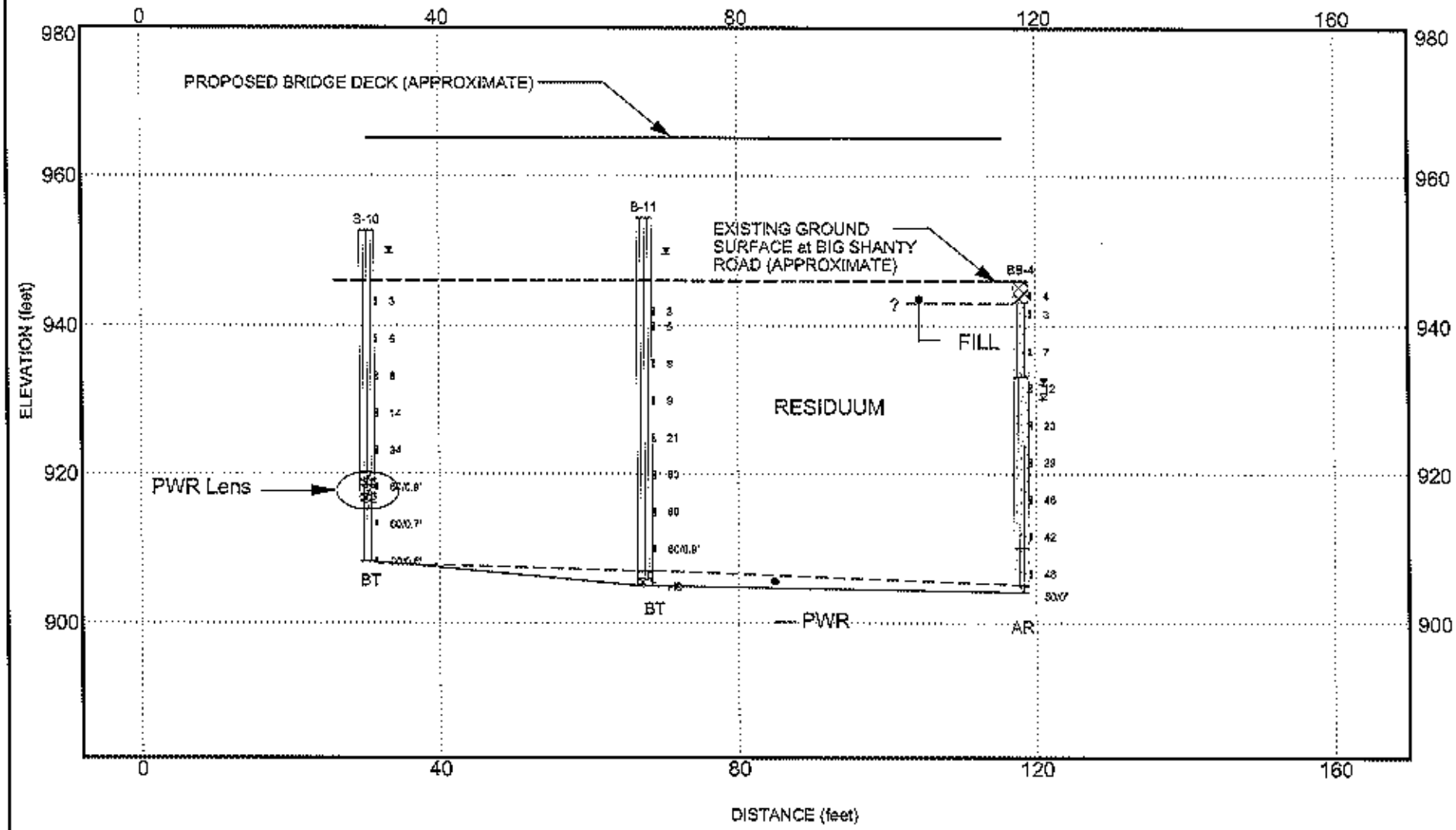
SCALE : 1 inch = 20 feet (vertical)
1 inch = 20 feet (horizontal)

NOTE: Borings B-8, B-8A and B-9 were performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE
SECTION C-C' (RT. BRIDGE)

I-575 over CR 171 (Big Shanty Road)
GDOT Proj. # : CSNHS-0006-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Nov 29, 2007	5



LEGEND:
- ▼ - Groundwater Table @ 24 hours
- ⧗ - Groundwater Table @ Time of Boring
- AR - Auger Refusal
- BT - Boring Terminated
- PWR - Partially Weathered Rock
- HB - Hammer Bounce

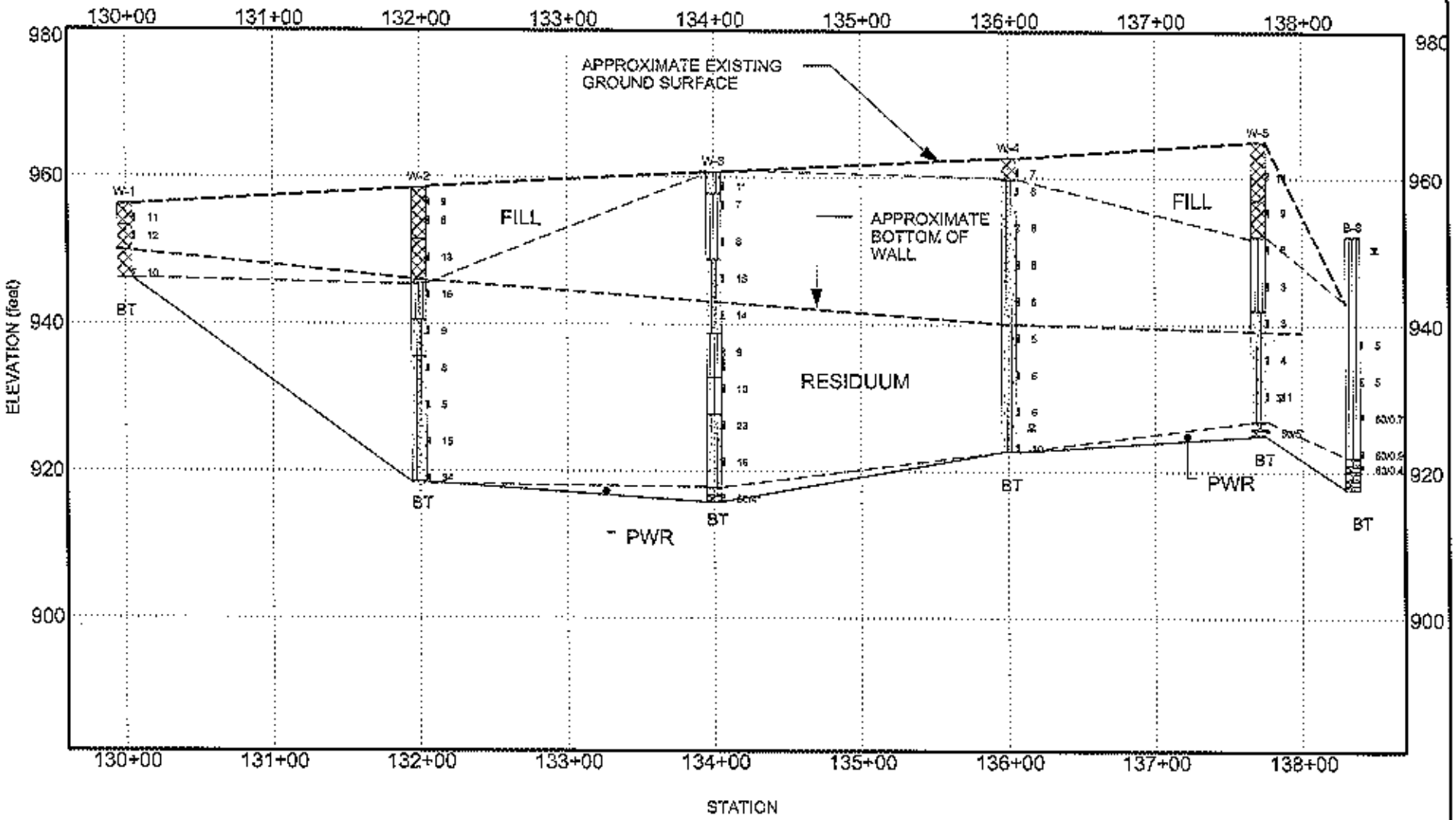
SCALE : 1 inch = 20 feet (vertical)
1 inch = 20 feet (horizontal)

NOTE: Borings B-10 and B-11 were performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE
SECTION D-D' (RT. BRIDGE)

I-575 over CR 171 (Big Shanty Road)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Nov 29, 2007	6



LEGEND:
∓ - Groundwater Table @ 24 hours
‡ - Groundwater Table @ Time of Boring
BT - Boring Terminated
PWR - Partially Weathered Rock

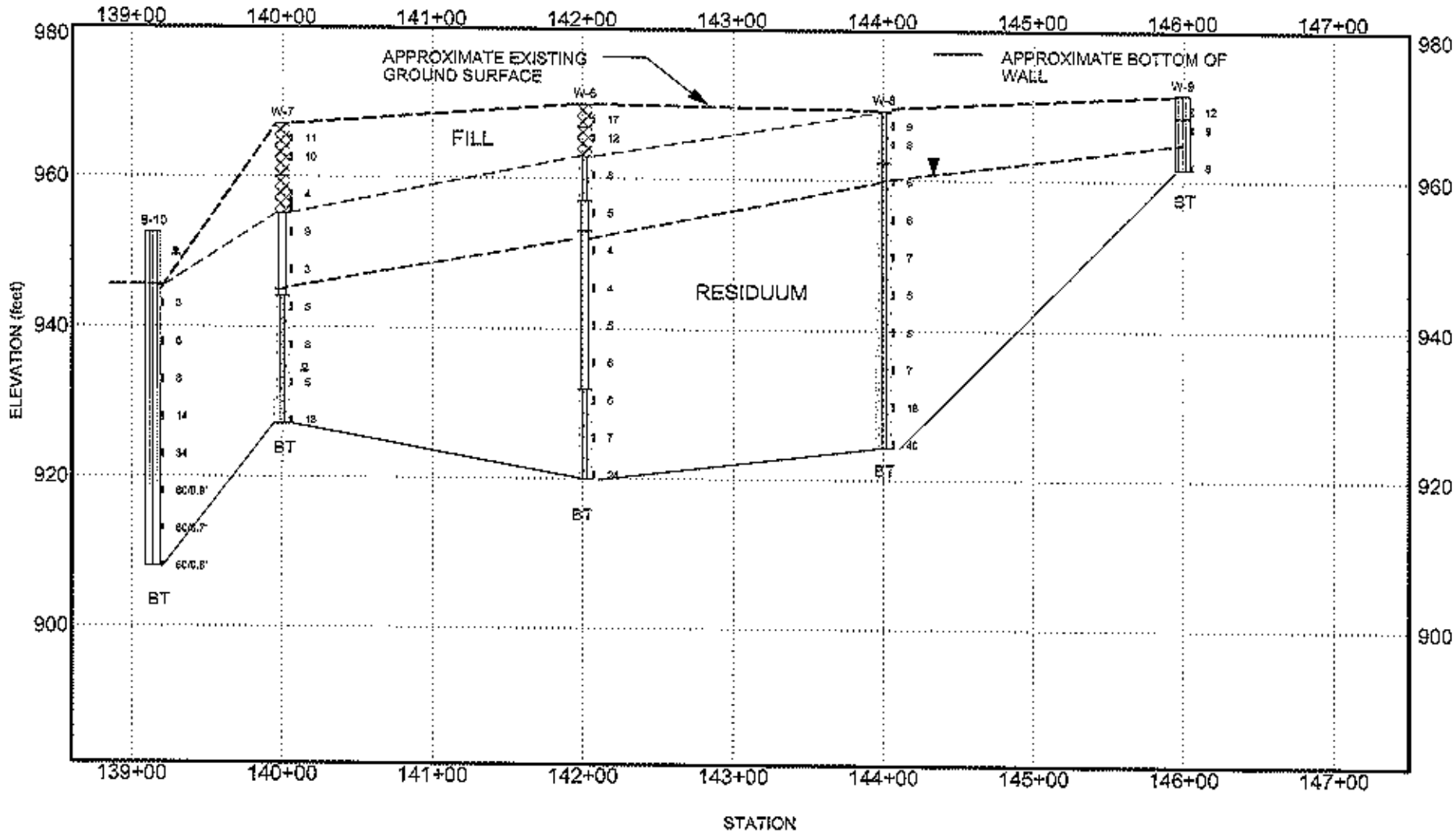
SCALE : 1 inch = 20 feet (vertical)
1 inch = 100 feet (horizontal)

NOTE: Boring B-8 was performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE
SECTION E-E' (Wall Nos. 2 and 3)

I-575 over CR 171 (Big Shanty Road)
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Dec 02, 2007	7



LEGEND:
- Groundwater Table @ 24 hours
- Groundwater Table @ Time of Boring
BT - Boring Terminated

SCALE : 1 inch = 20 feet (vertical)
1 inch = 100 feet (horizontal)

NOTE: Boring B-10 was performed by GDOT in 1976.

GENERALIZED SUBSURFACE PROFILE
SECTION F-F' (WALL Nos. 4 and 5)

I-575 over Big Shanty Road
GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256
Cobb County, Georgia

PROJECT #	DATE	FIGURE
171-3099C	Nov 26, 2007	8

APPENDIX I

WESTON & ASSOCIATES, INC. WE

BORING RECORD LEGEND

SM, CL, etc: - GROUP SYMBOL based on Unified Soil Classification System.
(Refer to ASTM D-2488 and Table 1 of D-2487)

N-VALUE: BLOWS PER FOOT- Standard Penetration Resistance (SPT) blow count, the sum of the second and third 6-inch increments of the SPT test.
(Refer to ASTM D-1586)

CONSISTENCY / RELATIVE DENSITY Correlated with SPT Blow Count, N:

SILTS AND CLAYS

N (blows per foot)	Consistency
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Firm
9 - 15	Stiff
16 - 30	Very Stiff
31 - 50	Hard
> 50	Very Hard

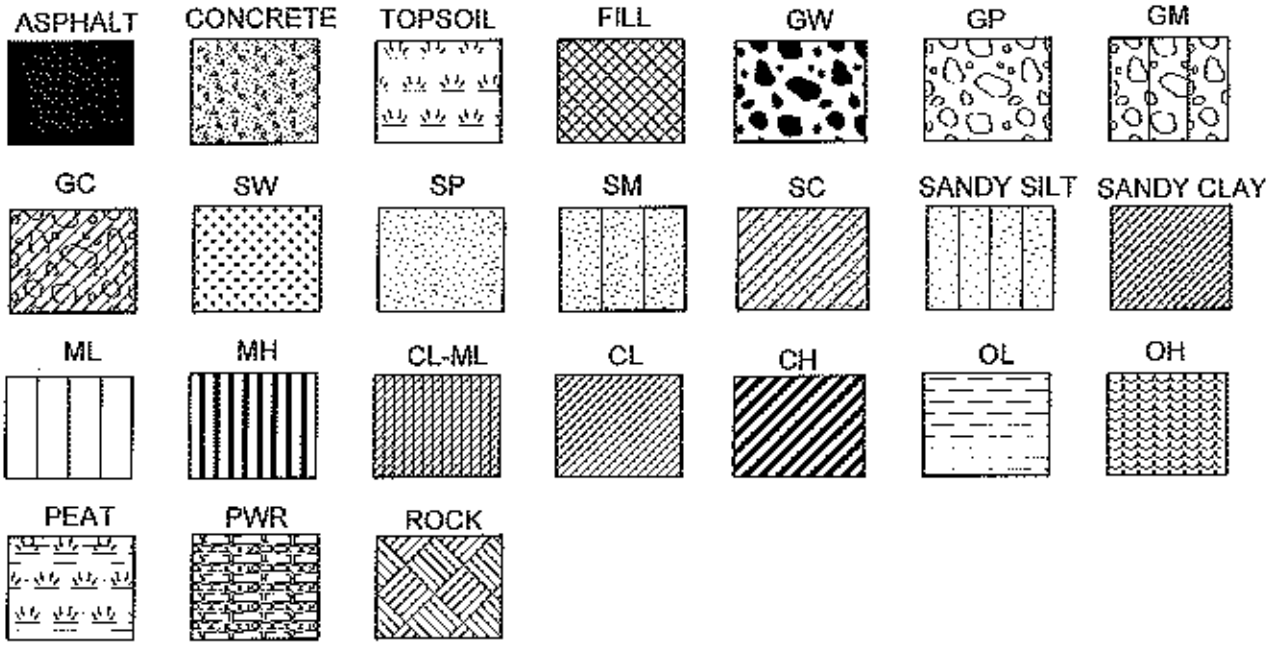
SANDS

N (blows per foot)	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
> 50	Very Dense

NOTES:

Groundwater Measurements:

- Water level at time of backfilling
- Water level at time of boring
- Caved level at 24 hours



Willmer Engineering Inc.
3772 Pleasantdale Road, Suite 165
Atlanta, Georgia 30340

UNIFIED SOIL CLASSIFICATION SYSTEM REFERENCE SHEET

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN #200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED #4 SIEVE	CLEAN GRAVELS LITTLE OR NO FINES	(GW)	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			(GP)	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	(GM)	SILTY GRAVELS and GRAVEL-SAND-SILT MIXTURES
			(GC)	CLAYEY GRAVELS and GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING #4 SIEVE	CLEAN SAND LITTLE OR NO FINES	(SW)	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			(SP)	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	(SM)	SILTY SANDS and SAND-SILT MIXTURES
			(SC)	CLAYEY SANDS and SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		(ML)	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR VERY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			(CL)	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			(OL)	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		(MH)	INORGANIC ELASTIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS
			(CH)	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			(OH)	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			(PT)	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

WOLFMER ENGINEERING | WE

ENGINEERING DESCRIPTION
OF
ROCK HARDNESS

Hardness	Description
Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 inch deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1 inch maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1 inch or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.
Partially Weathered Rock	For engineering purposes, partially weathered rock (PWR) is locally defined as residual soils exhibiting Standard Penetration Test N-values in excess of 50 blows for 6 inches of penetration.

WILLIAMS ENGINEERING INC | WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. BB-1**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Bent - 1, LT Bridge

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 944.48 Station: 138+00, 115' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

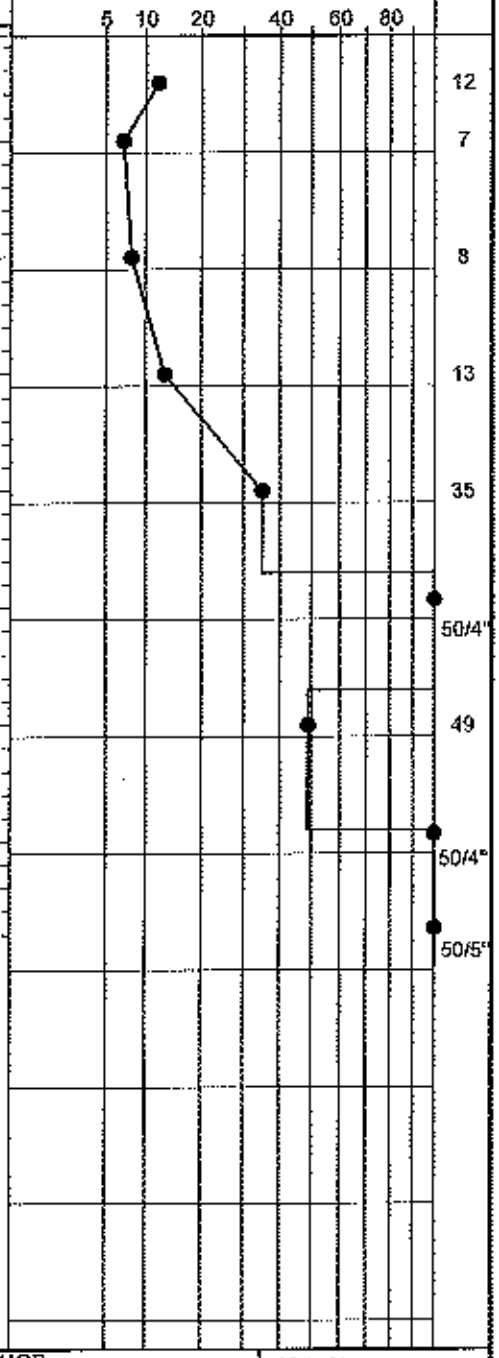
Core Boxes: -- Samples: 9 Overburden (ft): 38.5 Rock (ft): -- Total Depth (ft): 38.5

Logged By: MK Date Drilled: 9/28/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			FILL : Medium dense reddish brown silty medium to fine **SAND** with gravel	FILL	944.5	12
		SS			RESIDUUM : Firm gray and brown medium to fine sandy **SILT** (micaceous)	ML	940	7
5								
		SS			Loose to dense gray, brown and black silty medium to fine **SAND** (slightly micaceous)	SM	935	8
10								
		SS					930	13
15								
		SS					925	35
20								
		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense brown, white and tan silty coarse to fine **SAND** with rock fragments	PWR	920	50/4"
25								
		SS			RESIDUUM : Dense brown, white and tan silty coarse to fine **SAND**	SM	915	49
30								
		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense black and tan silty coarse to fine **SAND** with rock fragments	PWR	910	50/4"
35		SS						50/5"

Auger refusal encountered @ 38.5 feet below existing ground surface.

Groundwater was encountered @ 23 feet below existing ground surface @ time of boring completion and @ 18 feet below existing ground surface @ 24 hours after boring completion.



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

SPTN 171-3099C.GPJ 11/26/07

WILLMER ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. BB-2**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Bent - 2, LT Bridge

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 943.61 Station: 139+00, 115' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 8 Overburden (ft): 30 Rock (ft): -- Total Depth (ft): 30.0

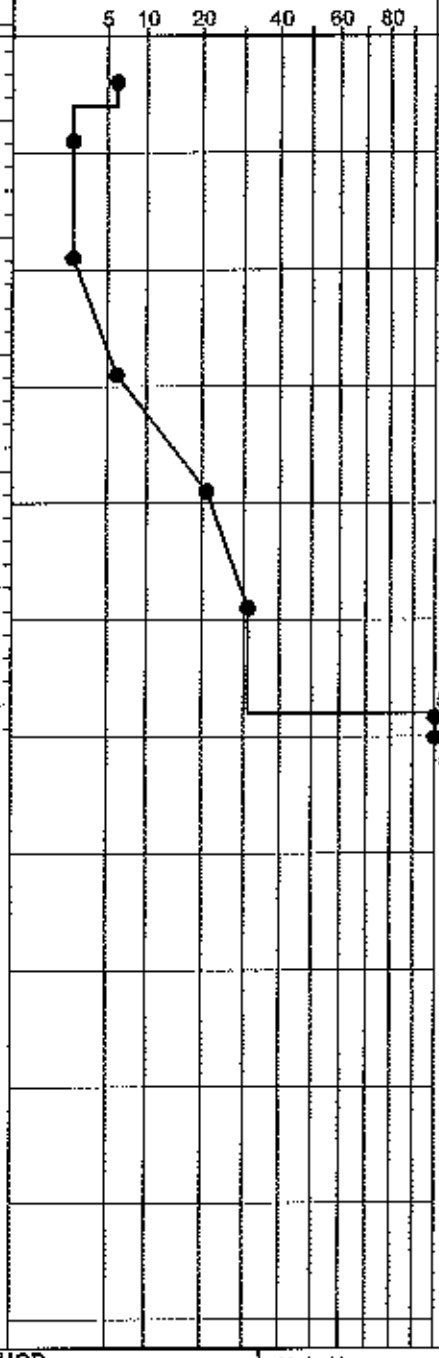
Logged By: MK Date Drilled: 9/28/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 1 inch	FILL	943.6	
		SS			FILL : Loose reddish brown silty medium to fine **SAND** with graded aggregate base	ML	940	6
5		SS			RESIDUUM : Very soft reddish brown and tan medium to fine sandy **SILT** (slightly micaceous)		935	2
10		SS						2
					Loose to dense gray, white and tan silty medium to fine **SAND** (slightly micaceous)	SM	930	6
15		SS						
20		SS					925	21
25		SS					920	31
		SS					915	50/4"
30		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense brown, white and tan silty medium to fine **SAND** with rock fragments	PWR		50/1"

Auger refusal encountered @ 30 feet below existing ground surface.

Groundwater was encountered @ 20 feet below existing ground surface @ time of boring completion and @ 18 feet below existing ground surface @ 24 hours after boring completion.

STANDARD PENETRATION TEST DATA (blows/foot)



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

SPT_ 171-3099C.GP_ 11/28/07

WOLFLAKE ENGINEERING, INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. BB-3**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Bent - 1, RT Bridge

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 945.03 Station: 138+32, 115' Rt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 8 Overburden (ft): 35 Rock (ft): -- Total Depth (ft): 35.0

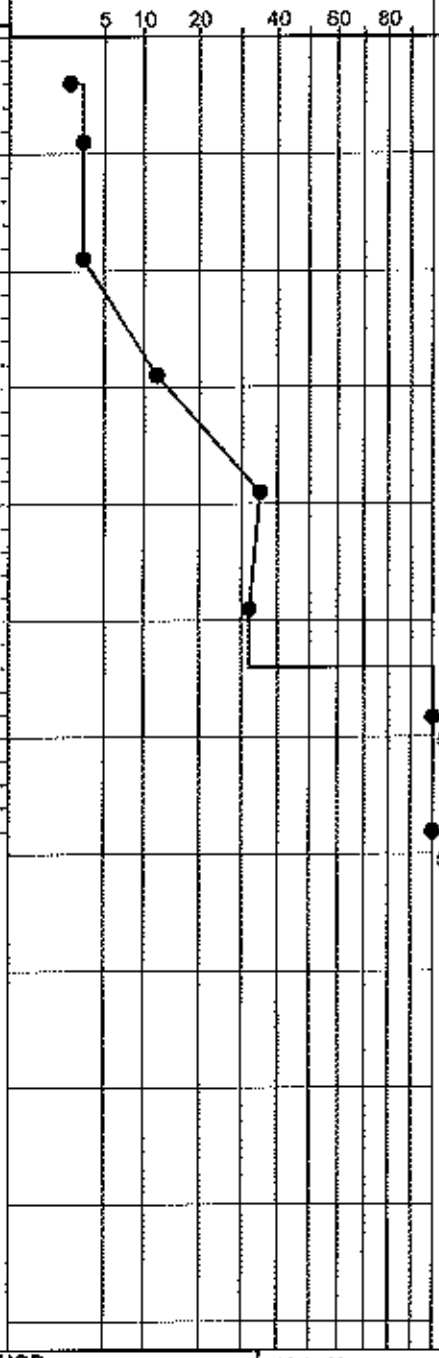
Logged By: MK Date Drilled: 9/28/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)
		SS			FILL : Very loose reddish brown silty medium to fine **SAND** with gravel	FILL	945.0
		SS			RESIDUUM : Soft reddish brown medium to fine sandy **SILT** (micaceous)	ML	
5		SS					940
		SS			Very loose to dense gray, brown and white silty medium to fine **SAND** (slightly micaceous)	SM	935
10		SS					
15		SS					930
20		SS					925
25		SS					920
		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense black, white and tan silty coarse to fine **SAND** with rock fragments	PWR	915
30		SS					
35		SS					

Auger refusal encountered @ 35 feet below existing ground surface.

Groundwater was encountered @ 11 feet below existing ground surface @ time of boring completion and @ 10 feet below existing ground surface @ 24 hours after boring completion.

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	BB-3
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

SPTN 171-3099C.GPJ 11/28/07

WILLMOTT ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. BB-4**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Bent - 2, RT Bridge

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 946.11 Station: 139+35, 115' Rt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

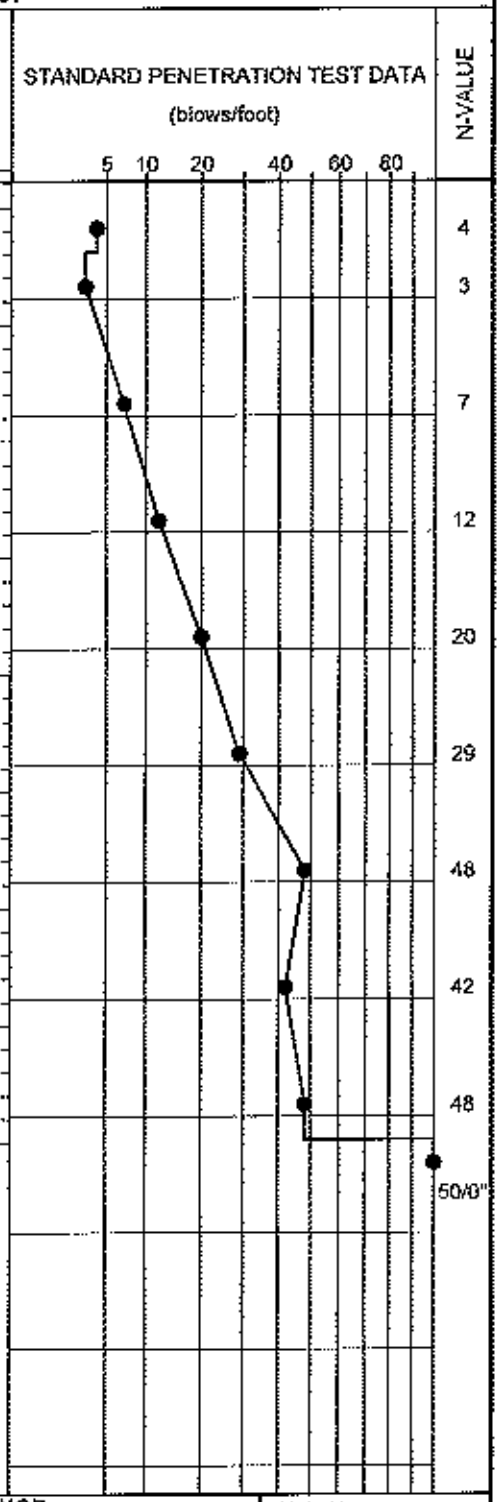
Core Boxes: -- Samples: 10 Overburden (ft): 42 Rock (ft): -- Total Depth (ft): 42.0

Logged By: MK Date Drilled: 9/28/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					TOPSOIL = 2 inches (FILL)	946.1	
		SS			FILL : Loose reddish brown and tan silty medium to fine **SAND** and graded aggregate base (ML)	945	4
5		SS			RESIDUUM : Soft and firm brown, white and tan medium to fine sandy **SILT**	940	3
10		SS				935	7
15		SS			Medium dense to dense black, brown, white and tan silty medium to fine **SAND** (slightly micaceous) (SM)	930	12
20		SS				925	20
25		SS				920	29
30		SS				915	48
35		SS				910	42
40		SS			Dense brown, white and tan silty medium to fine **SAND** with rock fragments(slightly micaceous) (SM)	905	48
		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense brown, white and tan silty medium to fine **SAND** with rock fragments (PWR)		50/0"

Auger refusal encountered @ 42 feet below existing ground surface.

Groundwater was encountered @ 16 feet below existing ground surface @ time of boring completion and @ 14 feet below existing ground surface @ 24 hours after boring completion.



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	BB-4
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

SPTN 171-3099C.GPJ 11/29/07

WILLIAMS ENGINEERING, INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-1**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 3

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 956.23 Station: 130+00, 30' Rt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 3 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 10.0

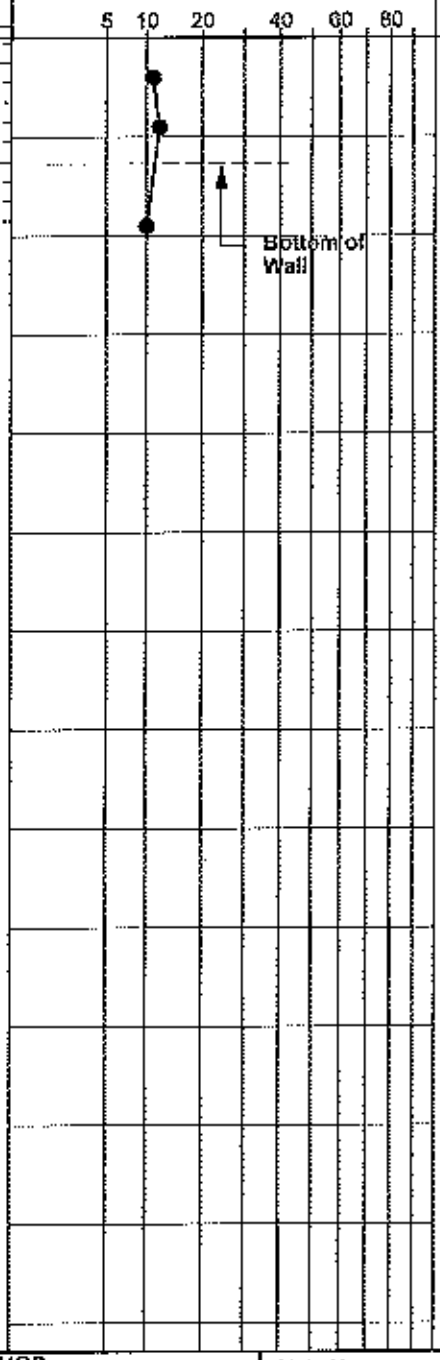
Logged By: MK Date Drilled: 10/3/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 1 inch / FILL	956.2	
		SS			FILL : Medium dense reddish brown and tan silty medium to fine SAND / FILL	955	11
5		SS			Stiff reddish brown medium to fine sandy SILT	950	12
10		SS					10

Boring terminated @ 10 feet below existing ground surface.

Groundwater was not encountered @ time of boring completion.

STANDARD PENETRATION TEST DATA (blows/foot)



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

SPTN 171-3099C.GPJ 12/4/07

WILLMERT ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-2**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 2

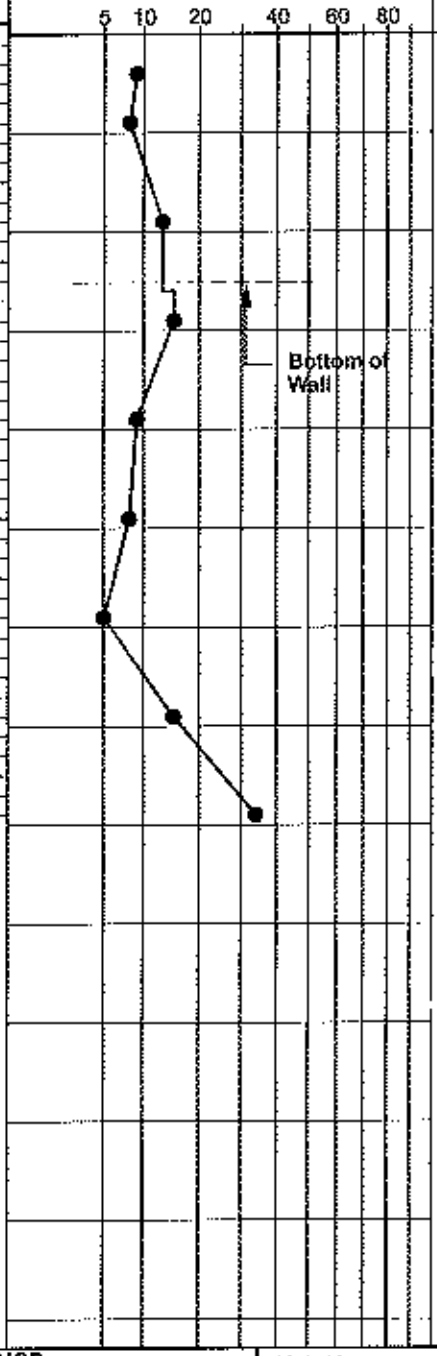
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 958.49 Station: 132+00, 30' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 9 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 40.0

Logged By: MK Date Drilled: 10/3/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
					TOPSOIL = 1 inch	FILL	958.5	
		SS			FILL : Loose reddish brown and tan silty medium to fine **SAND**		955	9
5		SS						8
					Stiff reddish brown medium to fine sandy **SILT**	FILL	950	
10		SS						13
					RESIDUUM : Stiff reddish-brown and tan medium to fine sandy **SILT**	ML	945	
15		SS						15
					Loose tan, brown and gray silty medium to fine **SAND** (micaceous)	SM	940	
20		SS						9
					Loose to dense brown, white and tan silty medium to fine **SAND** (micaceous)	SM	935	
25		SS						8
30		SS					930	5
35		SS					925	15
40		SS					920	34
					Boring terminated @ 40 feet below existing ground surface.			
					Groundwater was not encountered @ time of boring completion.			



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

8PTN 171-3099C.GPJ 12/4/07

WILLMER ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-3**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 3

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 960.76 Station: 134+00, 30' Rt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

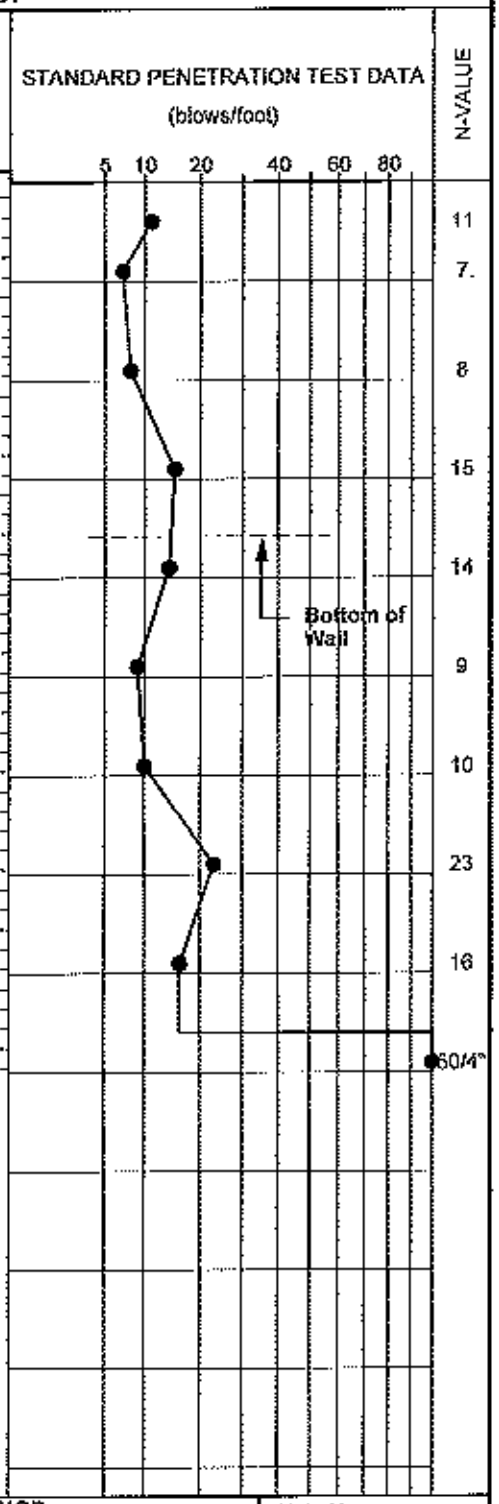
Core Boxes: -- Samples: 11 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 45.0

Logged By: MK Date Drilled: 10/3/07

VERTICAL DEPTH (ft)	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
	SS			TOPSOIL = 1 inch	SM	960.8	
	SS			RESIDUUM : Medium dense reddish brown and tan silty medium to fine **SAND**	ML	960	11
5	SS			Firm reddish brown and tan medium to fine sandy **SILT** (slightly micaceous)		955	7
10	SS					950	8
				Medium dense brown, white and tan silty medium to fine **SAND**	SM		
15	SS					945	15
20	SS					940	14
				Stiff brown, white and tan medium to fine sandy **SILT**	ML		
25	SS, ST					935	9
30	SS			Stiff gray, orange and brown medium to fine sandy **SILT** (slightly micaceous)	ML	930	10
				Medium dense gray, black and tan silty medium to fine **SAND** (slightly micaceous)	SM		
35	SS					925	23
40	SS					920	16
45	SS			PARTIALLY WEATHERED ROCK: Sampled as very dense gray, white and black silty medium to fine **SAND** with rock fragments	PWR		50/4"

Boring terminated @ 45 feet below existing ground surface.

Groundwater was not encountered @ time of boring completion.



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	W-3
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

SPTN 171-3099C.GPJ 12/4/07

WILLMER ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)
Location: Cobb County, Georgia
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256

HOLE No. W-4

Sheet 1 of 1
Location: Wall No. 2

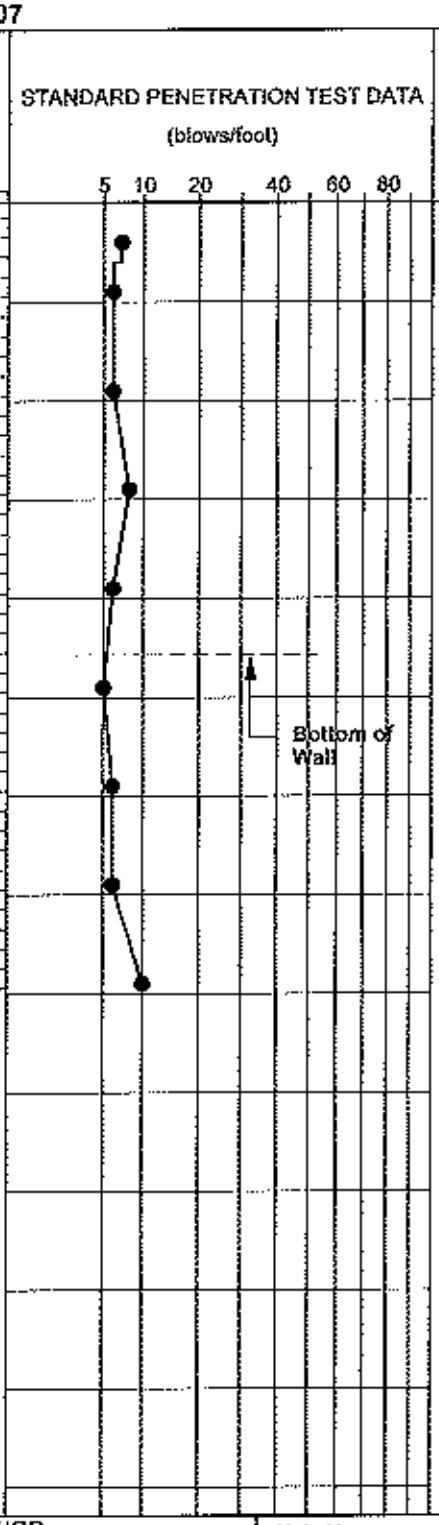
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 962.73 Station: 136+00, 30' Lt. of CL
Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer
Core Boxes: -- Samples: 9 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 40.0
Logged By: MK Date Drilled: 10/3/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)
		SS			TOPSOIL - 1 inch (FILL)	962.7
		SS			FILL : Loose reddish brown and tan silty medium to fine **SAND** (slightly micaceous) (SM)	960
5		SS			RESIDUUM : Loose red, brown, white and tan silty medium to fine **SAND** (micaceous)	955
10		SS				950
15		SS				945
20		SS				940
25		SS				935
30		SS				930
35		SS				925
40		SS				

Boring terminated @ 40 feet below existing ground surface.

Groundwater was encountered @ 37 feet below existing ground surface @ time of boring completion.

Bore hole caved in to 24 feet below existing ground surface @ 24 hours after boring completion.



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	W-4
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

SPTN 171-3099C.GPJ 12/4/07

WILLMOTT ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-5**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 3

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 964.98 Station: 137+70, 30' Rt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 8 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 40.0

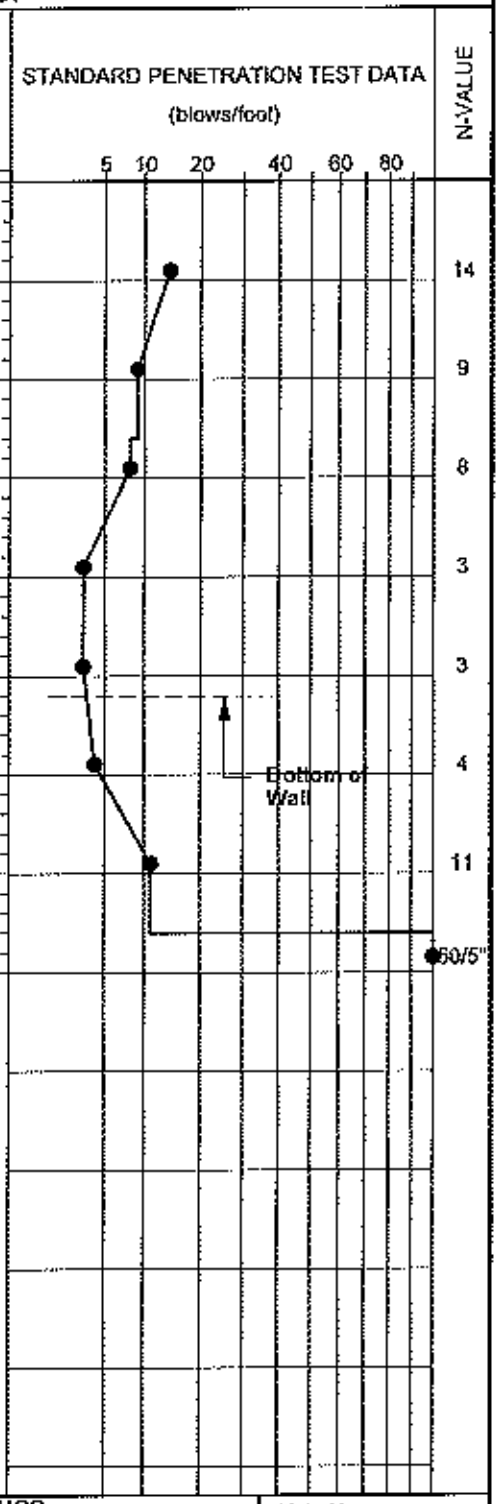
Logged By: MK Date Drilled: 10/3/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
5		SS			FILL : Medium dense reddish brown silty coarse to fine **SAND** with organic odor and rock fragments	FILL	960	14
10		SS			Loose reddish brown and gray clayey medium to fine **SAND** with organic odor	FILL	955	9
15		SS			RESIDUUM : Firm and soft gray, red and tan medium to fine sandy **SILT** (micaceous)	ML	950	6
20		SS					945	3
25		SS			Very loose and medium dense gray, orange-brown and black silty medium to fine **SAND** (slightly micaceous)	SM	940	3
30		SS					935	4
35		SS					930	11
40		SS			PARTIALLY WEATHERED ROCK : Sampled as very dense black, orange-brown and gray silty medium to fine **SAND**	PWR	925	50/5"

Boring terminated @ 40 feet below existing ground surface.

Groundwater was encountered @ 35 feet below existing ground surface @ time of boring completion.

Bore hole caved in to 24 feet below 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"
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. W-5

SPTN 171-3099C.GPJ 12/4/07

WILLIAMS ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-6**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 4

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 969.98 Station: 142+00, 30' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 11 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 50.0

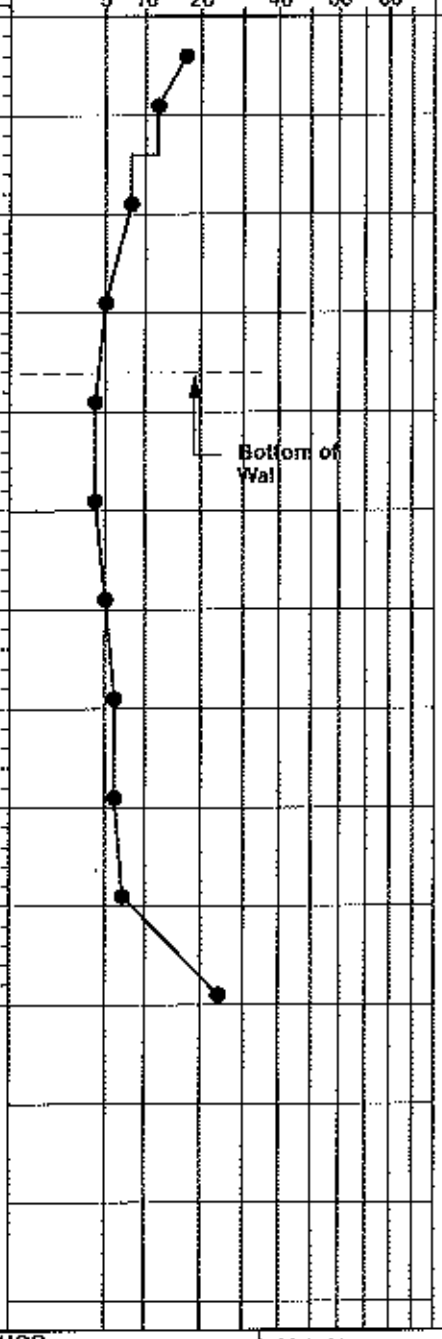
Logged By: MK Date Drilled: 10/2/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 1 inch	FILL	970.0	
		SS			FILL : Medium dense brown and tan silty medium to fine SAND	FILL		17
5		SS			Medium dense reddish brown and tan silty medium to fine SAND with clay		965	12
10		SS			RESIDUUM : Loose reddish brown and tan silty medium to fine SAND	SM	960	8
15		SS			Firm purple-brown and orange medium to fine sandy SILT	ML	955	5
20		SS			Soft black, brown and tan medium to fine sandy SILT (slightly micaceous)	ML	950	4
25		SS					945	4
30		SS					940	5
35		SS					935	6
40		SS			Loose to medium dense gray, brown and tan silty medium to fine SAND (micaceous)	SM	930	6
45		SS					925	7
50		SS					920	24

Boring terminated @ 50 feet below existing ground surface.

Groundwater was not encountered @ time of boring completion.

Bore hole caved in to 33 feet below existing ground surface @ time of boring completion.



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	W-6
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

SPTX 171-3099C.GPJ 12/4/07

WILLMER ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)
Location: Cobb County, Georgia
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256

HOLE No. W-7

Sheet 1 of 1

Location: Wall No. 4

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 967.10 Station: 140+00, 30' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 10 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 40.0

Logged By: MK Date Drilled: 10/2/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					TOPSOIL= 1 inch FILL	967.1	
		SS			FILL : Stiff reddish brown medium to fine sandy SILT	965	11
5		SS					10
					Soft brown and tan medium to fine sandy SILT FILL	960	
10		SS, ST					4
					RESIDUUM: Stiff to soft brown and gray medium to fine sandy SILT (micaceous) ML	955	
15		SS					9
20		SS				950	3
					Loose and medium dense brown brown, black and tan silty medium to fine SAND (micaceous) SM	945	
25		SS					5
30		SS				940	8
35		SS				935	5
40		SS				930	13

Bottom of Wall

Boring terminated @ 40 feet below existing ground surface.

Groundwater was encountered @ 33 feet below existing ground surface @ time of boring completion.

Bore hole caved in to 24 feet below existing ground surface @ 24 hours after boring completion.

STANDARD PENETRATION TEST DATA (blows/foot): 5, 10, 20, 40, 60, 80

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. W-7

SPTN: 171-3099C.GPJ 12/4/07

WITHERSPOON ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)	**HOLE No. W-8**
Location: Cobb County, Georgia	Sheet 1 of 1
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256	Location: Wall No. 4

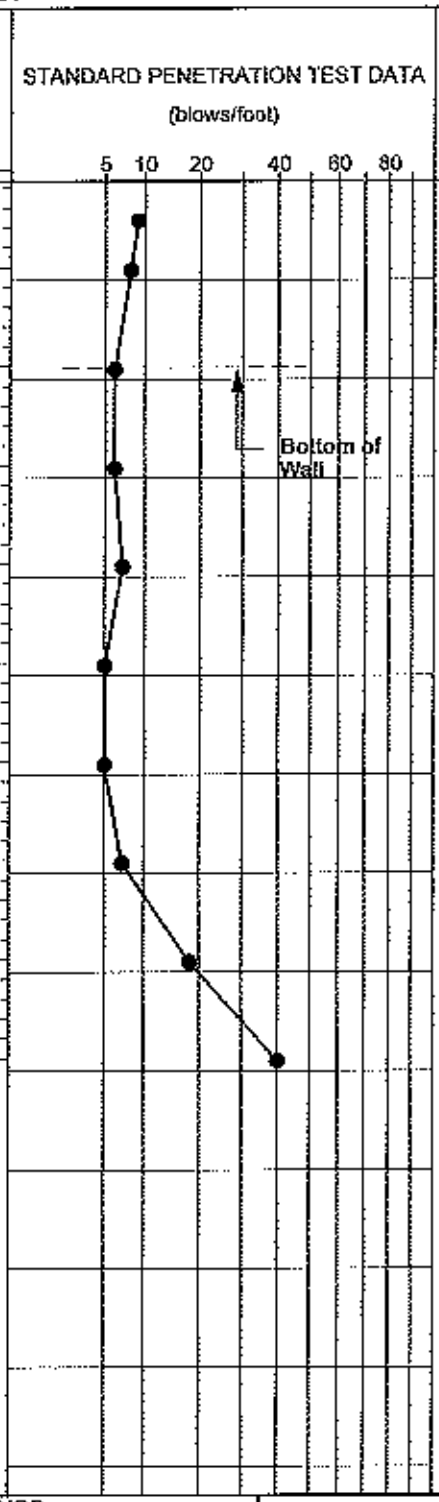
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 969.34 Station: 144+00, 30' Lt. of CL

Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer

Core Boxes: -- Samples: 5 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 45.0

Logged By: MK Date Drilled: 10/2/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					TOPSOIL = 2 inches — ML	969.3	
		SS			RESIDUUM : Stiff to firm brown coarse to fine sandy **SILT** (micaceous)		9
5		SS				965	8
					Loose to dense purple, brown and tan silty medium to fine **SAND** (micaceous) — SM		
10		SS				960	6
15		SS				955	6
20		SS				950	7
25		SS				945	5
30		SS				940	5
35		SS				935	7
40		SS				930	18
45		SS				925	40



Boring terminated @ 45 feet below existing ground surface.

Groundwater was not encountered @ time of boring completion.

Bore hole caved in to 30 feet below existing ground surface @ time of boring completion.

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

SPTK 171-3099C.GPJ 12/4/07

WILLMER ENGINEERING INC. WE

Project: I-575 over CR 171 (Big Shanty Road)
Location: Cobb County, Georgia
Project Number: 171-3099C; GDOT Proj. # : CSNHS-0008-00(256); PI # : 0008256

HOLE No. W-9

Sheet 1 of 1
Location: Wall No. 5

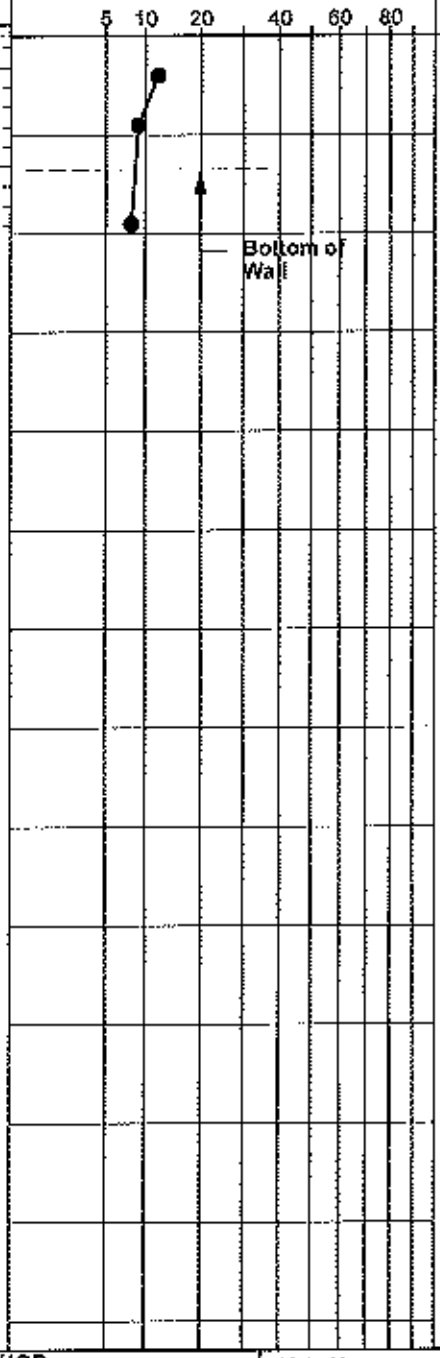
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): 971.57 Station: 146+00, 28' Rt. of CL
Drilling Equipment: CME 550 Drilling Method: HSA Auto Hammer
Core Boxes: -- Samples: 3 Overburden (ft): -- Rock (ft): -- Total Depth (ft): 10.0
Logged By: MK Date Drilled: 10/2/07

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	REC%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					TOPSOIL = 1 inch (ML)	971.6	
		SS			RESIDUUM : Stiff brown and tan medium to fine sandy SILT (ML)	970	12
5		SS			Firm reddish brown and tan medium to fine sandy SILT (micaceous)	965	9
10		SS					8

Boring terminated @ 10 feet below existing ground surface.

Groundwater was not encountered @ time of boring completion.

STANDARD PENETRATION TEST DATA (blows/foot)

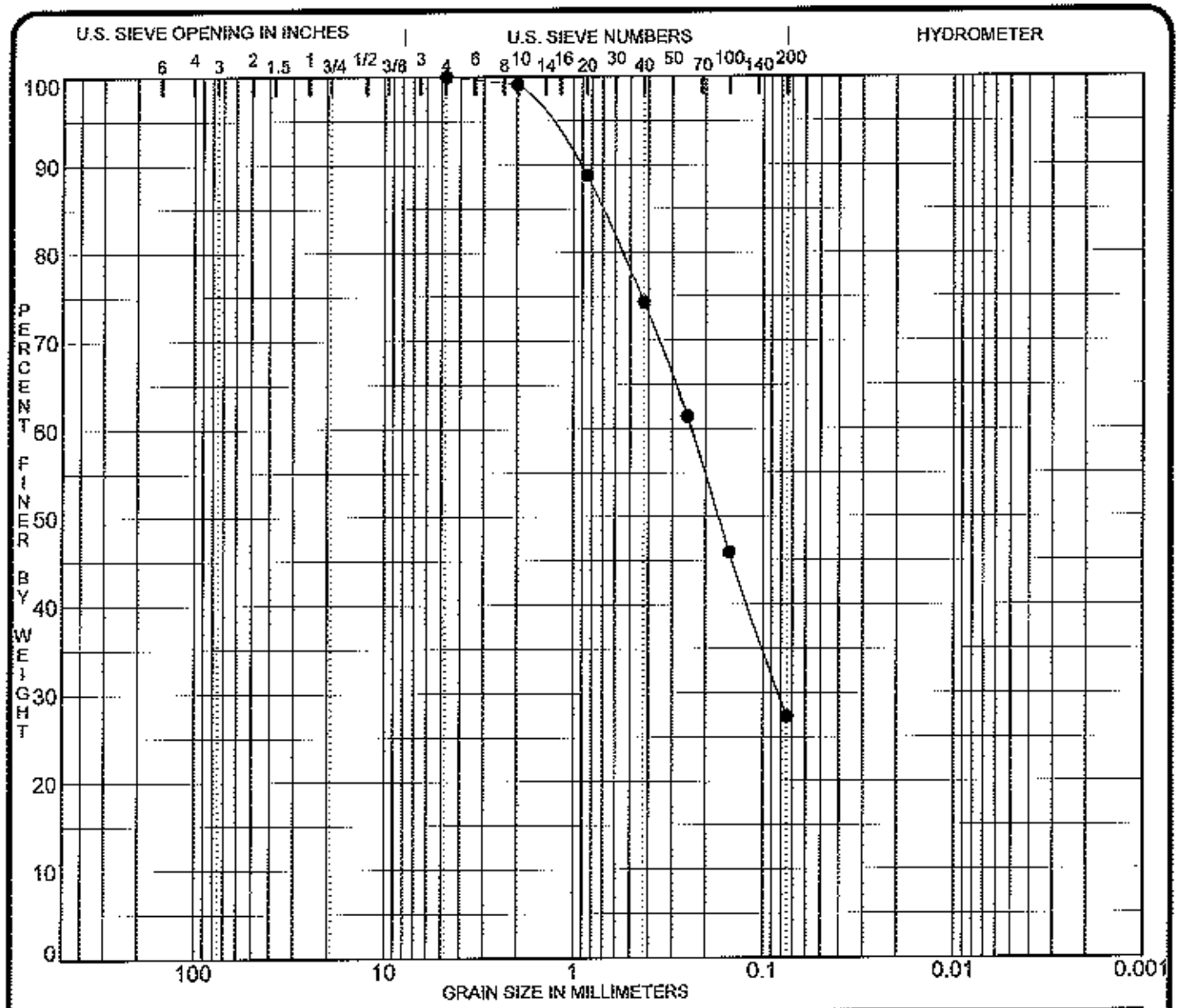


SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NQ - Rock Core, 1-7/8"
NX - Rock Core, 2-1/8"
CU - Cuttings
CT - Continuous Tube

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

Hole No. W-9

SPTN 171-3099C.GPJ 12/4/07



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
● W-2 S-5 (18.5-20 ft)	Tan, brown and gray silty medium to fine SAND (micaceous)						

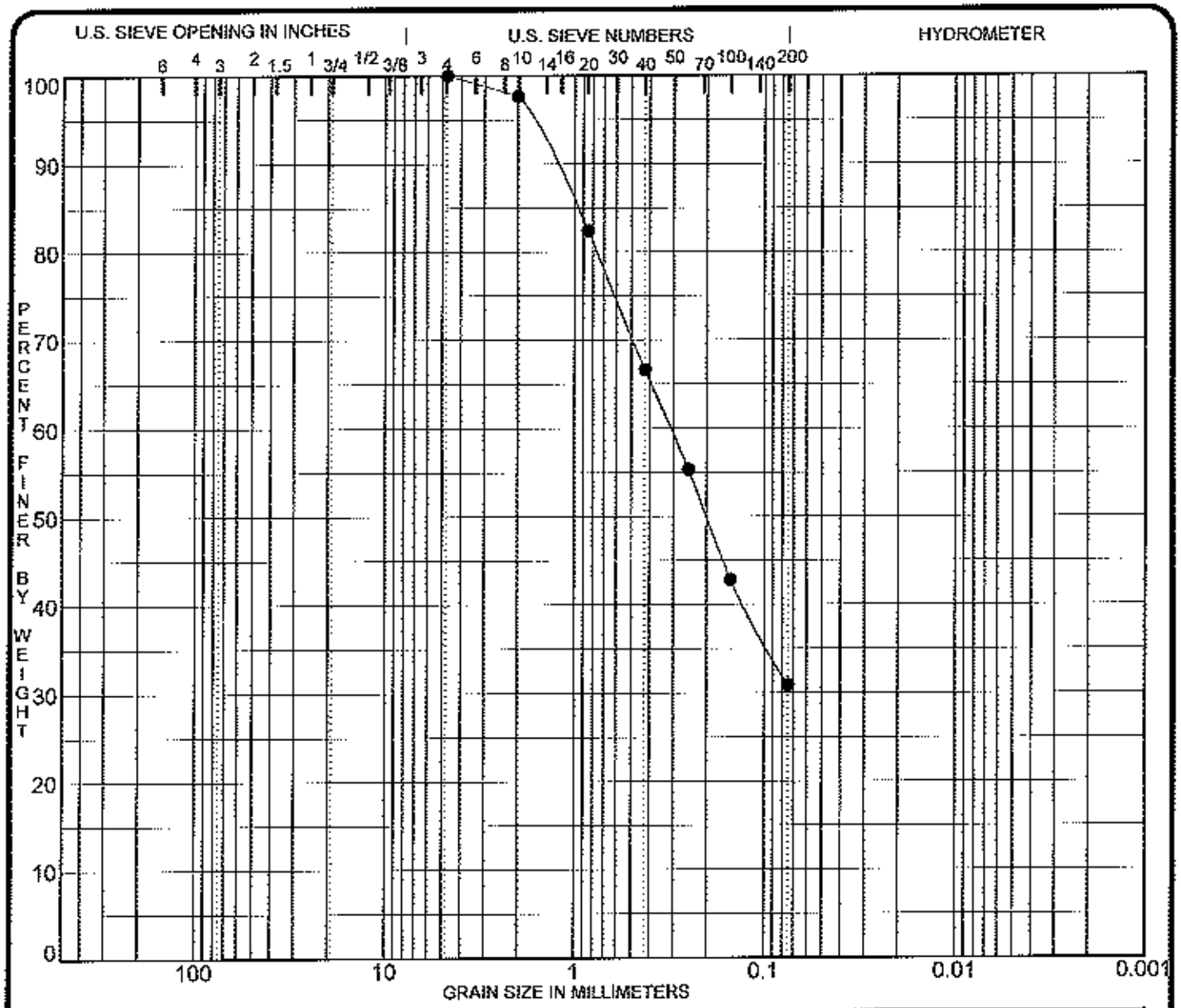
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● W-2 S-5 (18.5-20 ft)	4.75	0.24	0.083		0.0	72.7	27.3	

PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

JOB NO. 171-3099 C
DATE 12/2/07

WILLIAMSON ENGINEERING INC. WE

GRADATION CURVE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
● W-4 S-3 (8.5-10 ft)	Tan and brown silty medium to fine SAND (micaceous)						

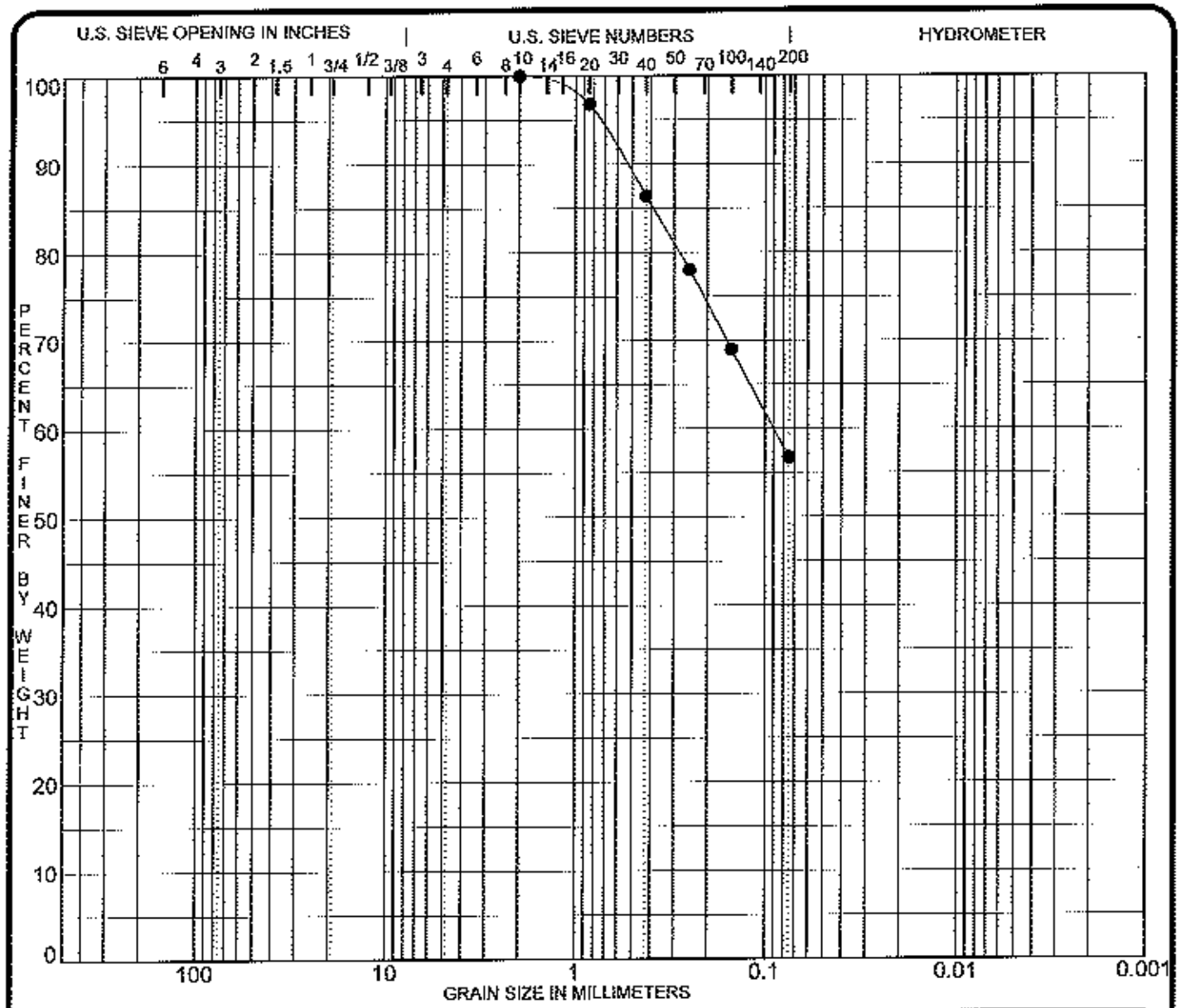
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● W-4 S-3 (8.5-10 ft)	4.75	0.31			0.0	69.1	30.9	

PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

JOB NO. 171-3099 C
DATE 12/2/07

WILLIAMS ENGINEERING INC. WE

GRADATION CURVE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
● W-5 S-5 (18.5-20 ft)	Tan and gray medium to fine sandy SILT (micaceous)						

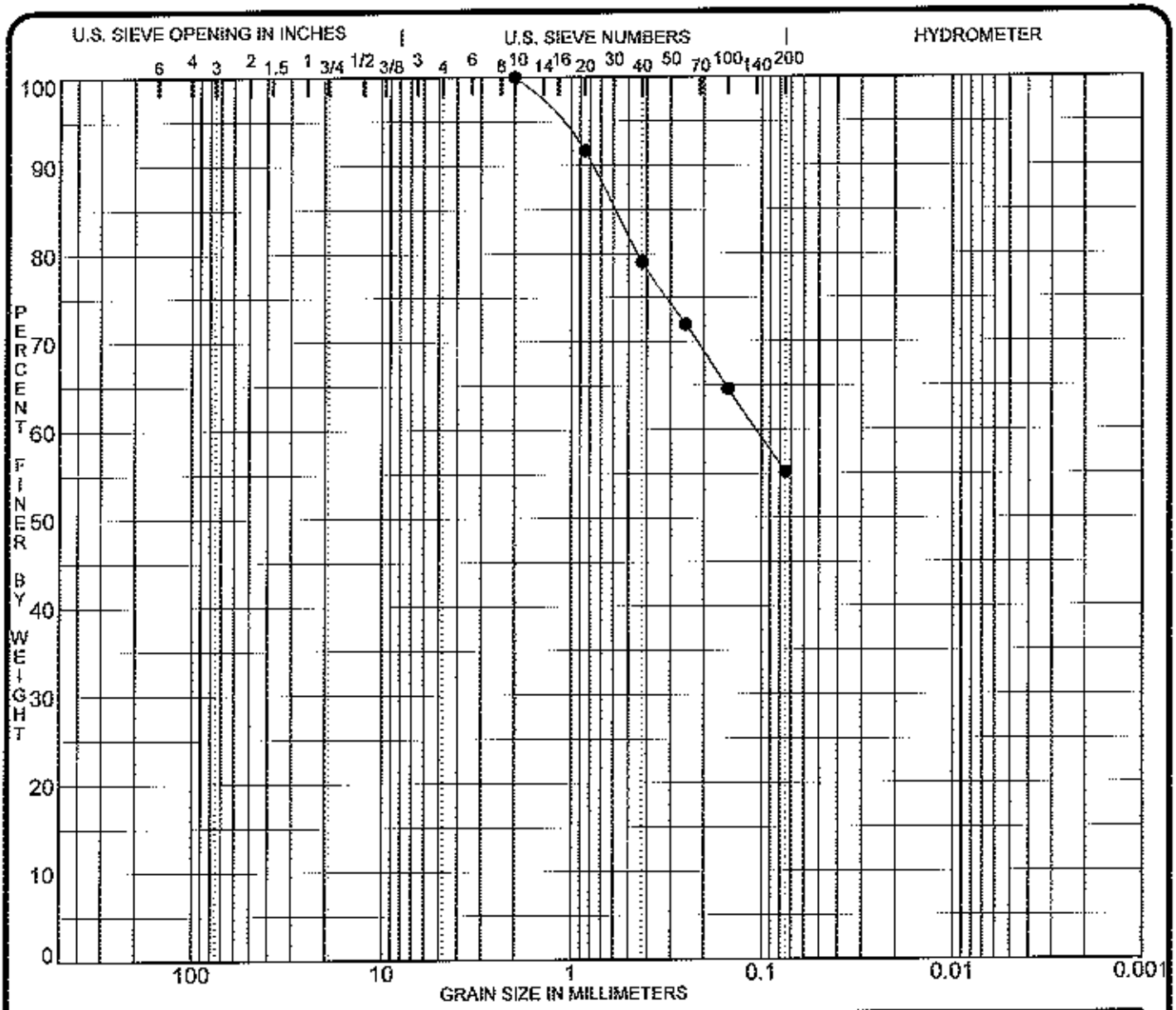
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● W-5 S-5 (18.5-20 ft)	2.00	0.09			0.0	43.3	56.7	

PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

JOB NO. 171-3099 C
DATE 12/2/07

WOOMER ENGINEERING WE

GRADATION CURVE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
●	W-6 S-6 (23.5-25 ft)	Black, tan and brown medium to fine sandy SILT (micaceous)						

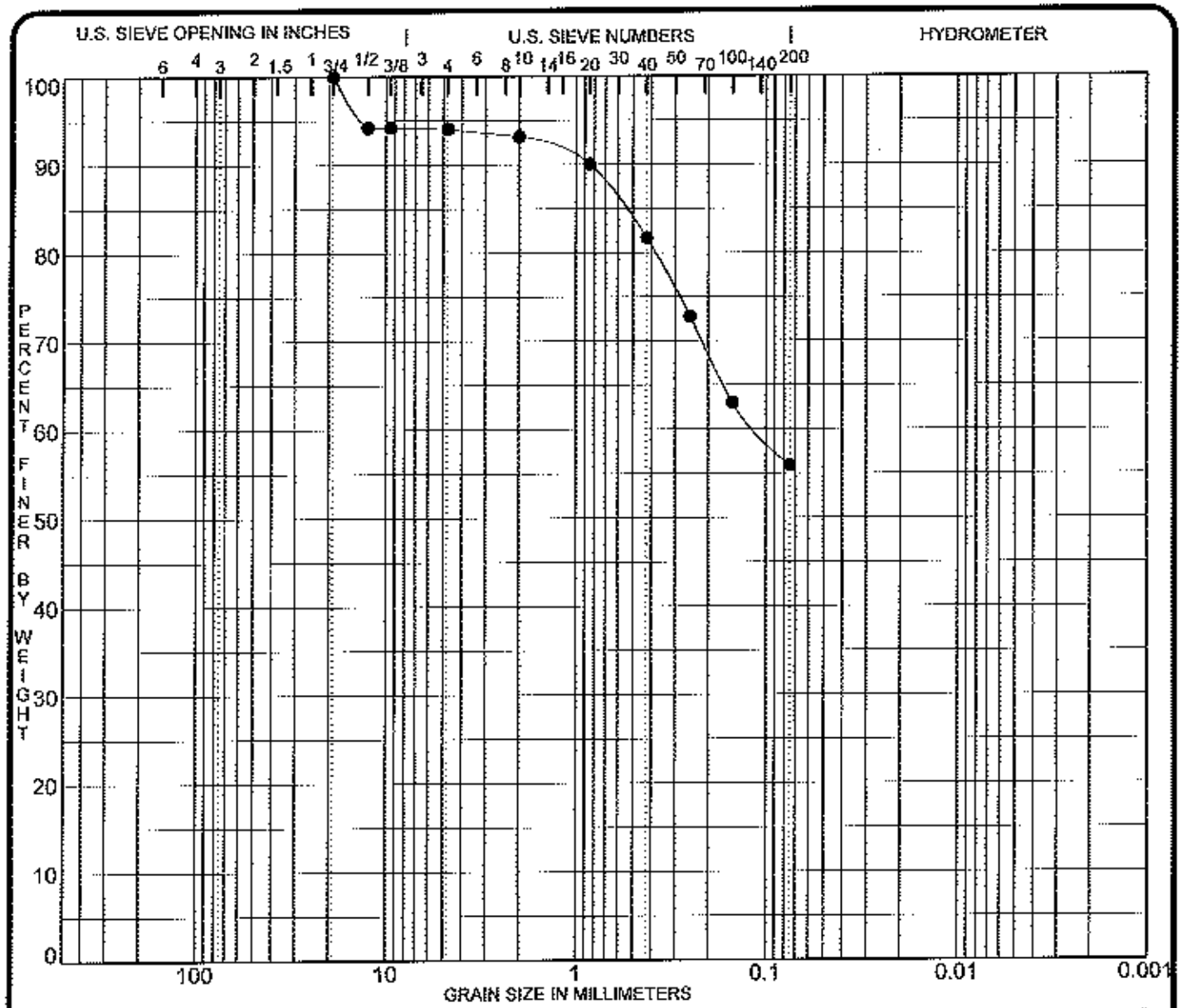
	Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	W-6 S-6 (23.5-25 ft)	2.00	0.11			0.0	44.8	55.2	

PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

JOB NO. 171-3099 C
DATE 12/2/07

WILLIAMS ENGINEERING INC. WE

GRADATION CURVE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
● W-7 S-5 (13.5-15 ft)	Gray and brown medium to fine sandy SILT (micaceous)						

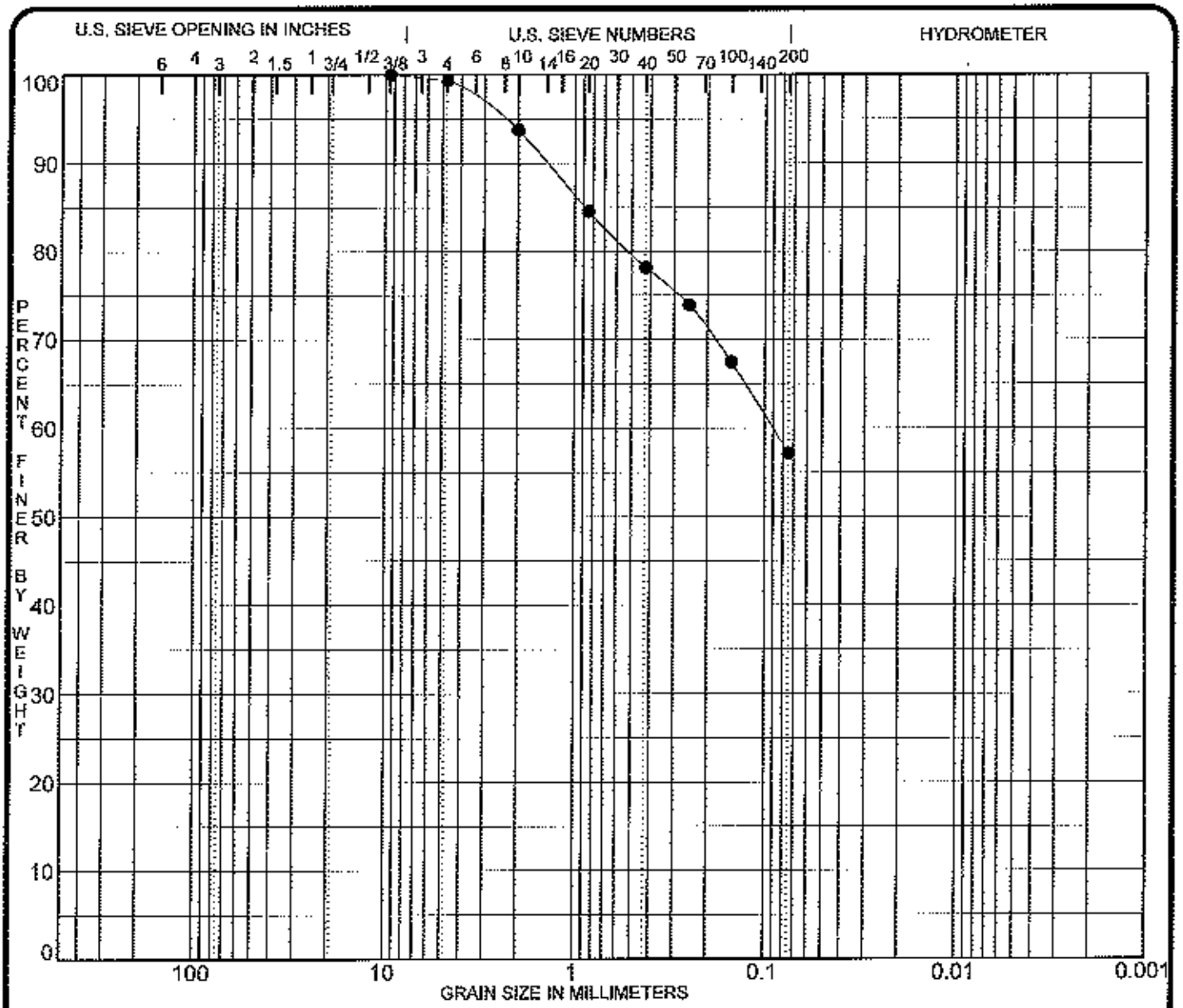
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● W-7 S-5 13.5-15 ft)	19.00	0.11			6.0	38.1	55.9	

PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

JOB NO. 171-3099 C
DATE 12/2/07

WALLACE ENGINEERING WE

GRADATION CURVE



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification	Soil Description	MC%	LL	PL	PI	Cc	Cu
●	W-8 S-2 (3.5-5 ft)	Brown coarse to fine sandy SILT (micaceous)						

	Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	W-8 S-2 (3.5-5 ft)	9.50	0.09			0.7	42.2	57.2	

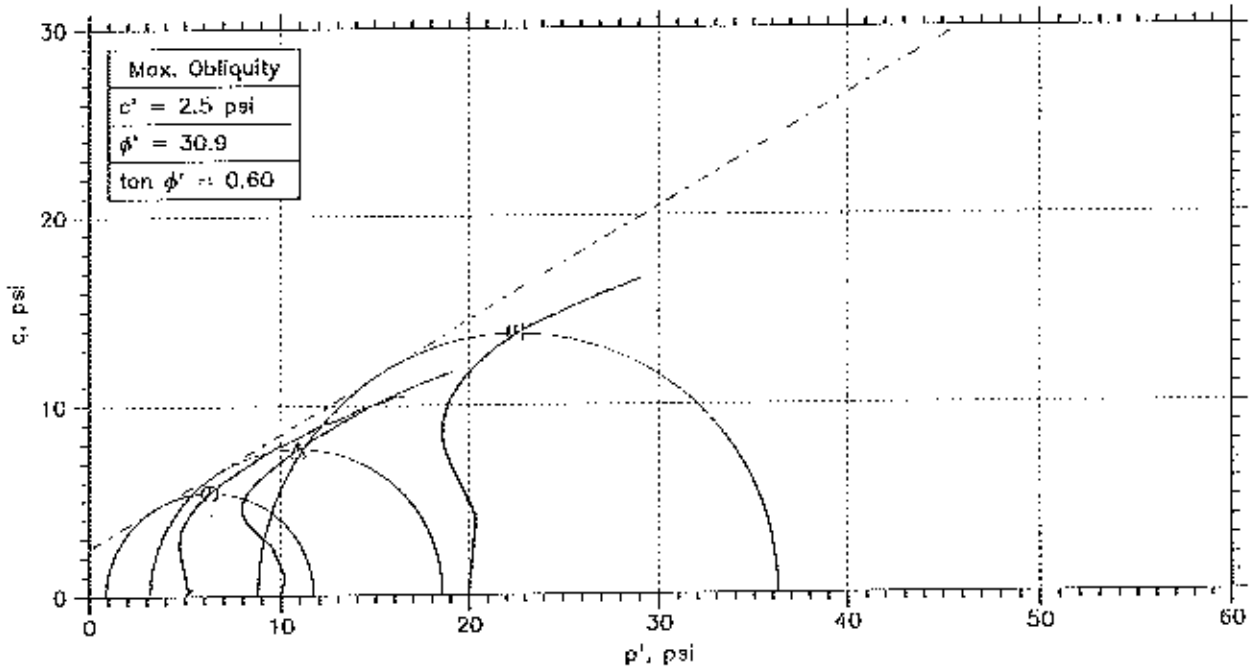
PROJECT I-575/CR 171 (Big Shanty Rd), Cobb County,GA
GDOT Proj. # CSNHS-0008-00(256); PI # 0008256

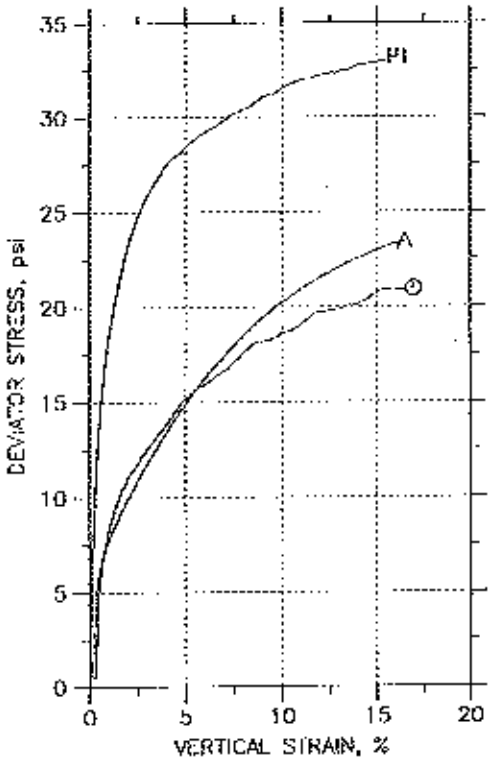
JOB NO. 171-3099 C
DATE 12/2/07

WE

GRADATION CURVE

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767





Symbol		⊙	△	⊟	
Sample No.		ST-1	ST-1	ST-1	
Test No.		8085.1	8085.2	8085.3	
Depth		10-12 ft.	10-12 ft.	10-12 ft.	
Initial	Diameter, in	2.857	2.857	2.855	
	Height, in	6	6.007	6	
	Water Content, %	35.9	33.0	24.7	
	Dry Density, pcf	84.74	85.64	96.03	
	Saturation, %	99.9	93.9	90.7	
	Void Ratio	0.952	0.932	0.723	
Before Shear	Water Content, %	36.8	35.0	26.2	
	Dry Density, pcf	83.78	85.8	97.63	
	Saturation*, %	100.0	100.0	100.0	
	Void Ratio	0.975	0.928	0.694	
	Back Press., psi	152.	128.	118.	
Ver. Eff. Cons. Stress, psi		5.004	10.	19.99	
Shear Strength, psi		10.47	11.72	16.6	
Strain at Failure, %		16.9	16.5	16.1	
Strain Rate, %/min		0.1	0.1	0.1	
B-Value		0.95	0.96	0.96	
Estimated Specific Gravity		2.65	2.65	2.65	
Liquid Limit		---	---	---	
Plastic Limit		---	---	---	

MACTEC

Project: I-575 over Big Shanty Rd.

Location: Wall No.4 ST 140+00 30' L

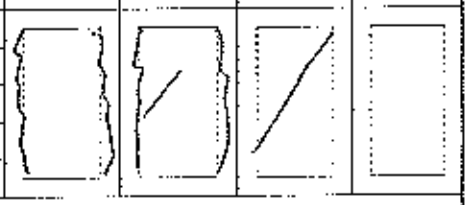
Project No.:

Boring No.: W-7

Sample Type: Shelby Tube

Description: Red Brown & Brown Sandy ~~Clayey~~ Silt

Remarks:



Phase calculations based on start and end of test.

* Saturation is set to 100% for phase calculations.

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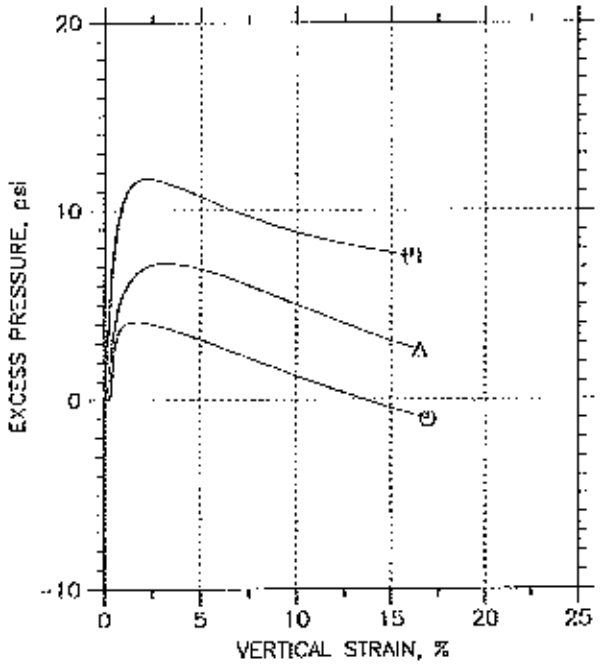
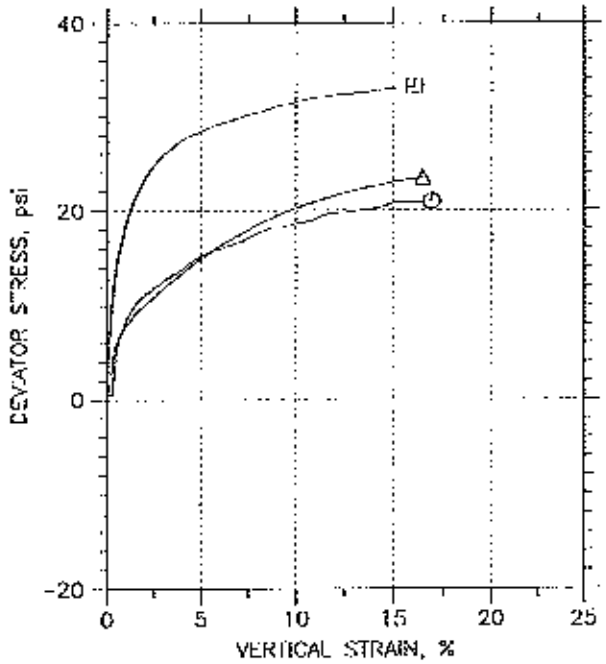
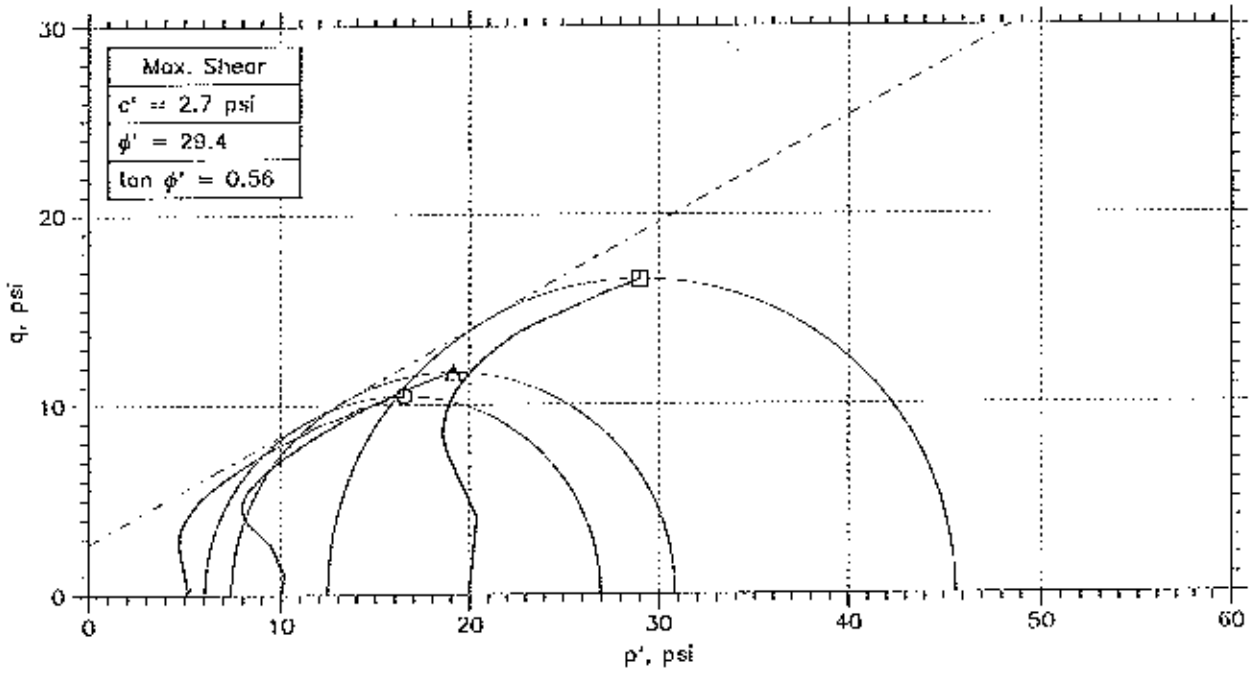
CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
◷	ST-1	8085.1	10-12 ft.	HJ	10/31/07	JW		8085.1_2547.dat
△	ST-1	8085.2	10-12 ft.	HJ	10/31/07	JW		8085.2a_2546.dat
⊡	ST-1	8085.3	10-12 ft.	HJ	10/31/07	JW		8085.3a_2545.dat

MACTEC

Project: I-575 over Big Shanty Rd. Location: Wall No.4 ST 140+00 30 Project No.:

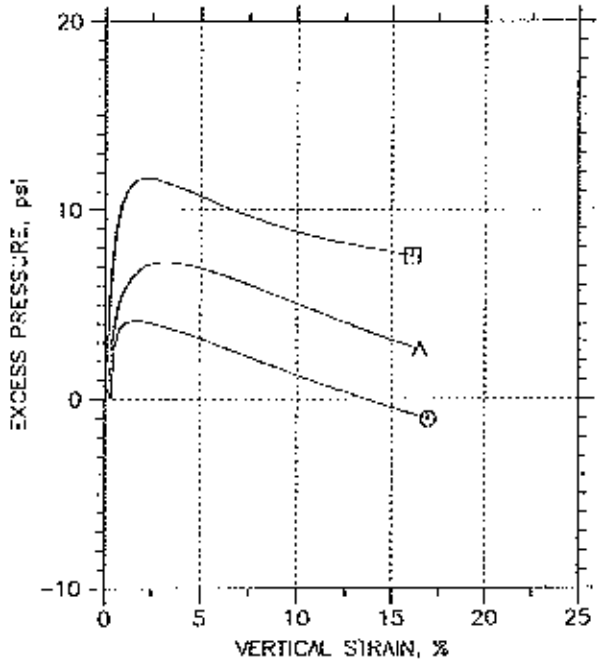
Boring No.: W-7 Sample Type: Shelby Tube

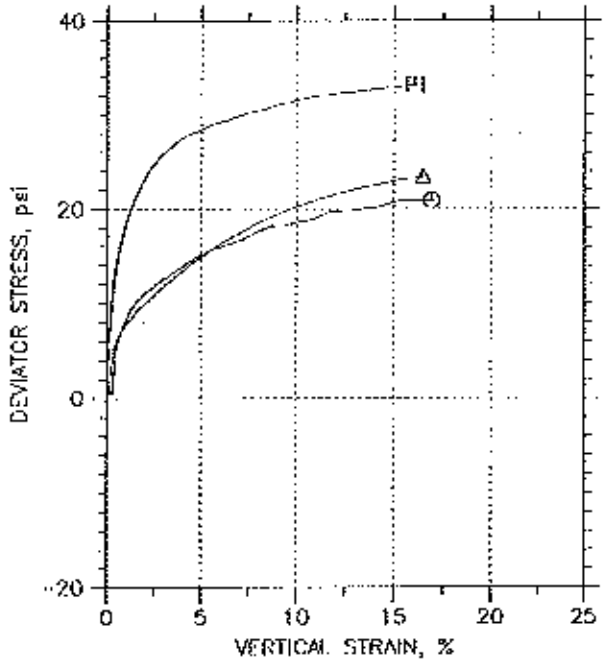
Description: Red Brown & Brown Sandy ~~Clayey~~ Silt

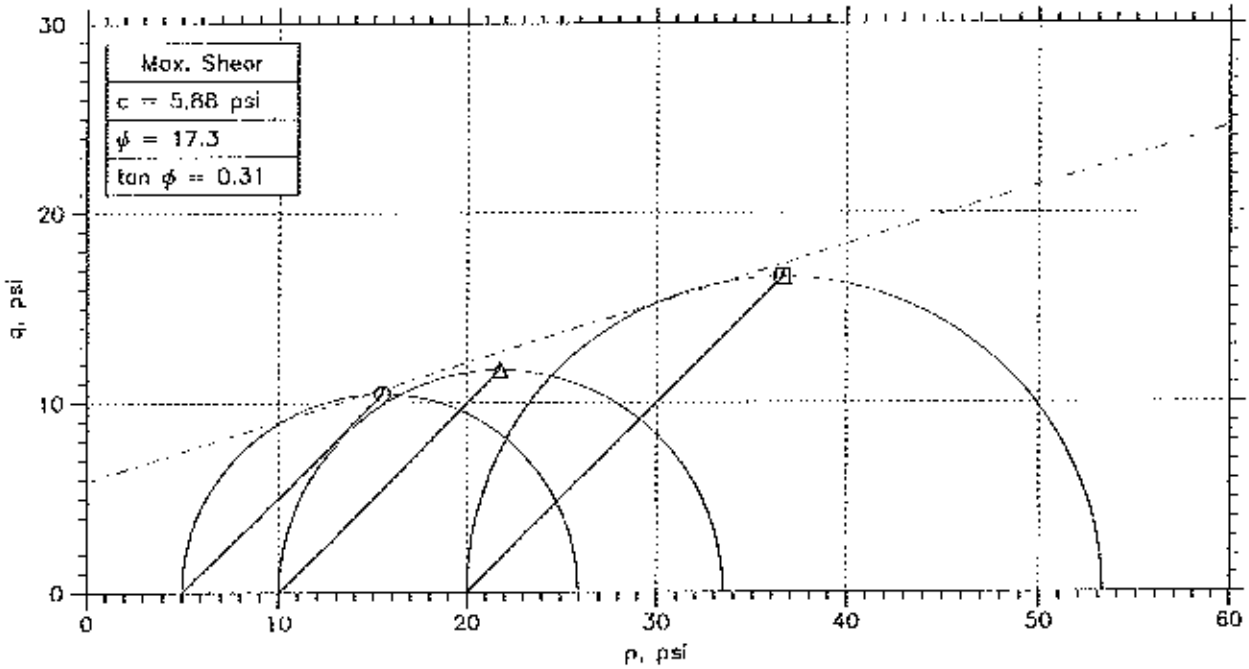
Remarks:

Mon, 05-NOV-2007 08:23:10

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767







	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
○	ST-1	8085.1	10-12 ft.	HJ	10/31/07	JW		8085.1_2547.dat
△	ST-1	8085.2	10-12 ft.	HJ	10/31/07	JW		8085.2a_2546.dat
□	ST-1	8085.3	10-12 ft.	HJ	10/31/07	JW		8085.3a_2545.dat

MACTEC

Project: I-575 over Big Shanty R | Location: Wall No.4 ST 140+00 30 | Project No.:

Boring No.: W-7 | Sample Type: Shelby Tube

Description: Red Brown & Brown Sandy ~~Clayey~~ Silt

Remarks:

Mon, 05-NOV-2007 08:22:31

APPENDIX II

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/18/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-1

BENT NO. 1 FOOTING GROUND ELEV. 954.6

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr.El.														
950	Loose Mltc. Micas. Clayey Sandy Silt	1s	8												
Swt.	Very Loose Mltc Micas.Sandy Silt	2s	3												
940	Loose Same	3s	10												
	Medium Dense Mltc. Micas.Sandy Silt	4s	15												
930		5s	11												
	Very Dense MSame	6s	60=3'												
920	V.Dse.Weathered Rock	7s	HB												
	Very Dense Mltc. Micas. Sandy Silt		60=1'												
910	V. Dse.Weathered Rock	9s	HB												
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor or refer on this information in his bidding or in his construction operations and finds that the inaccurate.

This foundation investigation report is not considered as a part of the plans and specifications of the contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/18/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-2

BENT NO. 1 FOOTING GROUND ELEV. 953.1

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El. ?														
950															
Swt.	Very Loose to Loose Mitc. Micas. Clayey Sandy Silt														
940		1s	6												
	Loose Mitc. Micas. Sandy Silt	2s	9												
930															
	Dense Some	3s	35												
		4s	60=7'												
920															
		5s	60=9'												
	Very Dense Mitc. Micas. Sandy Silt	6s	60=.3'												
910															
			60=.1'												
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor or relies on this information [illegible] in the construction operations [illegible] that it is inaccurate.

This [illegible] report is not [illegible] specifications [illegible]

GOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/18/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-3

BENT NO. 1 FOOTING GROUND ELEV. 953.2

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr.El. 7														
950															
Jwt.	Very Loose to Loose Mltc. Micas. Clayey Sandy Silt														
940															
	Very Loose Mltc. Micas. Sandy Silt	1s	3												
		2s	11												
930	Medium Dense Same														
	Very Dense Mltc. Micas. Sandy Silt	3s	60=4'												
		4s	60=.9'												
		5s	HB												
920															
	V.Dse.WeatheredRock	6s	HB												
910	Practical Refusal														

The Department of Transportation in making this boring(s) makes no representations as to the accuracy of the data.

No claim will be considered if the contractor relies on this information for bidding or in the construction phase of the work that is involved.

This information represents a boring considered to be in the vicinity and representations of Contractor on the job.

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/18/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-4

BENT NO. 2 FOOTING GROUND ELEV. 951.7

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C	Ø	BC	LL	PI	% 200	% CLAY	e
	Gr. El. 7														
950															
Swt.	Loose to Medium Dense Mltc. Micas Sandy Silt														
940	Very Loose Same	1s	2												
	Loose Mltc. Micas Sandy Silt	2s	7												
930		3s	7												
	Medium Dense Same	4s	14												
920		5s	17												
	Dse. Mltc. Micas. Sdy. Silt	6s	44												
910	V. Dse. Same	7s	60=3"												
	v. dse. weathered rock	8s	60=2"												
	Prodical Refusal														

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/17/76

LOCATION J-575 over CR 171 (Big Shanty Road) BORING NO. B-5

BENT NO. 2 FOOTING GROUND ELEV. 951.80

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El.														
Gwt															
950	Lse. to Med. Dense Mltc. Micas. Sandy Silt														
940		1s	2												
	Very Loose Same	2s	3												
930	Loose Mltc. Micas. Sandy Silt	3s	10												
	Medium Dense Same	4s	13												
920	Dse. Mltc. Micas. Sdy. Silt	5s	43												
		6s	60=5'												
	Very Dense Same	7s	57												
910		8s	60=9'												
	End Drilling														

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/18/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-6

BENT NO. 2 FOOTING GROUND ELEV. 952.2

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El.														
Swt. 950	Very Loose Mltc. Micas. Sandy Silt	1u													
		2s	2												
		3u													
940		4s	5												
		5u													
		6s	5												
	Loose Same														
		7s	8												
930															
		8s	6												
		9s	18												
920	Medium Dense Mltc. Micas. Sandy Silt														
		10s	62												
		11s	60=.2												
910	Very Dense Same														
		12s	60=.6												
	V.Dse.Weathered Rock	13s	HB												
	End Drilling														

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/19/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-7

BENT NO. 1 FOOTING GROUND ELEV. 954.6

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	Ø	BC	LL	PI	% 200	% CLAY	e
	Gr. El. 7														
950	Med. Dse. Mltc. Micas. Clayey Sandy Silt	1s	11												
Swt.	Very Loose Mltc. Micas. Sandy Silt	2s	2												
940		3s	7												
	Loose Same	4s	10												
930		5s	11												
	Medium Dense Mltc. Micas. Sandy Silt	6s	27												
	Dense Same														
920		7s	60=6												
	Very Dense Mltc. Micas. Sandy Silt														
	v dense weathered rock	8s	60=3												
	Practical Refusal														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications in contract on the job.

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/19/76

LOCATION I-575 over CR 171 (Big Shanty Road BORING NO. B-8

BENT NO. 1 FOOTING GROUND ELEV. 962.05

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	#
	Gr. El. 7														
950															
Swt.	V. Lse to Loose Mltc. Micas. Cy. Sandy Silt														
940															
		1s	5												
	Loose Mltc. Micas. Sandy Silt	2s	5												
930															
		3s	60=7'												
	Very Dense Same	4s	60=9'												
		5s	60=4'												
920															
	V. dense weath. rock														
	Very Dense Rock														
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/19/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-8A

BENT NO. 1 FOOTING GROUND ELEV. 952.1

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	Ø	BC	LL	PI	% 200	% CLAY	e
	Gr. El.														
950															
Swt.															
	Very Loose to Loose Mltc. Micas Clayey Sandy Silt														
940															
930	V.Lse.MltcMicas.Sdy.Silt	1s	4												
	Loose Same	2s	6												
	MedDseMltc.MicasSdy.Slt.	3s	13												
	Loose Same	4s	10												
920	Med.DseMltcMicasSdy.Slt.	5s	14												
	Very Dse. Same	6s	60=2"												
	v.densewedthered rock														
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not a part of the Plans and Specifications for contract on the job.

DOT 400

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/19/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-9

BENT NO. 1 FOOTING -- GROUND ELEV. 952.45

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	Ø	BC	LL	PI	% 200	% CLAY	e
	Gr. El.														
950															
Swt	Very Loose to Loose Mltc. Micas. Clayey Sandy Silt														
940															
	Very Loose Mltc. Micas. Sandy Silt	1s	3												
		2s	5												
930		3s	8												
	Loose Same	4s	9												
		5s	9												
		6s	37												
920	Dense Mltc. Micas. Sandy Silt														
		7s	HB												
	V.Dse. Weathered Rock														
910	Practical Refusal														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the plans and Specifications or Contract on the job.

DOT 480

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/17/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-10

BENT NO. 2 FOOTING GROUND ELEV. 952.7

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El. 7														
950															
3wt	Very Loose to Medium Dense Mltc. Micas. Sandy Silt														
940	Very Loose Same	1s	3												
	Loose Mltc. Micas. Sandy Silt	2s	6												
930		3s	8												
		4s	14												
	Medium Dense Same														
920	Dse. Mltc Micas. Sdy. Silt	5s	34												
		6s	60=.9'												
	Very Dense Same	7s	60=.7'												
910		8s	60=.6'												
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor relies on this information in his bidding or in his construction operations and finds that it is inaccurate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/12/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-11

BENT NO. 2 FOOTING GROUND ELEV. 954.40

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El.														
950															
Swt.	V.Lse.to Med.Dse.Mltc. Micas.Clayey Sdy Silt														
940	Very Loose Mltc. Micas. Sandy Silt	1s	3												
		2s	5												
	Loose Same	3s	6												
930		4s	9												
	Medium Dense Mltc. Micas. Sandy Silt	5s	21												
920		6s	60												
	Very Dense Same	7s	60												
910		8s	60=9"												
	V.Dse.Weathered Rock	9s	HB												
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy. No claim will be considered if the contractor [illegible] in his bidding on [illegible] and finds that [illegible] foundation report is not [illegible] the class and [illegible] the job.

DOT 490

DEPARTMENT OF TRANSPORTATION

OFFICE OF MATERIALS AND TEST, FOREST PARK, GEORGIA
SOILS ENGINEERING AND GEOLOGY BRANCH

BRIDGE SUBSURFACE INVESTIGATION

CSNHS-0008-00 (256)

PROJECT PI No. 0008256 COUNTY Cobb DATE 5/12/76

LOCATION I-575 over CR 171 (Big Shanty Road) BORING NO. B-12

BENT NO. 2 FOOTING GROUND ELEV. 955.05

PROPOSED FOOTING ELEV. PARTY CHIEF Pulliam

ELEV.	BORING LOG	SAMPLE	BLOW	UNIFIED	W	γ	Gs	C.	ϕ	BC	LL	PI	% 200	% CLAY	e
	Gr. El. 7														
Gwt 950	Med.Dse.Brown Gray Micas.Clayey Sdy.Silt	1s	16												
	Very Loose Mltc. Micas. Sandy Silt	2s	3												
940		3s	3												
	Loose Same	4s	6												
930	Medium Dense Mltc. Micas. Sandy Silt	5s	17												
	Dense Same	6s	31												
920		7s	60=.9'												
	Very Dense Mltc. Micas. Sandy Silt	8s	60=5'												
910		9s	60												
		10s	60=2'												
	End Drilling														

The Department of Transportation in making this foundation report available to contractors assumes no responsibility for its accuracy.

No claim will be considered if the contractor or relies on this information in his bidding or in his construction operations and finds that it is inadequate.

This foundation investigation report is not considered as a part of the Plans and Specifications or Contract on the job.