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DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE MSL-0003-00(168) & MSL-0004-00(086), Gwinnett County
SR 316 HOV Lanes from I-85 to SR 20
PI No. 0003168 & 0004086

OFFICE Materials and Research

DATE February 7, 2007

FROM Georgene M. Geary, P.E., State Materials and Research Engineer

TO Ben Buchan, P.E. State Urban Design Engineer
Attention: Neal O'Brien

SUBJECT Final Acceptance of Consultant's Soil Survey Summary Report
SR 316 HOV Lanes from I-85 to SR 20

As requested, we have reviewed the Soil Survey Report Summary that was written on January 26, 2007 by Willmer Engineering Inc. of Atlanta, Georgia. This report is acceptable for use in design and during construction. Copies of this report should be forwarded to the appropriate DOT offices.

If additional information is needed, please contact Ian Rish, E.I.T. of the Geotechnical Engineering Bureau at 404-363-7546.

GMG:IDR

Copy: Willmer Engineering Inc.
3772 Pleasantdale Road Suite 165
Atlanta, GA 30340-4270
Attention: Sujit K. Bhowmik, PhD, P.E.

061192

SOIL SURVEY REPORT
(Revised January 26, 2007)
SR 316 HOV Lanes from I-85 to SR 20
GDOT Project Nos. MSL-0003-00(168) & MSL-0004-00(086) Gwinnett
PI Nos. 0003168 & 0004086
Gwinnett County, Georgia

WILLMER ENGINEERING INC.
Willmer Project No. ATL-171-2867

Prepared For

PBS&J
Atlanta, Georgia

Prepared By

WILLMER ENGINEERING INC.
3772 Pleasantdale Road
Suite 165
Atlanta, Georgia 30340-4270

770.939.0089

August 9, 2006
(Revised January 26, 2007)

VIA FEDERAL EXPRESS

Michael R. Moseley, Jr.
PBS&J
5665 New Northside Drive
Suite 400
Atlanta, Georgia 30328

SUBJECT: **Soil Survey Report**
SR 316 HOV Lanes from I-85 to SR 20
GDOT Project Nos. MSL-0003-00(168) & MSL-0004-00(086) Gwinnett
PI Nos. 0003168 & 0004086
Gwinnett County, Georgia
Willmer Project No. ATL-171-2867

Dear Mr. Moseley:

Willmer Engineering Inc. (Willmer) is pleased to provide this Soil Survey report for the proposed construction of SR 316 HOV Lanes from I-85 to SR 20 in Gwinnett County, Georgia. The Soil Survey was performed based on a set of plans, profiles and cross sections received on October 4 and November 4, 2005, provided to us by PBS&J. This work was performed in general accordance with Willmer Proposal No. P04-105C.1, dated April 13, 2005, and the GDOT guidance documents for Soil Survey for roadway design. The report was revised to comply with GDOT review comments of November 29, 2006.

The attached summary presents the site and subsurface conditions along the proposed alignment, and our geotechnical recommendations related to roadway design and construction.

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

Sincerely,

WILLMER ENGINEERING INC.

Eric J. Byrne, EIT
Staff Engineer

Sujit K. Bhowmik, PhD, PE
Principal Geotechnical Consultant

James L. Willmer, PE
Vice President/Principal Consultant

EJB/SKB/JLW:kas
I:\Word Processing\Projects\171-GEO\171-2867\Reports\171-2867 - SR 316 HOV Lanes Soil Survey Revised 01.26.07.doc

Attachments: **Soil Survey Summary**

Figures

Appendix I

Berm Detail
Benching Detail
Underdrain Placement Detail
Filter Fabric Detail
Pipe Culvert Material Alternates

Appendix II

Boring Record Legend
Unified Soil Classification System Reference Sheet
Engineering Description of Rock Hardness
Record of Soil Survey Borings (Pages 1 through 122)
Standard Penetration Test and Hand Auger and Penetrometer Boring Logs

Appendix III

Laboratory Data Summary (Pages 1 through 36)
Corrosion Series Test Results

SOIL SURVEY SUMMARY
for
GDOT Project Nos. MSL-0003-00(168) & MSL-0004-00(86) Gwinnett
PI Nos. 0003168 & 0004086
SR 316 HOV Lanes from I-85 to SR 20
Gwinnett County, Georgia

1. **Location / Description**

This project involves the construction of SR 316 HOV Lanes beginning at the intersection with I-85 and extending to about 5,700 feet east of the intersection with Hi-Hope Road in Gwinnett County, Georgia. The starting point of the project is located about six miles west of Lawrenceville, Georgia. The project is along the existing SR 316 alignment with the construction work beginning at Station 940+89, and continuing east to Station 1401+12. The planned improvements will consist of two HOV lanes and widening of SR 316, including eight bridges, four HOV interchanges and nine box culverts. The mainline length of the project is about 8.7 miles. The location of the project is shown in Figure 1, and a project alignment map is presented in Figures 2.1 through 2.3.

2. **Geology**

The project alignment is geologically sited within the Piedmont Physiographic Province of Georgia, and is underlain by granitic gneiss, metagraywacke, mica schist, amphibolite and quartzite.

3. **Rock**

Rock/boulders, noted as auger refusal, were encountered at a number of boring locations. Additional borings were conducted at more frequent intervals (100-foot or 50-foot intervals, as needed) to better define auger refusal depths along the project alignment. It is estimated that this material will be encountered above the proposed grade at the following locations:

Station to Station	Location
1006+50± to 1007+50±	Left
1042+50± to 1043+50±	Right
1122+00± to 1124+00±	Left
1128+50± to 1137+50±	Left & Right
1137+50± to 1144+50±	Right
1148+00± to 1157+50±	Left
1159+50± to 1166+50±	Left
1167+50± to 1169+50±	Left & Right
1169+50± to 1177+25±	Left
1181+50± to 1186+50±	Right
1198+50± to 1199+50±	Right
1232+50± to 1233+50±	Left
1234+50± to 1235+00±	Left & Right
1235+00± to 1236+00±	Right
1249+50± to 1250+00±	HOV & Right
1284+50± to 1287+50±	Right
1288+50± to 1289+50±	Left

(continued)

3. Rock (continued)

Station to Station	Location
2140+00± to 2141+50± (Ramp J–Riverside Pkwy)	Left & Right
2141+50± to 2144+50± (Ramp J–Riverside Pkwy)	Left
2235+00± to 2237+50± (Ramp P–SR120/Duluth Hwy)	Left & Right

The depth to auger refusal varied along the proposed alignment, as indicated in the "Record of Soil Survey Borings" in Appendix II. Rock coring was performed at two auger refusal locations to determine the type and quality of rock. The quality of rock varied along the project alignment. Rock coring data at Station 1132+00 indicates the rock to be highly weathered, fractured/jointed, mica schist. Soil seams were also encountered in the fractured/jointed portions of the rock. Rock coring data at Station 1169+00 indicates the rock to be fresh, hard, amphibole gneiss.

The fractured/jointed portions of rock will likely be removable by heavy equipment and possibly some light blasting. The hard rock will require blasting for removal.

At station 1132+00, after encountering auger refusal at 1.5 feet and coring to 10 feet below existing ground surface, the boring was offset by 2 feet where auger refusal was encountered at 13 feet. This data indicates that some of the auger refusals are likely to be due to the presence of boulders/rock layers.

The boulders/rock layers will likely be removable by heavy equipment and possibly some light blasting.

4. Removal

A. Rock:

The rock material excavated from the cut areas should be processed and used in the fill areas in accordance with the standard GDOT specifications.

B. Soils with High In-Place Moisture Content:

In some parts of the project alignment, the soils at/near the proposed grade were found to have in-place moisture contents far above the corresponding optimum moisture contents. This condition has the potential to cause pumping problems during subgrade and base construction. It is recommended that upon completion of any necessary excavation in these areas, 24-inches of subgrade soils from beneath the proposed pavement and shoulders be removed, and either dried out and replaced, or replaced with drier soils. The locations where high in-place moisture contents will likely be encountered are:

4. Removal (continued)

Station to Station	Location
957+50± to 960+50±	Left
981+50± to 984+50±	Left
984+50± to 987+50±	Left & Right
1002+50± to 1020+50±	Left & Right
1021+50± to 1022+50±	Left
1022+50± to 1038+50±	Left & Right
1059+50± to 1080+50±	Left & Right
1092+50± to 1095+50±	Left & Right
1101+50± to 1104+50±	Left & Right
1110+50± to 1124+25±	Left & Right
1125+75± to 1137+50±	Left & Right
1146+50± to 1152+50±	Left & Right
1158+50± to 1167+50±	Left & Right
1173+00± to 1173+50±	Right
1173+50± to 1191+50±	Left & Right
1200+50± to 1206+50±	Left & Right
1222+50± to 1227+50±	Right
1230+50± to 1233+50±	Left & Right
1238+50± to 1239+50±	Left
1242+50± to 1251+50±	Left & Right
1257+50± to 1260+50±	Left & Right
1290+50± to 1293+50±	Left & Right
1296+50± to 1311+50±	Left & Right
1314+50± to 1317+50±	Right
1326+50± to 1338+50±	Left & Right
35+00± to 39+50± (Lawrenceville–Suwanee Rd)	Left & Right
40+25± to 47+75± (Lawrenceville–Suwanee Rd)	Right
64+50± to 73+00± (SR120/Duluth Hwy)	Left & Right
60+50± to 62+75± (Walther Road)	Left & Right
83+50± to 86+50± (Buford Drive/SR20)	Left & Right
93+00± to 100+00± (Buford Drive/SR20)	Left & Right
87+50± to 94+75± (Hi-Hope Road)	Left & Right
893+75± to 907+00± (Wimberly Way)	Left & Right
2088+33± to 2099+41± (Ramp L–Riverside Pkwy)	Left & Right
2140+00± to 2144+50± (Ramp J–Riverside Pkwy)	Left & Right
506+25± to 507+25± (Ramp U–Collins Hill Road)	Left & Right

This work should be done under the direction of the Engineer, and may be eliminated if the subgrade soils are dry and stable at the time of construction.

5. Waste

None of the materials found on this project will require wasting. However, Class IIIC2 and IIIC3 soils, which exhibit high volume change and are considered to have poor load-carrying characteristics, will likely be encountered at the following cut areas:

Station to Station	Location
1050+50± to 1053+50±	Left & Right
1134+50± to 1137+50±	Left & Right
1167+50± to 1173+25±	Left & Right
1221+50± to 1227+25±	Right
1227+25± to 1230+50±	Left & Right
1230+50± to 1233+50±	Left
1263+50± to 1266+50±	Right
1368+50± to 1371+75±	Right
1376+75± to 1377+50±	Right
42+50± to 47+75± (Lawrenceville–Suwanee Rd)	Right

Class IIIC2 and IIIC3 soils excavated from the above cut areas, and undercut from at-grade areas (as described under "7. Pavement Design") of the project alignment should not be placed within the upper three feet of subgrade directly beneath the pavement section. These soils may be used in the bottom of high fill sections, in the shoulders, or in the side slopes as directed by the Engineer. This work shall be done in accordance with Special Provision 205.

6. Subgrade Materials

No additional subgrade materials will be required for this project.

7. Pavement Design

The pavement design for this project should include a minimum of 12 inches of graded aggregate base (GAB) except where special treatment is required as described below.

Class IIIC2 and IIIC3 soils, which exhibit high volume change and are considered to have poor load-carrying characteristics, were encountered at the proposed subgrade level at many locations along the project alignment. It is recommended that the pavement design include an additional 4 inches of GAB in the following at-grade and cut areas, at the discretion of the Engineer:

Station to Station	Location
1050+50± to 1053+50±	Left & Right
1134+50± to 1137+50±	Left & Right
1167+50± to 1173+25±	Left & Right
1221+50± to 1227+25±	Right

(continued)

7. Pavement Design (continued)

Station to Station	Location
1227+25± to 1230+50±	Left & Right
1230+50± to 1233+50±	Left
1263+50± to 1266+50±	Left and Right
1368+50± to 1377+50±	Right
42+75± to 47+75± (Lawrenceville–Suwannee Rd)	Left and Right

The additional 4 inches of GAB should be installed by undercutting subgrade soils and replacing with GAB. The Class IIIC2 and IIIC3 soils undercut from these areas should be used as described under "5. Waste."

8. Pavement Design Values

The following values are recommended for use in the pavement design calculations for the entire length of the project:

Soil Support Value	**=**	**2.5**
Regional Factor	**=**	**1.8**
Subgrade Reaction Modulus, k	**=**	**130 pci**

Graded aggregate base is the only base material recommended for use on this project.

9. Slopes

A. General Slopes:

Standard Penetration Test (SPT) borings and slope stability analyses were performed at the critical slope locations to evaluate the stability of the designed slopes. Logs of the SPT borings performed in high fill and other critical slope areas are included in Appendix II.

Based on the results of our stability analyses, it is recommended that a maximum slope of 2:1 be used in all areas.

B. Slopes Greater than 35 feet in Height:

Embankment and cut slopes that are greater than 35 feet in height will require construction of an intermediate berm in accordance with the attached "Berm Detail" (see Appendix I) at the following locations:

Station to Station	Location
988+75± to 991+75±	Left
1135+25± to 1136+25±	Left
1160+75± to 1162+75±	Left
52+25± to 57+25± (Lawrenceville–Suwanee Rd)	Right
2256+75± to 2258+75± (Ramp Q–Buford Drive/SR20)	Right

10. Serrated Slopes Serrated slopes will not be required on this project.

11. Bench Detail Where new fills are to be placed on existing slopes steeper than 3:1, the existing slope should be benched in accordance with the "Benching Detail" presented in Appendix I.

12. Ground Water Ground water was encountered at/above the proposed grade at two boring locations as follows:

Station to Station	Location
1167+00	Left
1199+00	Right

The above ground water readings appear inconsistent since no ground water was encountered at/above grade during our field exploration in nearby borings or in any of the other deep cut areas.

We recommend that underdrains and drainage stone be set up on an as needed basis, as directed by the Engineer, at the following locations:

Station to Station	Location
1166+50± to 1167+50±	Left
1198+00± to 1199+50±	Right

The underdrains should be installed in accordance with the "Underdrain Placement Detail" presented in Appendix I.

13. Low Wet Areas The project alignment crosses a number of low wet areas, which may remain inundated at the time of construction. Ditching will likely be required to drain any standing water prior to embankment construction. The low wet areas were at the following stations:

Station to Station	Location
963+75± to 968+00±	Left
973+25± to 975+50±	Left
1010+25± to 1011+75±	Left
1011+75± to 1017+25±	Left & Right
1017+25± to 1018+75±	Left
888+75± to 890+00± (Wimberly Way)	Left & Right

(continued)

13. Low Wet Areas (continued)

If there is standing water and it is not feasible to drain these areas during construction, a mat of rock embankment should be placed to a height of 18 inches above the water level prior to placing normal fills. We recommend that the rock embankment be choked off with fines prior to the placement of normal fill material.

If the ground surface is wet and unstable due to high ground water, we recommend that a layer of filter fabric be placed on top of the existing ground surface prior to placing the fills, as shown on the 'Filter Fabric Detail' in Appendix I. Placement of the fabric should be in accordance with Special Provision Section 881.

The requirement of any of these measures may be eliminated at the direction of the Engineer if the subgrade soils are dry and stable at the time of construction.

14. Shrinkage

We recommend an average shrinkage factor of 25% for use in the earthwork calculations for this project.

15. Rock Swell

We recommend an average swell factor of 30% for materials identified as medium hard or hard rock in the "Record of Soil Survey Borings" in Appendix II.

16. Culverts

We recommend that a 12-inch blanket of Type II Foundation Backfill material be placed under the barrel of all culverts, and 48-inch diameter and larger cross-drains on this project with the exception of the culverts at the following locations where a 24-inch blanket of Type II Foundation Backfill is recommended:

Station	Culvert Size	Type II Foundation Backfill Required
967+75±	DBL 10'x10' RCBC	24"
974+80±	DBL 5'x6' RCBC	24"
1017+20±	DBL 10'x10' RCBC	24"
1143+30±	6'X5' RCBC	24"
1151+30±	6'x6' RCBC	24"
1214+24±	5'x6' RCBC	24"
1242+80±	7'x7' RCBC	24"
1336+35±	8'x7' RCBC	24"
1355+90±	6'x5' RCBC	24"

This recommendation is based on the loose soil conditions encountered at the culvert locations. Logs of SPT and Hand Auger and Penetrometer borings performed at the culvert locations showing the soil types encountered are included in Appendix II.

17. Corrosion

In selecting culvert material types, reference should be made to the attached (Appendix I) "Pipe Culvert Material Alternates" for materials allowable based on the laboratory corrosion tests.

Corrosion potential tests, consisting of electrical resistivity and pH tests, were performed on water samples obtained from the culvert locations. The test results are summarized in Table A3-2, Appendix III.

18. Special Problems

A. A number of ponds were observed along the project alignment. The ponds at the following locations will likely require siltation control during construction:

Station to Station	Location
979+00± to 981+65±	Left
1011+00± to 1015+00±	Left
1213+25± to 1215+75±	Right
692+00± to 695+00± (Ramp V – Collins Hill Rd)	Right

It is also recommended that pre- and post-construction cross sections be prepared at these locations, as per the construction manual, to protect the Department against claims.

B. Several residences and businesses are located close to the construction limits of the project. Vibrations from construction may be of concern to the property owners. It is recommended that the Engineer contact the Geotechnical Engineering Bureau prior to construction to evaluate the need for crack surveys and vibration monitoring.

C. It is recommended that the bridge and HOV interchange approach slabs on this project be constructed in accordance with the notched detail on Georgia Standard 9017-R.

Reported By: Eric J. Byrne, EIT / Sujit K. Bhowmik, PhD, PE

Reviewed By: James L. Willmer, PE

Revised: December 18, 2002

DEPARTMENT OF TRANSPORATION
STATE OF GEORGIA

SPECIAL PROVISION

PROJECT NO. MSL-0003-00(168), GWINNETT COUNTY
P.I. NO. 0003168

SECTION 205 – ROADWAY EXCAVATION

Add the following to Sub-section 205.3.05.E:

The soils that will be excavated from the following cut sections are primarily Class IIIC soils with poor load carrying characteristics. Do not place these soils within 3 feet (915 mm) of the subgrade directly beneath the pavement in fill sections. These soils may be placed in the bottom of high fill sections, in the shoulders or in the median as directed by the Engineer:

Station to Station	Location
1050+50± to 1053+50±	Left & Right
1134+50± to 1137+50±	Left & Right
1167+50± to 1173+25±	Left & Right
1221+50± to 1227+25±	Right
1227+25± to 1230+50±	Left & Right
1230+50± to 1233+50±	Left
1263+50± to 1266+50±	Right
1368+50± to 1371+75±	Right
1376+75± to 1377+50±	Right
42+50± to 47+75± (Lawrenceville – Suwanee Rd)	Right

Revised June 16, 2006

GEORGIA DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

SPECIAL PROVISION

PROJECT NO. MSL-0003-00(168), GWINNETT COUNTY

P.I. NO. 0003168

Section 881- Fabrics

Add the following to Subsection 881.2.08:

881.2.08 Filter Fabric for Embankment Stabilization

A. Requirements

1. Use woven filter fabric for embankment stabilization.
2. Sew fabric with a lock stitch using high strength polypropylene or nylon thread.
3. Obtain approval of the stitch and sewing method from the Engineer prior to use.
4. Use fabric that meets the following minimum tensile strength requirements:

Fabric Type	Tensile Strengths in lbs/in (kN/m) width			
	Warp Direction		Fill Direction	
	5% Strain	Ultimate	5% Strain	Ultimate
Polyester	100 (17.5)	250 (43.8)	100 (17.5)	250 (43.8)
Polypropylene	100 (17.5)	400 (70)	100 (17.5)	400 (70)

Minimum Seam Strength = 100 lbs/in (17.5 kN/m) width

a. Tensile strengths at 5% strain are based on reduction factors from the ultimate strengths of 0.4 for polyester and 0.25 for polypropylene fabrics.

b. Use of reduction factors other than those shown are allowed only if verified by laboratory tests acceptable to the Department.

5. Submit a certification from the manufacturer that shows the physical properties of the material used and how it meets this Specification. Submit the certificate according to Subsection 106.05, "Materials Certification."

B. Fabrication

General Provisions 101 through 150.

C. Acceptance

Test according to the following:

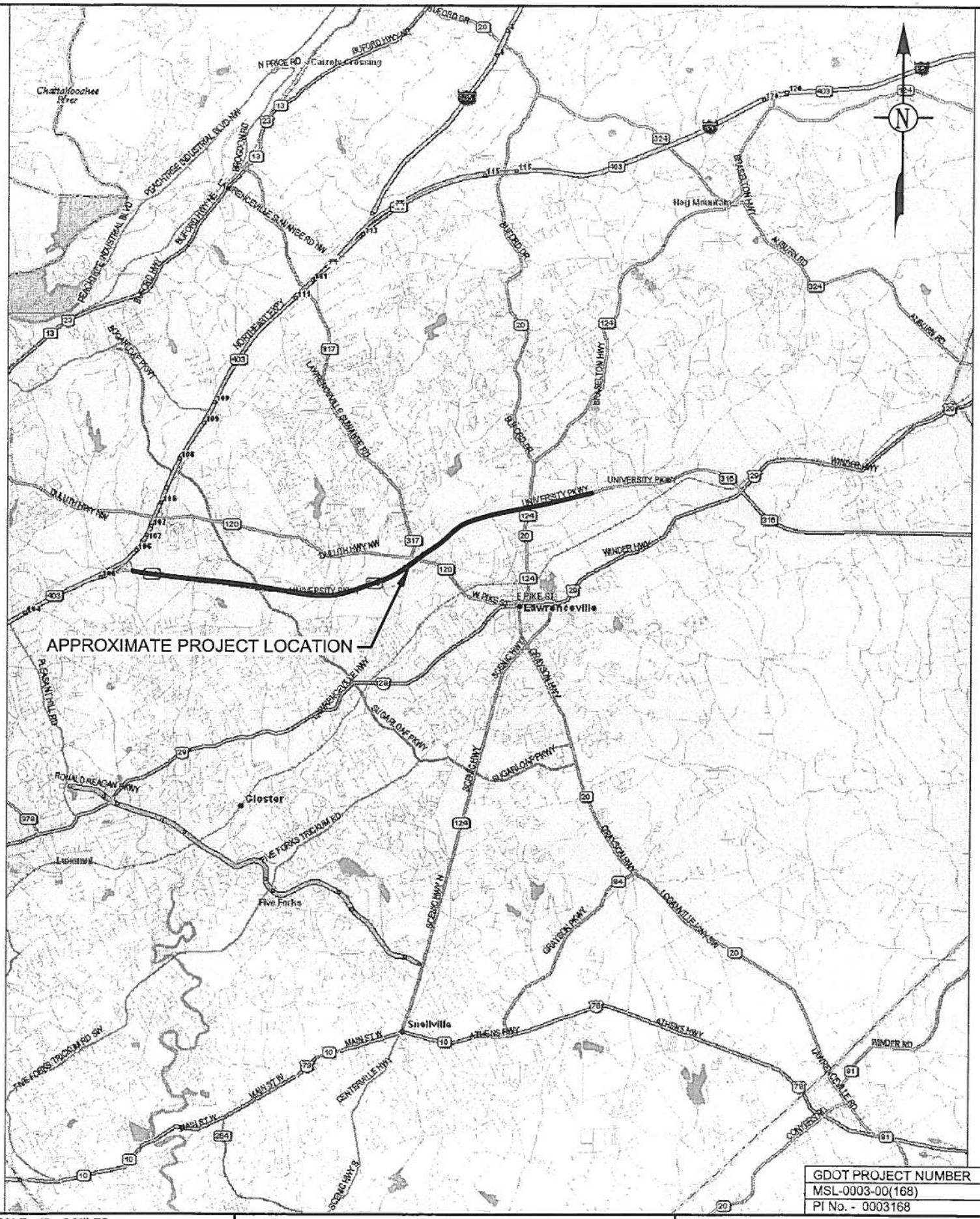
Test	Method
Tensile strength, elongation	ASTM D 4595 Wide Strip Test
Seam Strength	ASTM D 4884 Wide Strip Test

1. Run the tests at a strain rate of 10% per minute.
2. Use a pre tensioning load of 10 lbs/in (1.75 kN/m) or 3%, whichever is less.

D. Materials Warranty

General Provisions 101 through 150.

FIGURES



GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. - 0003168

SCALE: 1" = 2 MILES

DRAWN BY: PMGS 6/30/2006

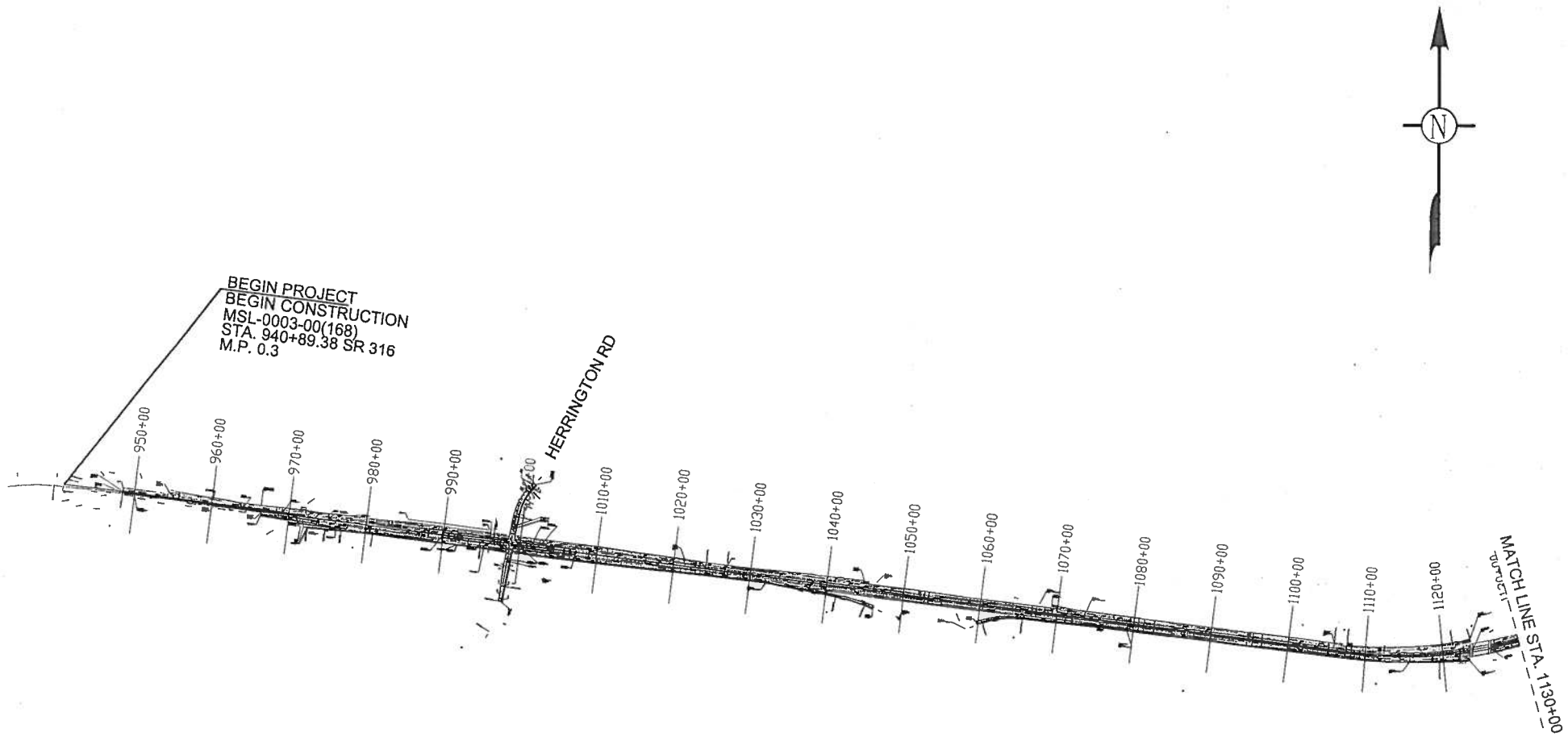
REVIEWED BY: EB 6/30/2006

WILLMER ENGINEERING INC. WE

GEOTECHNICAL ENGINEERING
CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 1

PROJECT LOCATION MAP
SR 16 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867



GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. - 0003168

SCALE: 1" = 2,000'		
DRAWN BY: PMGS	6/30/2006	
REVIEWED BY: EB	6/30/2006	

WILLMER ENGINEERING INC.

WE

GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 2.1

PROJECT ALLIGNMENT
SR 16 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867

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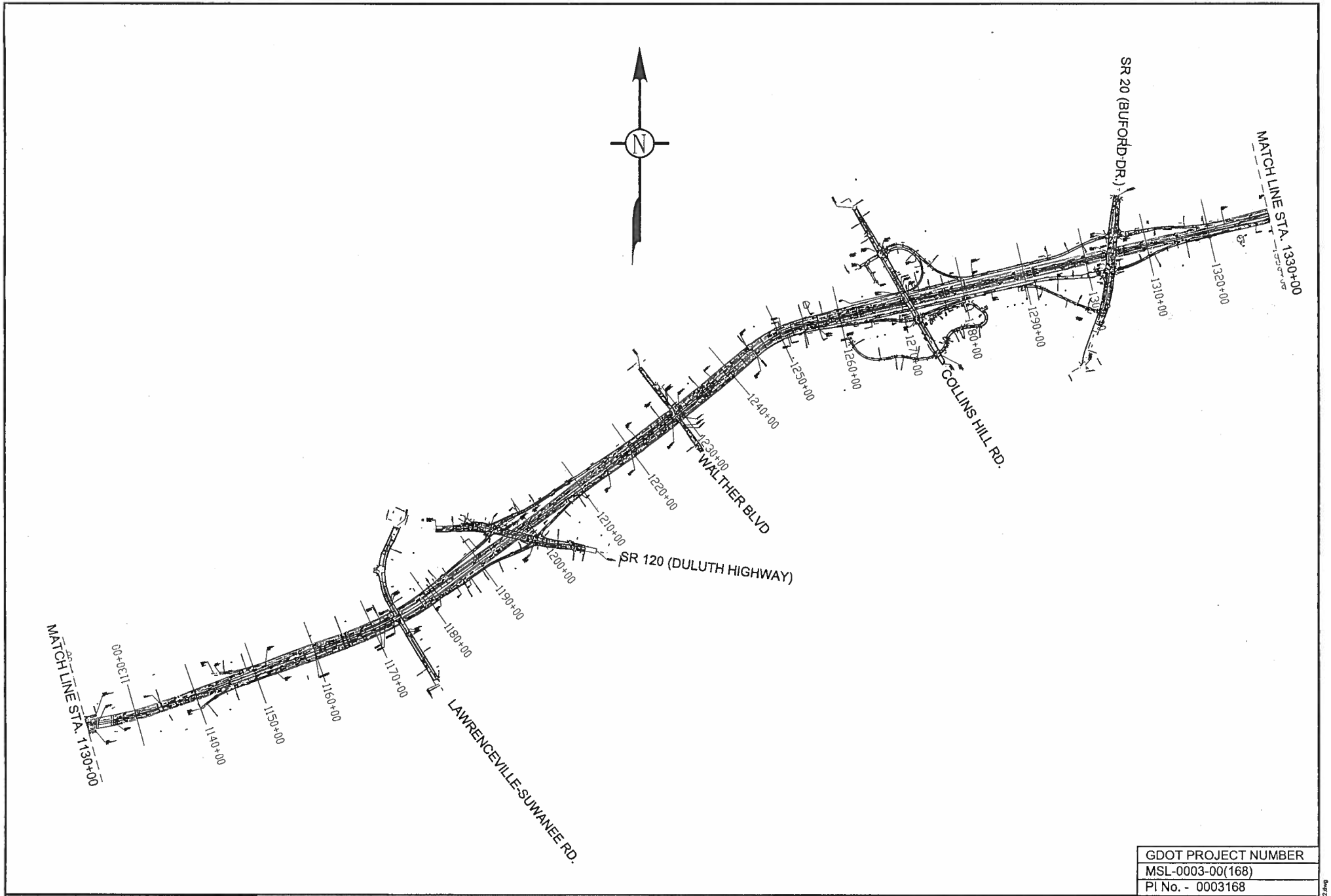

GDOT PROJECT NUMBER
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SCALE: 1" = 2,000'	
DRAWN BY: PMGS	6/30/2006
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ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 2.2

PROJECT ALLIGNMENT
SR 16 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867

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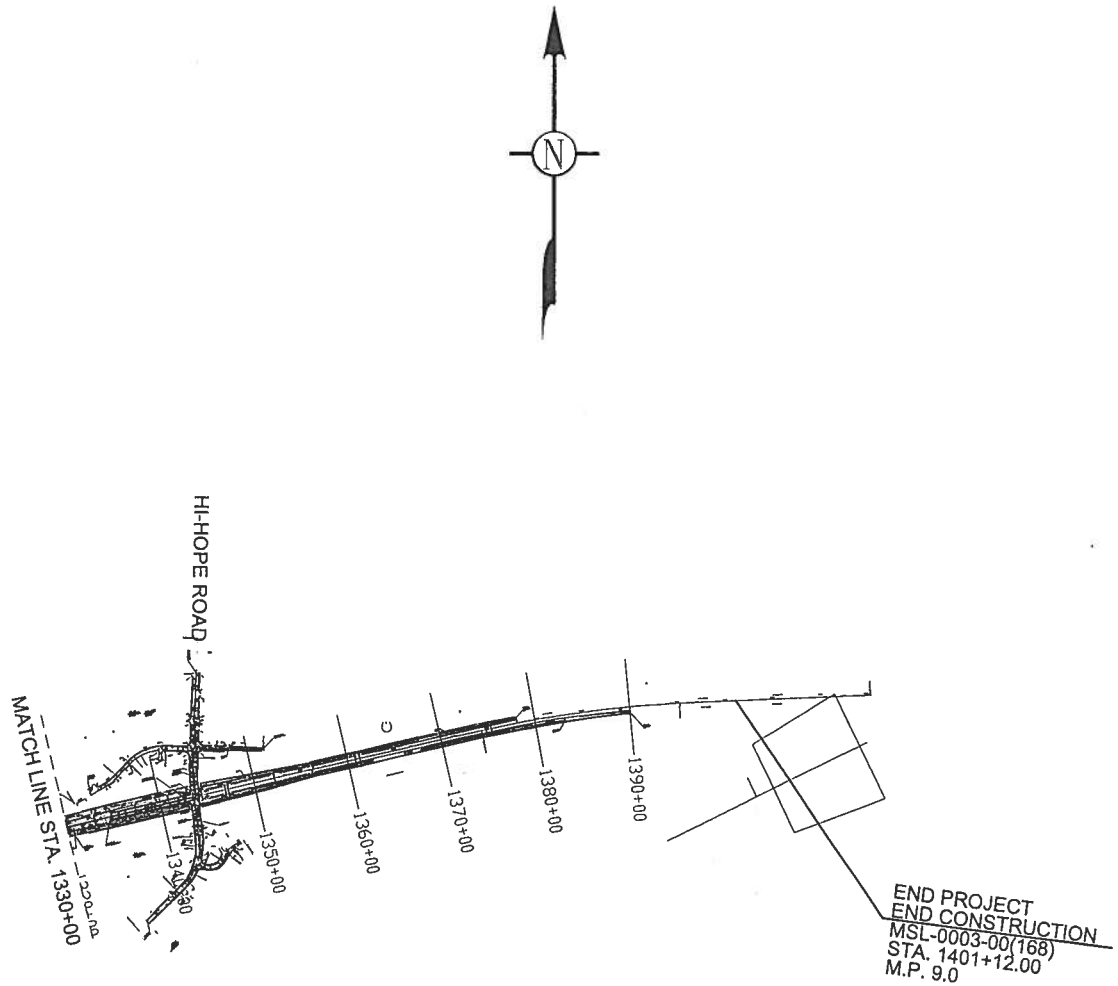

GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. - 0003168

SCALE: 1" = 2,000'		
DRAWN BY: PMGS	6/30/2006	
REVIEWED BY: EB	6/30/2006	

WILLMER ENGINEERING INC.

WE

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ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FIGURE 2.3

PROJECT ALLIGNMENT
SR 16 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867

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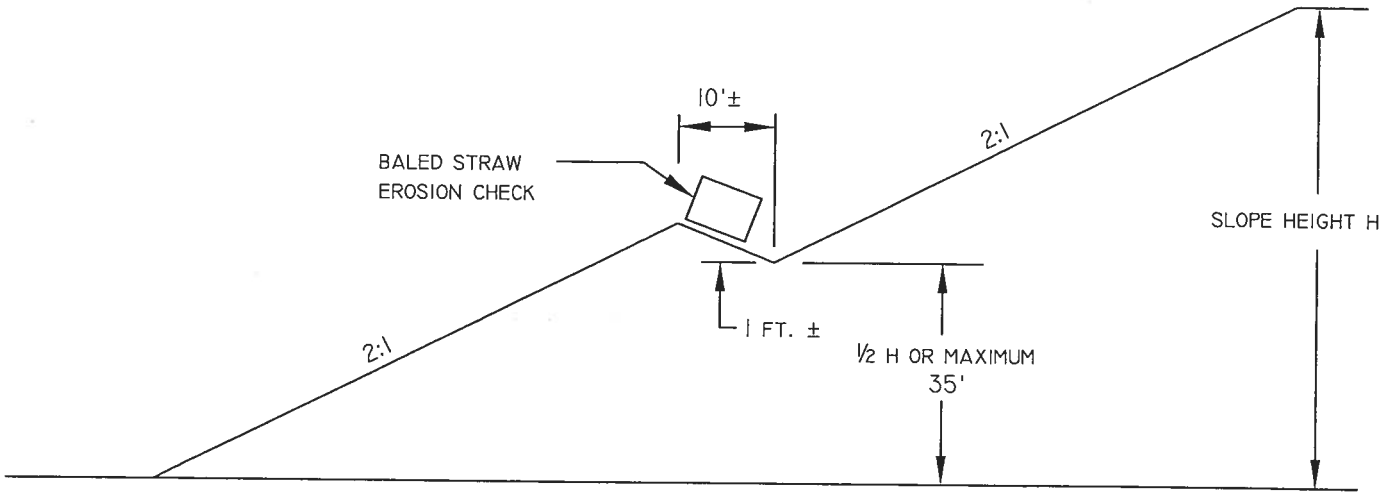
APPENDIX I



NOTES:

1. FOR SLOPE HEIGHTS LESS THAN 70 FT. BUT GREATER THAN 35 FT., A BERM SHOULD BE CONSTRUCTED AT APPROX. ½ THE SLOPE HEIGHT. FOR SLOPE HEIGHTS GREATER THAN 70 FT., CONSTRUCT A BERM EVERY 35 FT.

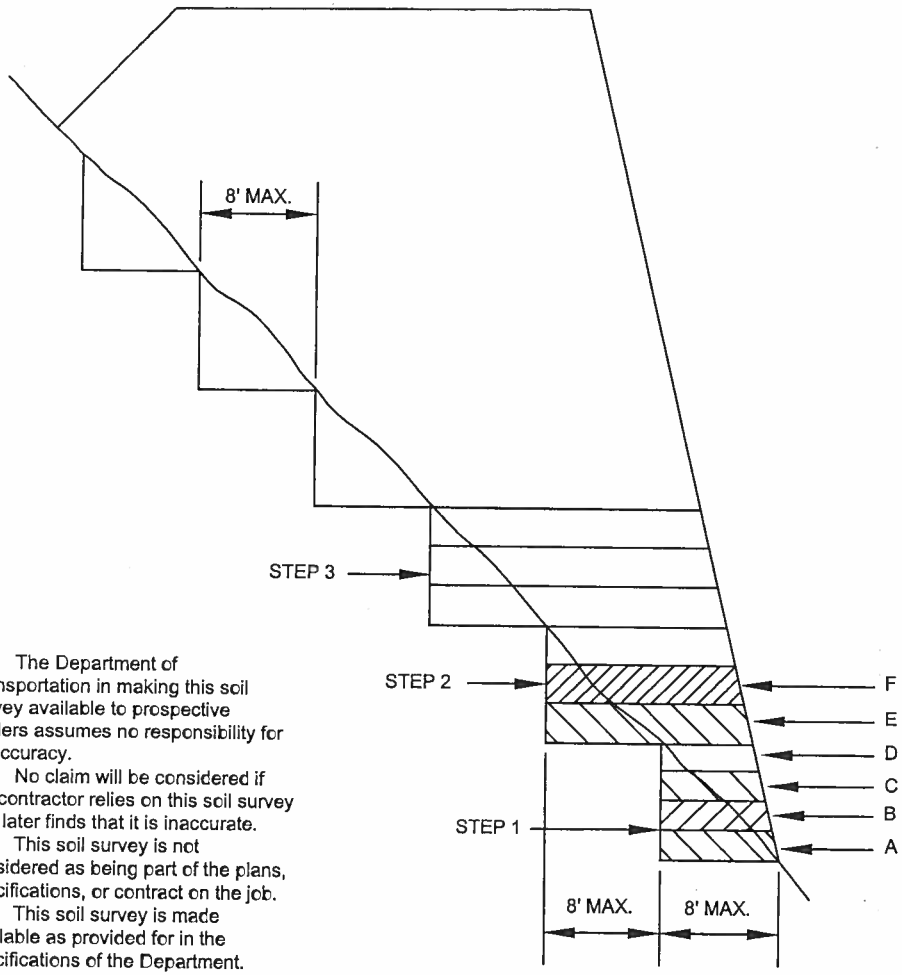
2. THE BERM SHOULD BE SLOPED TO DRAIN AND SHOULD BE CONNECTED TO CONCRETE FLUMES TO REMOVE WATER FROM SLOPE.

3. A DRAINAGE DITCH SHOULD BE CONSTRUCTED AT THE TOP OF CUT SLOPES WHERE WATER DRAINS TOWARDS SLOPE.

BERM DETAIL FOR CUTS OR FILLS OVER 35 FEET

GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. 0003168

SCALE: NTS			BERM DETAIL
DRAWN BY: CRB	6/28/2006	GEOTECHNICAL ENGINEERING CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 165 ATLANTA, GA 30340-4270	SR 316 HOV LANES FROM I-85 TO SR 20 GWINNETT COUNTY, GEORGIA WILLMER PROJECT No. ATL-171-2867
REVIEWED BY: EB	6/28/2006		



The Department of Transportation in making this soil survey available to prospective bidders assumes no responsibility for its accuracy.

No claim will be considered if the contractor relies on this soil survey and later finds that it is inaccurate.

This soil survey is not considered as being part of the plans, specifications, or contract on the job.

This soil survey is made available as provided for in the specifications of the Department.

1. WHERE THE EMBANKMENT IS TO BE PLACED ON A HILLSIDE OR ANOTHER EXISTING EMBANKMENT HAVING A SLOPE OF 3 TO 1 OR STEEPER, THE FOUNDATION MUST BE BENCHED WHILE THE EMBANKMENT IS BEING MADE. (SEE DIAGRAM AT LEFT.)

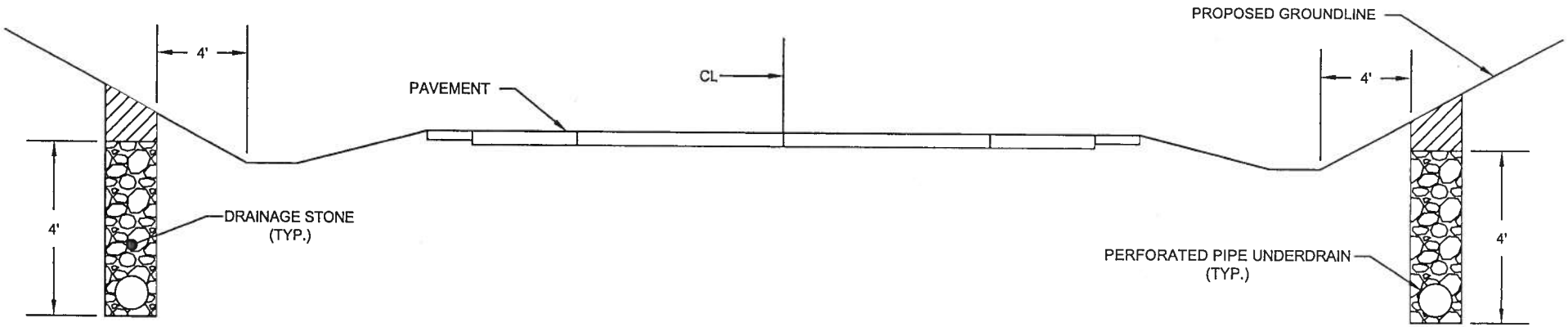
2. THE DIAGRAM SHOWS THAT BEFORE LAYER "A" IS PLACED THE FIRST STEP (1) IS TO CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8' (ABOUT 3/4 THE WIDTH OF THE USUAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS B, C, AND D ARE THEN PLACED. BEFORE LAYER "E" IS PLACED, THE SECOND STEP IS TO CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED. IF IT IS ANTICIPATED THAT THE VERTICAL PART OF THE STEP WILL EXCEED 4' IF AN 8' HORIZONTAL CUT IS MADE, THEN THE ACTUAL CUT STOPS WHEN THE VERTICAL PART REACHES A MAXIMUM OF 4' ALLOWING THE HORIZONTAL DISTANCE TO VARY.

3. THE PROCESS OF BENCHING IS CONSIDERED INCIDENTAL TO THE ITEM OF UNCLASSIFIED EXCAVATION AND BORROW IN CONSTRUCTION OF THE EMBANKMENT AND NO ADDITIONAL MEASUREMENT OF QUANTITIY OR PAYMENT WILL BE MADE FOR BENCHING.

BENCHING DETAIL

GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. - 0003168

SCALE: NTS	WILLMER ENGINEERING INC. WE	GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES ENVIRONMENTAL SERVICES AND ENGINEERING 3772 PLEASANTDALE ROAD - SUITE 165 ATLANTA, GA 30340-4270	BENCHING DETAIL
DRAWN BY: CRB 6/28/2006			SR 316 HOV LANES FROM I-85 TO SR 20 GWINNETT COUNTY, GEORGIA WILLMER PROJECT No. ATL-171-2867
REVIEWED BY: EB 6/28/2006			



APPLIES TO STATION TO STATION	LOCATION
1166+50± TO 1167+50±	LEFT
1198+00± TO 1199+50±	RIGHT

GENERAL NOTES:

1. PERFORATED UNDERDRAIN TO BE PLACED AT 4 FEET IN ACCORDANCE WITH STANDARD 9029B.

2. PIPES SHALL BE TIED INTO CROSS DRAIN PIPES.

3. UNDERDRAINS SHALL BE INSTALLED AT THE DIRECTION OF THE ENGINEER.

4. WHERE UNDERDRAINS WILL BE INSTALLED IN CONJUNCTION WITH SLOPE DRAINS, SLOPE DRAINS SHALL BE PLACED A SUFFICIENT DISTANCE ABOVE THE UNDERDRAIN AS NOT TO INTERFERE WITH UNDERDRAIN INSTALLATION.

UNDERDRAIN PLACEMENT
DETAIL FOR HIGH WATER TABLE AREAS

GDOT PROJECT NUMBER
MLS-0003-00(168)
PI No. - 0003168

NTS

DRAWN BY: CRB 6/28/2006
REVIEWED BY: EB 6/28/2006

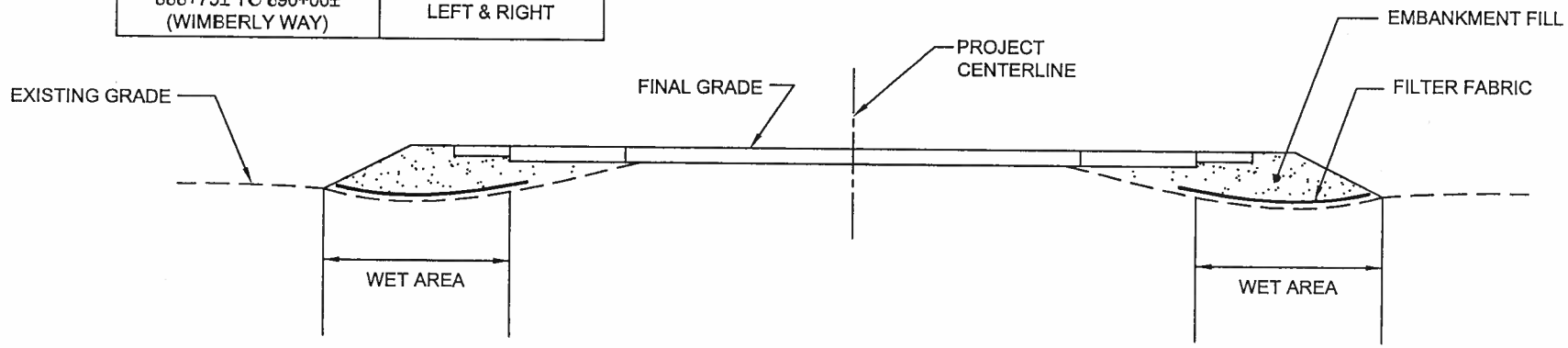
WILLMER ENGINEERING INC.

GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

UNDERDRAIN PLACEMENT DETAIL

SR 16 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867

APPLIES TO STATION TO STATION	LOCATION
963+75± TO 968+00±	LEFT
973+25± TO 975+50±	LEFT
1010+25± TO 1011+75±	LEFT
1011+75± TO 1017+25±	LEFT & RIGHT
1017+25± TO 1018+75±	LEFT
888+75± TO 890+00± (WIMBERLY WAY)	LEFT & RIGHT



GENERAL NOTES:

1. FILTER FABRIC SHALL BE PLACED IN LOW WET AREAS WITHOUT ANY STANDING WATER, OR IF ANY STANDING WATER CAN BE DRAINED PRIOR TO FABRIC PLACEMENT.

2. ALL TREES, DEBRIS AND OTHER ORGANIC MATTER SHALL BE REMOVED PRIOR TO FILTER FABRIC PLACEMENT.

3. FILTER FABRIC SHALL BE PLACED IN ACCORDANCE WITH SP881 IN APPLICABLE PORTIONS OF THE AREAS LISTED ABOVE, AS DIRECTED BY THE ENGINEER.

FILTER FABRIC DETAIL

GDOT PROJECT NUMBER
MSL-0003-00(168)
PI No. - 0003168

SCALE: NTS	
DRAWN BY: TJS	12/22/2006
REVIEWED BY: PZ	12/22/2006

WILLMER ENGINEERING INC. WE

GEOTECHNICAL ENGINEERING ¤ CONSTRUCTION SERVICES
ENVIRONMENTAL SERVICES AND ENGINEERING
3772 PLEASANTDALE ROAD - SUITE 165
ATLANTA, GA 30340-4270

FILTER FABRIC DETAIL

SR 316 HOV LANES FROM I-85 TO SR 20
GWINNETT COUNTY, GEORGIA
WILLMER PROJECT No. ATL-171-2867

pH 6.3
Resistance 21185
Project No.: MSL-0003-00(168) **County:** Gwinnett **P.I. No.:** 0003168

Pipe Culvert Material Alternates
For Piedmont/Blue Ridge Region

TYPE OF PIPE INSTALLATION				CONCRETE	CORRUGATED STEEL AASHTO M-36		CORRUGATED ALUMINUM AASHTO M 196	PLASTIC			
					ALUMINUM COATED (TYPE 2) CORR. STEEL	PLAIN ZINC COATED	PLAIN UNCOATED ALUMINUM	CORR. POLY-ETHYLENE AASHTO M-252	CORR. POLY-ETHYLENE SMOOTHED LINED AASHTO M-294 TYPE "S"	POLY VINYL CHLORIDE (PVC) PROFILE WALL AASHTO M-304	POLY VINYL CHLORIDE (PVC) CORRUGATED SMOOTH INTERIOR ASTM F-949
STORM DRAIN	LONGITUDINAL INTERSTATE AND TRAVEL BEARING			X							
STORM DRAIN	LONGITUDINAL NON-INTERSTATE AND NON-TRAVEL BEARING			X	X		X		X	X	X
STORM DRAIN	CROSS DRAIN	GRADE ≤ 10%	ADT < 250	X	X	X	X		X	X	X
STORM DRAIN	CROSS DRAIN	GRADE ≤ 10%	250 < ADT < 1500	X	X*		X		X	X	X
STORM DRAIN	CROSS DRAIN	GRADE ≤ 10%	ADT > 1500	X							
STORM DRAIN	CROSS DRAIN	GRADE > 10%	ADT < 250		X	X	X		X	X	X
STORM DRAIN	CROSS DRAIN	GRADE > 10%	ADT > 250				X		X	X	X
SIDE DRAIN				X	X	X	X		X	X	X
PERMANENT SLOPE DRAIN					X	X	X		X	X	X
PERFORATED UNDERDRAIN					X	X	X	X	X		X

* This type pipe can be used if the addition of Type "B" Coating (AASHTO M-190, Half Bituminous Coated with Paved Invert) is utilized.

NOTES:

1. Allowable materials are indicated by an "X".
2. Structural requirements of storm drain pipe will be in accordance with Georgia Standard 1030-D or 1030-P, whichever is applicable, and the Standard Specifications.

3 Graded aggregate backfill shall be used in cross drain applications for all plastic pipes (AASHTO M-294, HDPE pipe; AASHTO M-304, PVC pipe; ASTM F-949, PVC pipe).

Rev. 09-07-06

APPENDIX II

Record of Soil Survey Borings – List of Abbreviations
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett County, Georgia
GDOT Project No. MSL-0003-00(168), PI No. 0003168
Willmer Engineering Project No. 171-2867

LIST OF ABBREVIATIONS

1. Abbreviations Used in Boring and Sample Numbering Systems:

SS	Soil Survey
LL	Left Lane
RL	Right Lane
SR	Side Road
CL	Center Line or Left end of Culvert
CR	Right end of Culvert
R	Ramp
IR	Interchange Ramp
BR	Bridge Ramp
RW	Retaining Wall

Example: SS-1-LL - Soil Survey Boring No. 1 located on the Left Lane of the proposed roadway.

2. Abbreviations Used in Sample Descriptions and Notes/Comments:

SPT	Standard Penetration Test
MC	Moisture Content
GAB	Graded Aggregate Base
NR	No Recovery
REC	Recovery (%) – for Rock Cores
RQD	Rock Quality Designation – for Rock Cores
DCP	Dynamic Cone Penetrometer

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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

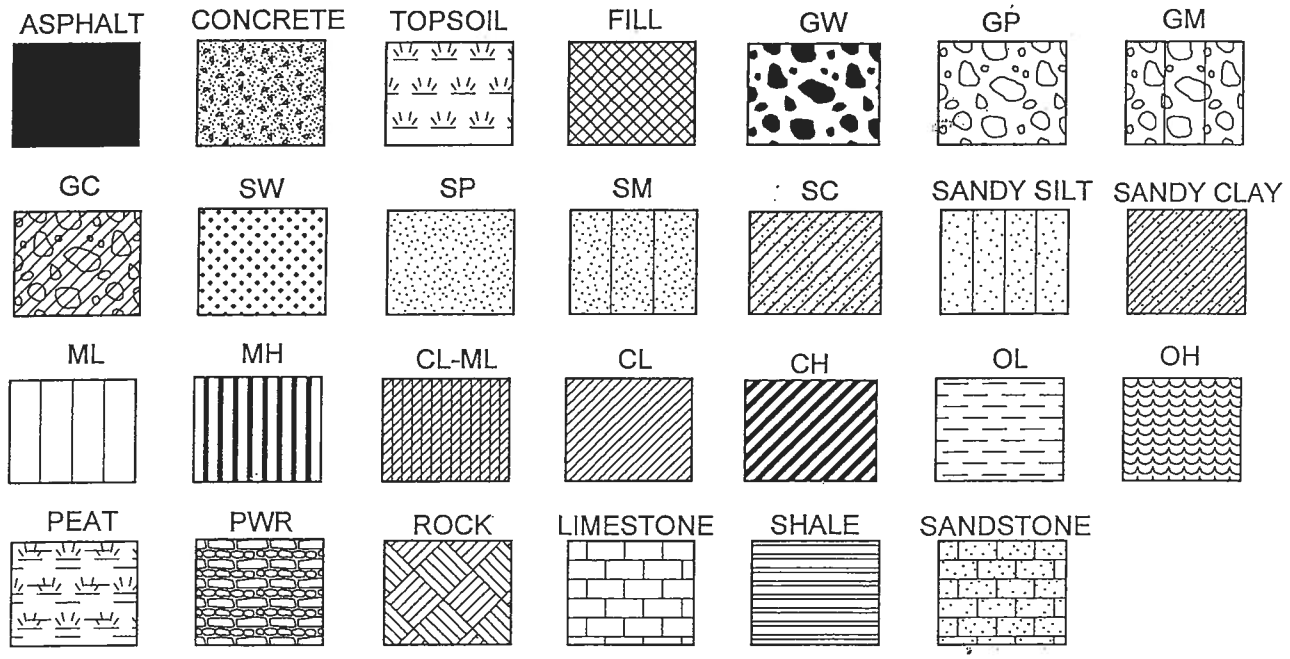
SANDS

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 24 hours
- ▽ 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

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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 of 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.

Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
948+50	SS-1-LL	60		0-1"	Topsoil			--	5	
				1"-5'	Brownish gray silty coarse to fine	--	IIB2			Subsoil similar to SS-2-LL
					SAND (slightly micaceous)					
953+00	SS-2-LL	60		0-10"	Asphalt			--	5	
				10"-20"	Graded Aggregate Base					
				20"-5'	Brownish gray silty coarse to fine	SS-2-LL	IIB2			MC @ 1'-2'
					SAND (slightly micaceous)					
956+00	SS-3-LL	100		0-3"	Topsoil			--	5	
				3"-5'	Reddish brown medium to fine sandy	--	IIB4			Subsoil similar to SS-4-LL
					SILT (micaceous)					
959+00	SS-4-LL	100		0-3"	Topsoil			--	5	
				3"-5'	Reddish brown medium to fine sandy	SS-4-LL	IIB4			MC @ 1'-2'
					SILT (micaceous)					
962+00	SS-5-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
965+00	SS-6-CL			0-2"	Topsoil			--	7	
				2"-7'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					
965+00	SS-6-RL		60	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					
965+00	SS-6-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					
968+00	SS-7-CL			0-2"	Topsoil			--	7	
				2"-6'	Brown medium to fine sandy	SS-7-CL	IIIC1			MC @ 1'-2'
					SILT (micaceous)					
968+00	SS-7-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
968+00	SS-7-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy	--	IIIC1			Subsoil similar to SS-7-CL
					SILT (micaceous)					
971+00	SS-8-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
971+00	SS-8-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
971+00	SS-8-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
974+00	SS-9-CL			0-2"	Topsoil				5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
974+00	SS-9-RL		80	0-2"	Topsoil				5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
974+00	SS-9-LL	80		0-2"	Topsoil				5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
977+00	SS-10-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	SS-10-CL	IIB4			MC @ 1'-2'
					(micaceous)					
977+00	SS-10-RL		80	0-2"	Topsoil			--	4	
				2"-4'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					Auger refusal @ 4'
977+00	SS-10-LL	80		0-2"	Topsoil			4	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
979+00	SS-11-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
980+00	SS-11-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
980+00	SS-11-LL	80		0-2"	Topsoil			--	4	
				2"-4'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					Auger refusal @ 4'
983+00	SS-12-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					
983+00	SS-12-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-10-CL
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
983+00	SS-12-LL	114		0-3"	Topsoil			--	14	
				3"-14'	Brown medium to fine sandy fat CLAY	SS-12-LL	IIB4			MC @ 9'-10'
					(micaceous)					
986+00	SS-13-CL			0-2"	Topsoil			--	6	
				2"-6'	Light gray silty medium to fine SAND	SS-13-CL	IIIC1			MC @ 1'-2'
					(micaceous)					
986+00	SS-13-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Pink silty medium to fine SAND	--	IIB3			Subsoil similar to SS-14-LL
					(micaceous)					
986+00	SS-13-LL	120		0-3"	Topsoil			--	21	
				3"-15'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-12-LL
					(micaceous)					
				15'-21'	Pink silty medium to fine SAND	--	IIB3			Subsoil similar to SS-14-LL
					(micaceous)					
989+00	SS-14-CL			0-2"	Topsoil			--	5	
				2"-5'	Pink silty medium to fine SAND	--	IIB3			Subsoil similar to SS-14-LL
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
989+00	SS-14-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Pink silty medium to fine SAND	--	IIB3			Subsoil similar to SS-14-LL
					(micaceous)					
989+00	SS-14-LL	128		0-3"	Topsoil			--	30	
				3"-10'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-12-LL
					(micaceous)					
				10'-30'	Pink silty medium to fine SAND	SS-14-LL	IIB3			MC @ 25'-26'
					(micaceous)					
992+00	SS-15-CL			0-2"	Topsoil			--	5	
				2"-5'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
992+00	SS-15-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Red brown fat CLAY with medium to	--	IIB4			Subsoil similar to SS-16-CL
					fine sand (slightly micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
992+00	SS-15-LL	129		0-3"	Topsoil			--	24	
				3"-8'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-12-LL
					(micaceous)					
				8'-24'	Tan and brown medium to fine sandy	SS-15-LL	IIB3			MC @ 19'-20'
					SILT (micaceous)					
995+00	SS-16-CL			0-2"	Topsoil			--	5	
				2"-5'	Red brown fat CLAY with medium to	SS-16-CL	IIB4			MC @ 1'-2'
					fine sand (slightly micaceous)					
995+00	SS-16-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
995+00	SS-16-LL	129		0-3"	Topsoil			--	27	
				3"-15'	Red brown fat CLAY with medium to	--	IIB4			Subsoil similar to SS-16-CL
					fine sand (slightly micaceous)					
				15'-27'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
998+00	SS-17-CL			0-2"	Topsoil			--	5	
				2"-5'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
998+00	SS-17-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
998+00	SS-17-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Red brown fat CLAY with medium to	--	IIB4			Subsoil similar to SS-16-CL
					fine sand (slightly micaceous)					
1001+00	SS-18-CL			0-2"	Topsoil			--	5	
				2"-5'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
1001+00	SS-18-RL		100	0-2"	Topsoil			--	17	Subsoil similar to SS-15-LL
				2"-17'	Tan and brown medium to fine sandy	--	IIB3			
					SILT (micaceous)					

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Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1001+00	SS-18-LL	129		0-3"	Topsoil			--	27	
				3"-20'	Tan and brown medium to fine sandy	--	IIB3			Subsoil similar to SS-15-LL
					SILT (micaceous)					
				20'-27'	Light gray silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-13-CL
					(micaceous)					
1004+00	SS-19-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-19-CL	IIB3			MC @ 1'-2'
					(micaceous)					
1004+00	SS-19-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-19-CL
					(micaceous)					
1004+00	SS-19-LL	100		0-2"	Topsoil			--	15	
				2"-15'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-19-CL
					(micaceous)					
1006+00	SS-20-LL-A1	130		0-7'	Boring to define auger refusal	--	--	--	7	Boring terminated @ 7'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1007+00	SS-20-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-19-CL
					(micaceous)					
1007+00	SS-20-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-19-CL
					(micaceous)					
1007+00	SS-20-LL	100		0-10"	Topsoil			--	2	
				10"-2'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-19-CL
					(micaceous)					Auger refusal @ 2'
1010+00	SS-21-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1010+00	SS-21-RL		100	0-3"	Topsoil			2	5	
				3"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1010+00	SS-21-LL	100		0-10"	Topsoil			--	3	
				10"-3'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					Auger refusal @ 3'
1013+00	SS-22-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	SS-22-CL	IIIC1			MC @ 1'-2'
					(micaceous)					
1013+00	SS-22-RL		80	0-2"	Topsoil			2	5	
				2"-2'	Red brown fat CLAY with medium to	--	IIB4			Subsoil similar to SS-16-CL
					fine sand (slightly micaceous)					
				2'-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1013+00	SS-22-LL	80		0-6"	Topsoil			1.5	5	
				6"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1016+00	SS-23-CL			0-2"	Topsoil			--	6	
				2"-6'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1016+00	SS-23-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1016+00	SS-23-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1019+00	SS-24-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					
1019+00	SS-24-RL		80	0-2"	Topsoil			--	1	
				2"-1'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					Auger refusal @ 1'
1019+00	SS-24-LL	100		0-4"	Topsoil			--	5	
				4"-5'	Light brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-22-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1022+00	SS-25-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy lean	SS-25-CL	IIB4			MC @ 1'-2'
					CLAY (slightly micaceous)					
1022+00	SS-25-RL		80	0-2"	Topsoil			--	3	
				2"-3'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					Auger refusal @ 3'
1022+00	SS-25-LL	100		0-4"	Topsoil			--	9	
				4"-6'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
				6'-9'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-26-LL
					(micaceous)					
1025+00	SS-26-CL			0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1025+00	SS-26-RL		80	0-2"	Topsoil			--	5	
				2"-3'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
				3'-5'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-26-LL
					(micaceous)					
1025+00	SS-26-LL	100		0-4"	Topsoil			--	15	
				4"-7'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-LL
					SAND (micaceous)					
				7'-15'	Light brown silty medium to fine SAND	SS-26-LL	IIB3			MC @ 10'-11'
					(micaceous)					
1028+00	SS-27-CL			0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
1028+00	SS-27-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1028+00	SS-27-LL	110		0-1'	Topsoil			--	17	
				1'-3'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
				3'-8'	Brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-25-CL
					CLAY (slightly micaceous)					
				8'-17'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
1031+00	SS-28-CL			0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	SS-28-CL	IIB3			MC @ 1'-2'
					SAND (micaceous)					
1031+00	SS-28-RL		80	0-2"	Topsoil			--	5	
				2"-3'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
				3'-5'	Brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-25-CL
					CLAY (slightly micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1031+00	SS-28-LL	110		0-3"	Topsoil			--	10	
				3"-3'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-26-LL
					(micaceous)					
				3'-5'	Brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-25-CL
					CLAY (slightly micaceous)					
				5'-10'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
1034+00	SS-29-CL			0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
1034+00	SS-29-RL		120	0-2"	Topsoil			--	5	
				2"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					
1034+00	SS-29-LL	100		0-3"	Topsoil			--	5	
				3"-5'	Reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-28-CL
					SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1037+00	SS-30-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-30-RL
1037+00	SS-30-RL		140	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-30-RL	IIB3			MC @ 1'-2'
1037+00	SS-30-LL	120		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-30-RL
1040+00	SS-31-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-31-CL	IIB3			MC @ 1'-2'
					(micaceous)					
1040+00	SS-31-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-31-CL
					(micaceous)					
1040+00	SS-31-LL	130		0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-31-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1041+00	SS-32-RL-A2		95	0-6'	Boring to define auger refusal	--	--	--	6	Boring terminated @ 6'
1042+00	SS-32-RL-A1		95	0-8'	Boring to define auger refusal	--	--	--	8	Boring terminated @ 8'
1043+00	SS-32-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty coarse to fine SAND	--	IA3			Subsoil similar to SS-32-RL
					(micaceous)					
1043+00	SS-32-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Light brown silty coarse to fine SAND	SS-32-RL	IA3			MC @ 4'-5'
					(micaceous)					Auger refusal @ 5'
1043+00	SS-32-LL	120		0-2"	Topsoil			--	5	
				2"-5'	Light brown silty coarse to fine SAND	--	IA3			Subsoil similar to SS-32-RL
					(micaceous)					
1044+00	SS-32-RL-B1		100	0-9'	Boring to define auger refusal	--	--	--	9	Boring terminated @ 9'
1045+00	SS-32-RL-B2		100	0-15'	Boring to define auger refusal	--	--	--	15	Boring terminated @ 15'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1046+00	SS-33-CL			0-2"	Topsoil			--	4	
				2"-4'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-33-RL
					(micaceous)					Auger refusal @ 4'
1046+00	SS-33-RL		100	0-2"	Topsoil			--	14	MC @ 9'-10.5'
				2"-14'	Brown silty medium to fine SAND	SS-33-RL	IIB3			N = 5
					(micaceous)					
1046+00	SS-33-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-33-RL
					(micaceous)					
1049+00	SS-34-CL			0-2"	Topsoil			--	5	
				2"-5'	Gray silty medium to fine SAND	SS-34-CL	IIB4			MC @1'-2'
					(micaceous)					
1049+00	SS-34-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Gray silty medium to fine SAND	--	IIB4			Subsoil similar to SS-34-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1409+00	SS-34-LL	80		0-1"	Topsoil			--	5	
				1"-5'	Gray silty medium to fine SAND	--	IIB4			Subsoil similar to SS-34-CL
					(micaceous)					
1052+00	SS-35-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC2			Subsoil similar to SS-35-LL
					(micaceous)					
1052+00	SS-35-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIIC2			Subsoil similar to SS-35-LL
					(micaceous)					
1052+00	SS-35-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	SS-35-LL	IIIC2			MC @ 1'-2'
					(micaceous)					
1055+00	SS-36-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-36-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1055+00	SS-36-RL		100	0-2"	Topsoil			--	9	
				2"-9'	Brown silty medium to fine SAND	SS-36-RL	IIB3			MC @ 4'-5.5'
					(micaceous)					N = 3
1055+00	SS-36-LL	60		0-2"	Topsoil			--	8	
				2"-8'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-36-RL
					(micaceous)					
1058+00	SS-37-CL			0-2"	Topsoil			--	7	
				2"-7'	Light brown silty medium to fine	SS-37-CL	IIB4			MC @ 2'-3'
					SAND (micaceous)					
1058+00	SS-37-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine	--	IIB4			Subsoil similar to SS-37-CL
					SAND (micaceous)					
1058+00	SS-37-LL	80		0-2"	Topsoil			--	10	
				2"-10'	Light brown silty medium to fine	--	IIB4			Subsoil similar to SS-37-CL
					SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1061+00	SS-38-CL			0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-38-LL
					(micaceous)					
1061+00	SS-38-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-38-LL
					(micaceous)					
1061+00	SS-38-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Dark brown silty medium to fine SAND	SS-38-LL	IA3			MC @ 1'-2'
					(micaceous)					
1064+00	SS-39-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-40-CL
					(micaceous)					
1064+00	SS-39-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-40-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1064+00	SS-39-LL	110		0-2"	Topsoil			--	7	
				2"-7'	Light brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-40-CL
					(micaceous)					
1067+00	SS-40-CL			0-2"	Topsoil			--	2	
				2"-2'	Light brown silty medium to fine SAND	SS-40-CL	IA3			MC @ 1'-2'
					(micaceous)					Auger refusal @ 2'
1067+00	SS-40-RL	80		0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-40-CL
					(micaceous)					
1067+00	SS-40-LL		60	0-2"	Topsoil			--	5	
				2"-3'	Light brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-40-CL
					(micaceous)					
				3'-5'	Red brown medium to fine sandy lean	SS-40-LL	IIB4			MC @ 3'-4'
					CLAY (micaceous)					
1070+00	SS-41-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-41-LL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1070+00	SS-41-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-41-LL
					(micaceous)					
1070+00	SS-41-LL	130		0-2"	Topsoil			--	10	
				2"-10'	Brown silty medium to fine SAND	SS-41-LL	IIB4			MC @ 4'-5.5'
					(micaceous)					N = 8
1073+00	SS-42-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1073+00	SS-42-RL		140	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1073+00	SS-42-LL	110		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1076+00	SS-43-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-43-CL	IIB4			MC @ 1'-2'
					(micaceous)					
1076+00	SS-43-RL		140	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1073+00	SS-43-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1079+00	SS-44-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1079+00	SS-44-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1079+00	SS-44-LL	100		0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-43-CL
					(micaceous)					
1082+00	SS-45-CL			0-2"	Topsoil			--	9	
				2"-9'	Red-brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-45-LL
					(slightly micaceous)					
1082+00	SS-45-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Red-brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-45-LL
					(slightly micaceous)					
1082+00	SS-45-LL	110		0-2"	Topsoil			--	12	
				2"-12'	Red-brown silty medium to fine SAND	SS-45-LL	IIB4			MC @ 7'-8.5'
					(slightly micaceous)					N = 7
1085+00	SS-46-CL			0-2"	Topsoil			--	5	
				2"-5'	Reddish brown clayey medium to fine	SS-46-CL	IIB4			MC @ 1'-2'
					SAND (micaceous)					

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Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1085+00	SS-46-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Reddish brown clayey medium to fine	--	IIB4			Subsoil similar to SS-46-CL
					SAND (micaceous)					
1085+00	SS-46-LL	120		0-3"	Topsoil			--	13	
				3"-13'	Reddish brown clayey medium to fine	--	IIB4			Subsoil similar to SS-46-CL
					SAND (micaceous)					
1088+00	SS-47-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-47-RL
					(micaceous)					
1088+00	SS-47-RL		100	0-3"	Topsoil			--	10	
				2"-10'	Brown silty medium to fine SAND	SS-47-RL	IIB3			MC @ 5'-6'
					(micaceous)					
1088+00	SS-47-LL	120		0-3"	Topsoil			--	15	
				3"-15'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-47-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1091+00	SS-48-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-48-RL
					(micaceous)					
1091+00	SS-48-RL		110	0-2"	Topsoil			--	17	
				2"-17'	Brown silty medium to fine SAND	SS-48-RL	IIB4			MC @ 12'-13'
					(micaceous)					
1091+00	SS-48-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-48-RL
					(micaceous)					
1094+00	SS-49-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	SS-49-CL	IIB4			MC @ 1'-2'
					(micaceous)					
1094+00	SS-49-RL		110	0-2"	Topsoil			--	16	
				2"-16'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-49-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1094+00	SS-49-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT with	--	IIB4			Subsoil similar to SS-49-CL
					organics and wood debris					
1097+00	SS-50-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-50-RL
					(micaceous)					
1097+00	SS-50-RL		110	0-2"	Topsoil			--	14	
				2"-14'	Brown medium to fine sandy SILT	SS-50-RL	IIB4			MC @ 9'-10'
					(micaceous)					
1097+00	SS-50-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-50-RL
					(micaceous)					
1100+00	SS-51-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-50-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1100+00	SS-51-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-50-RL
					(micaceous)					
1100+00	SS-51-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-50-RL
					(micaceous)					
1103+00	SS-52-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-52-CL	IIB4			MC @ 1'-2'
					(micaceous)					
1103+00	SS-52-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-52-CL
					(micaceous)					
1103+00	SS-52-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-52-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1106+00	SS-53-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-53-RL
					(micaceous)					
1106+00	SS-53-RL		100	0-2"	Topsoil			--	11	
				2"-11'	Brown silty medium to fine SAND	SS-53-RL	IIB3			MC @ 6'-7'
					(micaceous)					
1106+00	SS-53-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-53-RL
					(micaceous)					
1109+00	SS-54-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and light brown silty medium to	--	IA3			Subsoil similar to SS-54-RL(2)
					fine SAND (micaceous)					
1109+00	SS-54-RL		100	0-2"	Topsoil			--	18	
				2"-10'	Red-brown silty medium to fine SAND	SS-54-RL-S1	IIB3			
					(micaceous)					
				10'-18'	Red and light brown silty medium to	SS-54-RL-S2	IA3			MC @ 13'-14.5'
					fine SAND (micaceous)					N = 4

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1109+00	SS-54-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Red and light brown silty medium to	--	IA3			Subsoil similar to SS-54-RL(2)
					fine SAND (micaceous)					
1112+00	SS-55-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-55-CL	IA3			MC @ 1'-2'
					(micaceous)					
1112+00	SS-55-RL		100	0-2"	Topsoil			--	10	
				2"-10'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
1112+00	SS-55-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
1115+00	SS-56-CL			0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1115+00	SS-56-RL		80	0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
1115+00	SS-56-LL	100		0-2"	Topsoil			--	3	
				2"-3'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					Auger refusal @ 3'
1118+00	SS-57-CL			0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
1118+00	SS-57-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
1118+00	SS-57-LL	140		0-2"	Topsoil			2	5	
				2"-3'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-55-CL
					(micaceous)					
				3'-5'	Light brown medium to fine sandy SILT	SS-57-LL	IIB4			MC @ 3'-4'
					(slightly micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1121+00	SS-58-CL			0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	SS-58-CL	IIB4			MC @ 1'-2'
					fine SAND (micaceous)					
1121+00	SS-58-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1121+00	SS-58-LL	120		0-5"	Topsoil			--	2	
				5"-2'	Red-brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-64-CL
					CLAY (slightly micaceous)					Auger refusal @ 2'
1122+00	SS-59-LL-A1	95		0-2'	Boring to define auger refusal	--	--	--	2	Auger refusal @ 2'
1123+00	SS-59-CL			0-2"	Topsoil			--	7	
				2"-7'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1123+00	SS-59-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1123+00	SS-59-LL	100		0-2"	Topsoil			--	0.7	
				2"-8"	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					Auger refusal @ 8"
1124+00	SS-59-LL-B1	95		0-2'	Boring to define auger refusal	--	--	--	2	Auger refusal @ 2'
1127+00	SS-60-CL			0-2"	Topsoil			--	6	
				2"-6'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1127+00	SS-60-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1127+00	SS-60-LL	80		0-2"	Topsoil			0.1	0.25	
				2"-3"	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					Auger refusal @ 3"
1129+00	SS-61-LL-A1	95		0-11'	Boring to define auger refusal	--	--	--	11	Auger refusal @ 11'
1129+00	SS-61-RL-A1		100	0-1'	Boring to define auger refusal	--	--	--	1	Auger refusal @ 1'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1130+00	SS-61-CL			0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1130+00	SS-61-RL		100	0-2"	Topsoil			--	7	
				2"-7'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					Auger refusal @ 7'
1130+00	SS-61-LL	100		0-2"	Topsoil			--	2	
				2"-2'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					Auger refusal @ 2'
1131+00	SS-61-RL-B1		100	0-3'	Boring to define auger refusal	--	--	--	3	Auger refusal @ 3'
1131+00	SS-61-LL-B1	100		0-17'	Boring to define auger refusal	--	--	--	17	Auger refusal @ 17'
1132+00	SS-62-RL-A1		100	0-2'	Boring to define auger refusal	--	--	--	2	Auger refsual @ 2'
										Rock Core (see boring log)
1132+00	SS-62-LL-A1	100		0-17'	Boring to define auger refusal	--	--	--	17	Auger refusal @ 17'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1133+00	SS-62-CL			0-2"	Topsoil			--	5	
				2"-5'	Light reddish brown silty medium to	--	IIB4			Subsoil similar to SS-58-CL
					fine SAND (micaceous)					
1133+00	SS-62-RL		100	0-2"	Topsoil			--	8	
				2"-8'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-62-LL
					(micaceous)					Auger refusal @ 8'
1133+00	SS-62-LL	120		0-2"	Topsoil			--	13	
				2"-13'	Brown silty medium to fine SAND	SS-62-LL	IIB4			MC @ 11'-12'
					(micaceous)					Auger refusal @ 13'
1134+00	SS-62-RL-B1		100	0-5'	Boring to define auger refusal	--	--	--	5	Auger refusal @ 5'
1134+00	SS-62-LL-B1	140		--	Boring on riverside parkway bridge	--	--	--	--	--
1135+00	SS-62-RL-B2		140	--	Boring on riverside parkway bridge	--	--	--	--	--
1136+00	SS-63-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIIC3			Subsoil similar to SS-63-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1136+00	SS-63-RL		100	0-2"	Topsoil			--	20	
				2"-20'	Brown silty medium to fine SAND	SS-63-RL	IIIC3			MC @ 15'-16'
					(micaceous)					
1136+00	SS-63-LL	100		0-2"	Topsoil			--	2	
				2"-2'	Brown silty medium to fine SAND	--	IIIC3			Subsoil similar to SS-63-RL
					(micaceous)					Auger refusal @ 2'
1139+00	SS-64-CL			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy lean	SS-64-CL	IIB4			MC @ 1'-2'
					CLAY (slightly micaceous)					
1139+00	SS-64-RL			0-2"	Topsoil			--	7	
				2"-7'	Red-brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-64-CL
					CLAY (slightly micaceous)					Auger refusal @ 7'
1139+00	SS-64-LL	80		0-2"	Topsoil			--	0.5	
				2"-6"	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					Auger refusal @ 6"
1140+00	SS-65-RL-A2		100	0-1'	Boring to define auger refusal	--	--	--	1	Auger refusal @ 1'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1141+00	SS-65-RL-A1		100	0-1'	Boring to define auger refusal	--	--	--	1	Auger refusal @ 1'
1142+00	SS-65-CL			0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					
1142+00	SS-65-RL		80	0-2"	Topsoil			--	2	
				2"-2'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					Auger refusal @ 2'
1142+00	SS-65-LL	80		0-2"	Topsoil			--	2	
				2"-2'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					Auger refusal @ 2'
1143+00	SS-65-RL-B1		100	0-5'	Boring to define auger refusal	--	--	--	5	Boring terminated @ 5'
1145+00	SS-66-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					Auger refusal @ 5'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1145+00	SS-66-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					Auger refusal @ 5'
1145+00	SS-66-LL	80		0-6"	Topsoil			--	2	
				6"-2'	Brown silty medium to fine SAND	SS-66-LL	IA3			MC @ 1'-2'
					(micaceous)					Auger refusal @ 2'
1148+00	SS-67-CL			0-2"	Topsoil			--	4	
				2"-4'	Light brown silty medium to fine SAND	SS-67-CL	IIB2			MC @ 1'-2'
					(micaceous)					Auger refusal @ 4'
1148+00	SS-67-RL		80	0-2"	Topsoil			--	4	
				2"-4'	Light brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-67-CL
					(micaceous)					Auger refusal @ 4'
1148+00	SS-67-LL	60		0-2"	Topsoil			--	0.5	
				2"-6"	Light brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-67-CL
					(micaceous)					Auger refusal @ 6"

Notes:
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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1151+00	SS-68-CL			0-2"	Topsoil			--	3	
				2"-3'	Light brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-67-CL
					(micaceous)					Auger refusal @ 3'
1151+00	SS-68-RL		80	0-2"	Topsoil			--	3	
				2"-3'	Light brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-67-CL
					(micaceous)					Auger refusal @ 3'
1151+00	SS-68-LL	80		0-3"	Topsoil			--	0.5	
				3"-6"	Light brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-67-CL
					(micaceous)					Auger refusal @ 6"
1154+00	SS-69-CL			0-2"	Topsoil			--	4	
				2"-4'	Dark brown silty coarse to fine SAND	--	IA1			Subsoil similar to SS-69-RL
					with gravel (micaceous)					Auger refusal @ 4'
1154+00	SS-69-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty coarse to fine SAND	SS-69-RL	IA1			MC @ 1'-2'
					with gravel (micaceous)					Auger refusal @ 5'
1154+00	SS-69-LL	80		0-2"	Topsoil	--	--	--	0.1	Auger refusal @ 2"

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1157+00	SS-70-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-70-CL	IIB4			MC @ 1'-2'
					(micaceous)					
1157+00	SS-70-RL		80	0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					
1157+00	SS-70-LL	80		0-2"	Topsoil			--	0.5	
				2"-6"	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					Auger refusal @ 6"
1159+00	SS-71-LL-A1	130		0-10'	Boring to define auger refusal	--	--	--	10	Boring terminated @ 10'
1160+00	SS-71-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-73-CL
					(slightly micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1160+00	SS-71-RL		130	0-3"	Topsoil			--	12	
				3"-11'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					
				11'-11.5'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-73-CL
					(slightly micaceous)					
				11.5'-12'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					
1160+00	SS-71-LL	125		0-4"	Topsoil	--	--	--	0.3	Auger refusal @ 4"
1161+00	SS-71-LL-B1	145		0-1'	Boring to define auger refusal	--	--	--	1	Auger refusal @ 1'
1162+00	SS-72-LL-A1	140		0-1'	Boring to define auger refusal	--	--	--	1	Auger refusal @ 1'
1163+00	SS-72-CL			0-2"	Topsoil			--	4	
				2"-4'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-73-CL
					(slightly micaceous)					Auger refusal @ 4'
1163+00	SS-72-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-73-CL
					(slightly micaceous)					

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Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1163+00	SS-72-LL	130		0	Rock	--	--	--	0	Auger refusal @ 0'
1164+00	SS-72-LL-B1	130		0-7'	Boring to define auger refusal	--	--	--	7	Auger refusal @ 7'
1165+00	SS-73-LL-A1	130		0-2'	Boring to define auger refusal	--	--	--	2	Auger refusal @ 2'
1166+00	SS-73-CL			0-2"	Topsoil			--	3	
				2"-3'	Brown medium to fine sandy fat CLAY	SS-73-CL	IIB4			MC @ 1'-2'
					(slightly micaceous)					Auger refusal @ 3'
1166+00	SS-73-RL		100	0-2"	Topsoil			--	2.5	
				2"-2.5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					Auger refusal @ 2.5'
1166+00	SS-73-LL	140		0-2"	Topsoil			--	4	
				2"-3'	Brown medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-73-CL
					(slightly micaceous)					
				3'-4'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-70-CL
					(micaceous)					Auger refusal @ 4'
1167+00	SS-73-LL-B1	140		0-20'	Boring to define auger refusal	--	--	--	20	Boring terminated @ 20'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1168+00	SS-74-LL-A1	140		0-7'	Boring to define auger refusal	--	--	--	7	Auger refusal @ 7'
1169+00	SS-74-CL			0-2'	Topsoil			--	4.5	
				2"-4.5'	Red and brown medium to fine sandy	--	IIIC3			Subsoil similar to SS-75-LL
					SILT (slightly micaceous)					Auger refusal @ 4.5'
1168+00	SS-74-RL		120	0-2"	Topsoil			--	7	
				2"-7'	Gray silty medium to fine SAND	SS-74-RL	IIB2			MC @ 6'-7'
					(slightly micaceous)					Auger refusal @ 7'
1169+00	SS-74-LL	140		0-2"	Topsoil			--	12	
				2"-12'	Red and brown medium to fine sandy	--	IIIC3			Subsoil similar to SS-75-LL
					SILT (slightly micaceous)					Auge refusal @ 12'
										Rock Core (see boring log)
1170+00	SS-74-LL-B1	140		0-2'	Boring to define auger refusal	--	--	--	2	Auger refusal @ 2'
1171+00	SS-75-LL-A1	140		0-5'	Boring to define auger refusal	--	--	--	5	Auger refusal @ 5'

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Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1172+00	SS-75-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and brown medium to fine sandy	--	IIIC3			Subsoil similar to SS-75-LL
					SILT (slightly micaceous)					
1172+00	SS-75-RL		100	0-2"	Topsoil			--	9	
				2"-9'	Red and brown medium to fine sandy	--	IIIC3			Subsoil similar to SS-75-LL
					SILT (slightly micaceous)					
1172+00	SS-75-LL	140		0-2"	Topsoil			--	16	
				2"-16'	Red and brown medium to fine sandy	SS-75-LL	IIIC3			MC @ 15'-16'
					SILT (slightly micaceous)					Auger refusal @ 16'
1173+00	SS-75-LL-B1	140		0-14'	Boring to define auger refusal	--	--	--	14	Auger refusal @ 14'
1174+00	SS-76-LL-A1	140		--	Boring to define auger refsual	--	--	--	--	Skipped due to utilities
1175+00	SS-76-CL			0-3"	Topsoil			--	5	
				3"-5'	Red-brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-76-RL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1174+50	SS-76-RL		140	0-3"	Topsoil			--	26	
				3"-26'	Red-brown silty medium to fine SAND	SS-76-RL	IIB4			MC @ 21'-22'
					(micaceous)					
1174+50	SS-76-LL	140		0-3"	Topsoil			--	17	
				3"-17'	Red-brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-76-RL
					(micaceous)					Auger refusal @ 17'
1176+00	SS-76-LL-B1	140		--	Boring to define auger refusal	--	--	--	--	Skipped due to presence of onsite
										rock excavation activities at time of
										soil survey
1177+00	SS-76-LL-B2	150		--	Boring to define auger refusal	--	--	--	--	Skipped due to presence of onsite
										rock excavation activities at time of
										soil survey
1178+00	SS-77-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-77-CL	IIB3			MC @ 1'-2'
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1178+00	SS-77-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1178+00	SS-77-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1181+00	SS-78-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1181+00	SS-78-RL		100	0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1181+00	SS-78-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1182+00	SS-79-RL-A2		150	0-2'	Boring to define auger refusal	--	--	--	2	Auger refusal @ 2'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1183+00	SS-79-RL-A1		150	0-6'	Boring to define auger refusal	--	--	--	6	Auger refusal @ 6'
1184+00	SS-79-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1184+20	SS-79-RL		140	0-3"	Topsoil			--	6	
				3"-6'	Yellow and gray silty coarse to fine	SS-79-RL	IIB2			MC @ 5'-6'
					SAND (micaceous)					Auger refusal @ 6'
1184+00	SS-79-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-77-CL
					(micaceous)					
1185+00	SS-79-RL-B1		150	0-6'	Boring to define auger refusal	--	--	--	6	Auger refusal @ 6'
1186+00	SS-79-RL-B2		170	0-8'	Boring to define auger refusal	--	--	--	8	Auger refusal @ 8'
1187+00	SS-80-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-80-CL	IIB4			MC @ 1'-2'
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1187+00	SS-80-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-80-CL
					(micaceous)					
1187+00	SS-80-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-80-CL
					(micaceous)					
1190+00	SS-81-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-80-CL
					(micaceous)					
1190+00	SS-81-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-80-CL
					(micaceous)					
1190+00	SS-81-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-80-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1193+00	SS-82-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-82-CL	IIB3			MC @ 1'-2'
					(micaceous)					
1193+00	SS-82-RL		100	0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-82-CL
					(micaceous)					
1193+00	SS-82-LL	120		0-2"	Topsoil			--	18	
				2"-18'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-82-CL
					(micaceous)					
1196+00	SS-83-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and brown silty coarse to fine	--	IA3			Subsoil similar to SS-83-LL
					SAND (micaceous)					
1196+00	SS-83-RL		100	0-2"	Topsoil			--	9	
				2"-9'	Red and brown silty coarse to fine	--	IA3			Subsoil similar to SS-83-LL
					SAND (micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1196+00	SS-83-LL	100		0-2"	Topsoil			--	16	
				2"-16'	Red and brown silty coarse to fine	SS-83-LL	IA3			MC @ 11'-12.5'
					SAND (micaceous)					N = 20
1197+50	SS-84-RL-A1		100	0-23'	Boring to define auger refusal	--	--	--	23	Boring terminated @ 23'
1199+00	SS-84-CL			0-2"	Topsoil			--	6	
				2"-6'	Light brown silty coarse to fine SAND	--	IIB4			Subsoil similar to SS-84-RL
					with gravel (micaceous)					
1199+25	SS-84-RL		110	0-3"	Topsoil			18	24	
				3"-24'	Light brown silty coarse to fine SAND	SS-84-RL	IIB4			MC @ 22'-23'
					with gravel (micaceous)					
1199+00	SS-84-LL	100		0-2"	Topsoil			--	10	
				2"-10'	Light brown silty coarse to fine SAND	--	IIB4			Subsoil similar to SS-84-RL
					with gravel (micaceous)					
1200+00	SS-84-RL-B1		100	0-11'	Boring to define auger refusal	--	--	--	11	Auger refusal @ 11'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1202+00	SS-85-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-85-CL	IIB4			MC @ 2'-3'
					(micaceous)					Auger refusal @ 5'
1202+00	SS-85-RL		100	0-2"	Topsoil			--	15	
				2"-15'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-85-CL
					(micaceous)					
1202+00	SS-85-LL	80		0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-85-CL
					(micaceous)					
1205+00	SS-86-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-85-CL
					(micaceous)					
1205+00	SS-86-RL		100	0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-85-CL
					(micaceous)					

Notes:
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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1205+00	SS-86-LL	100		0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-85-CL
					(micaceous)					
1208+00	SS-87-CL			0-2"	Topsoil			--	6	
				2"-6'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-87-RL
					(micaceous)					
1208+00	SS-87-RL		160	0-2"	Topsoil			--	20	
				2"-20'	Brown silty medium to fine SAND	SS-87-RL	IIB4			MC @ 15'-16.5'
					(micaceous)					N = 16
1208+00	SS-87-LL	120		0-2"	Topsoil			--	18	
				2"-18'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-87-RL
					(micaceous)					
1211+00	SS-88-CL			0-2"	Topsoil			--	6	
				2"-6'	Red brown medium to fine sandy SILT	SS-88-CL	IIB4			MC @ 1'-2'
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1211+00	SS-88-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					
1211+00	SS-88-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					
1214+00	SS-89-CL			0-2"	Topsoil			--	6	
				2"-6'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					
1214+00	SS-89-RL		160	0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-110-RL
					CLAY (slightly micaceous)					
1214+00	SS-89-LL	150		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1217+00	SS-90-CL			0-2"	Topsoil			--	7	
				2"-7'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					
1217+00	SS-90-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-88-CL
					(micaceous)					
1217+00	SS-90-LL	160		0-2"	Topsoil			--	5	
				2"-5'	Red fat CLAY (micaceous)	SS-90-LL	IIIC2			MC @ 1'-2'
1220+00	SS-91-CL			0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	SS-91-CL	IIB4			MC @ 2'-3'
					(micaceous)					
1220+00	SS-91-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-91-CL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1220+00	SS-91-LL	140		0-2"	Topsoil			--	1	
				2"-1'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-91-CL
					(micaceous)					Auger refusal @ 1'
1223+00	SS-92-CL			0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-92-LL
					(micaceous)					
1223+00	SS-92-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red-brown fat CLAY with medium to	--	IIIC2			Subsoil similar to SS-93-RL
					fine sand (micaceous)					
1223+00	SS-92-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty medium to fine SAND	SS-92-LL	IIB3			MC @ 1'-2'
					(micaceous)					
1226+00	SS-93-CL			0-2"	Topsoil			--	5	
				2"-5'	Dark brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-92-LL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1226+00	SS-93-RL		140	0-2"	Topsoil			--	13	
				2"-13'	Red-brown fat CLAY with medium to	SS-93-RL	IIIC2			MC @ 8'-9'
					fine sand (micaceous)					
1226+00	SS-93-LL	100		0-2"	Topsoil			--	4	
				2"-4'	Dark brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-92-LL
					(micaceous)					Auger refusal @ 4'
1229+00	SS-94-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy fat CLAY	SS-94-CL	IIIC2			MC @ 1'-2'
					(micaceous)					
1229+00	SS-94-RL		140	0-2"	Topsoil			--	11	
				2"-11'	Brown medium to fine sandy fat CLAY	--	IIIC2			Subsoil similar to SS-94-CL
					(micaceous)					
1229+00	SS-94-LL	140		0-3"	Topsoil			--	12	
				3"-12'	Brown medium to fine sandy fat CLAY	--	IIIC2			Subsoil similar to SS-94-CL
					(micaceous)					
1231+00	SS-95-RL-A1		140	0-25'	Boring to define auger refusal	--	--	--	25	Boring terminated @ 25'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1231+50	SS-95-RL-A2		140	0-25'	Boring to define auger refusal	--	--	--	25	Boring terminated @ 25'
1232+00	SS-95-CL			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-95-LL
					(micaceous)					
1232+00	SS-95-RL		140	0-3"	Topsoil			--	18	
				3"-18'	Red-brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-95-LL
					(micaceous)					
1232+00	SS-95-LL	140		0-3"	Topsoil			--	24	
				3"-8'	Brown medium to fine sandy fat CLAY	--	IIIC2			Subsoil similar to SS-94-CL
					(micaceous)					
				8'-24'	Red-brown medium to fine sandy SILT	SS-95-LL	IIB4			MC @ 19'-20.5'
					(micaceous)					N = 14
1233+00	SS-96-LL-A2	140		0-10'	Boring to define auger refusal	--	--	--	10	Auger refusal @ 10'
1233+00	SS-96-RL-A2		140	0-23'	Boring to define auger refusal	--	--	--	23	Auger refusal @ 23'
1234+00	SS-96-LL-A1	140		0-30'	Boring to define auger refusal	--	--	--	30	Boring terminated @ 30'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1234+00	SS-96-RL-A1		140	0-30'	Boring to define auger refusal	--	--	--	30	Auger refusal @ 30'
1235+00	SS-96-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and brown silty medium to fine	--	IA3			Subsoil similar to SS-96-RL
					SAND (micaceous)					
1235+00	SS-96-RL		140	0-3"	Topsoil			--	23	
				3"-23'	Red and brown silty medium to fine	SS-96-RL	IA3			MC @ 19'-20'
					SAND (micaceous)					
1235+00	SS-96-LL	140		0-3"	Topsoil			--	23	
				3"-13'	Red-brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-95-LL
					(micaceous)					
				13'-23'	Red and brown silty medium to fine	--	IA3			Subsoil similar to SS-96-RL
					SAND (micaceous)					
1235+50	SS-96-LL-B1	140		0-30'	Boring to define auger refusal	--	--	--	30	Boring terminated @ 30'
1236+00	SS-96-LL-B2	140		0-27'	Boring to define auger refusal	--	--	--	27	Boring terminated @ 27'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1238+00	SS-97-CL			0-2"	Topsoil			--	6	
				2"-6'	Red brown medium to fine sandy lean	SS-97-CL	IIB4			MC @ 2'-3'
					CLAY (micaceous)					
1238+00	SS-97-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					
1238+00	SS-97-LL	120		0-3"	Topsoil			--	12	
				3"-8'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					
				8'-12'	Red-brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-95-LL
					(micaceous)					
1241+00	SS-98-CL			0-2"	Topsoil			--	5	
				2"-6'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					Auger refusal @ 5'
1241+00	SS-98-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1241+00	SS-98-LL	130		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					
1244+00	SS-99-CL			0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	SS-99-CL	IIB4			MC @ 2'-3'
					(micaceous)					
1244+00	SS-99-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-99-CL
					(micaceous)					
1244+00	SS-99-LL	140		0-2"	Topsoil			--	3	
				2"-3'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					Auger refusal @ 3'
1247+00	SS-100-CL			0-2"	Topsoil			--	8	
				2"-8'	Brown medium to fine sandy SILT	SS-100-CL	IIB4			MC @ 3'-4'
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term.. Depth (feet)	Notes / Comments
		Left	Right							
1247+00	SS-100-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-100-CL
					(micaceous)					
1247+00	SS-100-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					
1250+00	SS-101-CL			0-2"	Topsoil			--	4	
				2"-4'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-97-CL
					CLAY (micaceous)					Auger refusal @ 4'
1250+00	SS-101-RL		80	0-2"	Topsoil			--	4	
				2"-4'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-100-CL
					(micaceous)					Auger refusal @ 4'
1250+00	SS-101-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-100-CL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1253+00	SS-102-CL			0-2"	Topsoil			--	7	
				2"-7'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-102-LL
					(micaceous)					
1253+00	SS-102-RL		100	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-102-LL
					(micaceous)					
1253+00	SS-102-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-102-LL	IIB4			MC @ 1'-1.5'
					(micaceous)					N = 11
1256+00	SS-103-CL			0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	SS-103-CL	IIIC1			MC @ 1'-2'
					(micaceous)					
1256+00	SS-103-RL		105	0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-103-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1256+00	SS-103-LL	90		0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIIC1			Subsoil similar to SS-103-CL
					(micaceous)					
1259+00	SS-104-CL			0-3"	Topsoil			--	5	
				3"-5'	Black and red-brown coarse to fine	--	IIIC1			Subsoil similar to SS-104-RL
					sandy SILT (slightly micaceous)					
1259+00	SS-104-RL		165	0-3"	Topsoil			--	16	
				3"-16'	Black and red-brown coarse to fine	SS-104-RL	IIIC1			MC @ 11'-12.5'
					sandy SILT (slightly micaceous)					N = 4
1259+00	SS-104-LL	100		0-3"	Topsoil			--	5	
				3"-5'	Black and red-brown coarse to fine	--	IIIC1			Subsoil similar to SS-104-RL
					sandy SILT (slightly micaceous)					
1262+00	SS-105-CL			0-3"	Topsoil			--	5	
				3"-5'	Brown silty coarse to fine SAND	--	IIB4			Subsoil similar to SS-105-RL
					(slightly micaceous)					

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Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1262+00	SS-105-RL		187	0-2"	Topsoil			--	12	
				2"-12'	Brown silty coarse to fine SAND	SS-105-RL	IIB4			MC @ 7'-8'
					(slightly micaceous)					
1262+00	SS-105-LL	150		0-4"	Topsoil				5	
				4"-5'	Brown silty coarse to fine SAND	--	IIB4			Subsoil similar to SS-105-RL
					(slightly micaceous)					
1265+00	SS-106-CL			0-3"	Topsoil			--	5	
				3"-5'	Brown fine sandy SILT	SS-106-CL	IIIC3			MC @ 1'-2'
					(micaceous)					
1265+00	SS-106-RL		130	0-3"	Topsoil			--	8	
				3"-8'	Brown fine sandy SILT	--	IIIC3			Subsoil similar to SS-106-CL
					(micaceous)					
1265+00	SS-106-LL	130		0-2"	Topsoil			--	5	
				2"-5'	Brown fine sandy SILT	--	IIIC3			Subsoil similar to SS-106-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1268+00	SS-107-CL			0-3"	Topsoil			--	5	
				3"-5'	Red-brown fine sandy SILT	--	IIIC1			Subsoil similar to SS-107-RL
					(micaceous)					
1268+00	SS-107-RL		140	0-3"	Topsoil			--	7	
				3"-7'	Red-brown fine sandy SILT	SS-107-RL	IIIC1			MC @ 2'-3'
					(micaceous)					
1268+00	SS-107-LL	115		0-3"	Topsoil			--	5	
				3"-5'	Red-brown fine sandy SILT	--	IIIC1			Subsoil similar to SS-107-RL
					(micaceous)					
1271+00	SS-108-RL		140	0-3"	Topsoil			--	6	
				3"-6'	Red-brown fine sandy SILT	--	IIIC1			Subsoil similar to SS-107-RL
					(micaceous)					
1271+00	SS-108-LL	120		0-2"	Topsoil			--	7	
				2"-7'	Red-brown fine sandy SILT	--	IIIC1			Subsoil similar to SS-107-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1274+00	SS-109-CL			0-3"	Topsoil			--	8	
				3"-8'	Red brown medium to fine sandy	SS-109-CL	IIB3			MC @ 3'-4'
					SILT (micaceous)					
1274+00	SS-109-RL		170	0-3"	Topsoil			--	15	
				3"-15'	Light yellow-brown silty medium to fine	SS-109-RL	IIB4			MC @ 10'-11.5'
					SAND (micaceous)					N = 6
1274+00	SS-109-LL	125		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy	--	IIB3			Subsoil similar to SS-109-CL
					SILT (micaceous)					
1277+00	SS-110-CL			0-3"	Topsoil			--	8	
				3"-8'	Red brown medium to fine sandy	--	IIB3			Subsoil similar to SS-109-CL
					SILT (micaceous)					
1277+00	SS-110-RL		140	0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy lean	SS-110-RL	IIB4			MC @ 1'-2'
					CLAY (slightly micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1277+00	SS-110-LL	140		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy	--	IIB3			Subsoil similar to SS-109-CL
					SILT (micaceous)					
1280+00	SS-111-CL			0-3"	Topsoil			--	4	
				3"-3'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					
				3'-4'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-111-RL
					(micaceous)					
1280+00	SS-111-RL		175	0-2"	Topsoil			--	15	
				2"-9'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					
				9'-15'	Light brown silty medium to fine SAND	SS-111-RL	IIB3			MC @ 10'-11'
					(micaceous)					
1280+00	SS-111-LL	140		0-2"	Topsoil			--	1	
				2"-1'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					Auger refusal @ 1'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1283+00	SS-112-CL			0-3"	Topsoil			--	8	
				3"-8'	Brown clayey medium to fine SAND	SS-112-CL	IIB3			MC @ 3'-4'
					(micaceous)					
1283+00	SS-112-RL		140	0-2"	Topsoil			--	5	
				2"-5'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					
1283+00	SS-112-LL	140		0-2"	Topsoil			--	5	
				2"-5'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					
1284+00	SS-113-RL-A2		150	0-12'	Boring to define auger refusal	--	--	--	12	Boring terminated @ 12'
1285+00	SS-113-RL-A1		150	0-6'	Boring to define auger refusal	--	--	--	6	Auger refusal @ 6'
1286+00	SS-113-CL			0-3"	Topsoil			--	5	
				3"-5'	Light brown silty medium to fine SAND	--	IA2			Subsoil similar to SS-113-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1286+00	SS-113-RL		155	0-2"	Topsoil			--	6	
				2"-6'	Light brown silty medium to fine SAND	SS-113-RL	IA2			MC @ 4'-5'
					(micaceous)					Auger refusal @ 6'
1286+00	SS-113-LL	140		0-4"	Topsoil			--	1	
				4"-1'	Light brown silty medium to fine SAND	--	IA2			Subsoil similar to SS-113-RL
					(micaceous)					Auger refusal @ 1'
1287+00	SS-113-RL-B1		150	0-9'	Boring to define auger refusal	--	--	--	9	Auger refusal @ 9'
1289+00	SS-114-CL			0-3"	Topsoil			--	5	
				3"-5'	Light brown silty medium to fine SAND	--	IA2			Subsoil similar to SS-113-RL
					(micaceous)					
1289+00	SS-114-RL		140	0-3"	Topsoil			--	7	
				3"-4'	Light brown silty medium to fine SAND	--	IA2			Subsoil similar to SS-113-RL
					(micaceous)					
				4'-7'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-112-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1289+00	SS-114-LL	140		0-1"	Topsoil			--	2	
				1"-2'	Light brown silty medium to fine SAND	--	IA2			Subsoil similar to SS-113-RL
					(micaceous)					Auger refusal @ 2'
1292+00	SS-115-CL			0-3"	Topsoil			--	8	
				3"-8'	Red brown silty medium to fine SAND	SS-115-CL	IIB4			MC @ 3'-4'
					(micaceous)					
1292+00	SS-115-RL		80	0-3"	Topsoil			--	8	
				3"-8'	Red brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-115-CL
					(micaceous)					
1292+00	SS-115-LL	80		0-2"	Topsoil					
				2"-8'	Red brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-115-CL
					(micaceous)					
1295+00	SS-116-CL			0-2"	Topsoil			--	16	
				2"-16'	Brown silty medium to fine SAND	SS-116-CL	IIB3			MC @ 11'-12'
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1295+00	SS-116-RL		80	0-2"	Topsoil			--	13	
				2"-13'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-116-CL
					(micaceous)					
1295+00	SS-116-LL	75		0-2"	Topsoil			--	15	
				2"-15'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-116-CL
					(micaceous)					
1298+00	SS-117-CL			0-2"	Topsoil			--	23	
				2"-6'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-116-CL
					(micaceous)					
				6'-17'	Brown silty medium to fine SAND	SS-117-CL	IIB4			MC @ 18'-19'
					(micaceous)					
				17'-23'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-116-CL
					(micaceous)					
1298+00	SS-117-RL		80	0-3"	Topsoil			--	21	
				3"-21'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-117-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1298+00	SS-117-LL	80		0-2"	Topsoil			--	21	
				2"-21'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-117-CL
					(micaceous)					
1301+00	SS-118-CL			0-2"	Topsoil			--	24	
				2"-16'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-117-CL
					(micaceous)					
				16'-24'	Gray silty medium to fine SAND	SS-118-CL	IIB2			MC @ 22'-23'
					(slightly micaceous)					
1301+00	SS-118-RL		90	0-2"	Topsoil			--	25	
				2"-15'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-117-CL
					(micaceous)					
				15'-25'	Gray silty medium to fine SAND	--	IIB2			Subsoil similar to SS-118-CL
					(slightly micaceous)					
1301+00	SS-118-LL	85		0-2"	Topsoil			--	25	
				2"-15'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-117-CL
					(micaceous)					
				15'-25'	Gray silty medium to fine SAND	--	IIB2			Subsoil similar to SS-118-CL
					(slightly micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1304+00	SS-119-CL			0-2"	Topsoil			27	29	
				2"-29'	Gray silty medium to fine SAND	SS-119-CL	IIB3			MC @ 24'-25'
					(micaceous)					
1304+00	SS-119-RL		95	0-2"	Topsoil			--	27	
				2"-27'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
1304+00	SS-119-LL	95		0-2"	Topsoil			--	27	
				2"-27'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
1307+00	SS-120-CL			0-2"	Topsoil			25	26	
				2"-7'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
				7'-14'	Red brown silty medium to fine	SS-120-CL	IIB3			MC @ 12'-13'
					SAND (micaceous)					
				14'-26'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1307+00	SS-120-RL		70	0-2"	Topsoil			--	24	
				2"-10'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
				10'-24'	Red brown silty medium to fine	--	IIB3			Subsoil similar to SS-120-CL
					SAND (micaceous)					
1307+00	SS-120-LL	80		0-2"	Topsoil			--	24	
				2"-24'	Red brown silty medium to fine	--	IIB3			Subsoil similar to SS-120-CL
					SAND (micaceous)					
1310+00	SS-121-CL			0-2"	Topsoil			--	18	
				2"-15'	Red brown medium to fine sandy lean	SS-121-CL	IIB4			MC @ 13'-14'
					CLAY (micaceous)					
				15'-18'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
1310+00	SS-121-RL		80	0-2"	Topsoil			--	16	
				2"-10'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					
				10'-16'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-121-CL
					CLAY (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1310+00	SS-121-LL	80		0-2"	Topsoil			--	15	
				2"-15'	Red brown silty medium to fine	--	IIB3			Subsoil similar to SS-120-CL
					SAND (micaceous)					
1313+00	SS-122-CL			0-2"	Topsoil			--	7	
				2"-7'	Light brown silty medium to fine SAND	SS-122-CL	IIB4			MC @ 6'-7'
					(micaceous)					Auger refusal @ 7'
1313+00	SS-122A-CL		10	0-2"	Topsoil			--	9	
				2"-9'	Light brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-122-CL
					(micaceous)					Auger refusal @ 9'
1313+00	SS-122-RL		80	0-2"	Topsoil			--	10	
				2"-10'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-121-CL
					CLAY (micaceous)					
1313+00	SS-122-LL	70		0-2"	Topsoil			--	10	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-121-CL
					CLAY (micaceous)					
				5'-10'	Light brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-122-CL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1316+00	SS-123-CL			0-2"	Topsoil			--	5	
				2"-5'	Light brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-122-CL
					(micaceous)					Auger refusal @ 5'
1316+00	SS-123-RL		120	0-2"	Topsoil			--	2.5	
				2"-2.5'	Gray silty medium to fine SAND	--	IIB3			Subsoil similar to SS-119-CL
					(micaceous)					Auger refusal @ 2.5'
1316+00	SS-123-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Red brown medium to fine sandy lean	--	IIB4			Subsoil similar to SS-121-CL
					CLAY (micaceous)					
1319+00	SS-124-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and brown medium to fine sandy	SS-124-CL	IIB4			MC @ 1'-2'
					SILT (micaceous)					
1319+00	SS-124-RL		80	--	Skipped due to utilities	--	--	--	--	--
1319+00	SS-124-LL	140		0-3"	Topsoil			--	15	
				3"-15'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1322+00	SS-125-CL			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1322+00	SS-125-RL		125	0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	SS-125-RL	IIB4			MC @ 1'-2'
					lean CLAY (micaceous)					
1322+00	SS-125-LL	140		0-3"	Topsoil			--	15	
				3"-15'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					
1325+00	SS-126-CL			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1325+00	SS-126-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1325+00	SS-126-LL	120		0-3"	Topsoil			--	10	
				3"-10'	Light brown silty medium to fine SAND	SS-126-LL	IIB3			MC @ 7'-8'
					(micaceous)					
1328+00	SS-127-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND	SS-127-CL	IIB3			MC @ 1'-2'
					(micaceous)					
1328+00	SS-127-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1327+50	SS-127-LL	130		0-2"	Topsoil			--	15	
				2"-15'	Brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-127-LL
					(micaceous)					
1331+00	SS-128-CL			0-2"	Topsoil			--	3	
				2"-3'	Red and brown medium to fine sandy	--	IIB4			Subsoil similar to SS-128-LL
					SILT (micaceous)					Auger refusal @ 3'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1331+00	SS-128-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1331+00	SS-128-LL	140		0-2"	Topsoil			--	13	
				2"-13'	Red and brown medium to fine sandy	SS-128-LL	IIB4			MC @ 8'-9'
					SILT (micaceous)					
1334+00	SS-129-CL			0-2"	Topsoil			--	5	
				2"-5'	Red and brown medium to fine sandy	--	IIB4			Subsoil similar to SS-128-LL
					SILT (micaceous)					
1334+00	SS-129-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Red and brown medium to fine sandy	--	IIB4			Subsoil similar to SS-128-LL
					SILT (micaceous)					
1334+00	SS-129-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Red and brown medium to fine sandy	--	IIB4			Subsoil similar to SS-128-LL
					SILT (micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1337+00	SS-130-CL			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	SS-130-CL	IIB4			MC @ 1'-2'
					SILT (slightly micaceous)					
1337+00	SS-130-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-130-CL
					SILT (slightly micaceous)					
1337+00	SS-130-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-130-CL
					SILT (slightly micaceous)					
1340+00	SS-131-CL			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-131-LL
					(micaceous)					
1340+00	SS-131-RL		120	0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-131-LL
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1340+00	SS-131-LL	80		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	SS-131-LL	IIB4			MC @ 1'-2'
					(micaceous)					
1343+00	SS-132-CL				In intersection					
1343+00	SS-132-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1343+00	SS-132-LL	100		0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-131-LL
					(micaceous)					
1346+00	SS-133-RL		90	0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1346+00	SS-133-LL	100		0-2"	Topsoil				5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4	--		Subsoil similar to SS-131-LL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1349+00	SS-134-RL		80	0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-125-RL
					lean CLAY (micaceous)					
1349+00	SS-134-LL	80		0-2"	Topsoil				5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB4	--		Subsoil similar to SS-131-LL
					(micaceous)					
1352+00	SS-135-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy lean	--	IIB3			Subsoil similar to SS-135-LL
					CLAY (micaceous)					
1352+00	SS-135-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy lean	SS-135-LL	IIB3			MC @ 1'-2'
					CLAY (micaceous)					
1355+00	SS-136-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					

Notes:
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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1355+00	SS-136-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					
1358+00	SS-137-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	SS-137-RL	IIB3			MC @ 1'-2'
					(slightly micaceous)					
1358+00	SS-137-LL	80		0-3"	Topsoil			--	6	
				3"-6'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					
1361+00	SS-138-RL		80	0-3"	Topsoil			--	6	
				3"-6'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					
1361+00	SS-138-LL	80		0-3"	Topsoil			--	6	
				3"-6'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1364+00	SS-139-RL		80	0-3"	Topsoil			--	6	
				3"-6'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-137-RL
					(slightly micaceous)					
1364+00	SS-139-LL	80		0-3"	Topsoil			--	7	
				3"-5'	Brown and gray clayey medium to fine	SS-139-LL	IIB3			MC @ 2'-3'
					SAND (slightly micaceous)					
				5'-7'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					
1367+00	SS-140-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	SS-140-RL	IIIC1			MC @ 1'-2'
					(micaceous)					
1367+00	SS-140-LL	100		0-3"	Topsoil			--	9	
				3"-9'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					
1370+00	SS-141-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIIC3			Subsoil similar to SS-143-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1370+00	SS-141-LL	90		0-3"	Topsoil			--	10	
				3"-10'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					See boring log for critical slope
1373+00	SS-142-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIIC3			Subsoil similar to SS-143-RL
					(micaceous)					
1373+00	SS-142-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					
1376+00	SS-143-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	SS-143-RL	IIIC3			MC @ 1'-2'
					(micaceous)					
1376+00	SS-143-LL	80		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1379+00	SS-144-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					
1382+00	SS-145-RL		90	0-3"	Topsoil			--	10	
				3"-10'	Brown medium to fine sandy SILT	--	IIIC1			Subsoil similar to SS-140-RL
					(micaceous)					See boring log for critical slope
1385+00	SS-146-RL		80	0-3"	Topsoil			--	3	
				3"-3'	Brown and gray clayey medium to fine	--	IIB3			Subsoil similar to SS-139-LL
					SAND (slightly micaceous)					Auger refusal @ 3'
1388+00	SS-147-RL		80	0-3"	Topsoil			--	5	
				3"-5'	Brown and gray clayey medium to fine	--	IIB3			Subsoil similar to SS-139-LL
					SAND (slightly micaceous)					Auger refusal @ 5'
										See boring log for slope stability
										analysis

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Herrington Road										
12+00	SS-148-SR			0-3"	Asphalt			--	5	
				3"-1'	Graded aggregate base	--	IIB3			
				1'-5'	Brown medium to fine sandy lean					Subsoil similar to SS-149-SR
					CLAY (micaceous)					
17+00	SS-149-SR	36		0-3"	Topsoil			--	5	
				3"-5'	Brown medium to fine sandy lean	SS-149-SR	IIB3			MC @ 1'-2'
					CLAY (micaceous)					
27+00	SS-150-SR	30		0-4"	Topsoil			--	5	
				4"-5'	Brown medium to fine sandy lean	--	IIB3			Subsoil similar to SS-149-SR
					CLAY (micaceous)					
Lawrenceville Suwannee Road										
35+00	SS-151-SR			0-2"	Topsoil			--	5	
				2"-5'	Red medium to fine sandy	--	IIB4			Subsoil similar to SS-153-SR
					SILT (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
38+00	SS-152-SR			0-2"	Topsoil			--	5	
				2"-5'	Red medium to fine sandy	--	IIB4			Subsoil similar to SS-153-SR
					SILT (micaceous)					
41+00	SS-153-SR		80	0-2"	Topsoil			--	7	
				2"-7'	Red medium to fine sandy	SS-153-SR	IIB4			MC @ 3'-4'
					SILT (micaceous)					
44+00	SS-154-SR		70	0-2"	Topsoil			--	8	
				2"-8'	Brown fine sandy SILT	--	IIIC2			Subsoil similar to SS-155-SR
					(slightly micaceous)					
47+00	SS-155-SR		75	0-2"	Topsoil			--	10	
				2"-10'	Brown fine sandy SILT	SS-155-SR	IIIC2			MC @ 6'-7'
					(slightly micaceous)					
53+00	SS-156-SR			0-2"	Topsoil			--	20	
				2"-20'	Red medium to fine sandy	--	IIB4			Subsoil similar to SS-153-SR
					SILT (micaceous)					See boring log for critical slope

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
58+00	SS-157-SR			0-2"	Topsoil			--	5	
				2"-5'	Red-brown medium to fine sandy	SS-157-SR	IIB3			MC @ 1'-2'
					lean CLAY (micaceous)					
61+00	SS-158-SR	30		0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB3			Subsoil similar to SS-157-SR
					lean CLAY (micaceous)					
SR 120 / Duluth Highway										
51+00	SS-159-SR		30	0-3"	Topsoil			--	5	
				3"-5'	Red clayey medium to fine SAND	SS-159-SR	IIB3			MC @ 1'-2'
					(micaceous)					
54+00	SS-160-SR	50		0-3"	Topsoil			--	5	
				3"-5'	Red-brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-161-SR
					(micaceous)					
58+00	SS-161-SR		60	0-3"	Topsoil			--	5	
				3"-5'	Red-brown silty medium to fine SAND	SS-161-SR	IA3			MC @ 1'-2'
					(micaceous)					

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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
66+00	SS-162-SR	50		0-3"	Topsoil			--	7	
				3"-7'	Red medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-163-SR
69+00	SS-163-SR		50	0-3"	Topsoil			--	6	
				3"-6'	Red medium to fine sandy fat CLAY	SS-163-SR	IIB4			MC @ 1'-2'
72+00	SS-164-SR	40		0-3"	Topsoil			--	5	
				3"-5'	Red medium to fine sandy fat CLAY	--	IIB4			Subsoil similar to SS-163-SR
Walther Road										
61+00	SS-165-SR			0-3"	Asphalt			--	5	
				3"-6"	Graded aggregate base	--				
				6"-5'	Red medium to fine sandy SILT (micaceous)	--	IIB4			Subsoil similar to SS-166-SR
66+00	SS-166-SR			0-3"	Topsoil			--	5	
				3"-5'	Red medium to fine sandy SILT (micaceous)	SS-166-SR	IIB4			MC @ 1'-2'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
73+00	SS-167-SR		20	0-2"	Topsoil			--	5	
				2"-5'	Red silty medium to fine SAND	SS-167-SR	IIB4			MC @ 1'-2'
					(micaceous)					
76+00	SS-168-SR		21	0-2"	Asphalt			--	5	
				2"-1'	Graded aggregate base					
				1'-4'	Red clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-159-SR
					(micaceous)					
				4'-5'	Red silty medium to fine SAND	--	IIB4			Subsoil similar to SS-167-SR
					(micaceous)					
Collins Hill Road										
69+50	SS-169-SR	40		0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-178-SR
					lean CLAY (slightly micaceous)					
69+50	SS-170-SR		30	0-10'	SPT boring for retaining wall	--	IIB4	--	10	2'-6' Subsoil similar to SS-178-SR
										See boring log

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
71+00	SS-171-SR		30	0-8'	SPT boring for retaining wall	--	IIB4	--	8	1'-8' Subsoil similar to SS-166-SR
										See boring log
73+20	SS-172-SR		45	0-20'	SPT boring for retaining wall	--	IIB4	--	20	1'-7' Subsoil similar to SS-166-SR
										See boring log
75+00	SS-173-SR		46	0-28'	SPT boring for retaining wall	--	IIB4	--	28	1'-5' Subsoil similar to SS-166-SR
										See boring log
										Auger refusal @ 28'
75+00	SS-174-SR	40		0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-178-SR
					lean CLAY (slightly micaceous)					
77+00	SS-175-SR		46	0-30'	SPT boring for retaining wall	--	IIB4	--	30	1'-10' Subsoil similar to SS-166-SR
										See boring log
78+00	SS-176-SR		46	0-35'	SPT boring for retaining wall	--	IIB4	--	35	1'-3' Subsoil similar to SS-166-SR
							IIB2			3'-8' Subsoil similar to SS-184-SR
										See boring log

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
78+00	SS-177-SR	50		0-4"	Topsoil			--	5	
				4"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-178-SR
					lean CLAY (slightly micaceous)					
82+15	SS-178-SR	50		0-3"	Topsoil			--	5	
				3"-5'	Red-brown medium to fine sandy	SS-178-SR	IIB4			MC @ 1'-2'
					lean CLAY (slightly micaceous)					
82+15	SS-179-SR		50	0-4"	Asphalt			--	5	
				4"-5'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-178-SR
					lean CLAY (slightly micaceous)					
84+00	SS-180-SR	46		0-28'	SPT boring for retaining wall	--	IIB2	--	28	Subsoil similar to SS-184-SR
										See Boring log
86+00	SS-181-SR	46		0-8.5'	SPT boring for retaining wall	--	IIB2	--	8.5	Subsoil similar to SS-184-SR
										See Boring log
										Auger refusal @ 8.5'
87+50	SS-182-SR	46		0-15'	SPT boring for retaining wall	--	IIB2	--	15	Subsoil similar to SS-184-SR
										See Boring log

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Buford Drive (SR 20)										
82+00	SS-183-SR		50	0-3"	Topsoil			--	5	
				3"-5'	Red medium to fine sandy lean CLAY	SS-183-SR	IIB4			MC @ 1'-2'
					(micaceous)					
85+00	SS-184-SR	50		0-3"	Topsoil			2	5	
				3"-5'	Red and brown silty medium to fine	--	IIB2			Subsoil similar to SS-185-SR
					SAND (micaceous)					
94+00	SS-185-SR		50	0-3"	Topsoil			--	5	
				3"-5'	Red and brown silty medium to fine	SS-185-SR	IIB2			MC @ 1'-2'
					SAND (micaceous)					
99+00	SS-186-SR	50		0-3"	Topsoil			--	5	
				3"-5'	Red and brown silty medium to fine	--	IIB2			Subsoil similar to SS-185-SR
					SAND (micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Hi Hope Road										
88+00	SS-187-SR		42	0-3"	Topsoil			--	10	
				3"-10'	Red-brown silty medium to fine SAND	SS-187-SR	IIB4			MC @ 5'-6'
					(micaceous)					See boring log for retaining wall
90+00	SS-188-SR		46	0-10'	SPT boring for retaining wall	--	IIB4	--	10	1'-10' Subsoil similar to SS-187-SR
										See boring log
93+00	SS-189-SR	36		0-4"	Topsoil			--	5	
				4"-5'	Brown silty medium to fine SAND	SS-189-SR	IIB2			MC @ 1'-2'
					(micaceous)					
97+50	SS-190-SR	89		0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-189-SR
					(micaceous)					
103+00	SS-191-SR		36	0-3"	Topsoil			18	20	
				3"-20'	Brown silty medium to fine SAND	SS-191-SR	IIIC1			MC @ 5'-6'
					(micaceous)					See boring log for high fill area

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
106+50	SS-192-SR	30		0-28.5'	SPT boring for retaining wall	--	IIIC1	9	28.5	1'-27' Subsoil similar to SS-191-SR
										See boring log
										Auger refusal @ 28.5'
107+00	SS-193-SR	30		0-30'	SPT boring for retaining wall	--	IIIC1	2.5	30	1'-23' Subsoil similar to SS-191-SR
										See boring log
										Auger refusal @ 30'
Airport Road										
901+00	SS-194-SR	50		0-20'	SPT boring for high fill area	--	IIIC1	13	20	1'-20' Subsoil similar to SS-191-SR
										See boring log
905+00	SS-195-SR			0-3"	Asphalt			--	5	
				3"-8"	Concrete					
				8"-5'	Gray silty coarse to fine SAND	SS-195-SR	IA3			MC @ 1'-2' (Concrete cuttings in
					(slightly micaceous)					sample)

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Wimberly Way										
890+00	SS-196-SR			0-1.5'	Brown and gray silty medium to fine SAND / MUCK with wood debris and organics	--	--	4	5	
				1.5'-5'	Gray silty medium to fine SAND (micaceous)	SS-196-SR	IA2			MC @ 1.5'-2'
894+00	SS-197-SR			0-2"	Topsoil			--	2	
				2"-2'	Brown silty medium to fine SAND (micaceous)	--	IIB2			Subsoil similar to SS-189-SR
903+00	SS-198-SR		20	0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND (micaceous)	--	IIB2			Subsoil similar to SS-189-SR
906+00	SS-199-SR		20	0-2"	Topsoil			--	5	
				2"-5'	Brown silty medium to fine SAND (micaceous)	--	IIB2			Subsoil similar to SS-189-SR

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp F - Sugarloaf Parkway										
2061+00	SS-200-R		20	0-6"	Topsoil / GAB			--	8	
				6"-8'	Light brown silty medium to fine SAND (micaceous)	--	IA2			Subsoil similar to SS-201-R
2064+00	SS-201-R		20	0-4"	Topsoil / GAB			--	13	
				4"-13'	Light brown silty medium to fine SAND (micaceous)	SS-201-R	IA2			MC @ 7'-8'
2067+00	SS-202-R		10	0-6"	Topsoil / GAB			--	5	
				6"-5'	Light brown silty medium to fine SAND (micaceous)	--	IA2			Subsoil similar to SS-201-R
2070+00	SS-203-R	10		0-6"	Topsoil / GAB			--	5	
				6"-5'	Light brown silty medium to fine SAND (micaceous)	--	IA2			Subsoil similar to SS-201-R

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp G - Sugarloaf Parkway										
2078+00	SS-204-R		20	0-3"	Topsoil			--	8	
				3"-8'	Reddish brown medium to fine sandy	--	IIB4			Subsoil similar to SS-205-R
					lean CLAY (micaceous)					
2079+50	SS-205-R		20	0-3"	Topsoil			--	10	
				3"-10'	Reddish brown medium to fine sandy	SS-205-R	IIB4			MC @ 4'-5'
					lean CLAY (micaceous)					
Ramp L - Riverside Parkway										
2089+00	SS-206-R		20	0-1"	Topsoil			--	5	
				1"-5'	Dark brown silty medium to fine SAND	SS-206-R	IIB4			MC @ 1'-2'
					(micaceous)					
2092+00	SS-207-R			0-2"	Topsoil			--	7	
				2"-7'	Dark brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-206-R
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
2095+00	SS-208-R			0-1"	Topsoil			--	5	
				1"-5'	Gray clayey medium to fine	SS-208-R	IIB3			MC @ 1'-2'
					SAND (micaceous)					
2098+00	SS-209-R			0-1"	Topsoil			--	5	
				1"-5'	Gray clayey medium to fine	--	IIB3			Subsoil similar to SS-208-R
					SAND (micaceous)					
Ramp I - Riverside Parkway										
2119+00	SS-210-R		10	0-1'	Topsoil / GAB			--	5	
				1'-5'	Gray silty medium to fine SAND	SS-210-R	IIB2			MC @ 1'-2'
					(micaceous)					
2122+00	SS-211-R		20	0-6"	Topsoil / GAB			--	5	
				6"-5'	Gray silty medium to fine SAND	--	IIB2			Subsoil similar to SS-210-R
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp K - Riverside Parkway										
2155+00	SS-212-R		15	0-1'	Topsoil / GAB			--	5	
				1'-5'	Dark brown silty medium to fine SAND	SS-212-R	IIB2			MC @ 1'-2'
					(micaceous)					
2158+00	SS-213-R		10	0-1"	Topsoil			--	3	
				1"-3'	Dark brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-212-R
					(micaceous)					Auger refusal @ 3'
Ramp J - Riverside Parkway										
2140+00	SS-214-R		20	0-1.5'	GAB / Topsoil	--	--	--	1.5	Auger refusal @ 1.5'
										offset encountered auger
										refusal @ 1.5'
2143+00	SS-215-R	40		0-8"	Topsoil / GAB			--	5	
				8"-5'	Brown medium to fine sandy SILT	SS-215-R	IIB3			MC @ 4'-5'
					(micaceous)					Auger refusal @ 5'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
2146+00	SS-216-R		20	0-8"	Topsoil / GAB			--	3	
				8"-3'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					
Ramp Q - SR 120 / Duluth Hwy										
2260+00	SS-217-R		20	0-19'	SPT boring for high fill area	--	--	--	19	See boring log
										Auger refusal @ 19'
Ramp N - SR 120 / Duluth Hwy										
2189+00	SS-218-R			0-2"	Topsoil			2	5	
				2"-2'	Brown silty medium to fine SAND	--	IA3			Subsoil similar to SS-66-LL
					(micaceous)					
				2'-5'	Gray silty medium to fine SAND	--	IA2			Subsoil similar to SS-196-SR
					(micaceous)					
2194+00	SS-219-R			0-2"	Topsoil			--	5	
				2"-5'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-215-R
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
2197+00	SS-220-R			0-1"	Topsoil			--	3	
				1"-3'	Brown medium to fine sandy SILT	--	IIB3			Subsoil similar to SS-215-R
					(micaceous)					Hand auger refusal @ 3'
Ramp P - SR 120 / Duluth Hwy										
2229+00	SS-221-R		30	0-17'	SPT boring for high fill area	--	--	--	17	See SS-281-CL SPT boring log
										for culvert left
2234+00	SS-222-R			0-3"	Topsoil			--	20	
				3"-20'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-223-R
					(micaceous)					
2236+00	SS-223-R	20		0-3"	Topsoil			--	20	
				3"-20'	Red brown medium to fine sandy SILT	SS-223-R	IIB4			MC @ 19'-20'
					(micaceous)					Auger refusal @ 20'

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
2243+00	SS-224-R		20	0-3"	Topsoil			--	20	
				3"-20'	Red brown medium to fine sandy SILT	--	IIB4			Subsoil similar to SS-223-R
					(micaceous)					
Ramp O - SR 120 / Duluth Hwy										
2201+00	SS-225-R			0-3"	Topsoil			--	5	
				3"-5'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-226-R
					(micaceous)					
2204+00	SS-226-R		40	0-6"	Topsoil			--	22	
				6"-22'	Brown silty medium to fine SAND	SS-226-R	IIB4			MC @ 17'-18'
					(micaceous)					
2207+00	SS-227-R		65	0-3"	Asphalt			--	34	
				3"-6"	GAB					
				6"-34'	Brown silty medium to fine SAND	SS-227-R	IIB4			MC @ 29'-30'
					(micaceous)					
2209+00	SS-228-R		50	0-3"	Topsoil / GAB			--	20	
				3"-20'	Brown silty medium to fine SAND	--	IIB4			Subsoil similar to SS-227-R
					(micaceous)					

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Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp T - Collins Hill Road										
493+00	SS-229-R		12	0-15'	SPT boring for retaining wall	--	IIB4	--	15	1'-6' Subsoil similar to SS-178-SR
										See boring log
495+00	SS-230-R		12	0-3"	Topsoil			--	20	See boring log for retaining wall
				3"-15'	Brown silty medium to fine SAND	SS-230-R	IIB4			MC @ 3'-4'
					(micaceous)					
497+00	SS-231-R		18	0-15'	SPT boring for retaining wall	--	IIB4	--	15	1'-6' Subsoil similar to SS-178-SR
										See boring log
498+50	SS-232-R		24	0-15'	SPT boring for retaining wall	--	IIB4	--	15	1'-6' Subsoil similar to SS-230-R
										See boring log
499+50	SS-233-R		46	0-30'	SPT boring for retaining wall	--	IIB4	--	30	1'-6' Subsoil similar to SS-230-R
										See boring log

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp W - Collins Hill Road										
794+00	SS-234-R			0-3"	Topsoil			--	5	
				3"-5'	Light reddish brown silty medium to fine	--	IIB3			Subsoil similar to SS-235-R
					SAND (micaceous)					
797+50	SS-235-R		20	0-2"	Topsoil			--	10	
				2"-5"	GAB					
				5"-10'	Light reddish brown silty medium to fine	SS-235-R	IIB3			MC @ 5'-6'
					SAND (micaceous)					
Ramp V - Collins Hill Road										
685+00	SS-236-R			0-3"	Topsoil			--	5	
				3"-5'	Light brown silty medium to fine	--	IA2			Subsoil similar to SS-237-R
					SAND (slightly micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
690+00	SS-237-R	10		0-2"	Topsoil			--	3	
				2"-3'	Light brown silty medium to fine	SS-237-R	IA2			MC @ 1'-2'
					SAND (slightly micaceous)					Hand auger refusal @ 3'
695+00	SS-238-R		10	0-2"	Topsoil			--	1.5	
				2"-1.5'	Light brown silty medium to fine	--	IA2			Subsoil similar to SS-237-R
					SAND (slightly micaceous)					Hand auger refusal @ 1.5'
Ramp U - Collins Hill Road										
500+50	SS-239-R			0-6"	Concrete			--	5	
				6"-5'	Grayish green silty medium to fine	--	IIB2			Subsoil similar to SS-240-R
					SAND (slightly micaceous)					
501+50	SS-240-R		12	0-3'	See boring log			--	30	See boring log for retaining wall
				3'-12'	Grayish green silty medium to fine	SS-240-R	IIB2			MC @ 4'-5'
					SAND (slightly micaceous)					
				12'-30'	See boring log					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
503+50	SS-241-R		12	0-7'	SPT boring for retaining wall	--	IIB2	--	7	Subsoil similar to SS-242-R
										See boring log
										Auger refusal @ 7'
506+00	SS-242-R		12	0-6'	See boring log			--	20	See boring log for retaining wall
				6'-20'	Light brown silty medium to fine SAND	SS-242-R	IIB2			MC @ 4'-5'
					(slightly micaceous)					
507+00	SS-243-R		12	0-6'	See boring log			21.5	35	See boring log for retaining wall
				6'-35'	Red and gray silty medium to fine SAND	SS-243-R	IA3			MC @ 5'-6'
					(slighlty micaceous)					
Appleland Drive										
311+00	SS-244-SR		40	0-2"	Topsoil			--	10	
				2"-10'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-247-SR
					(slightly micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
311+00	SS-245-SR	40		0-2"	Topsoil			--	10	
				2"-10'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-247-SR
					(slightly micaceous)					
314+00	SS-246-SR		35	0-2"	Topsoil			--	8	
				2"-8'	Red-brown medium to fine sandy	--	IIB4			Subsoil similar to SS-178-SR
					lean CLAY					
317+00	SS-247-SR	20		0-1"	Topsoil / Gravel			--	15	
				1"-15'	Brown silty medium to fine SAND	SS-247-SR	IIB2			MC @ 10'-11'
					(slightly micaceous)					
317+00	SS-248-SR		20	0-1"	Topsoil / Gravel			--	10	
				1"-10'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-247-SR
					(slightly micaceous)					
323+00	SS-249-SR	20		0-1"	Topsoil			--	15	
				1"-15'	Brown silty medium to fine SAND	SS-249-SR	IIB4			MC @ 9'-10'
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
326+00	SS-250-SR	20		0-3"	Topsoil			--	20	
				3"-20'	Brown clayey medium to fine SAND	SS-250-SR	IIB3			MC @ 15'-16'
					(micaceous)					
326+00	SS-251-SR		20	0-2"	Topsoil			--	13	
				2"-13'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-250-SR
					(micaceous)					
329+00	SS-252-SR			0-2"	Asphalt			--	7	
				2"-8"	GAB					
				8"-7'	Brown silty medium to fine SAND	SS-252-SR	IIB2			MC @ 2'-3'
					(slightly micaceous)					
332+00	SS-253-SR			0-3"	Asphalt			--	6	
				3"-9"	GAB					
				9"-6'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-252-SR
					(slightly micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
335+00	SS-254-SR			0-3"	Asphalt			--	6	
				3"-9"	GAB					
				9"-6'	Brown silty medium to fine SAND	--	IIB2			Subsoil similar to SS-252-SR
					(slightly micaceous)					
Ramp X - SR 20 / Buford Road										
2295+00	SS-255-R			0-3"	Topsoil			--	5	
				3"-5'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-256-R
					SILT (slightly micaceous)					
2298+00	SS-256-R	20		0-3"	Topsoil			--	15	
				3"-15'	Reddish brown medium to fine sandy	SS-256-R	IIB3			MC @ 10'-11'
					SILT (slightly micaceous)					
2300+00	SS-257-R			0-3"	Asphalt			--	5	
				3"-6"	GAB					
				6"-4'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-256-R
					SILT (slightly micaceous)					
				4'-5'	Concrete and/or partially weathered	--	--			
					rock					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp Z - SR 20 / Buford Road										
3328+00	SS-258-R			0-2"	Topsoil			--	10	
				2"-10"	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					
				10"-10'	Reddish brown medium to fine sandy	SS-258-R	IIB4			MC @ 4'-5'
					CLAY (micaceous)					
3331+00	SS-259-R	10		0-2"	Topsoil					
				2"-3'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					Hand auger refusal @ 3'
3336+00	SS-260-R	20		0-2"	Topsoil			--	2	
				2"- 2'	Reddish brown medium to fine sandy	--	IIB4			Subsoil similar to SS-258-R
					CLAY (micaceous)					Hand auger refusal @ 2'
Ramp Y - SR 20 / Buford Road										
2304+00	SS-261-R		20	0-3"	Topsoil			--	5	
				3"-5'	Light red and gray silty medium to fine	--	IIB4			Subsoil similar to SS-262-R
					SAND (slightly micaceous)					

Notes:
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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
2307+00	SS-262-R		20	0-3"	Asphalt					
				3"-9"	GAB			--	10	
				9"-10'	Light red and gray silty medium to fine	SS-262-R	IIB4			MC @ 5'-6'
					SAND (slightly micaceous)					
2309+00	SS-263-R	40		0-2"	Topsoil			--	15	
				2"-15'	Light red and gray silty medium to fine	--	IIB4			Subsoil similar to SS-264-R
					SAND (slightly micaceous)					
2312+00	SS-264-R		20	0-3"	Topsoil			--	15	
				3"-15'	Reddish brown medium to fine sandy	SS-264-R	IIB4			MC @ 10'-11'
					CLAY (slightly micaceous)					
2314+50	SS-265-R		20	0-3"	Topsoil			--	10	
				3"-10'	Reddish brown medium to fine sandy	--	IIB4			Subsoil similar to SS-264-R
					CLAY (slightly micaceous)					

Notes:
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(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Ramp AA - SR 20 / Buford Road										
3299+50	SS-266-R			0-2"	Topsoil			--	20	
				2"-20'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-267-R
					CLAY (slightly micaceous)					
3302+25	SS-267-R			0-2"	Topsoil			--	15	
				2"-15'	Reddish brown medium to fine sandy	SS-267-R	IIB3			MC @ 10'-11'
					CLAY (slightly micaceous)					
3303+00	SS-268-R			0-3"	GAB			--	20	Subsoil similar to SS-267-R
				3"-20'	Reddish brown medium to fine sandy	--	IIB3			
					CLAY (slightly micaceous)					
Park Access Road - SR 20 Buford Road										
403+50	SS-269-SR	17		0-2"	Topsoil			--	5	
				2"-1'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-267-R
					CLAY (slightly micaceous)					
				1'-5'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
407+00	SS-270-SR			0-3"	Topsoil			--	4	
				3"-10"	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					
				10"-2.5'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-267-R
					CLAY (slightly micaceous)					
				2.5'-4'	Light brown silty medium to fine	--	IIB3			Subsoil similar to SS-126-LL
					SAND (micaceous)					Hand auger refusal @ 4'
410+00	SS-271-SR			0-2"	Topsoil			--	5	
				2"-1'	Light brown silty medium to fine SAND	--	IIB3			Subsoil similar to SS-126-LL
					(micaceous)					
				1'-5'	Reddish brown medium to fine sandy	--	IIB3			Subsoil similar to SS-256-R
					SILT (slightly micaceous)					
413+00	SS-272-SR			0-2"	Topsoil			--	5	
				2"-5'	Brown clayey medium to fine SAND	--	IIB3			Subsoil similar to SS-250-SR
					(micaceous)					

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
Culverts										
966+80	SS-273-CL	110		0-5'	Hand auger and penetrometer for culvert left	--	--	2	5	See boring log Hand auger refusal @ 5'
972+10	SS-274-CR		280	0-20'	SPT boring for culvert right	--	--	1.5	20	See boring log
975+75	SS-275-CL	100		0-20'	SPT boring for culvert left	--	--	3.5	30	See boring log
974+10	SS-276-CR		190	0-20'	SPT boring for culvert right	--	--	5.4	25	See boring log
1017+00	SS-277-CR		80	0-20'	SPT boring for culvert right	--	--	6.5	20	See boring log
1018+00	SS-278-CL	75		0-20'	SPT boring for culvert left	--	--	5.5	20	See boring log
1149+85	SS-279-CL	180		0-3'	Hand auger and penetrometer for culvert left	--	--		3	See boring log Hand auger refusal @ 3'
1152+70	SS-280-CR		150	0-3'	Hand auger and penetrometer for culvert right	--	--		3	See boring log Hand auger refusal @ 3'

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
1213+90	SS-281-CL	140		0-20'	SPT boring for culvert left	--	--	12.5	17	See boring log Auger refusal @ 17'
1214+80	SS-282-CR		260	0-20'	SPT boring for culvert right	--	--		13.5	See boring log Auger refusal @ 13.5'
1243+40	SS-283-CL	230		0-20'	SPT boring for culvert left	--	--		10	See boring log Auger refusal @ 10'
1243+10	SS-284-CR		180	0-7'	Hand auger and penetrometer for culvert right	--	--	4.5	7	See boring log Hand auger refusal @ 7'
1338+10	SS-285-CR		135		SPT boring for culvert right	--	--	5.5	20	See boring log
1355+40	SS-286-CL	110			Hand auger and penetrometer for culvert left	--	--		4	See boring log Hand auger refusal @ 4'
1356+40	SS-287-CR		110		Hand auger and penetrometer for culvert right	--	--	2	10	See boring log

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
HOV Interchange Ramps										
998+95	SS-288-IR			0-20'	SPT boring for HOV interchange ramp	--	--	--	20	See boring log
1173+00	SS-289-IR			0-3'	SPT boring for HOV interchange ramp	--	--	--	3	See boring log Auger refusal @ 3'
1229+50	SS-290-IR			0-20'	SPT boring for HOV interchange ramp	--	--	--	20	See boring log
1341+00	SS-291-IR			0-20'	SPT boring for HOV interchange ramp	--	--	10	20	See boring log
Walther Road Bridge Ramp										
72+00	SS-292-BR			0-16'	SPT boring for bridge ramp	--	--	--	20	See boring log Auger refusal @ 16'
Collins Hill Road Bridge Ramp										
82+50	SS-294-BR			0-20'	SPT boring for bridge ramp	--	--	--	20	See boring log
Hi-Hope Road Bridge Ramps										

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

Record of Soil Survey Borings
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett, Georgia
GDOT Project No. MSL-0003-00(168) Gwinnett, PI No. 0003168
Willmer Engineering Project No. 171-2867

Station	Boring No.	Offset (feet)		Depth	Soil Description	Sample No.	Soil Class	Water Table Depth (feet)	Boring Term. Depth (feet)	Notes / Comments
		Left	Right							
97+50	SS-295-BR			0-20'	SPT boring for bridge ramp	--	--	--	20	See boring log
102+50	SS-296-BR			0-20'	SPT boring for bridge ramp	--	--	10	20	See boring log

Notes:
(i) All offsets are from proposed construction centerline unless noted otherwise.
(ii) All depths are from existing ground surface unless noted otherwise.

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-141-LL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Critical Slope

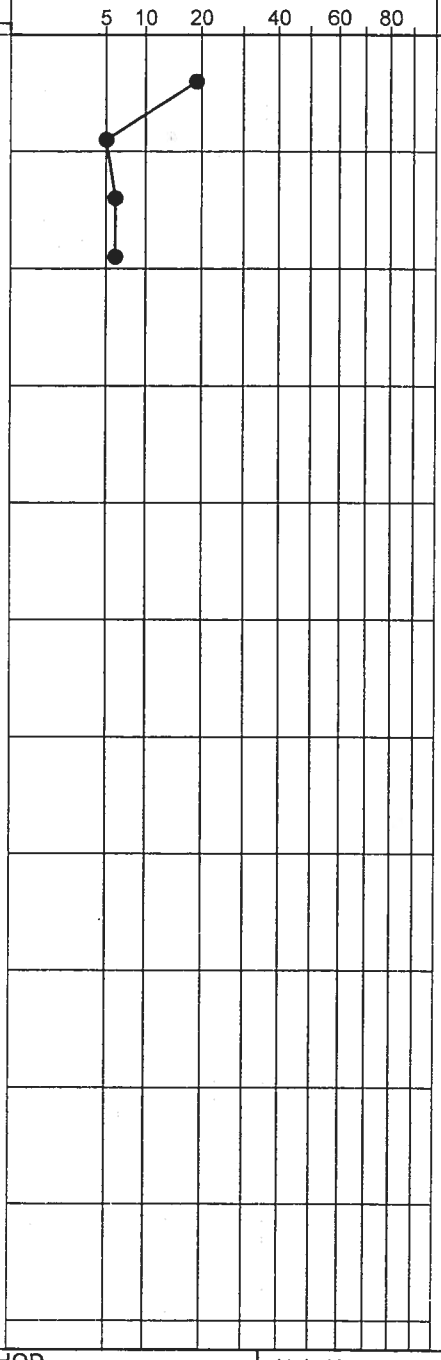
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1370+00, 90 Ft. Left

Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 4 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 10.0

Logged By: EB Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 3 inches SM			
		SS			RESIDUUM: Medium dense to loose brown, tan and white silty medium to fine **SAND** (micaceous)			19
5		SS						5
		SS						6
10		SS						6
					Boring terminated @ 10 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-141-LL

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-145-RL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Critical Slope

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1382+00, 90 Ft. Right

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 2 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 10.0

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 3 inches ML RESIDUUM: Soft to firm tan medium to fine sandy **SILT** (micaceous)			
5		SS						5
10		SS						4
					Boring terminated @ 10 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-145-RL

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-156-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Critical Slope

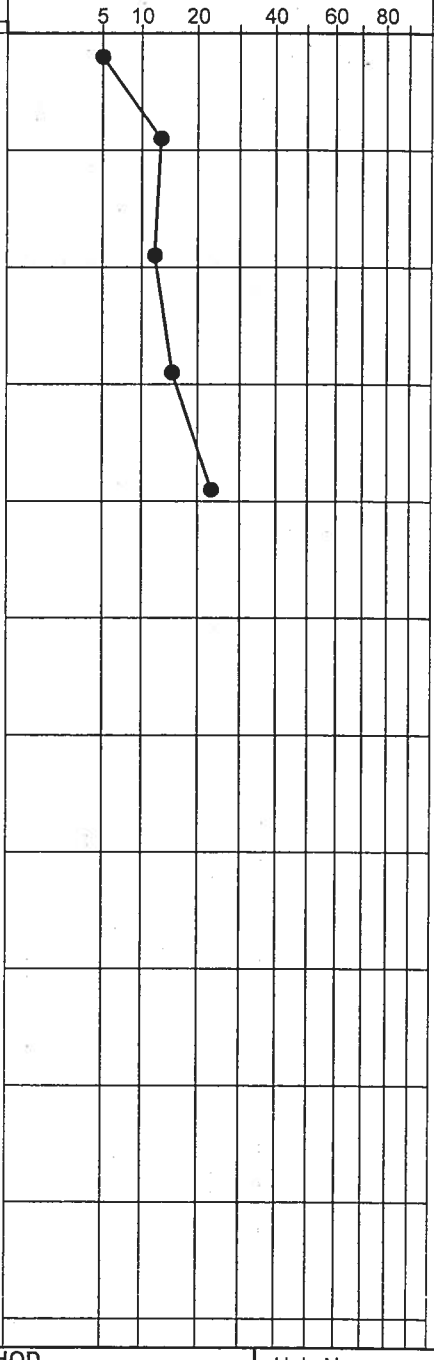
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 53+00, CL, Lawrenceville Suwanee Rd

Drilling Equipment: CME 550 Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: EB Date Drilled: 1/26/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 2 inches FILL			5
					FILL: Firm to very stiff red-brown medium to fine sandy **SILT** (micaceous)			
5		SS						13
10		SS						12
15		SS						15
20		SS						23
					Boring terminated @ 20 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-156-SR

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-170-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 69+50, 30 Ft. Right, Collins Hill Rd.

Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 4 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 10.0

Logged By: PZ Date Drilled: 12/14/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					TOPSOIL = 3 inches	FILL			
		SS			FILL: Very loose brown silty medium to fine **SAND**	CL			4
5		SS			RESIDUUM: Firm red to reddish brown medium to fine sandy **CLAY** with gravel	ML			8
		SS			Firm to very stiff reddish brown medium to fine sandy **SILT**				16
10		SS							8

Boring terminated @ 10 feet below existing ground surface

Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-170-SR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-171-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 71+00, 30 Ft. Right, Collins Hill Rd.

Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 3 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 8.0

Logged By: PZ Date Drilled: 12/14/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					TOPSOIL = 3 inches ML			
		SS			RESIDUUM: Firm to stiff reddish brown medium to fine sandy **SILT**			8
5		SS						7
		SS						9
					Boring terminated @ 8 feet below existing ground surface			
					Groundwater not encountered @ time of boring			

SAMPLER TYPE

SS - Split Spoon
ST - Shelby Tube
NO - 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. SS-171-SR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-172-SR

Sheet 1 of 1

Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 73+20, 45 Ft. Right, Collins Hill Rd.

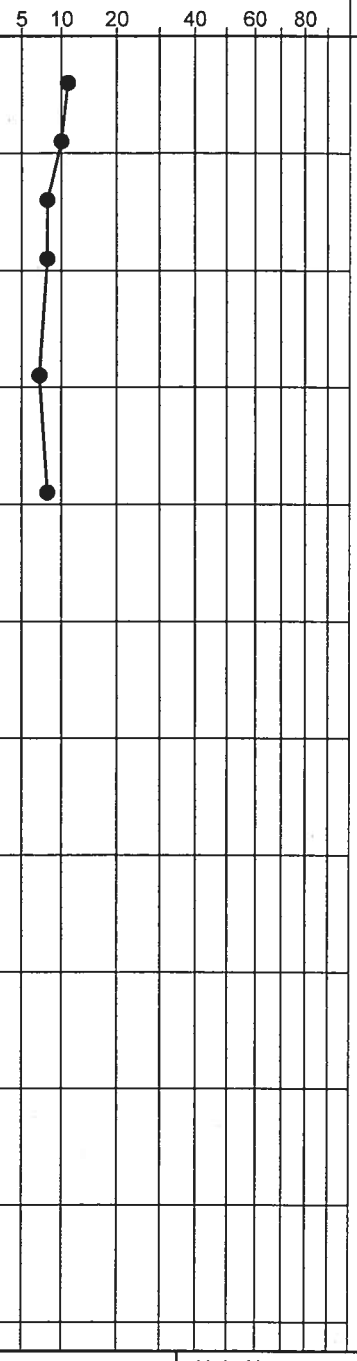
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 6 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: PZ Date Drilled: 12/14/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 3 inches (ML)		
		SS			RESIDUUM: Firm to stiff red to reddish brown medium to fine sandy **SILT**		11
5		SS					10
		SS			Loose reddish purple and brown silty medium to fine **SAND** (micaceous) (SM)		8
10		SS					8
15		SS					7
20		SS					8
					Boring teminated @ 20 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-172-SR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-173-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 75+00, 46 Ft. Right, Collins Hill Rd.

Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 7 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 28.0

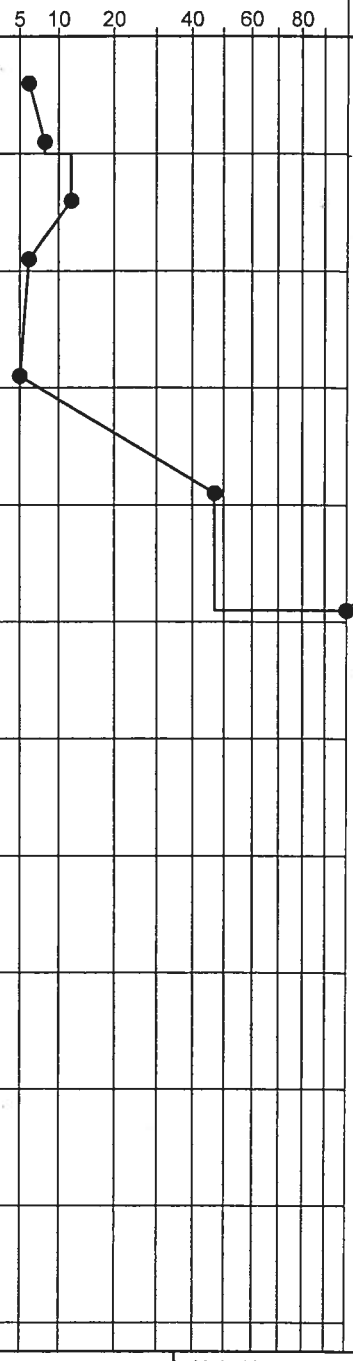
Logged By: PZ Date Drilled: 12/13/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			GRAVEL = 3 inches — FILL FILL: Firm reddish brown medium to fine sandy **SILT** with gravel		6
		SS					8
5		SS			RESIDUUM: Firm to stiff reddish brown medium to fine sandy **SILT** (slightly micaceous) — ML		12
10		SS					6
15		SS					5
20		SS			Dense tan and light brown silty medium to fine **SAND** with rock fragments — SM		47
25		SS			PARTIALLY WEATHERED ROCK: Sampled as light brown silty medium to fine **SAND** with rock fragments — PWR		73/7"

Boring encountered auger refusal @ 28 feet below existing ground surface

Groundwater not encountered @ time of boring

STANDARD PENETRATION TEST DATA (blows/foot)



SAMPLER TYPE		DRILLING METHOD	
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
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing	

Hole No. SS-173-SR

WILLMER ENGINEERING, INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-175-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 77+00, 46 Ft. Right, Collins Hill Rd.

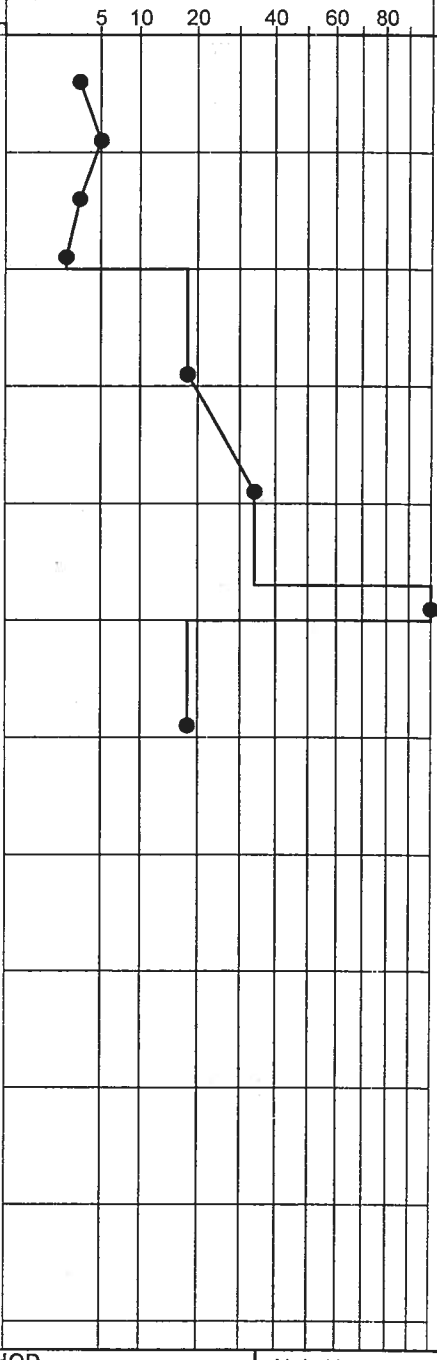
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

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

Logged By: PZ Date Drilled: 12/13/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 4 inches — FILL FILL: Very soft to firm reddish brown medium to fine sandy **SILT**		3
5		SS					5
		SS					3
10		SS					2
					RESIDUUM: Medium dense to dense tan and brown silty medium to fine **SAND** (slightly micaceous) — SM		
15		SS					18
20		SS					34
25		SS			PARTIALLY WEATHERED ROCK: Sampled as gray and black silty medium to fine **SAND** with rock fragments — PWR, SM		50/5"
30		SS			RESIDUUM: Medium dense brown and dark gray silty medium to fine **SAND**		18

STANDARD PENETRATION TEST DATA (blows/foot)



Boring terminated @ 30 feet below existing ground surface

Groundwater encountered @ 27.5 feet below existing ground surface @ time of boring

SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	SS-175-SR
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-176-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 78+00, 46 Ft. Right, Collins Hill Rd.

Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

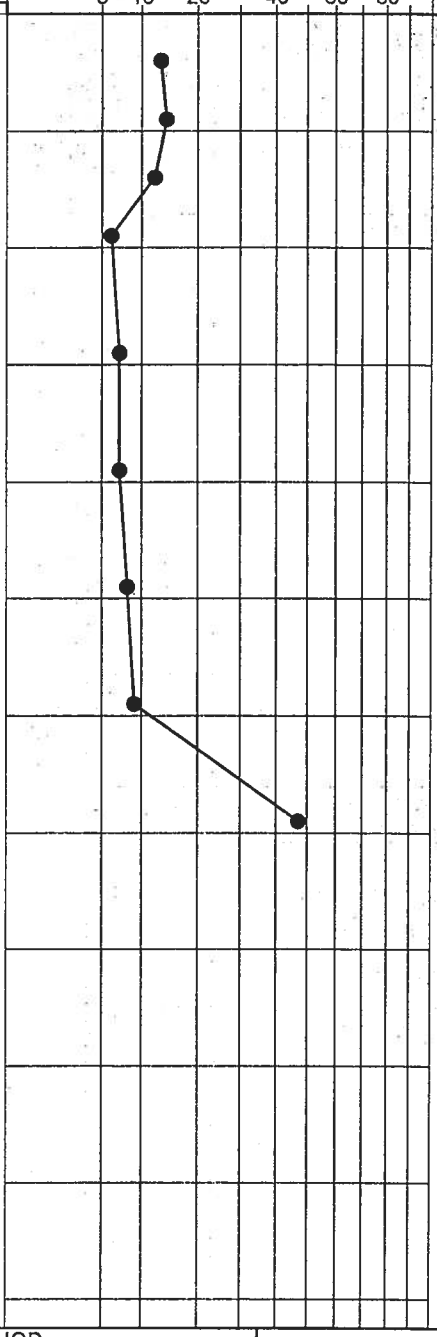
Core Boxes: NA Samples: 9 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 35.0

Logged By: PZ Date Drilled: 12/13/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			TOPSOIL = 4 inches	ML			
		SS			RESIDUUM: Stiff red medium to fine sandy **SILT**	SM			13
5		SS			Medium dense red and orange silty medium to fine **SAND**				14
		SS							12
10		SS			Loose tan and light brown silty medium to fine **SAND** (slightly micaceous)	SM			6
15		SS							7
20		SS							7
25		SS							8
30		SS							9
35		SS			Dense brown silty medium to fine **SAND** (micaceous)	SM			47

Boring terminated @ 35 feet below existing ground surface

Groundwater encountered @ 31 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-176-SR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-180-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 84+00, 46 Ft. Left, Collins Hill Rd.

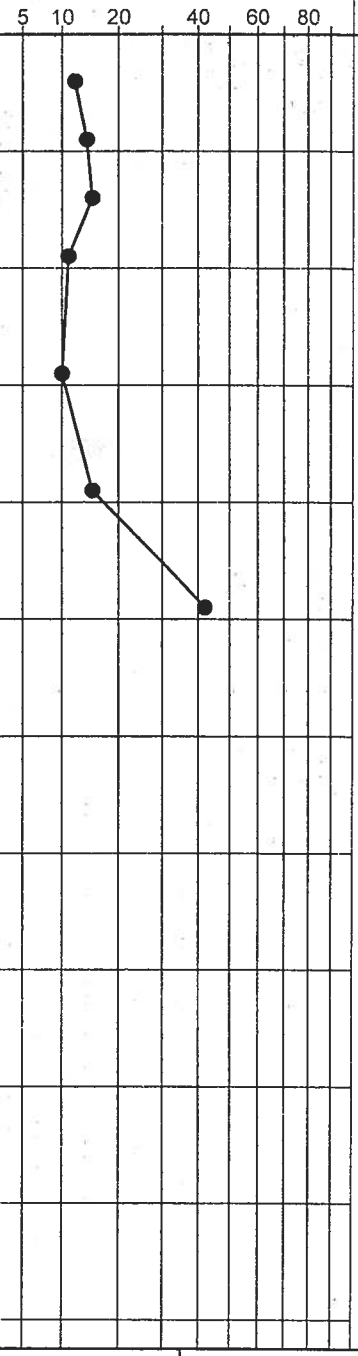
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 7 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 28.0

Logged By: PZ Date Drilled: 12/12/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			TOPSOIL = 4 inches SM RESIDUUM: Medium dense reddish brown silty medium to fine **SAND**		12
5		SS					14
		SS					15
10		SS					11
					Loose to medium dense tan silty medium to fine **SAND** (slightly micaceous) SM		
15		SS					10
20		SS					15
25		SS			Dense tan and white silty medium to fine **SAND** with rock fragments (slightly micaceous) SM		42
					Boring terminated @ 28 feet below existing ground surface Groundwater not encountered @ time of boring		

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	SS-180-SR
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 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-181-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

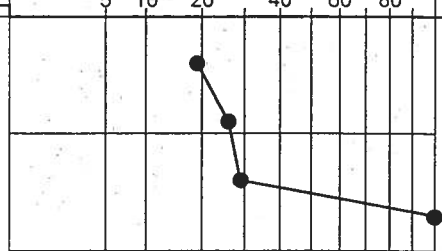
Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 86+00, 46 Ft. Left, Collins Hill Rd.

Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 4 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 8.5

Logged By: PZ Date Drilled: 12/12/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					ASPHALT = 4 inches			
					GAB = 2 inches	GAB		
		SS			RESIDUUM: Medium dense orange, brown and tan silty medium to fine **SAND**	SM		19
5		SS						26
		SS						29
		SS						50/0
					Boring encountered auger refusal @ 8.5 feet below existing ground surface			
					Groundwater not encountered @ time of boring			



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	SS-181-SR
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-182-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: -- Angle from Horizontal: 90 Surface Elevation (ft): Station: 87+50, 46 Ft. Left, Collins Hill Rd.

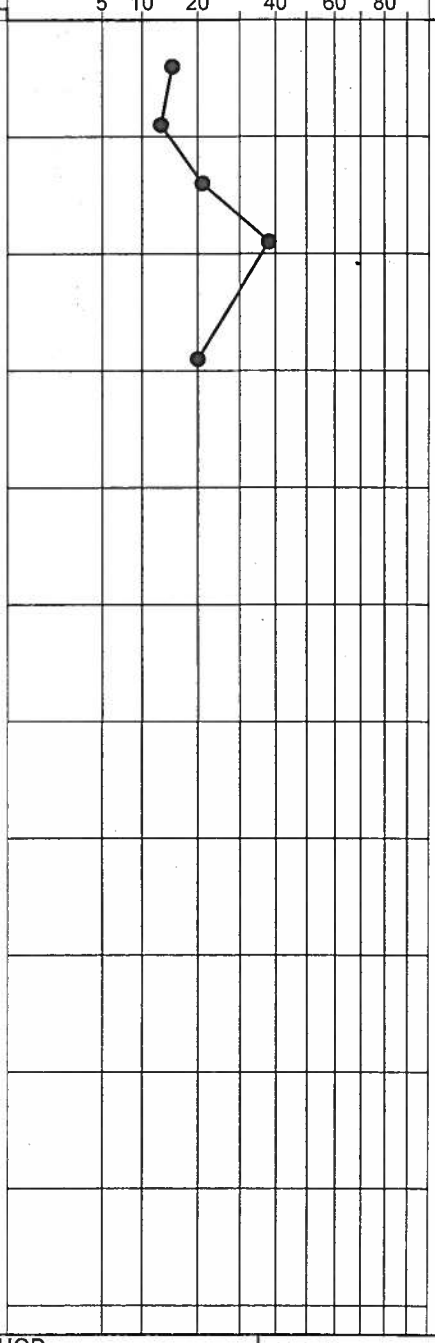
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 15.0

Logged By: PZ Date Drilled: 12/12/05

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					TOPSOIL = 4 inches SM		
		SS			RESIDUUM: Medium dense to dense orange, brown and tan silty medium to fine **SAND**		15
		SS					13
5		SS					21
		SS					38
10							
		SS					20
15							
					Boring terminated @ 15 feet below existing ground surface		
					Groundwater not encountered @ time of boring		

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	SS-182-SR
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-187-SR

Sheet 1 of 1

Location: Retaining Wall

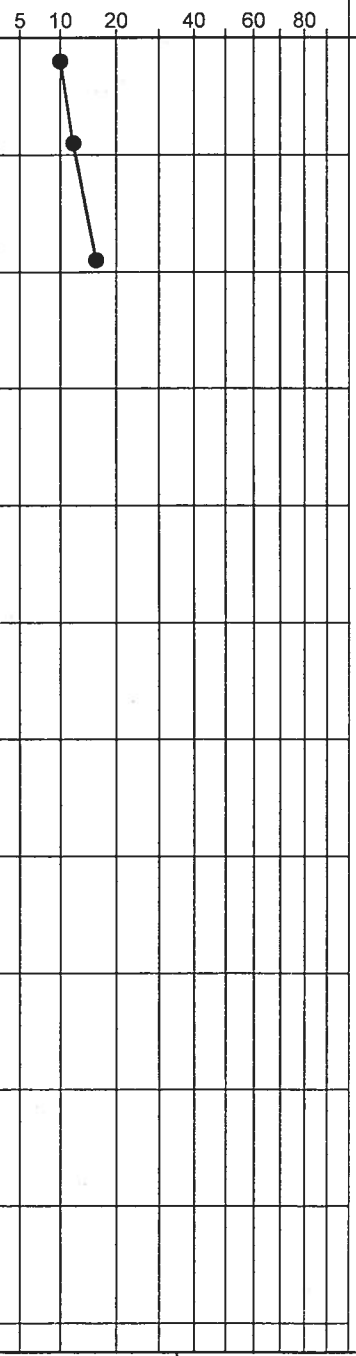
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 88+00, 42 Ft. Right, Hi-Hope Rd.

Drilling Equipment: CME 550 | Drilling Method: HSA

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

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 3 inches — SM			10
					RESIDUUM: Loose to medium dense red-brown and tan silty medium to fine **SAND** (micaceous)			
5		SS						12
10		SS						16
					Boring terminated @ 10 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-187-SR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-188-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

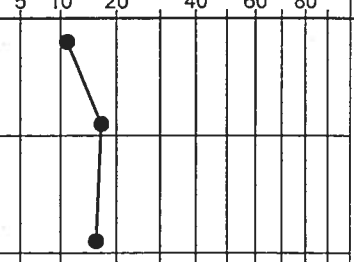
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 90+00, 46 Ft. Right, Hi-Hope Rd.

Drilling Equipment: CME 550 Drilling Method: HSA

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

Logged By: EB Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 6 inches SM RESIDUUM: Medium dense brown and tan silty medium to fine **SAND** (micaceous)			11
5		SS						17
10		SS						16
					Boring terminated @ 10 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-188-SR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-191-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: High Fill Area

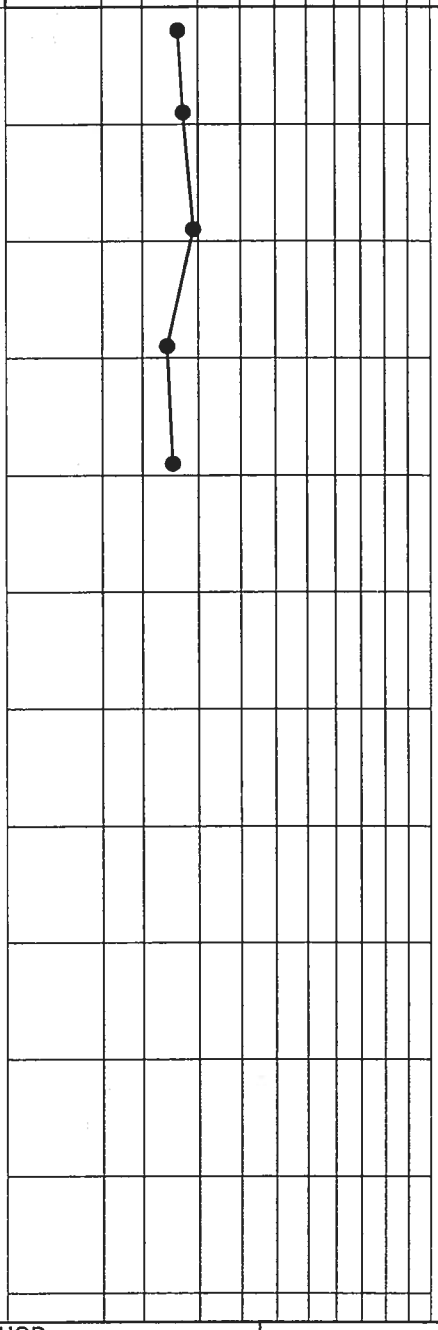
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 103+00, 36 Ft. Right, Hi-Hope Rd.

Drilling Equipment: CME 550 Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: EB Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 3 inches SM RESIDUUM: Medium dense brown and tan silty medium to fine **SAND** (micaceous)			16
5		SS						17
10		SS						19
15		SS						14
20		SS						15
					Boring terminated @ 20 feet below existing ground surface Groundwater encountered @ 18 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **SS-191-SR**

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-192-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

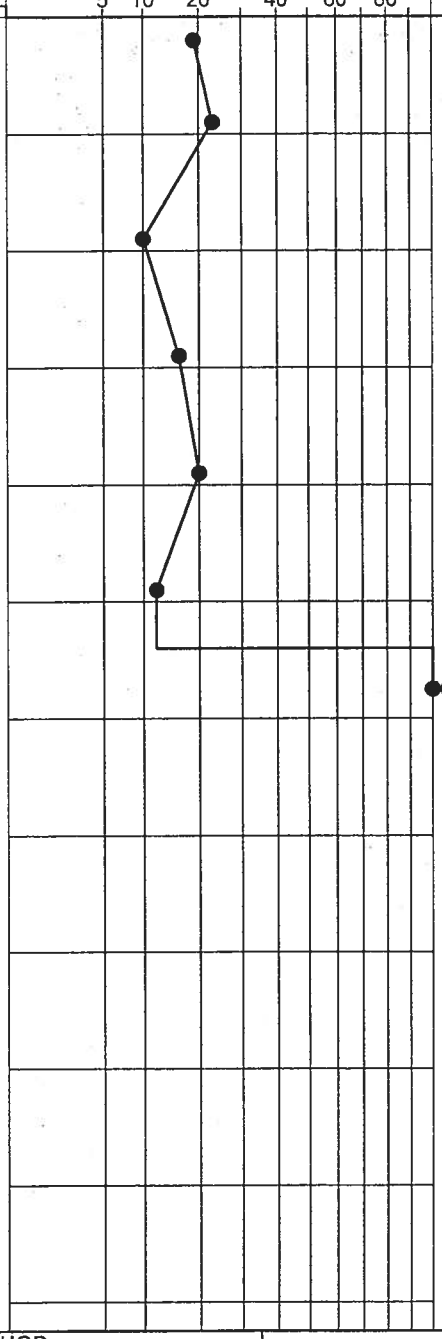
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 106+50, 30 Ft. Left, Hi-Hope Rd.

Drilling Equipment: CME 550 | Drilling Method: HSA

Core Boxes: NA | Samples: 7 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 28.5

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 3 inches — SM			19
					RESIDUUM: Medium dense brown and tan silty medium to fine **SAND** (micaceous)			
5		SS						23
10		SS			Changes to loose			10
15		SS			Changes to medium dense			16
20		SS						20
25		SS						12
		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense brown and tan silty medium to fine **SAND** (micaceous) — PWR			0/0.5"
					Boring encountered auger refusal @ 28.5 feet below existing ground surface			
					Groundwater encountered @ 9 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **SS-192-SR**

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-193-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 107+00, 30 Ft. Left, Hi-Hope Rd.

Drilling Equipment: CME 550 Drilling Method: HSA

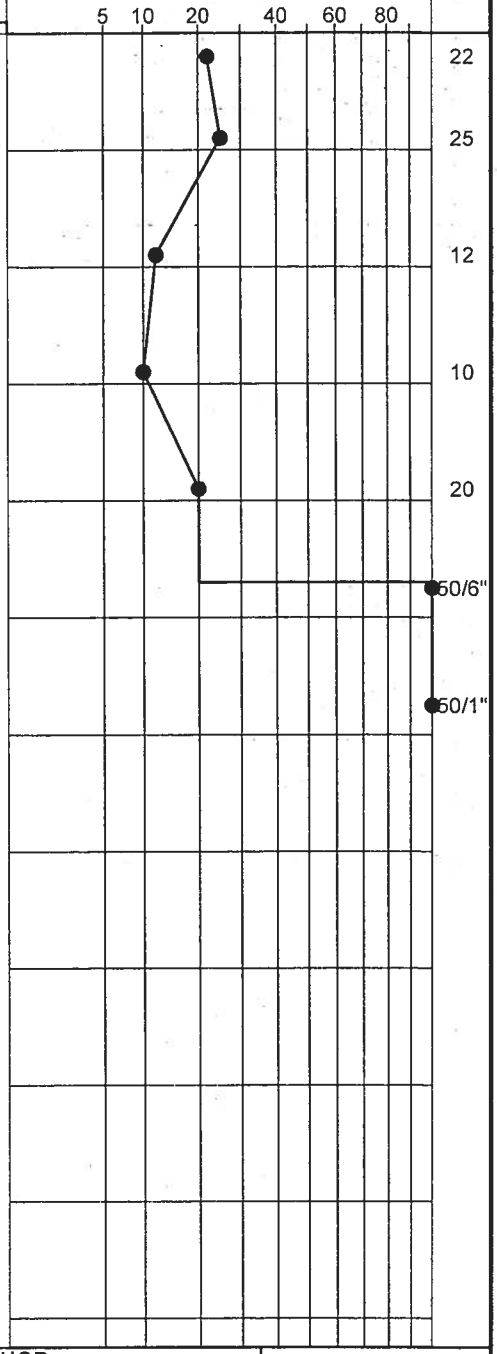
Core Boxes: NA Samples: 7 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 30.0

Logged By: PZ Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 3 inches	FILL			22
					FILL: Medium dense brown silty medium to fine **SAND**	SC			
5		SS			RESIDUUM: Medium dense tan and gray clayey coarse to fine **SAND**				25
10		SS			Loose to medium dense yellow and light brown silty medium to fine **SAND**	SM			12
15		SS							10
20		SS							20
25		SS			PARTIALLY WEATHERED ROCK: Sampled as very dense tan and brown silty medium to fine **SAND** (slightly micaceous)	PWR			50/6"
30		SS							50/1"

Boring encountered auger refusal @ 30 feet below existing ground surface

Groundwater encountered @ 2.5 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-193-SR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-194-SR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: High Fill Area

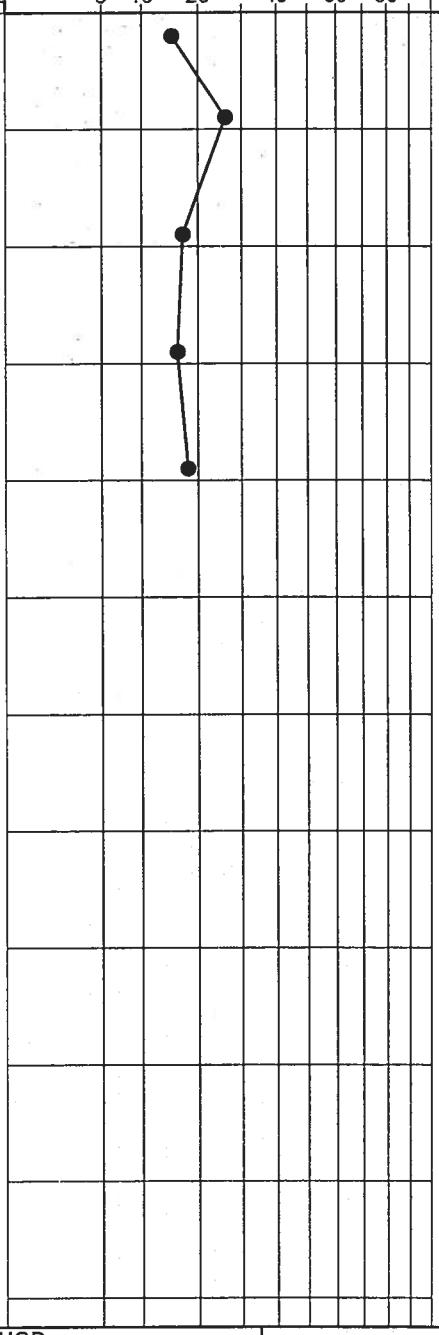
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 901+00, 50 Ft. Left, Airport Rd.

Drilling Equipment: CME 550 Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: EB Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 3 inches SM RESIDUUM: Medium dense brown and tan silty medium to fine **SAND** (micaceous)			15
5		SS						26
10		SS						17
15		SS						16
20		SS						18
					Boring terminated @ 20 feet below existing ground surface Groundwater encountered @ 13 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-194-SR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-217-R

Sheet 1 of 1

Location: High Fill Area

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 2260+00, 20 Ft. Right, Ramp Q

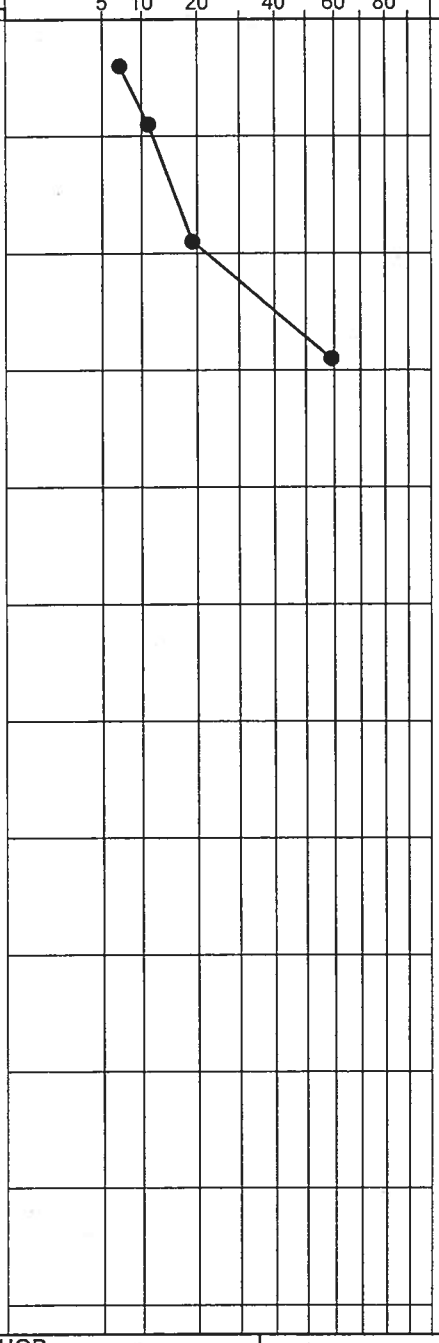
Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 4 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 19.0

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			RESIDUUM: Firm to stiff red-brown medium to fine sandy **SILT** (micaceous)	ML		7
		SS						11
5					Medium dense to very dense brown silty medium to fine **SAND** (micaceous)	SM		
10		SS						19
15		SS						59
					Boring encountered auger refusal @ 19 feet below existing ground surface Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-217-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-229-R

Sheet 1 of 1

Location: Retaining Wall

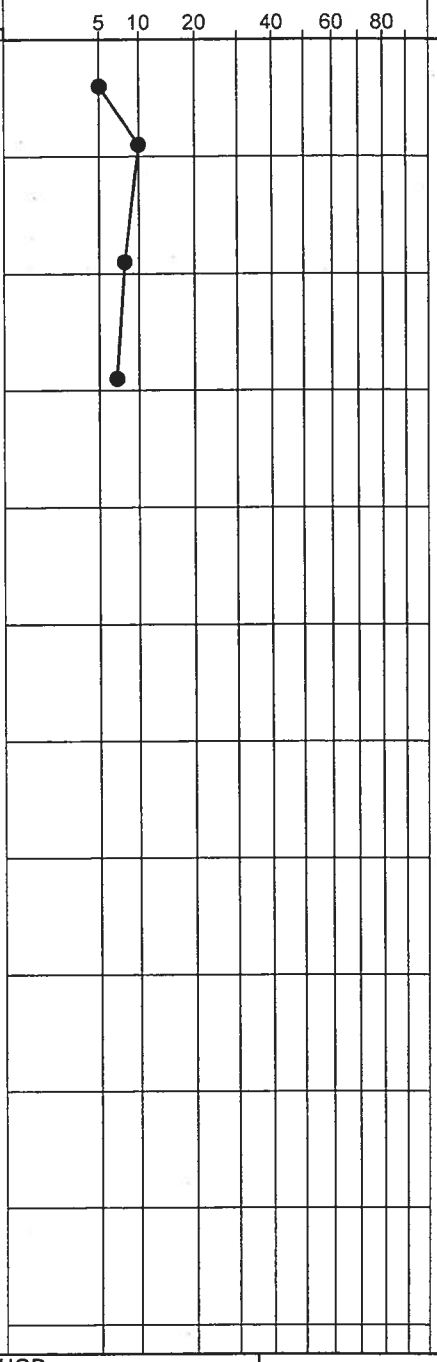
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 493+00, 12 Ft. Right, Ramp T

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 4 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 15.0

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 3 inches CL			
		SS			RESIDUUM: Firm to stiff red-brown medium to fine sandy lean **CLAY**			5
5		SS						10
					Loose red-brown silty medium to fine **SAND** (micaceous) SM			
10		SS						8
15		SS						7
					Boring terminated @ 15 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-229-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-230-R**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

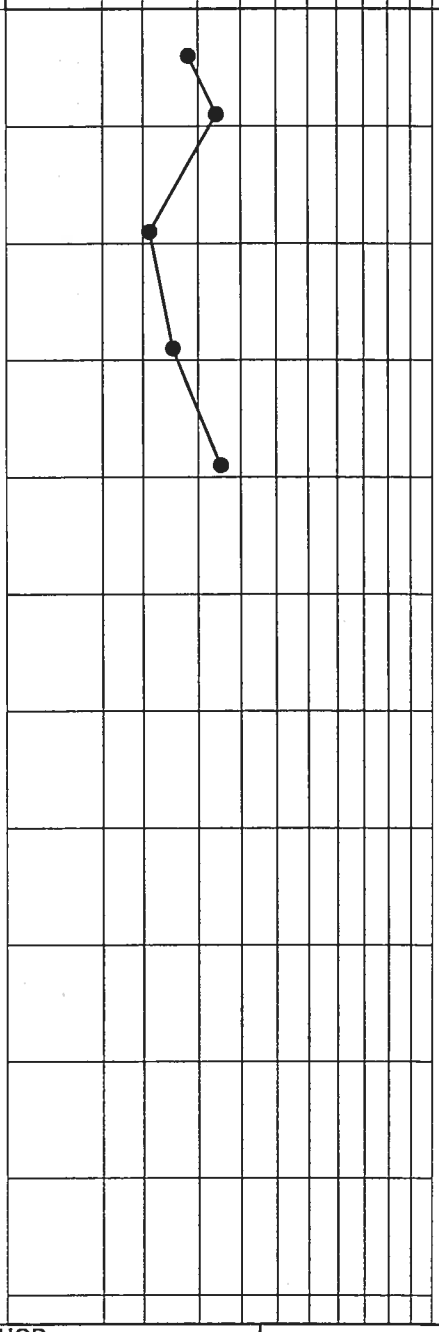
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 495+00, 12 Ft. Right, Ramp T

Drilling Equipment: GeoProbe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: EB | Date Drilled: 5/25/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 3 inches — SM			
		SS			RESIDUUM: Medium dense red-brown, tan and black silty medium to fine **SAND**			18
5		SS						24
10		SS						11
15		SS						15
20		SS						25
					Boring terminated @ 20 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-230-R

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-231-R**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 497+00, 18 Ft. Right, Ramp T

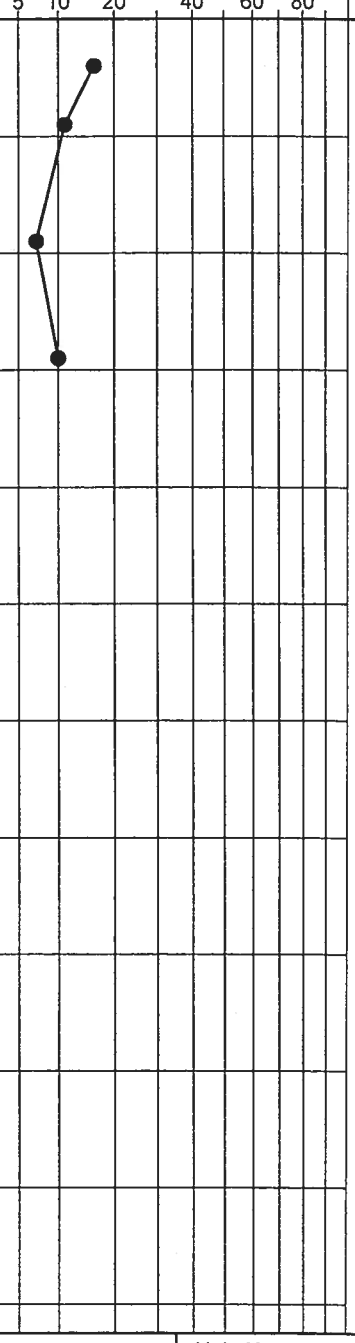
Drilling Equipment: GeoProbe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 4 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 15.0

Logged By: EB | Date Drilled: 5/25/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					Topsoil = 3 inches CL		
		SS			RESIDUUM: Very stiff to stiff red-brown medium to fine sandy lean **CLAY**		16
5		SS					11
					Loose white, red and brown silty medium to fine **SAND** SM		
10		SS					7
15		SS					10
					Boring terminated @ 15 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-231-R

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-232-R**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: - Angle from Horizontal: 90 Surface Elevation (ft): Station: 498+50, 24 Ft. Right, Ramp T

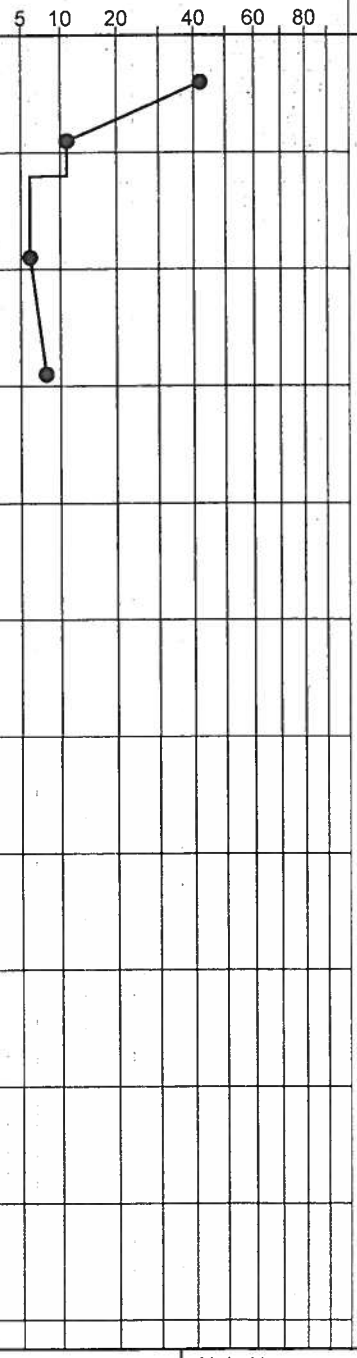
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 4 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 15.0

Logged By: EB Date Drilled: 5/25/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					Topsoil = 3 inches — FILL		
		SS			FILL: Dense to medium dense brown clayey medium to fine **SAND** with rock fragments		42
5		SS					11
					RESIDUUM: Loose brown and tan silty medium to fine **SAND** — SM		
10		SS					6
15		SS					8
					Boring terminated @ 15 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-232-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-233-R

Sheet 1 of 1

Location: Retaining Wall

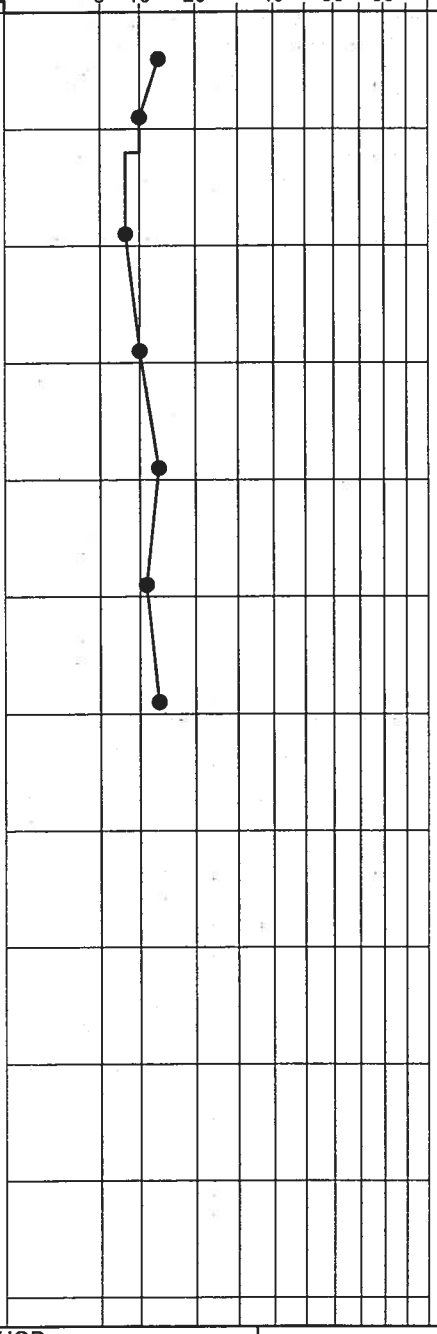
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 499+50, 46 Ft. Right, Ramp T

Drilling Equipment: GeoProbe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 7 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 30.0

Logged By: EB | Date Drilled: 5/30/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 3 inches — FILL			
		SS			FILL: Medium dense to loose red-brown clayey medium to fine **SAND**			13
5		SS						10
					RESIDUUM: Loose to medium dense brown, tan, gray and white silty medium to fine **SAND** (micaceous) — SM			
10		SS						8
15		SS						10
20		SS						13
25		SS						11
30		SS						13
					Boring terminated @ 30 feet below existing ground surface			
					Groundwater encountered @ 26 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-233-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-240-R**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 501+50, 12 Ft. Right, Ramp U

Drilling Equipment: GeoProbe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 7 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 30.0

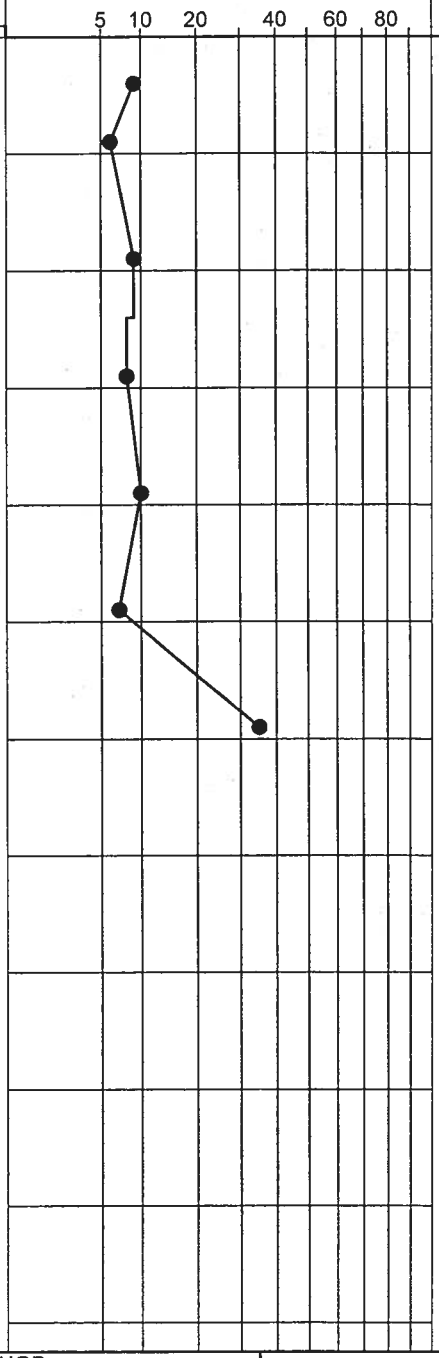
Logged By: EB | Date Drilled: 5/30/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			Topsoil = 3 inches	FILL		
		SS			FILL: Stiff brown and gray medium to fine sandy lean **CLAY** with organics	FILL		9
5		SS			Loose brown silty medium to fine **SAND** with organics			6
10		SS						9
					RESIDUUM: Firm red-brown medium to fine sandy lean **CLAY**	CL		8
15		SS						
					Loose to dense brown, tan, gray and white silty medium to fine **SAND** (micaceous)	SM		
20		SS						10
25		SS						7
30		SS						35

Boring terminated @ 30 feet below existing ground surface

Groundwater encountered @ 21 feet below existing ground surface @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-240-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-241-R

Sheet 1 of 1

Location: Retaining Wall

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 503+50, 12 Ft. Right, Ramp U

Drilling Equipment: GeoProbe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 2 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 7.0

Logged By: EB | Date Drilled: 5/30/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 3 inches FILL			
		SS			FILL: Loose red-brown silty medium to fine **SAND**			7
5		SS						10
					Boring encountered auger refusal @ 7 feet below existing ground surface			
					Boring was offset 10 feet and encountered auger refusal @ 7 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-241-R

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-242-R**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Retaining Wall

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 506+00, 12 Ft. Right, Ramp U

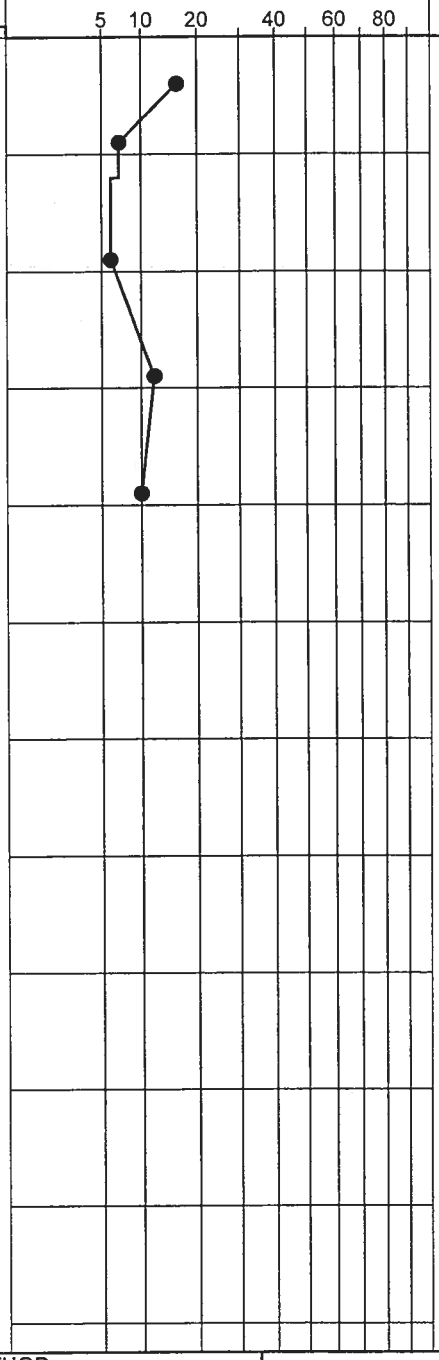
Drilling Equipment: GeoProbe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: EB Date Drilled: 5/30/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			Topsoil = 3 inches — FILL FILL: Medium dense to loose brown and tan clayey medium to fine **SAND** with rock fragments		16
5		SS					7
					RESIDUUM: Loose to medium dense gray, white and brown silty medium to fine **SAND** (micaceous) — SM		
10		SS					6
15		SS					12
20		SS					10
					Boring terminated @ 20 feet below existing ground surface Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-242-R

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING, INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20 Location: Gwinnett County, Georgia; 171-2867 Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	**HOLE No. SS-243-R** Sheet 1 of 1 Location: Retaining Wall

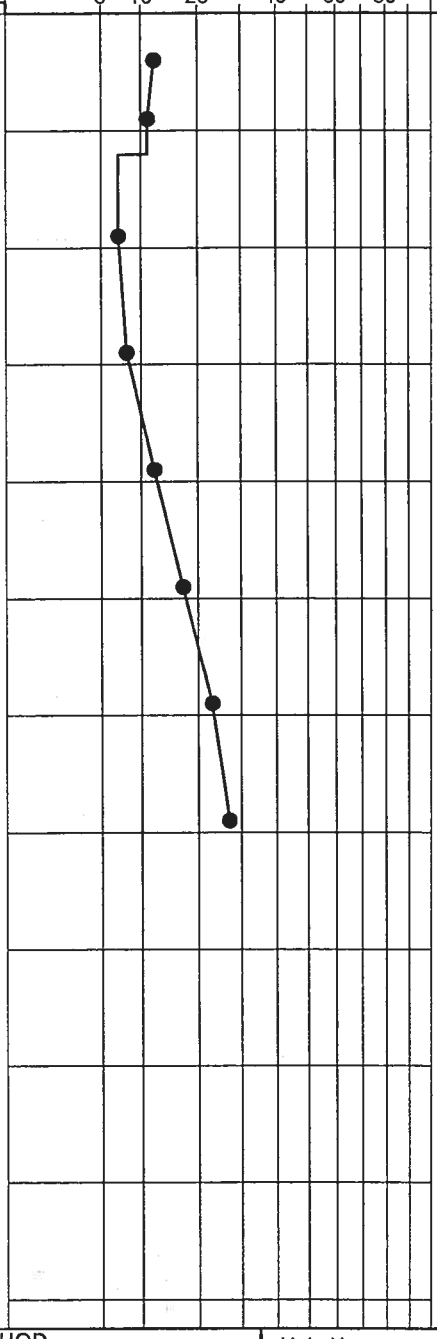
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 507+00, 12 Ft. Right, Ramp U

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 8 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 35.0

Logged By: EB | Date Drilled:

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 3 inches — FILL			
		SS			FILL: Medium dense to loose brown and tan clayey medium to fine **SAND** with rock fragments			12
5		SS						11
					RESIDUUM: Loose to medium dense gray, white and brown silty medium to fine **SAND** (micaceous) — SM			
10		SS						7
15		SS						8
20		SS						12
25		SS						17
30		SS						23
35		SS						27
					Boring terminated @ 35 feet below existing ground surface			
					Groundwater encountered @ 21.5 feet below existing ground surface @ time of boring			



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	SS-243-R
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-273-CL
Sheet 1 of 1
Location: Culvert Left

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 966+80, 110 Ft. Left

Drilling Equipment: Hand Auger | Drilling Method: HA

Core Boxes: NA | Samples: 2 | Overburden: NA | Rock: NA | Total Depth (ft):

Logged By: EB | Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment)	BLOWS/1.75 IN.
1					ALLUVIUM: Brown silty medium to fine **SAND** (slightly micaceous) SM			
2		DCP						8
3								
4		DCP						5
5								
					Boring encountered hand auger refusal @ 5 feet below existing ground surface			
					Groundwater encountered @ 2 feet below existing ground surface @ time of boring			

DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment): 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. SS-273-CL

&PLOG 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-274-CR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 972+10, 280 Ft. Right

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

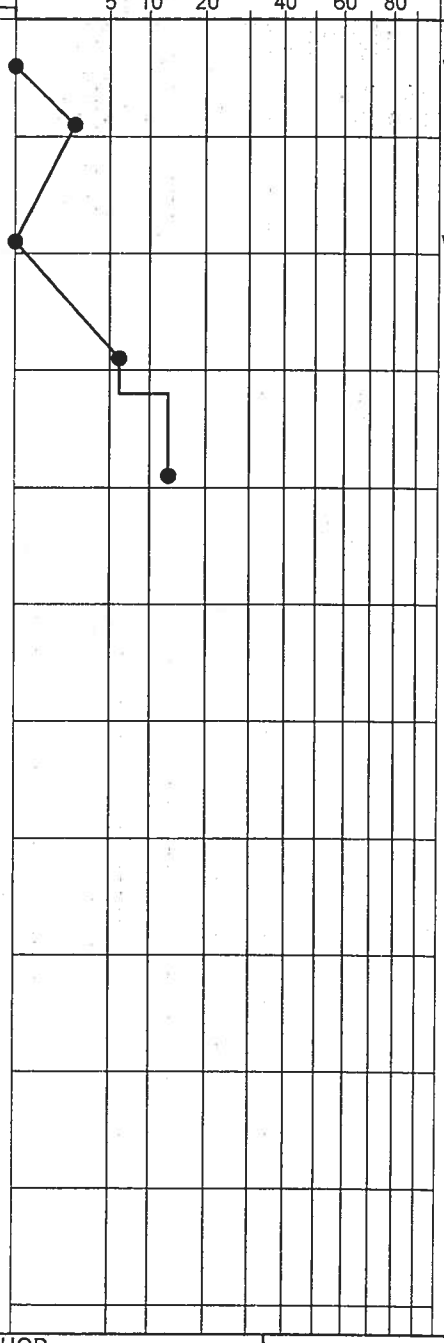
Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: EB | Date Drilled: 5/15/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches SM			
		SS			ALLUVIUM: Very loose to loose red-brown, tan, and gray silty / clayey medium to fine **SAND**			WOH
5		SS						2
10		SS						WOH
15		SS						6
					RESIDUUM: Medium dense brown, tan, gray, and white silty medium to fine **SAND** (micaceous) SM			
20		SS						13

Boring terminated @ 20 feet below existing ground surface

Groundwater encountered @ 1.5 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-274-CR

SPTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-275-CL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Left

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 975+75, 100 Ft. Left

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

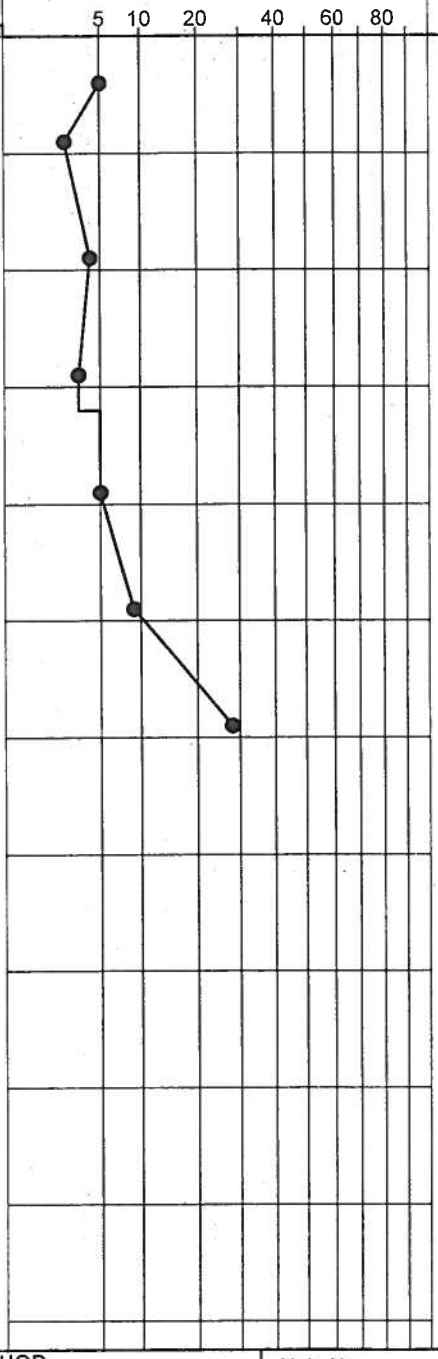
Core Boxes: NA | Samples: 7 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 30.0

Logged By: EB | Date Drilled: 5/17/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches (CL)			
		SS			ALLUVIUM: Red-brown medium to fine sandy lean **CLAY** (SM)			5
5		SS			Loose to very loose brown and tan silty medium to fine **SAND**			2
10		SS						4
15		SS						3
					RESIDUUM: Loose to medium dense red-brown and tan silty medium to fine **SAND** (micaceous) (SM)			
20		SS						5
25		SS						9
30		SS						28

Boring terminated @ 30 feet below existing ground surface

Groundwater encountered @ 3.5 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-275-CL

2TN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-276-CR

Sheet 1 of 1

Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 974+10, 190 Ft. Right

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

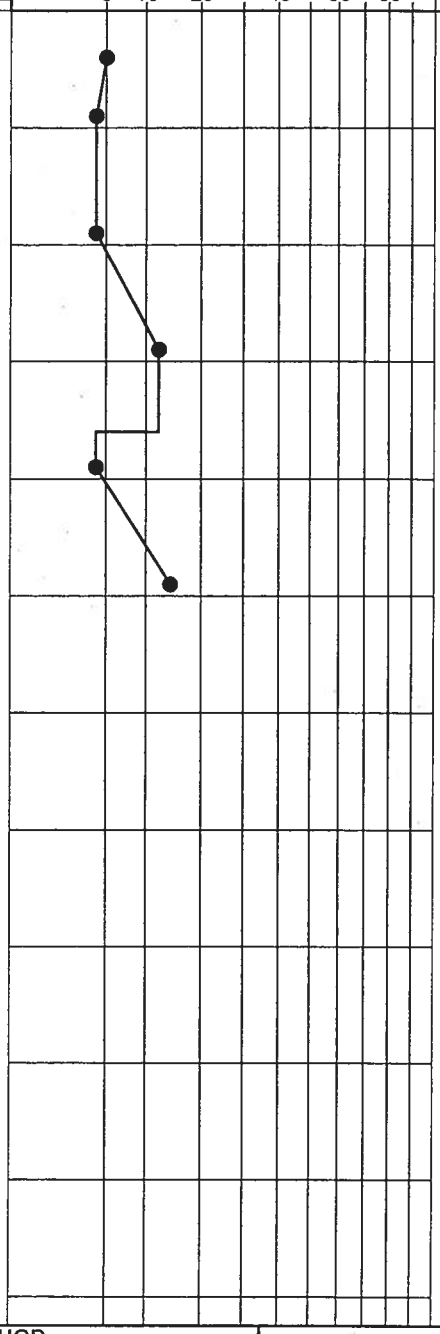
Core Boxes: NA | Samples: 6 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 25.0

Logged By: EB | Date Drilled: 5/15/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			Topsoil = 2 inches	CL			
					FILL: Firm to soft brown medium to fine sandy lean **CLAY**				5
		SH							
5		SS							4
					ALLUVIUM: Very loose to medium dense gray silty medium to fine **SAND**	SM			
10		SS							4
15		SS							12
					RESIDUUM: Firm yellow, brown, black and green medium to fine sandy **SILT** (micaceous)	ML			
20		SS							4
25		SS			Medium dense gray and white silty medium to fine **SAND** (micaceous)	SM			14

Boring terminated @ 25 feet below existing ground surface

Groundwater encountered @ 5.4 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-276-CR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-277-CR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1017+00, 80 Ft. Right

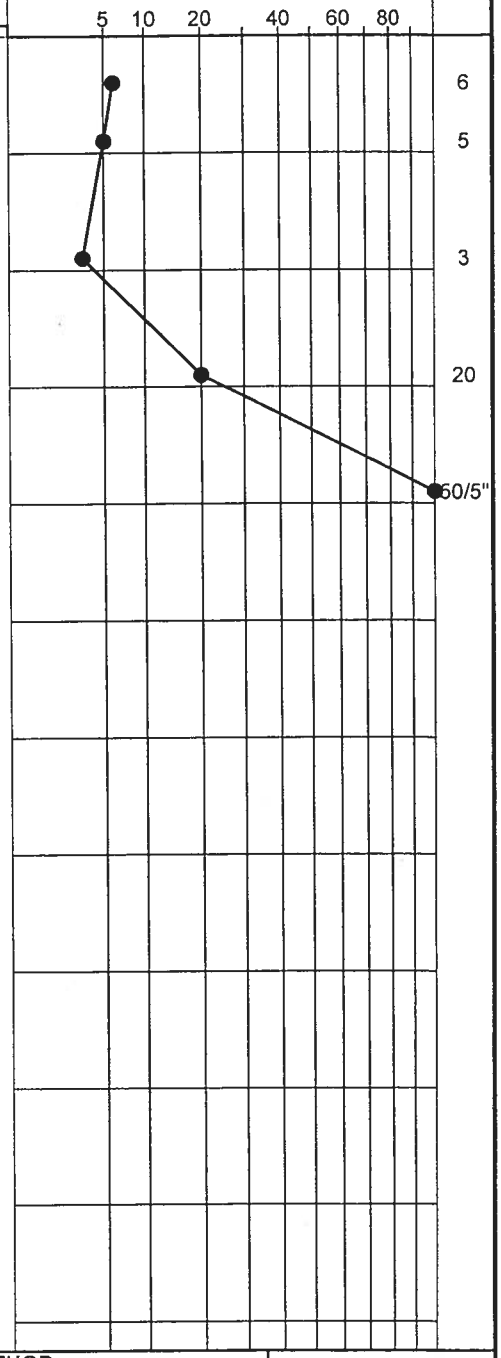
Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: EB | Date Drilled: 5/16/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)
		SS			Topsoil = 2 inches SM	
		SS			ALLUVIUM: Very loose to loose gray, brown, and tan silty medium to fine **SAND**	
5		SS				
10		SS			Medium dense to very dense gray and tan coarse to fine **SAND** SM	
15		SS				
20		SS			Boring terminated @ 20 feet below existing ground surface	
					Groundwater encountered @ 6.5 feet below existing ground surface @ time of boring	

STANDARD PENETRATION TEST DATA (blows/foot)



N-VALUE

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. SS-277-CR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-278-CL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Left

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1018+00, 75 Ft. Left

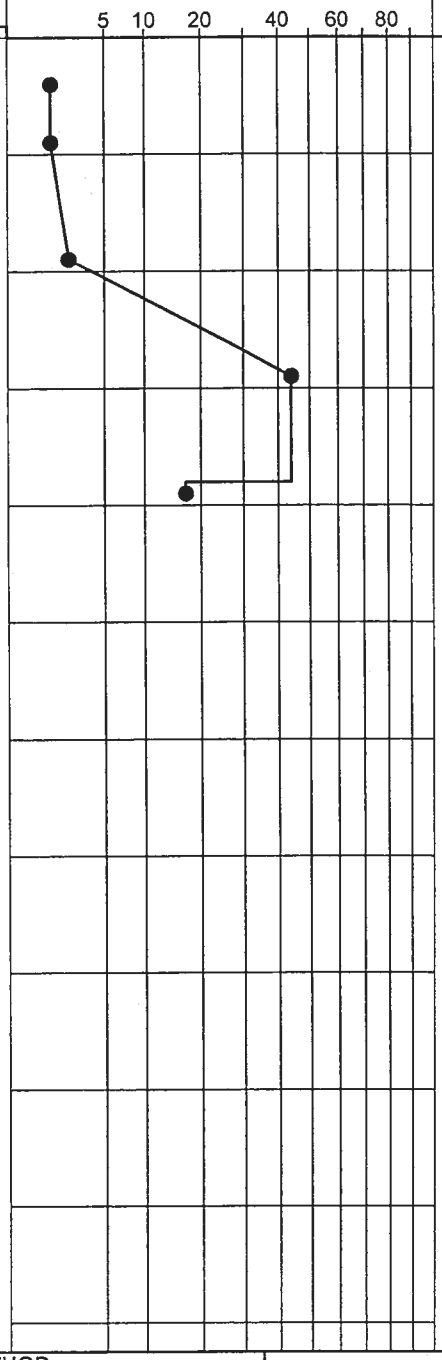
Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: EB Date Drilled: 5/17/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					Topsoil = 3 inches SM		
		SS			ALLUVIUM: Very loose red-brown and gray silty medium to fine **SAND**		1
5		SS					1
10		SS					2
15		SS			Soil becomes dense		44
20		SS			RESIDUUM: Medium dense brown and tan silty medium to fine **SAND** (micaceous) SM		17
					Boring terminated @ 20 feet below existing ground surface		
					Groundwater encountered @ 5.5 feet below existing ground surface @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-278-CL

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-279-CL
Sheet 1 of 1
Location: Culvert Left

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1149+85, 180 Ft. Left

Drilling Equipment: Hand Auger | Drilling Method: Hand Auger

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

Logged By: EB | Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment) 5 10 20 40 60 80	BLOWS/1.75 IN.
1 2 3					ALLUVIUM: Brown silty medium to fine **SAND** SM			
					Boring encountered hand auger refusal @ 3 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-279-CL

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-280-CR
Sheet 1 of 1
Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1152+70, 150 Ft. Right

Drilling Equipment: Hand Auger | Drilling Method: Hand Auger

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

Logged By: EB | Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment) 5 10 20 40 60 80	BLOWS/1.75 IN.
1					Topsoil = 3 inches			
2					ALLUVIUM: Brown silty medium to fine SAND	SM		
3					Boring terminated @ 3 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-280-CR

&PLOG 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-281-CL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Lt (Creek Bank)

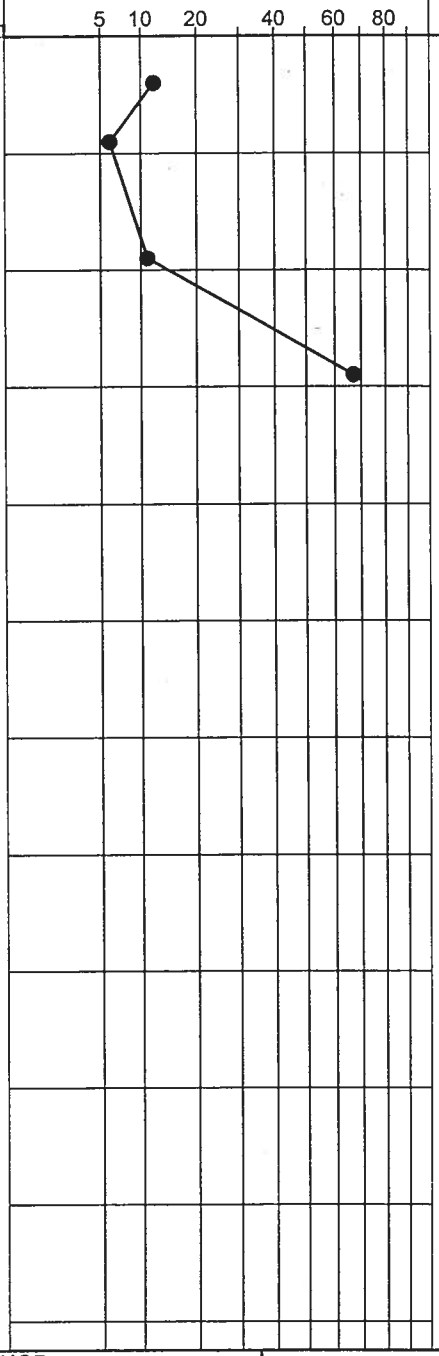
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1213+90, 140 Ft. Left

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 17.0

Logged By: EB | Date Drilled: 5/16/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches CL			
		SS			RESIDUUM: Stiff to firm red-brown medium to fine sandy lean **CLAY**			12
5		SS						6
					Medium dense to very dense brown, tan and green silty medium to fine **SAND** (micaceous) SM			
10		SS						11
15		SS						67
					Boring encountered auger refusal @ 17 feet below existing ground surface			
					Groundwater encountered @ 12.5 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **SS-281-CL**

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-282-CR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Rt (Creek Bank)

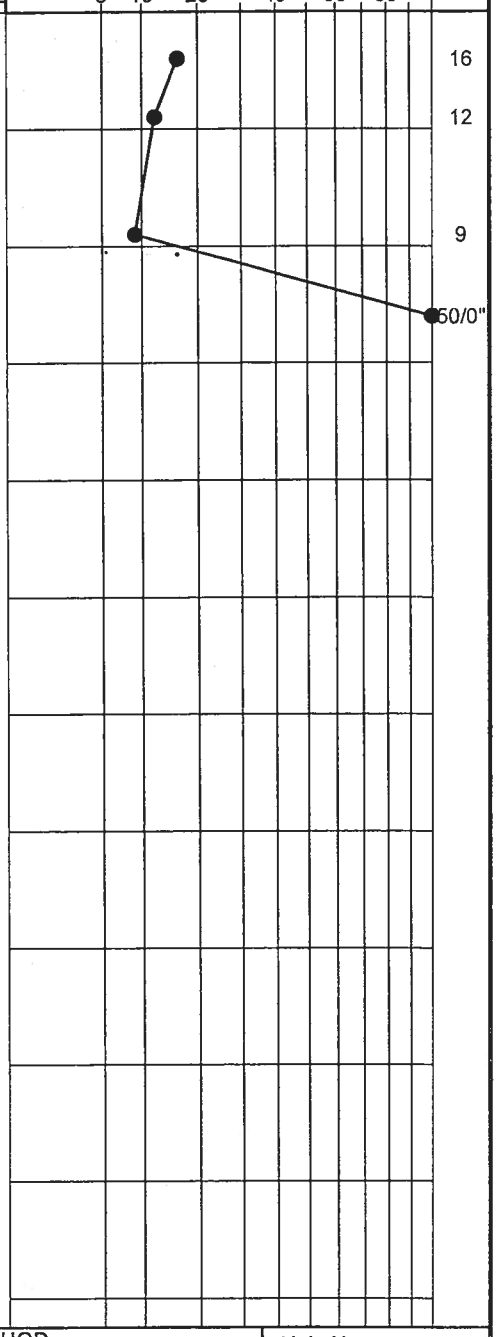
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1214+80, 260 Ft. Right

Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 4 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 13.5

Logged By: EB Date Drilled: 5/15/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
		SS			FILL: Stiff to very stiff red-brown medium to fine sandy lean **CLAY** with rock fragments and cobbles FILL			16
5		SS						12
10		SS						9
		SS						50/0"
					Boring encountered auger refusal @ 13.5 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-282-CR

WILLMER ENGINEERING INC. WE

Project. SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-283-CL**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Left (Bank)

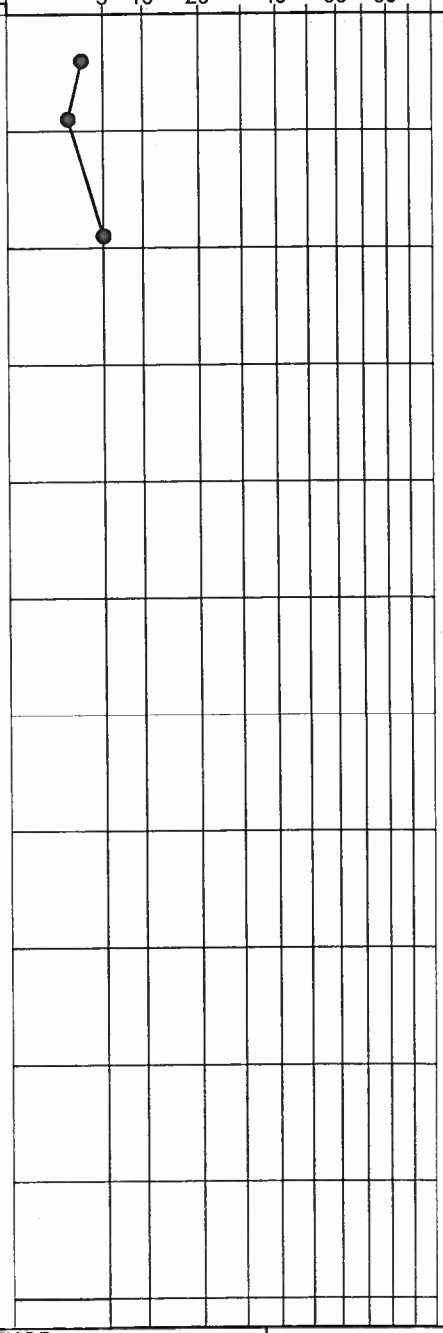
Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1243+40, 230 Ft. Left

Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 3 Overburden (ft): 10 Rock (ft): NA Total Depth (ft): 10.0

Logged By: EB Date Drilled: 5/16/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches FILL			
		SS			FILL: Soft to firm red-brown medium to fine sandy lean **CLAY**			3
		SH						2
5		SS						
10		SS						5
					Boring encountered auger refusal @ 10 feet below existing ground surface			
					Offset boring encountered auger refusal @ 10 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-283-CL

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-284-CR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Right

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1243+10, 180 Ft. Right

Drilling Equipment: Hand Auger Drilling Method: Hand Auger

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

Logged By: EB Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment) 5 10 20 40 60 80	BLOWS/1.75 IN.
1					ALLUVIUM: Gray-brown silty medium to fine **SAND** SM			
2		DCP						13
3								
4		DCP						14
5								
6		DCP						16
7								
					Boring encountered hand auger refusal @ 7 feet below existing ground surface			
					Groundwater encountered @ 4.5 feet below existing ground surface @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-284-CR

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-285-CR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1338+10, 135 Ft. Right

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

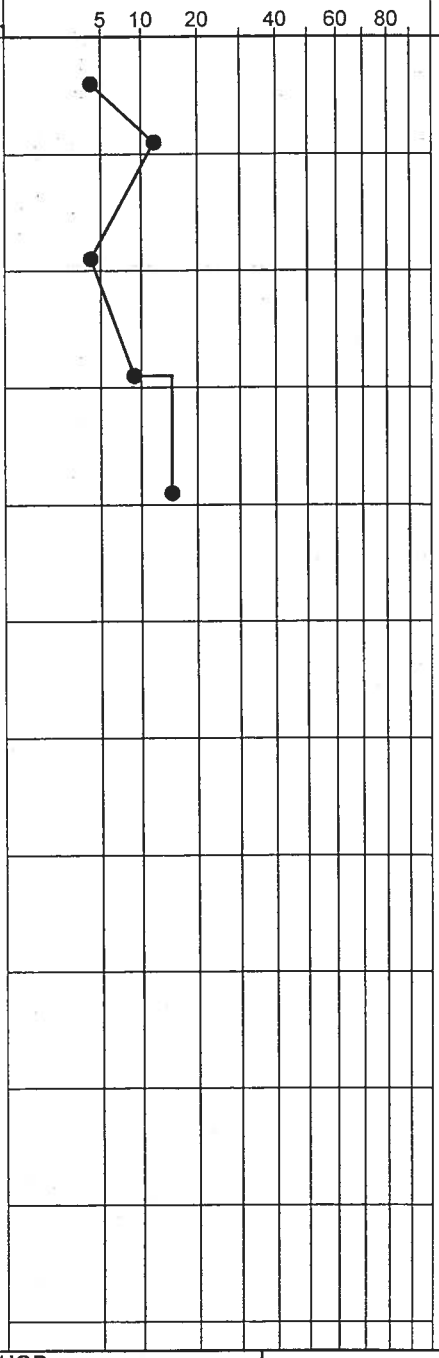
Logged By: EB | Date Drilled: 5/17/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
					Topsoil = 2 inches SM		
		SS			ALLUVIUM: Very loose to medium dense brown, tan, and gray silty medium to fine **SAND**		4
5		SS					12
10		SS					4
15		SS			RESIDUUM: Loose to medium dense gray, yellow, and white silty medium to fine **SAND** (micaceous) SM		9
20		SS					15

Boring terminated @ 20 feet below existing ground surface

Groundwater encountered @ 5.5 feet below existing ground surface @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-285-CR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20 Location: Gwinnett County, Georgia; 171-2867 Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	**HOLE No. SS-286-CL** Sheet 1 of 1 Location: Culvert Left

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1355+40, 110 Ft. Left

Drilling Equipment: Hand Auger | Drilling Method: Hand Auger

Core Boxes: NA | Samples: 1 | Overburden: NA | Rock: NA | Total Depth (ft):

Logged By: EB | Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment) 5 10 20 40 60 80	BLOWS/1.75 IN.
1					Topsoil = 6 inches	SM			
2		DCP			ALLUVIUM: Light brown silty medium to fine **SAND**	SM		●	13
3									
4					Brown-white silty medium to fine **SAND**				

Boring encountered hand auger refusal @ 4 feet below existing ground surface

Groundwater not encountered @ time of boring

SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	SS-286-CL
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-287-CR

Sheet 1 of 1

Location: Culvert Right

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1356+40, 110 Ft. Right

Drilling Equipment: Hand Auger | Drilling Method: Hand Auger

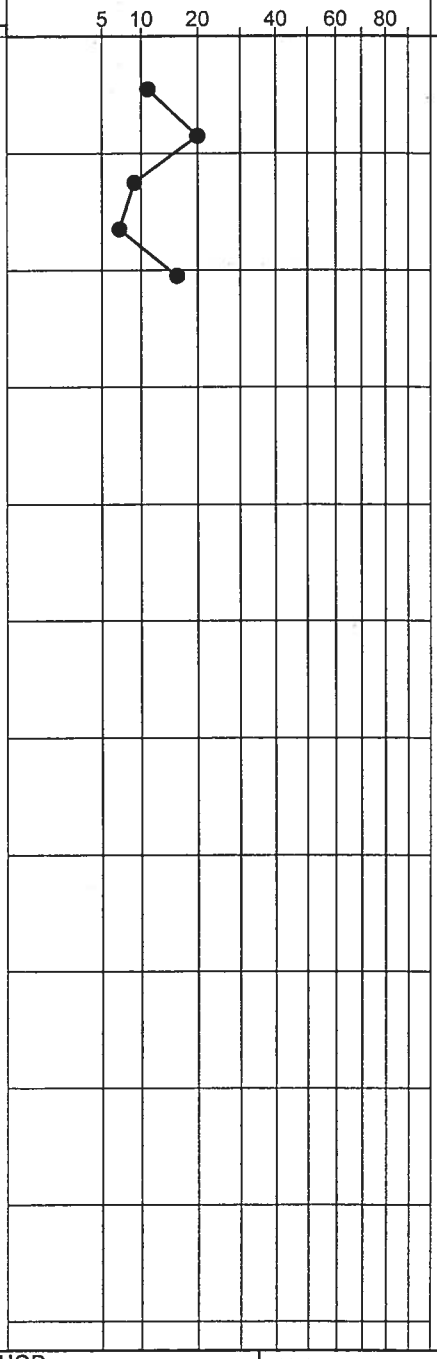
Core Boxes: NA | Samples: 5 | Overburden: NA | Rock: NA | Total Depth (ft):

Logged By: EB | Date Logged: 6/12/06

VERTICAL DEPTH	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	DYNAMIC CONE PENETRATION TEST DATA (blows/1.75 inch increment)	BLOWS/1.75 IN.
1					ALLUVIUM: Brown medium to fine sandy **SILT**	ML			
2		DCP							11
3					Gray silty/clayey medium to fine **SAND**	SC			
4		DCP							20
5									
6		DCP							9
7									
8		DCP							7
9									
10		DCP							16

Boring terminated @ 10 feet below existing ground surface

Groundwater encountered @ 2 feet below existing ground surface @ time of boring



SAMPLER TYPE
SS - Split Spoon
ST - Shelby Tube
NO - 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. SS-287-CR

&PLOG 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-288-IR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: HOV Int. Ramp

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 998+95, CL

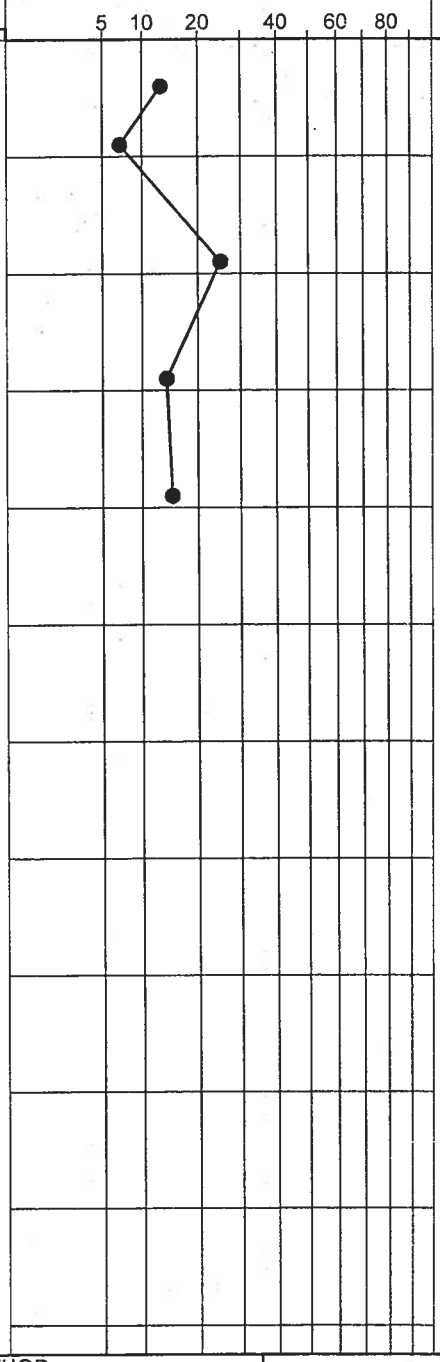
Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 5 Overburden (ft): NA Rock (ft): NA Total Depth (ft): 20.0

Logged By: Gus Date Drilled: 6/26/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			Topsoil = 2 inches (CH)		
		SS			RESIDUUM: Stiff red-brown medium to fine sandy fat **CLAY** (ML)		13
5		SS			Firm red-brown and tan medium to fine sandy **SILT** (micaceous)		7
10		SS			Medium dense red-brown, tan, and gray silty medium to fine **SAND** (micaceous) (SM)		25
15		SS					14
20		SS					15
					Boring terminated @ 20 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-288-IR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-289-IR
Sheet 1 of 1
Location: HOV Int. Ramp

Azimuth: Angle from Horizontal: 90 Surface Elevation (ft): Station: 1173+00, CL

Drilling Equipment: Geoprobe 6620DT Drilling Method: HSA

Core Boxes: NA Samples: 1 Overburden (ft): 3 Rock (ft): NA Total Depth (ft): 3.0

Logged By: Gus Date Drilled: 6/30/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 2 inches SM			
		SS			RESIDUUM: Medium dense brown silty medium to fine **SAND** with rock fragments (micaceous)		●	22
					Boring encountered auger refusal @ 3 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-289-IR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County, Georgia; 171-2867**
Project Number: **GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168**

HOLE No. SS-290-IR

Sheet 1 of 1

Location: **HOV Int. Ramp**

Azimuth: | Angle from Horizontal: **90** | Surface Elevation (ft): | Station: **1229+50, CL**

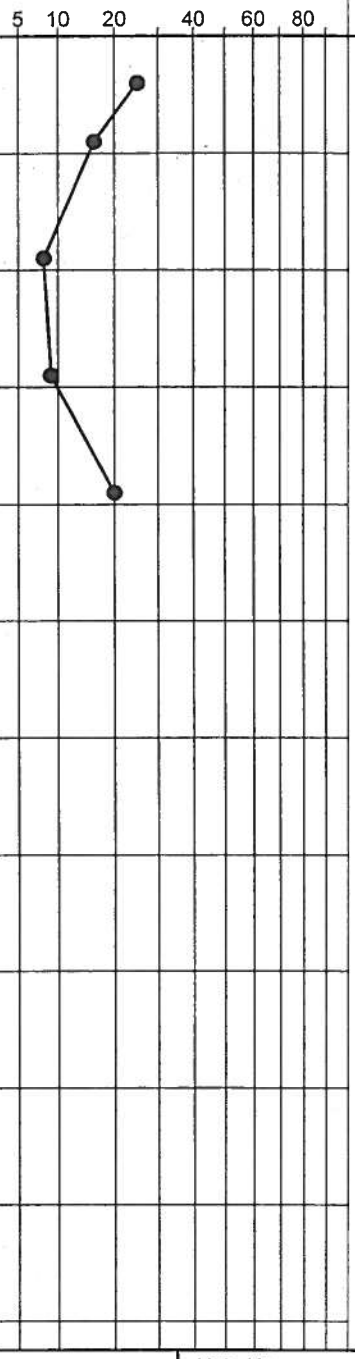
Drilling Equipment: **Geoprobe 6620DT** | Drilling Method: **HSA**

Core Boxes: **NA** | Samples: **5** | Overburden (ft): **NA** | Rock (ft): **NA** | Total Depth (ft): **20.0**

Logged By: **Gus** | Date Drilled: **7/3/06**

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			Topsoil = 2 inches — CL RESIDUUM: Very stiff reddish brown medium to fine sandy fat **CLAY**		25
5		SS					16
					Loose red and brown clayey medium to fine **SAND** — SC		
10		SS					8
15		SS					9
					Medium dense brown and gray silty medium to fine **SAND** — SM		
20		SS					20
					Boring terminated @ 20 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. **SS-290-IR**

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-291-IR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: HOV Int. Ramp

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1341+00, CL

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

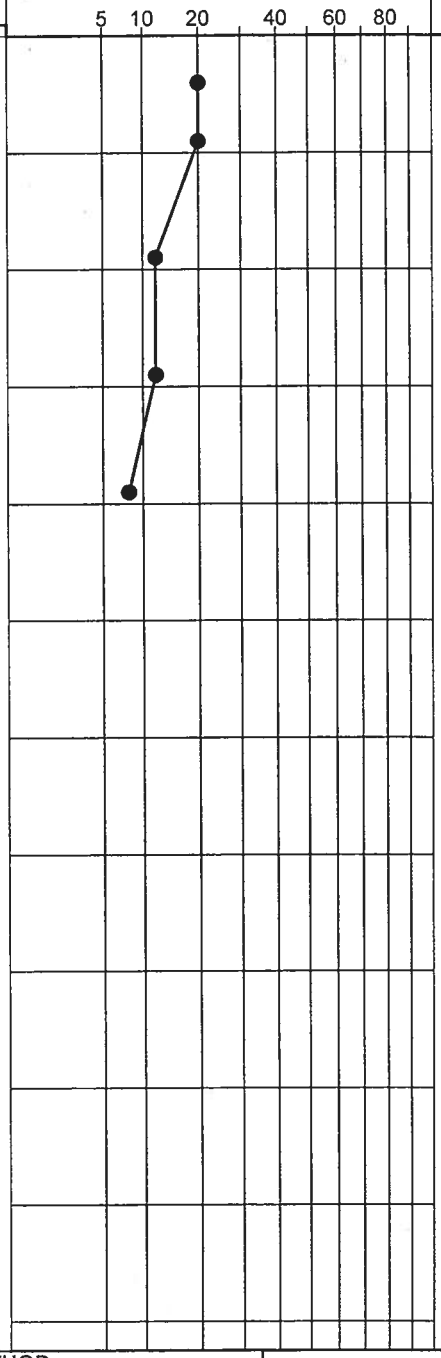
Logged By: Lewis | Date Drilled: 7/5/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			Topsoil = 2 inches SM		
		SS			RESIDUUM: Medium dense red-brown and tan silty medium to fine **SAND** (micaceous)		20
5		SS					20
10		SS					12
15		SS					12
					Loose brown, gray and tan silty medium to fine **SAND** (very micaceous) SM		
20		SS					8

Boring terminated @ 20 feet below existing ground surface

Groundwater encountered @ 10 feet below existing ground surface @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-291-IR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-292-BR

Sheet 1 of 1

Location: Walther Rd Br Ramp

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 72+00, CL

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 4 | Overburden (ft): 16 | Rock (ft): NA | Total Depth (ft): 16.0

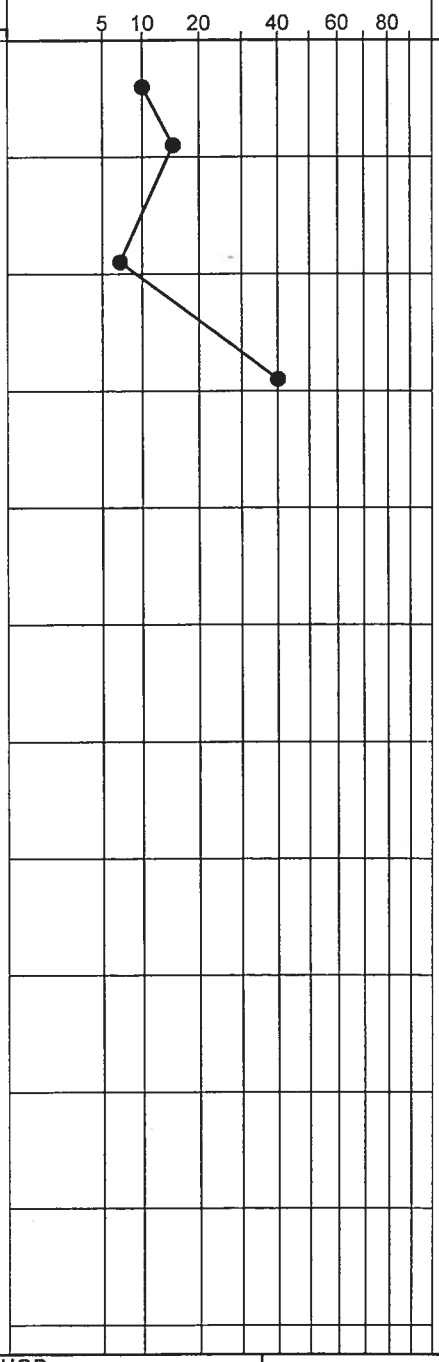
Logged By: Gus | Date Drilled: 7/3/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION		ELEVATION (feet)	N-VALUE
		SS			Topsoil = 2 inches	CL		
		SS			RESIDUUM: Stiff reddish brown medium to fine sandy **CLAY**			10
5		SS						15
					Firm reddish brown medium to fine sandy **SILT** (micaceous)	ML		
10		SS						7
15		SS			Dense brown and tan silty medium to fine **SAND** (micaceous)	SM		40

Boring encountered auger refusal @ 16 feet below existing ground surface

Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-292-BR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-293-BR

Sheet 1 of 1

Location: Collins Hill Rd Br Ramp

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 82+50, CL

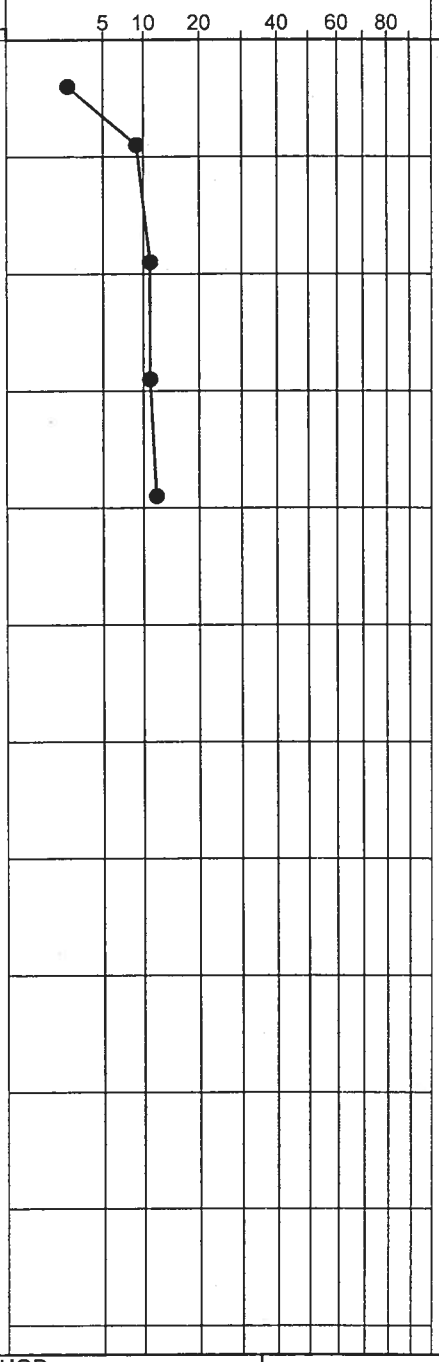
Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: Lewis | Date Drilled: 7/5/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	N-VALUE
		SS			Topsoil = 2 inches (CL)		2
					RESIDUUM: Very soft red-brown medium to fine sandy lean **CLAY** (SM)		
5		SS			Loose to medium dense red-brown, tan and gray silty medium to fine **SAND** (micaceous)		9
10		SS					11
15		SS					11
20		SS					12
					Boring terminated @ 20 feet below existing ground surface		
					Groundwater not encountered @ 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 Augers
DC - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-293-BR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-294-BR

Sheet 1 of 1

Location: Hi Hope Rd Br Ramp

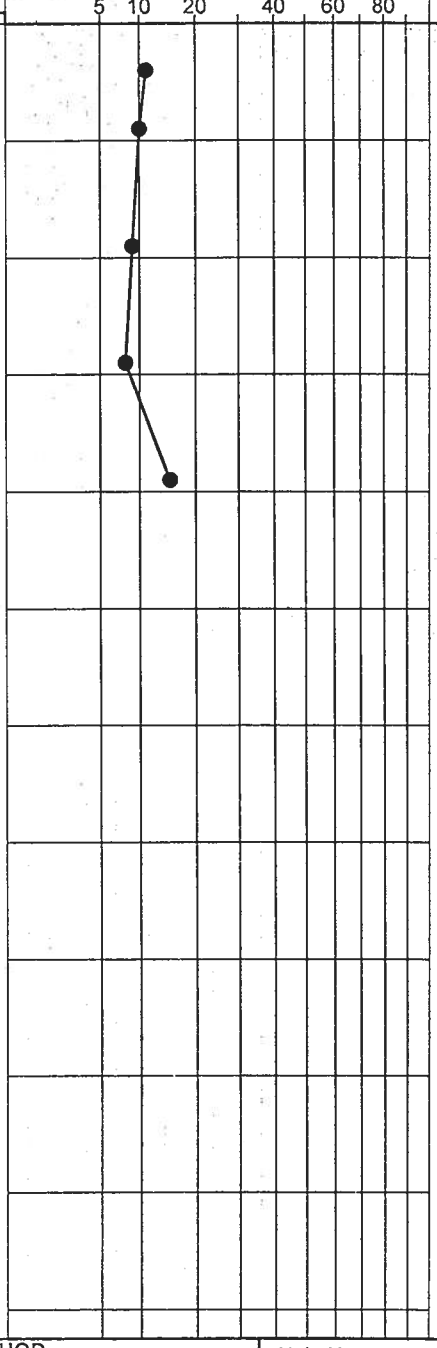
Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 97+50, CL

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: Lewis | Date Drilled: 7/5/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches SM			
		SS			RESIDUUM: Loose to medium dense red, brown and tan silty medium to fine **SAND** (micaceous)			11
5		SS						10
10		SS						9
15		SS						8
20		SS						15
					Boring terminated @ 20 feet below existing ground surface			
					Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-294-BR

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-295-BR**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Hi Hope Rd Br Ramp

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 102+50, CL

Drilling Equipment: Geoprobe 6620DT | Drilling Method: HSA

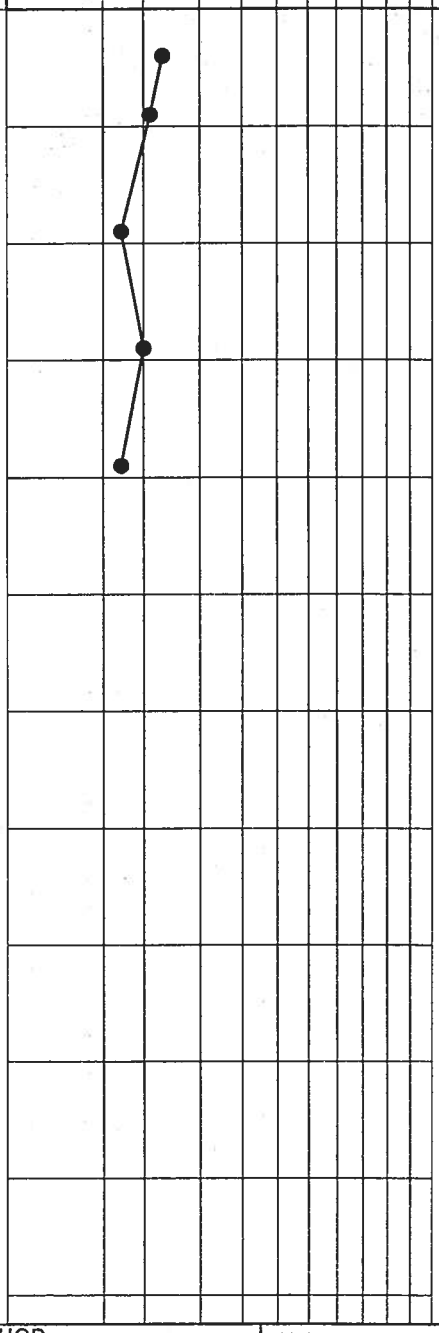
Core Boxes: NA | Samples: 5 | Overburden (ft): NA | Rock (ft): NA | Total Depth (ft): 20.0

Logged By: Lewis | Date Drilled: 7/6/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot)	N-VALUE
					Topsoil = 2 inches SM			
		SS			RESIDUUM: Medium dense to loose red, brown and tan silty medium to fine **SAND** (micaceous)			13
5		SS						11
10		SS						7
15		SS			Color changes to brown, gray and tan (micaceous)			10
20		SS						7

Boring terminated @ 20 feet below existing ground surface

Groundwater encountered @ 10 feet below existing ground surface @ time of boring



SAMPLER TYPE		DRILLING METHOD		Hole No.
SS - Split Spoon	NX - Rock Core, 2-1/8"	HSA - Hollow Stem Auger	RW - Rotary Wash	SS-295-BR
ST - Shelby Tube	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core	
NQ - Rock Core, 1-7/8"	CT - Continuous Tube	DC - Driving Casing		

PTN 2867.GPJ 7/21/06

WILLMER ENGINEERING INC. | WE

Project: SR 316 HOV Lanes from I-85 to SR 20	**HOLE No. SS-62-RL-A**
Location: Gwinnett County, Georgia; 171-2867	Sheet 1 of 1
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	Location: Rock Core

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1132+00, 140 Ft. Right

Drilling Equipment: CME 550 | Drilling Method: HSA

Core Boxes: 1 | Samples: NA | Overburden (ft): 1.5 | Rock (ft): 8.5 | Total Depth (ft): 10.0

Logged By: PZ | Date Drilled: 2/16/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 3 inches SM			
		NQ	47	17	RESIDUUM: Observed as red-brown silty medium to fine **SAND** (micaceous)			
5		NQ	15	0	ROCK: Sampled as hard highly weathered blue and gray mica **SCHIST** with quartzite intrusion and soil seams			
10					Boring encountered auger refusal @ 1.5 feet below existing ground surface Rock core terminated @ 10 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-62-RL-A

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20
Location: Gwinnett County, Georgia; 171-2867
Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168

HOLE No. SS-62-RL-A1

Sheet 1 of 1

Location: Rock Core

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1132+00, 142 Ft. Right

Drilling Equipment: CME 550 | Drilling Method: HSA

Core Boxes: 1 | Samples: NA | Overburden (ft): 13 | Rock (ft): 7 | Total Depth (ft): 20.0

Logged By: PZ | Date Drilled: 2/16/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 3 inches SM RESIDUUM: Observed as red-brown silty medium to fine **SAND** (micaceous)			
5 10								
15		NQ	71	24	ROCK: Sampled as soft to medium hard weathered blue and gray mica **SCHIST**with quartzite intrusion and soil seams			
20					Boring encountered auger refusal @ 13 feet below existing ground surface Rock core terminated @ 20 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-62-RL-A1

WILLMER ENGINEERING INC. WE

Project: SR 316 HOV Lanes from I-85 to SR 20 Location: Gwinnett County, Georgia; 171-2867 Project Number: GDOT Proj No. MSL-003-00(168) Gwinnett, PI No. 003168	**HOLE No. SS-74-LL-A** Sheet 1 of 1 Location: Rock Core

Azimuth: | Angle from Horizontal: 90 | Surface Elevation (ft): | Station: 1169+00, 150 Ft. Left

Drilling Equipment: CME 550 | Drilling Method: HSA

Core Boxes: 1 | Samples: NA | Overburden (ft): 16 | Rock (ft): 10 | Total Depth (ft): 26.0

Logged By: EB | Date Drilled: 5/15/06

VERTICAL DEPTH (ft)	GRAPHIC LOG	SAMPLE TYPE	RCD%	RQD %	MATERIAL DESCRIPTION	ELEVATION (feet)	STANDARD PENETRATION TEST DATA (blows/foot) 5 10 20 40 60 80	N-VALUE
					Topsoil = 3 inches SM RESIDUUM: Observed as red-brown silty medium to fine **SAND** (micaceous)			
5								
10								
15								
		NQ	100	93	ROCK: Sampled as hard fresh black and gray amphibole **GNEISS**			
20								
25								
					Boring encountered auger refusal @ 16 feet below existing ground surface Coring terminated @ 26 feet below existing ground surface Groundwater not encountered @ 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 - Driving Casing
RW - Rotary Wash
RC - Rock Core

Hole No. SS-74-LL-A

SPTN 2867.GPJ 7/21/06

APPENDIX III

Record of Soil Survey Borings – List of Abbreviations
SR 316 HOV Lanes from I-85 to SR 20, Gwinnett County, Georgia
GDOT Project No. MSL-0003-00(168), PI No. 0003168
Willmer Engineering Project No. 171-2867

LIST OF ABBREVIATIONS

1. Abbreviations Used in Boring and Sample Numbering Systems:

SS	Soil Survey
LL	Left Lane
RL	Right Lane
SR	Side Road
CL	Center Line or Left end of Culvert
CR	Right end of Culvert
R	Ramp
IR	Interchange Ramp
BR	Bridge Ramp
RW	Retaining Wall

Example: SS-1-LL - Soil Survey Boring No. 1 located on the Left Lane of the proposed roadway.

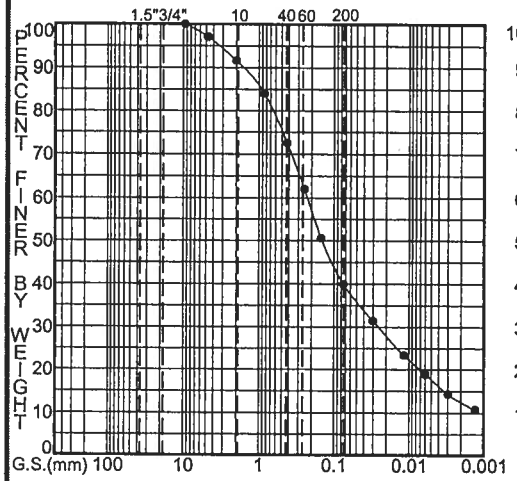
2. Abbreviations Used in Sample Descriptions and Notes/Comments:

SPT	Standard Penetration Test
MC	Moisture Content
GAB	Graded Aggregate Base
NR	No Recovery
REC	Recovery (%) – for Rock Cores
RQD	Rock Quality Designation – for Rock Cores
DCP	Dynamic Cone Penetrometer

WILLMER ENGINEERING INC. WE

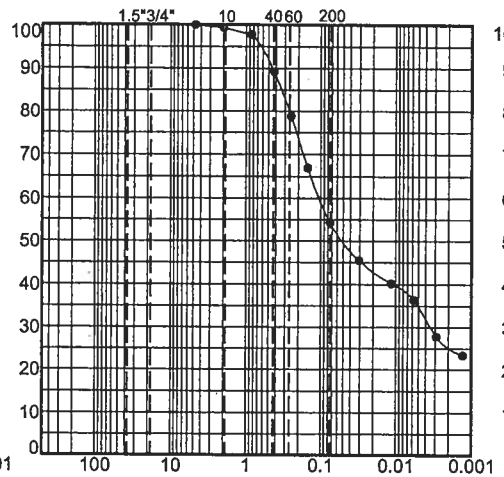
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **953+00, 60 ft Left of CL**
Sample No.: **SS-2-LL (1-5 ft)**
Soil Desc.: **Brownish gray silty coarse to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



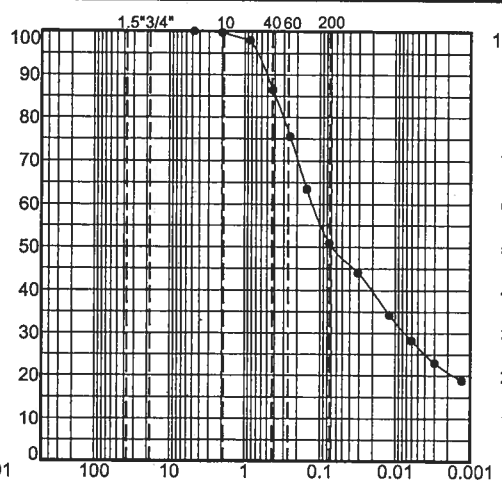
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	91.7
% Finer No. 40 Sieve	72.6
% Finer No. 60 Sieve	62.0
% Finer No. 200 Sieve	40.0
Clay Content (%)	12.7
Total Volume Change (%)	9.3
Swell (%)	8.5
Shrinkage (%)	0.8
Maximum Dry Density (pcf)	119.1
Opt. Moisture Content (%)	11.2
Nat. Moisture Content (%)	9.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.21
Soil Support Value	---

Station: **959+00, 100 ft Left of CL**
Sample No.: **SS-4-LL (1-5 ft)**
Soil Desc.: **Reddish brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



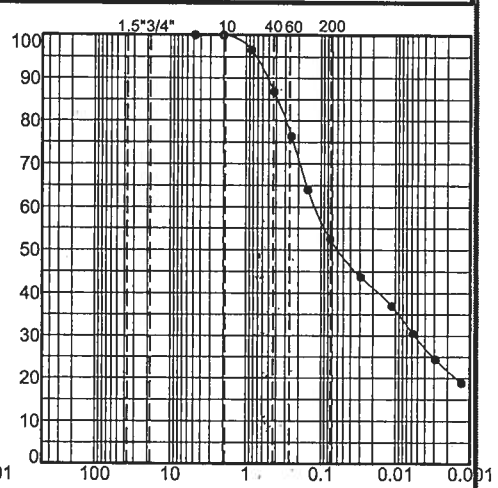
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.3
% Finer No. 40 Sieve	89.3
% Finer No. 60 Sieve	78.8
% Finer No. 200 Sieve	54.3
Clay Content (%)	25.8
Total Volume Change (%)	6.5
Swell (%)	5.0
Shrinkage (%)	1.5
Maximum Dry Density (pcf)	102.6
Opt. Moisture Content (%)	18.3
Nat. Moisture Content (%)	29.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.45
Soil Support Value	---

Station: **968+00, CL**
Sample No.: **SS-7-CL (1-6 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **III C1**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.7
% Finer No. 40 Sieve	86.5
% Finer No. 60 Sieve	75.6
% Finer No. 200 Sieve	51.0
Clay Content (%)	21.0
Total Volume Change (%)	25.5
Swell (%)	23.2
Shrinkage (%)	2.3
Maximum Dry Density (pcf)	106.0
Opt. Moisture Content (%)	16.6
Nat. Moisture Content (%)	16.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.86
Soil Support Value	---

Station: **977+00, CL**
Sample No.: **SS-10-CL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**

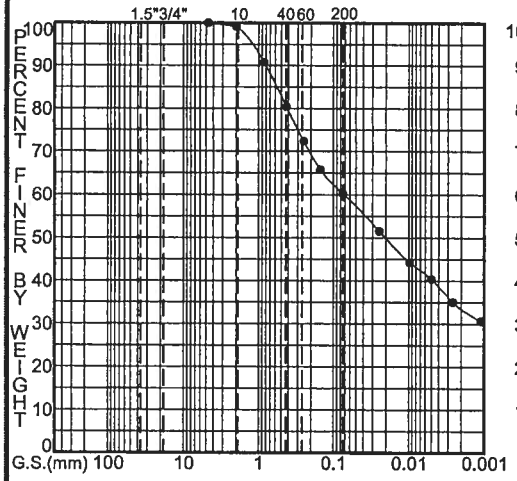


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	86.9
% Finer No. 60 Sieve	76.4
% Finer No. 200 Sieve	52.6
Clay Content (%)	21.9
Total Volume Change (%)	23.5
Swell (%)	19.2
Shrinkage (%)	4.3
Maximum Dry Density (pcf)	103.3
Opt. Moisture Content (%)	17.9
Nat. Moisture Content (%)	21.4
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.65
Soil Support Value	---

WILLMER ENGINEERING INC. WE

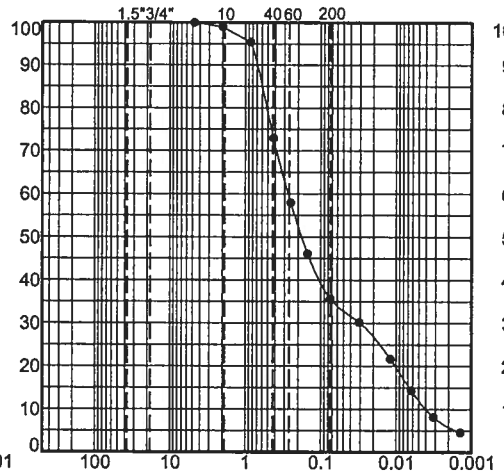
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **983+00, 114 ft Left of CL**
Sample No.: **SS-12-LL (1-14 ft)**
Soil Desc.: **Brown medium to fine sandy fat CLAY (micaceous)**
GDOT Soil Class: **II B4**



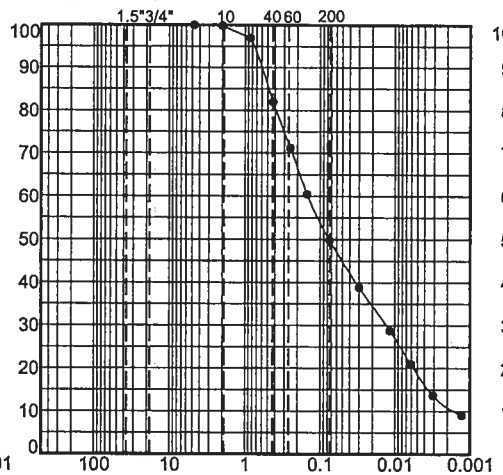
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.1
% Finer No. 40 Sieve	80.4
% Finer No. 60 Sieve	72.4
% Finer No. 200 Sieve	60.2
Clay Content (%)	33.8
Total Volume Change (%)	4.1
Swell (%)	3.9
Shrinkage (%)	0.2
Maximum Dry Density (pcf)	94.3
Opt. Moisture Content (%)	23.2
Nat. Moisture Content (%)	32.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.73
Soil Support Value	---

Station: **986+00, CL**
Sample No.: **SS-13-CL (1-6 ft)**
Soil Desc.: **Light gray silty medium to fine SAND (micaceous)**
GDOT Soil Class: **III C1**



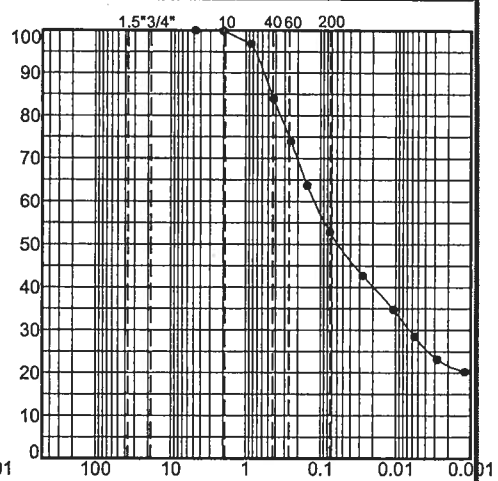
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.0
% Finer No. 40 Sieve	73.0
% Finer No. 60 Sieve	58.0
% Finer No. 200 Sieve	35.7
Clay Content (%)	6.2
Total Volume Change (%)	25.6
Swell (%)	22.1
Shrinkage (%)	3.5
Maximum Dry Density (pcf)	109.9
Opt. Moisture Content (%)	14.9
Nat. Moisture Content (%)	23.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.75
Soil Support Value	---

Station: **989+00, 128 ft Left of CL**
Sample No.: **SS-14-LL (10-30 ft)**
Soil Desc.: **Pink silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	82.0
% Finer No. 60 Sieve	71.2
% Finer No. 200 Sieve	49.9
Clay Content (%)	11.4
Total Volume Change (%)	23.2
Swell (%)	19.2
Shrinkage (%)	4.0
Maximum Dry Density (pcf)	108.2
Opt. Moisture Content (%)	15.6
Nat. Moisture Content (%)	16.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.99
Soil Support Value	---

Station: **992+00, 129 ft Left of CL**
Sample No.: **SS-15-LL (8-24 ft)**
Soil Desc.: **Tan and brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	83.9
% Finer No. 60 Sieve	74.0
% Finer No. 200 Sieve	52.9
Clay Content (%)	22.0
Total Volume Change (%)	12.5
Swell (%)	9.0
Shrinkage (%)	3.5
Maximum Dry Density (pcf)	108.8
Opt. Moisture Content (%)	15.3
Nat. Moisture Content (%)	16.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.62
Soil Support Value	3.8

WILLMER ENGINEERING INC.

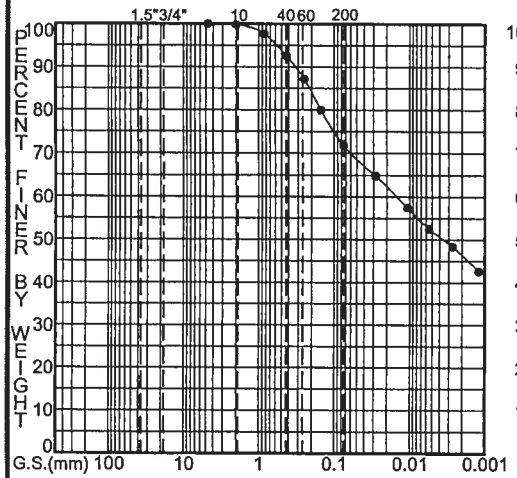
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **995+00, CL**

Sample No.: **SS-16-CL (1-5 ft)**

Soil Desc.: **Red brown fat CLAY with medium to fine sand (slightly micaceous) (CH)**

GDOT Soil Class: **II B4**



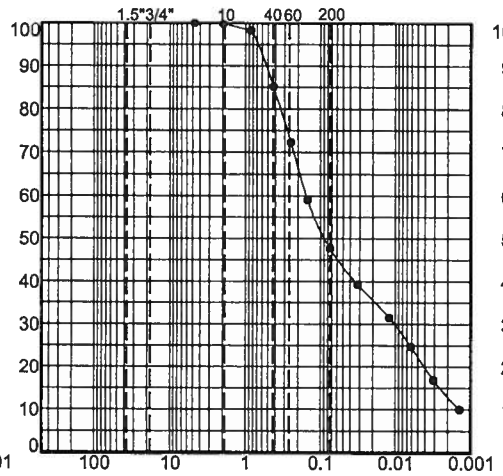
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.8
No. 40 Sieve	92.5
No. 60 Sieve	87.2
No. 200 Sieve	71.8
Clay Content (%)	46.3
Total Volume Change (%)	17.3
Swell (%)	11.4
Shrinkage (%)	5.9
Maximum Dry Density (pcf)	93.0
Opt. Moisture Content (%)	24.1
Nat. Moisture Content (%)	27.3
Liquid Limit (%)	70
Plasticity Index (%)	38
Erosion Index	1.3
Soil Support Value	---

Station: **1004+00, CL**

Sample No.: **SS-19-CL (1-5 ft)**

Soil Desc.: **Brown silty medium to fine SAND (micaceous)**

GDOT Soil Class: **II B3**



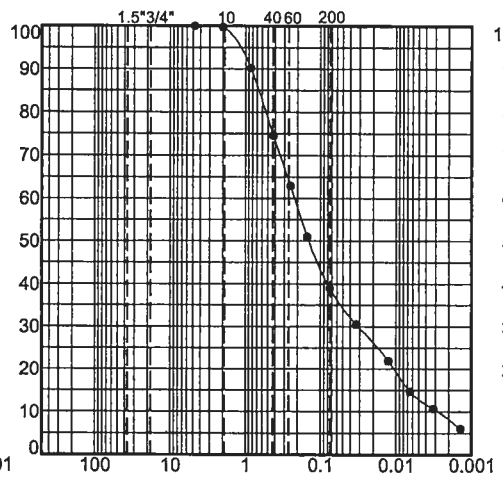
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.8
No. 40 Sieve	85.2
No. 60 Sieve	72.3
No. 200 Sieve	47.7
Clay Content (%)	13.1
Total Volume Change (%)	17.2
Swell (%)	13.7
Shrinkage (%)	3.5
Maximum Dry Density (pcf)	107.6
Opt. Moisture Content (%)	15.8
Nat. Moisture Content (%)	21.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.27
Soil Support Value	---

Station: **1013+00, CL**

Sample No.: **SS-22-CL (1-5 ft)**

Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**

GDOT Soil Class: **III C1**



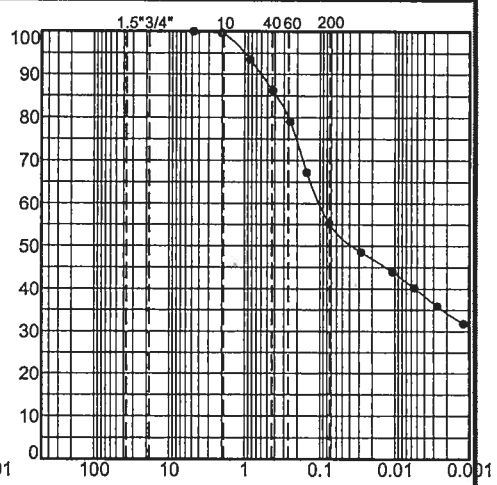
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.7
No. 40 Sieve	74.6
No. 60 Sieve	63.0
No. 200 Sieve	39.0
Clay Content (%)	8.1
Total Volume Change (%)	27.4
Swell (%)	26.4
Shrinkage (%)	1.0
Maximum Dry Density (pcf)	106.6
Opt. Moisture Content (%)	16.3
Nat. Moisture Content (%)	20.3
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.33
Soil Support Value	---

Station: **1022+00, CL**

Sample No.: **SS-25-CL (1-5 ft)**

Soil Desc.: **Brown medium to fine sandy lean CLAY (slightly micaceous)**

GDOT Soil Class: **II B4**

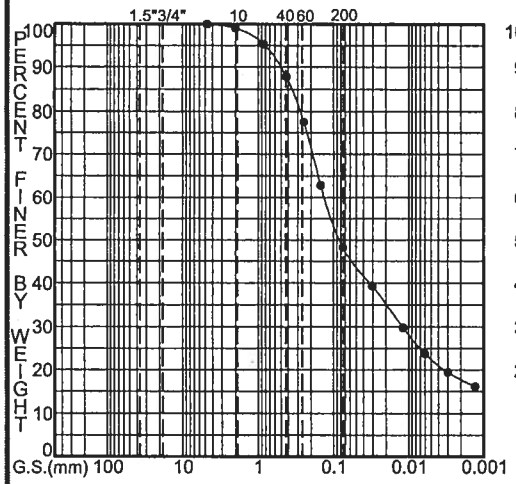


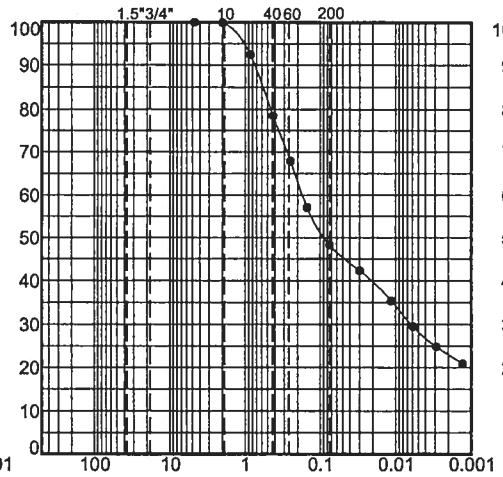
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.6
No. 40 Sieve	86.2
No. 60 Sieve	79.0
No. 200 Sieve	55.4
Clay Content (%)	34.4
Total Volume Change (%)	21.0
Swell (%)	18.8
Shrinkage (%)	2.2
Maximum Dry Density (pcf)	102.6
Opt. Moisture Content (%)	18.3
Nat. Moisture Content (%)	16.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.31
Soil Support Value	---

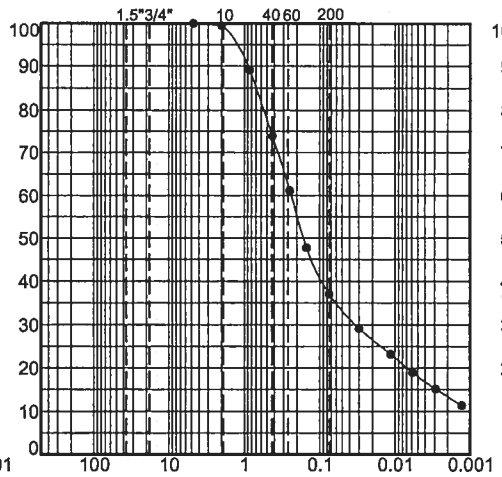
WILLMER ENGINEERING INC. | WE

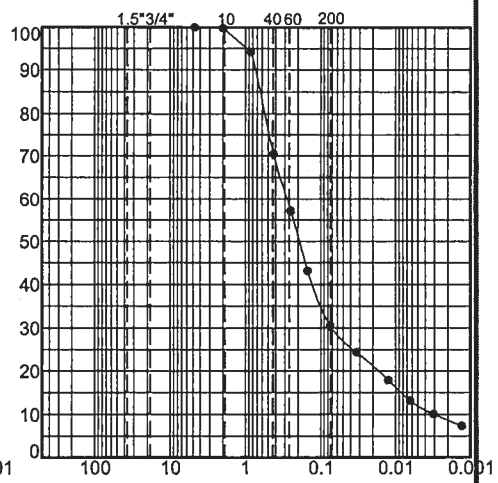
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1025+00, 100 ft Left of CL**	Station: **1031+00, CL**	Station: **1037+00, 140 ft Right of CL**	Station: **1040+00, CL**
Sample No.: **SS-26-LL (7-15 ft)**	Sample No.: **SS-28-CL (1-5 ft)**	Sample No.: **SS-30-RL (1-5 ft)**	Sample No.: **SS-31-CL (1-5 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (slightly micaceous)**	Soil Desc.: **Reddish brown silty medium to fine SAND (micaceous)**	Soil Desc.: **Brown silty medium to fine SAND**	Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**	GDOT Soil Class: **II B3**	GDOT Soil Class: **II B3**	GDOT Soil Class: **II B3**







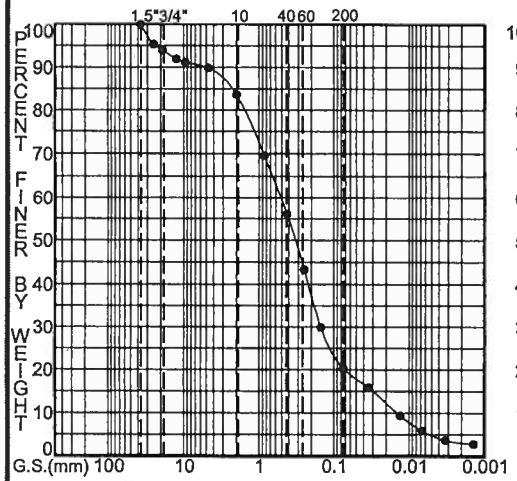


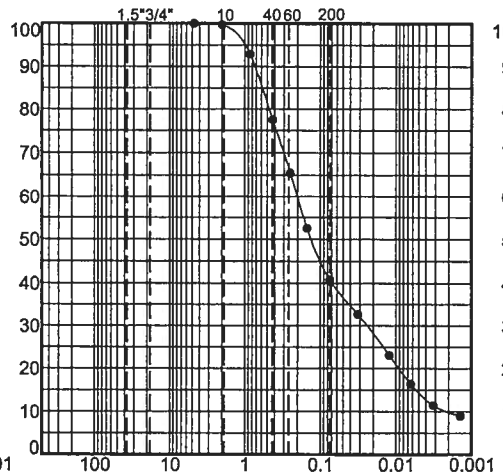
	Station 1025+00	Station 1031+00	Station 1037+00	Station 1040+00
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
% Finer: 3/4" Sieve	100.0	100.0	100.0	100.0
% Finer: No. 10 Sieve	99.0	99.9	99.5	99.8
% Finer: No. 40 Sieve	87.8	78.6	73.9	70.5
% Finer: No. 60 Sieve	77.6	67.8	61.2	57.2
No. 200 Sieve	48.2	48.3	37.0	30.6
Clay Content (%)	17.9	23.1	13.4	8.7
Total Volume Change (%)	13.4	13.0	16.3	11.6
Swell (%)	10.5	10.9	11.3	9.4
Shrinkage (%)	2.9	2.1	5.0	2.2
Maximum Dry Density (pcf)	107.0	105.4	106.0	109.8
Opt. Moisture Content (%)	16.2	16.8	16.6	14.9
Nat. Moisture Content (%)	14.8	22.8	22.8	18.2
Liquid Limit (%)	---	---	---	---
Plasticity Index (%)	---	---	---	---
Erosion Index	4.2	4.19	5.58	6.37
Soil Support Value	---	---	---	---

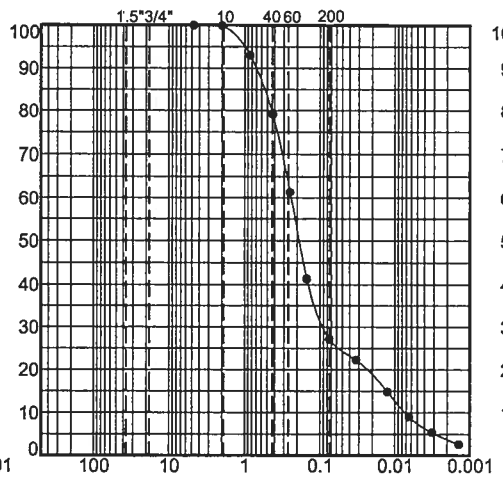
WILLMER ENGINEERING INC. | WE

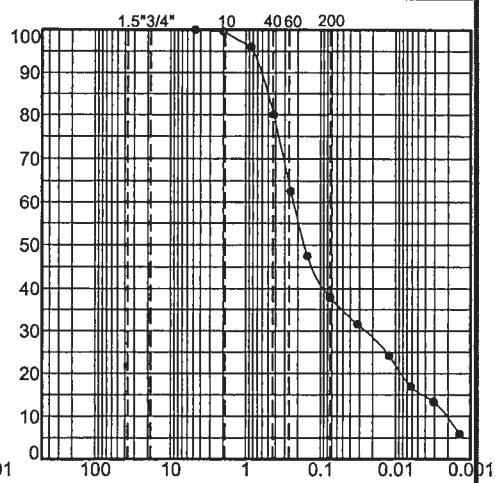
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1043+00, 100 ft Right of CL**	Station: **1046+00, 100 ft Right of CL**	Station: **1049+00, CL**	Station: **1052+00, 80 ft Left of CL**
Sample No.: **SS-32-RL (1-5 ft)**	Sample No.: **SS-33-RL (1-14 ft)**	Sample No.: **SS-34-CL (1-5 ft)**	Sample No.: **SS-35-LL (1-5 ft)**
Soil Desc.: **Light brown silty coarse to fine SAND (micaceous)**	Soil Desc.: **Brown silty medium to fine SAND (micaceous)**	Soil Desc.: **Gray silty medium to fine SAND (micaceous)**	Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**	GDOT Soil Class: **II B3**	GDOT Soil Class: **II B4**	GDOT Soil Class: **III C2**







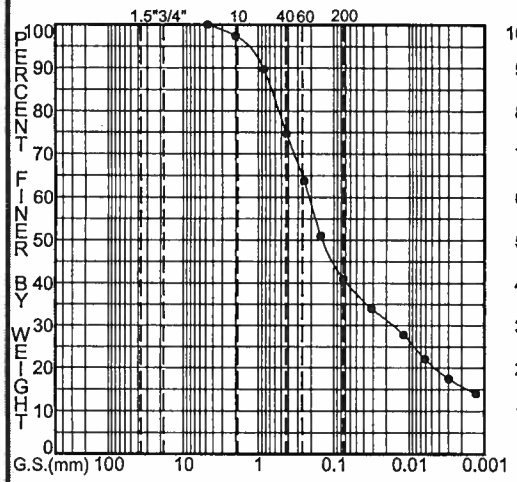


	Station 1043+00	Station 1046+00	Station 1049+00	Station 1052+00
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
3/4" Sieve	93.9	100.0	100.0	100.0
No. 10 Sieve	83.7	99.7	99.9	99.6
No. 40 Sieve	56.2	77.5	79.1	80.0
No. 60 Sieve	43.4	65.5	61.4	62.7
No. 200 Sieve	20.4	40.8	27.2	37.9
Clay Content (%)	3.2	10.1	3.8	9.3
Total Volume Change (%)	12.3	19.5	21.3	30.8
Swell (%)	10.6	16.3	18.9	28.6
Shrinkage (%)	1.7	3.2	2.4	2.2
Maximum Dry Density (pcf)	103.2	105.3	96.2	91.6
Opt. Moisture Content (%)	17.9	16.8	21.8	25.2
Nat. Moisture Content (%)	14.8	17.1	24.5	16.9
Liquid Limit (%)	---	---	---	---
Plasticity Index (%)	---	---	---	---
Erosion Index	7.62	5.11	6.71	5.47
Soil Support Value	---	---	---	---

WILLMER ENGINEERING INC. WE

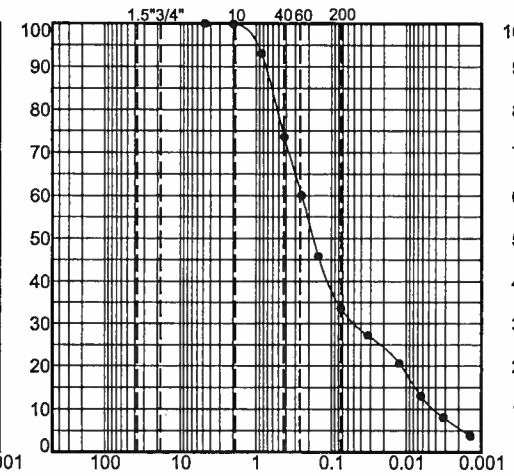
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1055+00, 100 ft Right of CL**
Sample No.: **SS-36-RL (1-9 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



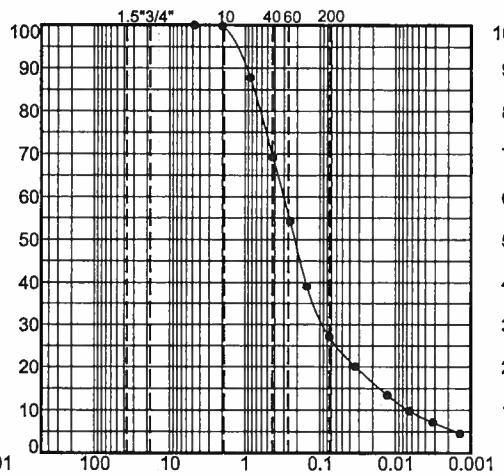
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	97.4
% Finer No. 40 Sieve	74.8
% Finer No. 60 Sieve	63.8
% Finer No. 200 Sieve	41.0
Clay Content (%)	15.9
Total Volume Change (%)	13.9
Swell (%)	11.2
Shrinkage (%)	2.7
Maximum Dry Density (pcf)	108.0
Opt. Moisture Content (%)	15.7
Nat. Moisture Content (%)	18.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.09
Soil Support Value	---

Station: **1058+00, CL**
Sample No.: **SS-37-CL (1-7 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



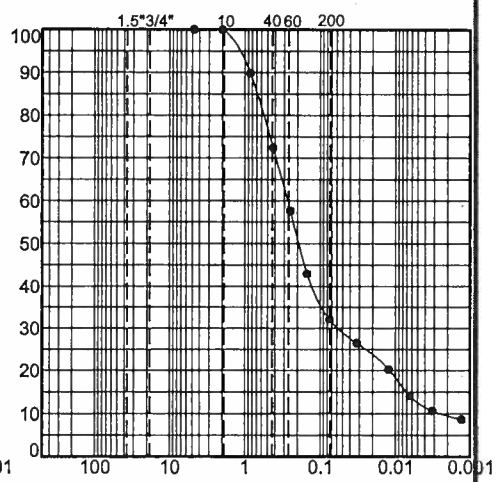
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	73.7
% Finer No. 60 Sieve	60.1
% Finer No. 200 Sieve	33.6
Clay Content (%)	5.7
Total Volume Change (%)	22.3
Swell (%)	20.2
Shrinkage (%)	2.1
Maximum Dry Density (pcf)	107.9
Opt. Moisture Content (%)	15.8
Nat. Moisture Content (%)	13.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6
Soil Support Value	---

Station: **1061+00, 80 ft Left of CL**
Sample No.: **SS-38-LL (1-5 ft)**
Soil Desc.: **Dark brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	69.3
% Finer No. 60 Sieve	54.4
% Finer No. 200 Sieve	27.1
Clay Content (%)	5.7
Total Volume Change (%)	15.9
Swell (%)	13.7
Shrinkage (%)	2.2
Maximum Dry Density (pcf)	114.4
Opt. Moisture Content (%)	13.1
Nat. Moisture Content (%)	17.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.8
Soil Support Value	---

Station: **1067+00, CL**
Sample No.: **SS-40-CL (1-5 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**

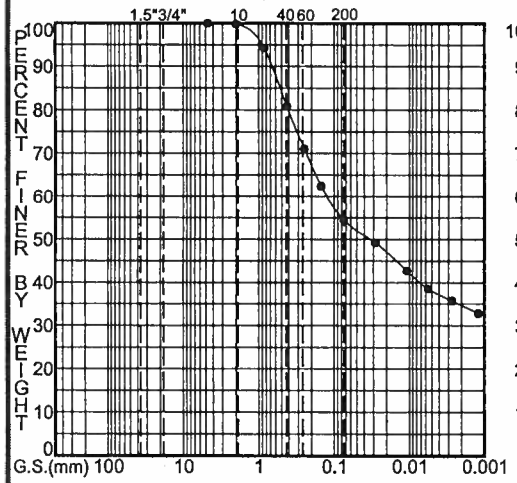


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	100.0
% Finer No. 40 Sieve	72.5
% Finer No. 60 Sieve	57.7
% Finer No. 200 Sieve	32.1
Clay Content (%)	9.7
Total Volume Change (%)	13.2
Swell (%)	10.1
Shrinkage (%)	3.1
Maximum Dry Density (pcf)	108.2
Opt. Moisture Content (%)	15.6
Nat. Moisture Content (%)	20.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.18
Soil Support Value	---

WILLMER ENGINEERING INC.

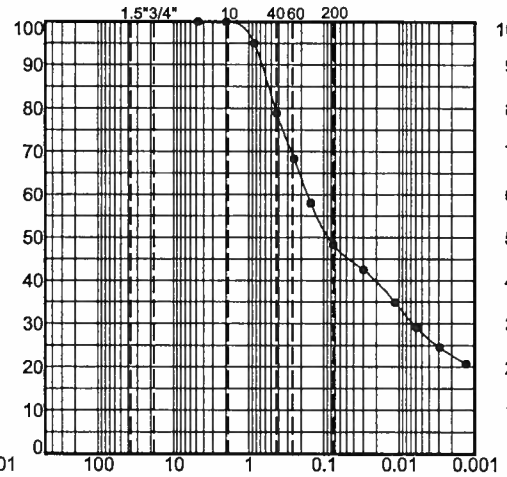
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1067+00, 60 ft Left of CL**
Sample No.: **SS-40-LL (1-5 ft)**
Soil Desc.: **Red brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B4**



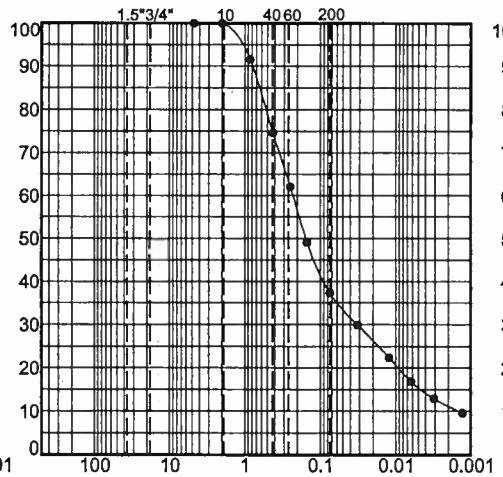
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	80.8
% Finer No. 60 Sieve	71.1
% Finer No. 200 Sieve	54.6
Clay Content (%)	34.6
Total Volume Change (%)	13.3
Swell (%)	10.6
Shrinkage (%)	2.7
Maximum Dry Density (pcf)	100.0
Opt. Moisture Content (%)	19.8
Nat. Moisture Content (%)	17.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.41
Soil Support Value	---

Station: **1070+00, 130 ft Left of CL**
Sample No.: **SS-41-LL (1-10 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous) (SM)**
GDOT Soil Class: **II B4**



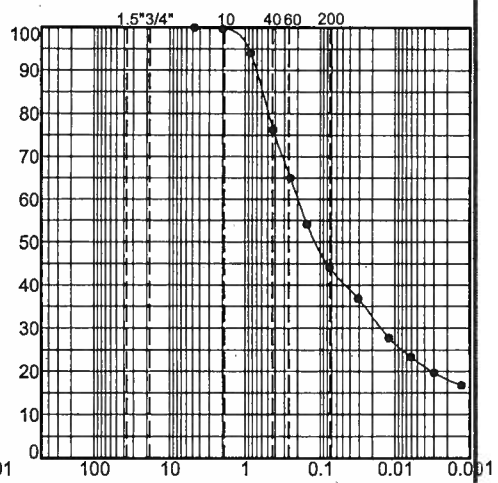
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	100.0
% Finer No. 40 Sieve	78.9
% Finer No. 60 Sieve	68.3
% Finer No. 200 Sieve	48.3
Clay Content (%)	22.8
Total Volume Change (%)	18.8
Swell (%)	17.8
Shrinkage (%)	1.0
Maximum Dry Density (pcf)	104.1
Opt. Moisture Content (%)	17.4
Nat. Moisture Content (%)	24.9
Liquid Limit (%)	46
Plasticity Index (%)	16
Erosion Index	4.19
Soil Support Value	---

Station: **1076+00, CL**
Sample No.: **SS-43-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	100.0
% Finer No. 40 Sieve	74.7
% Finer No. 60 Sieve	62.1
% Finer No. 200 Sieve	37.3
Clay Content (%)	11.2
Total Volume Change (%)	23.0
Swell (%)	20.9
Shrinkage (%)	2.1
Maximum Dry Density (pcf)	108.3
Opt. Moisture Content (%)	15.5
Nat. Moisture Content (%)	20.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.54
Soil Support Value	---

Station: **1082+00, 110 ft Left of CL**
Sample No.: **SS-45-LL (1-12 ft)**
Soil Desc.: **Red-brown silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B4**

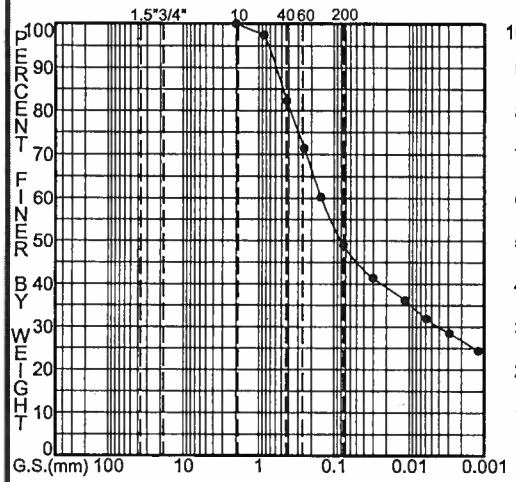


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.7
% Finer No. 40 Sieve	76.3
% Finer No. 60 Sieve	65.0
% Finer No. 200 Sieve	44.1
Clay Content (%)	18.3
Total Volume Change (%)	12.6
Swell (%)	11.2
Shrinkage (%)	1.4
Maximum Dry Density (pcf)	103.2
Opt. Moisture Content (%)	17.9
Nat. Moisture Content (%)	11.4
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.71
Soil Support Value	---

WILLMER ENGINEERING INC. | WE

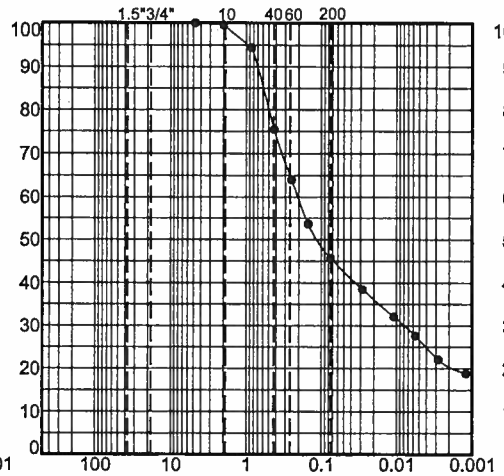
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1085+00, CL**
Sample No.: **SS-46-CL (1-5 ft)**
Soil Desc.: **Reddish brown clayey medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



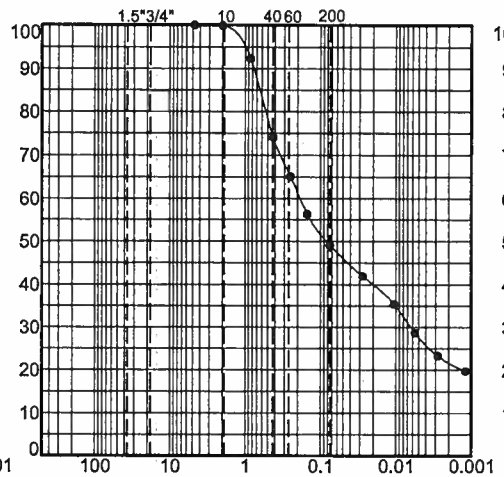
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	82.4
No. 60 Sieve	71.4
No. 200 Sieve	49.1
Clay Content (%)	26.8
Total Volume Change (%)	14.3
Swell (%)	10.6
Shrinkage (%)	3.7
Maximum Dry Density (pcf)	99.8
Opt. Moisture Content (%)	19.9
Nat. Moisture Content (%)	22.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.09
Soil Support Value	---

Station: **1088+00, 100 ft Right of CL**
Sample No.: **SS-47-RL (1-10 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



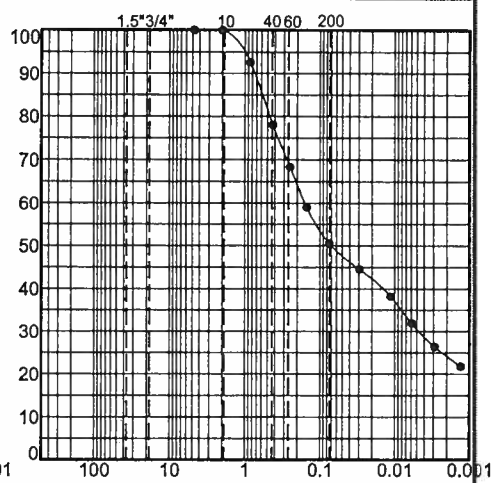
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.5
No. 40 Sieve	75.5
No. 60 Sieve	64.0
No. 200 Sieve	45.7
Clay Content (%)	20.8
Total Volume Change (%)	8.9
Swell (%)	8.3
Shrinkage (%)	0.6
Maximum Dry Density (pcf)	105.7
Opt. Moisture Content (%)	16.6
Nat. Moisture Content (%)	13.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.51
Soil Support Value	---

Station: **1091+00, 110 ft Right of CL**
Sample No.: **SS-48-RL (1-17 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.9
No. 40 Sieve	74.1
No. 60 Sieve	65.2
No. 200 Sieve	49.1
Clay Content (%)	21.9
Total Volume Change (%)	20.0
Swell (%)	18.9
Shrinkage (%)	1.1
Maximum Dry Density (pcf)	101.0
Opt. Moisture Content (%)	19.0
Nat. Moisture Content (%)	16.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.09
Soil Support Value	---

Station: **1094+00, CL**
Sample No.: **SS-49-CL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy elastic SILT (micaceous) (MH)**
GDOT Soil Class: **II B4**

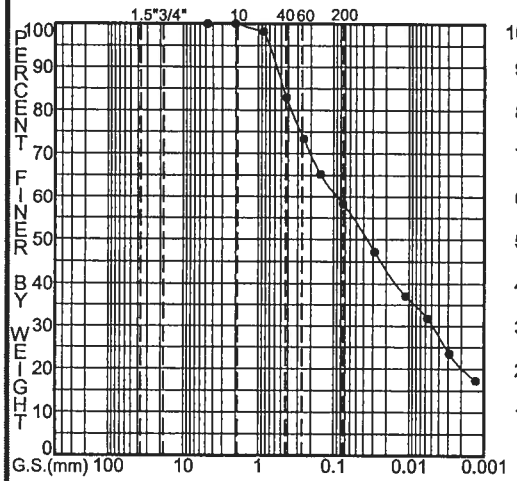


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	78.0
No. 60 Sieve	68.4
No. 200 Sieve	50.6
Clay Content (%)	24.3
Total Volume Change (%)	20.2
Swell (%)	16.6
Shrinkage (%)	3.6
Maximum Dry Density (pcf)	102.0
Opt. Moisture Content (%)	18.6
Nat. Moisture Content (%)	23.8
Liquid Limit (%)	63
Plasticity Index (%)	27
Erosion Index	3.91
Soil Support Value	---

WILLMER ENGINEERING INC. WE

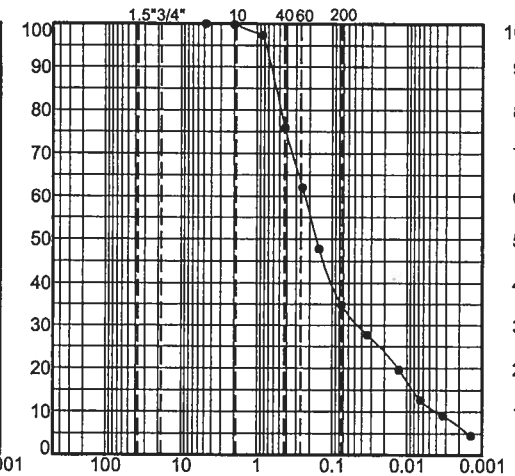
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1097+00, 110 ft Right of CL**
Sample No.: **SS-50-RL (1-14 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



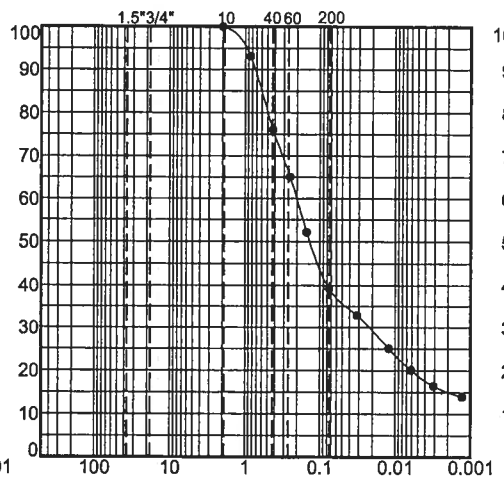
% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	82.9
No. 60 Sieve	73.4
No. 200 Sieve	58.3
Clay Content (%)	20.7
Total Volume Change (%)	18.9
Swell (%)	17.1
Shrinkage (%)	1.8
Maximum Dry Density (pcf)	100.7
Opt. Moisture Content (%)	19.3
Nat. Moisture Content (%)	21.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.96
Soil Support Value	---

Station: **1103+00, CL**
Sample No.: **SS-52-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



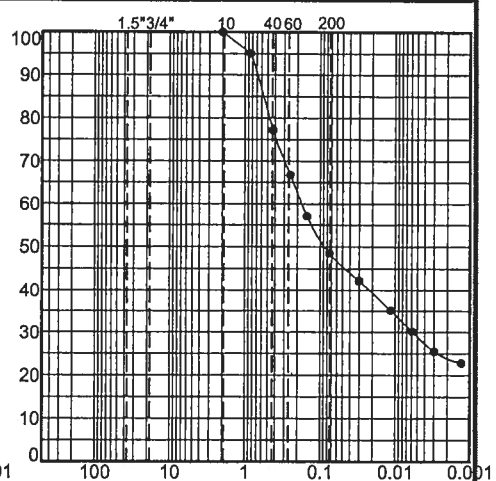
% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.8
No. 40 Sieve	76.0
No. 60 Sieve	62.1
No. 200 Sieve	34.8
Clay Content (%)	6.4
Total Volume Change (%)	22.7
Swell (%)	21.4
Shrinkage (%)	1.3
Maximum Dry Density (pcf)	107.6
Opt. Moisture Content (%)	15.8
Nat. Moisture Content (%)	21.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.85
Soil Support Value	---

Station: **1106+00, 100 ft Right of CL**
Sample No.: **SS-53-RL (1-11 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	76.1
No. 60 Sieve	65.2
No. 200 Sieve	39.3
Clay Content (%)	15.2
Total Volume Change (%)	17.2
Swell (%)	14.7
Shrinkage (%)	2.5
Maximum Dry Density (pcf)	106.0
Opt. Moisture Content (%)	16.6
Nat. Moisture Content (%)	17.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.29
Soil Support Value	---

Station: **1109+00, 100 ft Right of CL**
Sample No.: **SS-54-RL S-1 (1-10 ft)**
Soil Desc.: **Red-brown silty medium to fine SAND (micaceous) (SM)**
GDOT Soil Class: **II B3**

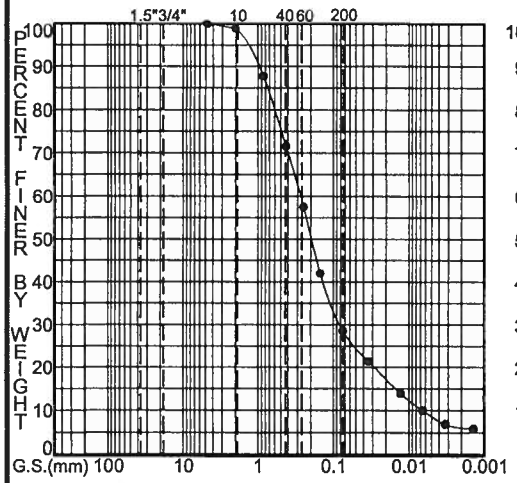


% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	77.2
No. 60 Sieve	66.8
No. 200 Sieve	48.5
Clay Content (%)	24.2
Total Volume Change (%)	6.5
Swell (%)	2.7
Shrinkage (%)	3.8
Maximum Dry Density (pcf)	105.0
Opt. Moisture Content (%)	17.0
Nat. Moisture Content (%)	13.4
Liquid Limit (%)	53
Plasticity Index (%)	21
Erosion Index	4.16
Soil Support Value	---

WILLMER ENGINEERING INC. WE

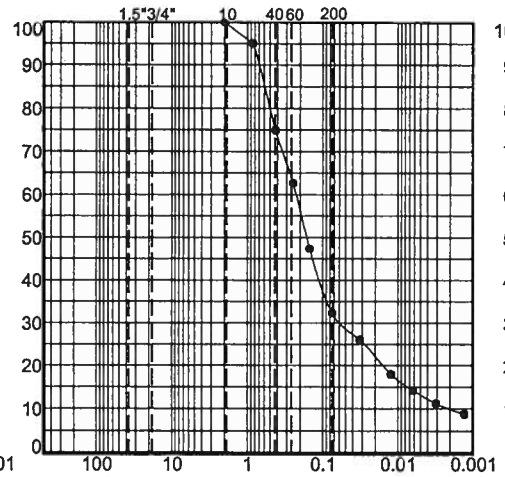
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1109+00, 100 ft Right of CL**
Sample No.: **SS-54-RL S-2 (10-18 ft)**
Soil Desc.: **Red and light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**



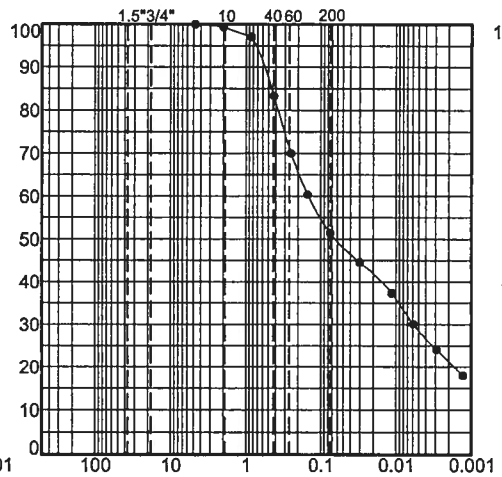
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.9
No. 40 Sieve	71.6
No. 60 Sieve	57.5
No. 200 Sieve	28.6
Clay Content (%)	6.3
Total Volume Change (%)	12.2
Swell (%)	9.7
Shrinkage (%)	2.5
Maximum Dry Density (pcf)	112.3
Opt. Moisture Content (%)	13.8
Nat. Moisture Content (%)	12.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.52
Soil Support Value	---

Station: **1112+00, CL**
Sample No.: **SS-55-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**



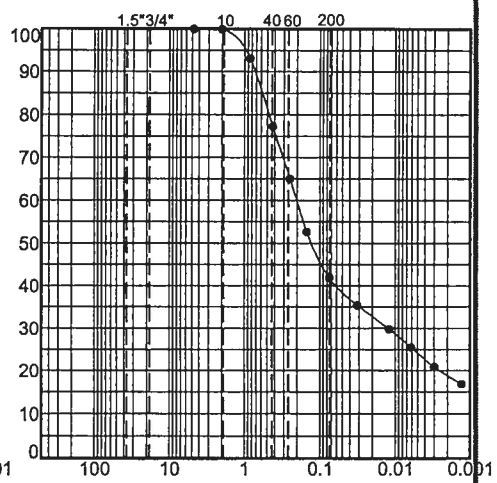
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	100.0
No. 40 Sieve	75.0
No. 60 Sieve	62.7
No. 200 Sieve	32.4
Clay Content (%)	10.0
Total Volume Change (%)	15.7
Swell (%)	13.0
Shrinkage (%)	2.7
Maximum Dry Density (pcf)	110.7
Opt. Moisture Content (%)	14.5
Nat. Moisture Content (%)	20.4
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.14
Soil Support Value	---

Station: **1118+00, 140 ft Left of CL**
Sample No.: **SS-57-LL (3-5 ft)**
Soil Desc.: **Light brown medium to fine sandy SILT (slightly micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.4
No. 40 Sieve	83.3
No. 60 Sieve	70.0
No. 200 Sieve	51.5
Clay Content (%)	21.3
Total Volume Change (%)	16.6
Swell (%)	12.6
Shrinkage (%)	4.0
Maximum Dry Density (pcf)	101.8
Opt. Moisture Content (%)	18.6
Nat. Moisture Content (%)	31.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.79
Soil Support Value	---

Station: **1121+00, CL**
Sample No.: **SS-58-CL (1-5 ft)**
Soil Desc.: **Light reddish brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**

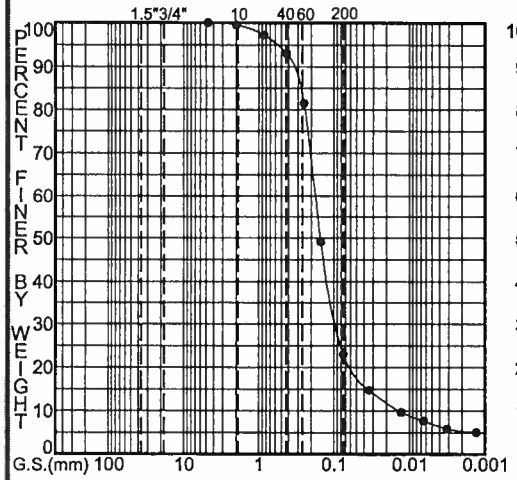


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.9
No. 40 Sieve	77.3
No. 60 Sieve	65.1
No. 200 Sieve	41.9
Clay Content (%)	19.0
Total Volume Change (%)	21.6
Swell (%)	18.4
Shrinkage (%)	3.2
Maximum Dry Density (pcf)	102.5
Opt. Moisture Content (%)	18.3
Nat. Moisture Content (%)	27.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.97
Soil Support Value	---

WILLMER ENGINEERING INC. WE

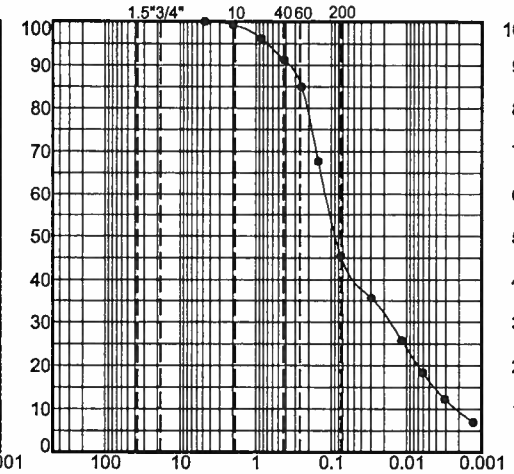
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1133+00, 120 ft Left of CL**
Sample No.: **SS-62-LL (11-13 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



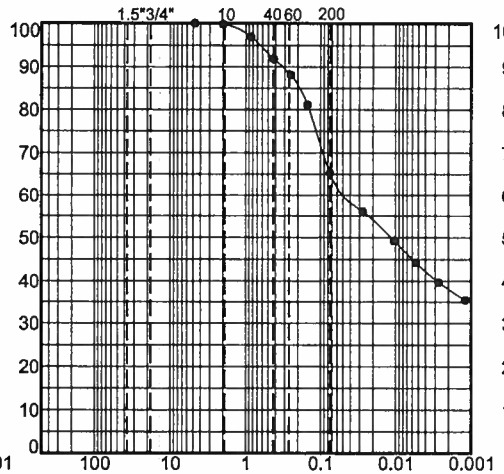
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.5
% Finer No. 40 Sieve	93.1
% Finer No. 60 Sieve	81.5
No. 200 Sieve	23.0
Clay Content (%)	5.5
Total Volume Change (%)	10.6
Swell (%)	9.7
Shrinkage (%)	0.9
Maximum Dry Density (pcf)	97.4
Opt. Moisture Content (%)	17.7
Nat. Moisture Content (%)	4.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	7.3
Soil Support Value	---

Station: **1136+00, 100 ft Right of CL**
Sample No.: **SS-63-RL (1-20 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **III C3**



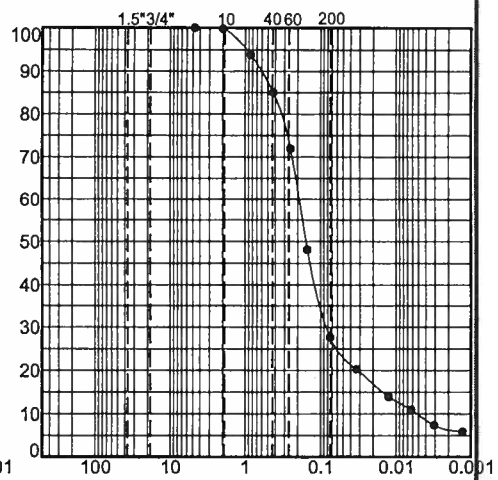
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.3
% Finer No. 40 Sieve	91.4
% Finer No. 60 Sieve	85.0
No. 200 Sieve	45.5
Clay Content (%)	9.6
Total Volume Change (%)	44.4
Swell (%)	41.7
Shrinkage (%)	2.7
Maximum Dry Density (pcf)	100.3
Opt. Moisture Content (%)	19.5
Nat. Moisture Content (%)	27.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.53
Soil Support Value	---

Station: **1139+00, CL**
Sample No.: **SS-64-CL (1-5 ft)**
Soil Desc.: **Red-brown medium to fine sandy fat CLAY (slightly micaceous) (CH)**
GDOT Soil Class: **II B4**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	91.9
% Finer No. 60 Sieve	88.2
No. 200 Sieve	65.3
Clay Content (%)	38.1
Total Volume Change (%)	16.7
Swell (%)	13.0
Shrinkage (%)	3.7
Maximum Dry Density (pcf)	96.1
Opt. Moisture Content (%)	21.8
Nat. Moisture Content (%)	22.3
Liquid Limit (%)	69
Plasticity Index (%)	40
Erosion Index	2.09
Soil Support Value	---

Station: **1145+00, 80 ft Left of CL**
Sample No.: **SS-66-LL (0.5-2 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**

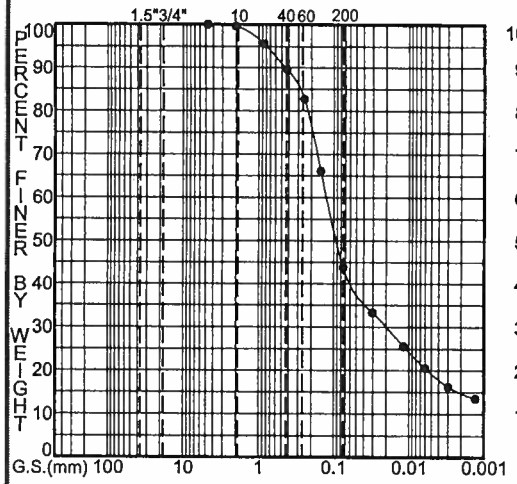


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	85.0
% Finer No. 60 Sieve	72.0
No. 200 Sieve	27.7
Clay Content (%)	6.6
Total Volume Change (%)	11.9
Swell (%)	11.7
Shrinkage (%)	0.2
Maximum Dry Density (pcf)	98.3
Opt. Moisture Content (%)	20.7
Nat. Moisture Content (%)	23.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.73
Soil Support Value	---

WILLMER ENGINEERING INC. WE

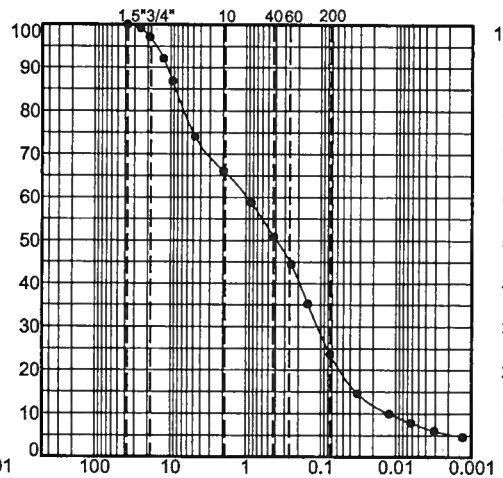
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1148+00, CL**
Sample No.: **SS-67-CL (1-4 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B2**



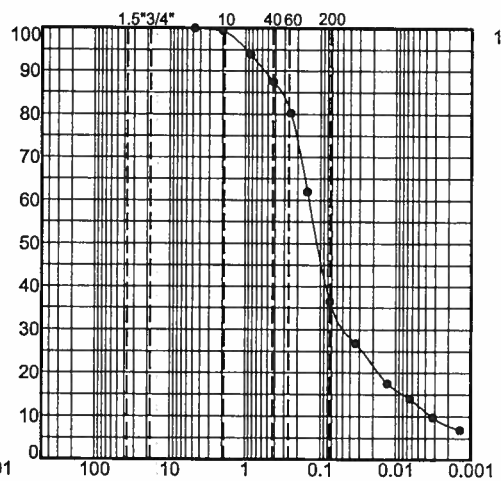
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.6
% Finer No. 40 Sieve	89.7
% Finer No. 60 Sieve	82.8
% Finer No. 200 Sieve	43.8
Clay Content (%)	15.0
Total Volume Change (%)	14.7
Swell (%)	11.6
Shrinkage (%)	3.1
Maximum Dry Density (pcf)	112.3
Opt. Moisture Content (%)	13.8
Nat. Moisture Content (%)	19.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.74
Soil Support Value	---

Station: **1154+00, 80 ft Right of CL**
Sample No.: **SS-69-RL (1-5 ft)**
Soil Desc.: **Dark brown silty coarse to fine SAND with gravel (micaceous)**
GDOT Soil Class: **I A1**



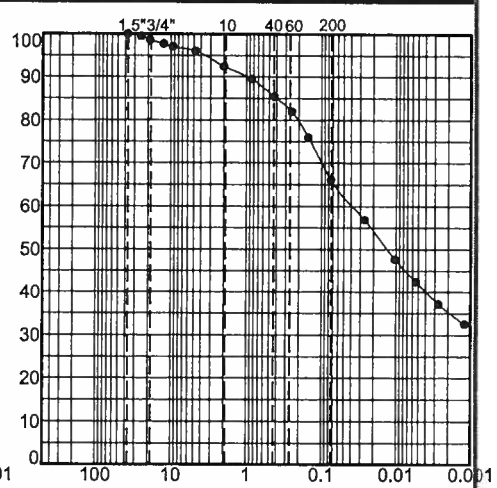
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	97.1
% Finer No. 10 Sieve	66.1
% Finer No. 40 Sieve	50.9
% Finer No. 60 Sieve	44.5
% Finer No. 200 Sieve	23.7
Clay Content (%)	5.4
Total Volume Change (%)	8.7
Swell (%)	7.1
Shrinkage (%)	1.6
Maximum Dry Density (pcf)	118.2
Opt. Moisture Content (%)	10.7
Nat. Moisture Content (%)	9.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	7.22
Soil Support Value	---

Station: **1157+00, CL**
Sample No.: **SS-70-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.4
% Finer No. 40 Sieve	87.5
% Finer No. 60 Sieve	80.3
% Finer No. 200 Sieve	36.5
Clay Content (%)	8.2
Total Volume Change (%)	22.6
Swell (%)	19.4
Shrinkage (%)	3.2
Maximum Dry Density (pcf)	112.0
Opt. Moisture Content (%)	14.0
Nat. Moisture Content (%)	14.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.64
Soil Support Value	---

Station: **1166+00, CL**
Sample No.: **SS-73-CL (1-3 ft)**
Soil Desc.: **Brown medium to fine sandy fat CLAY (slightly micaceous)**
GDOT Soil Class: **II B4**

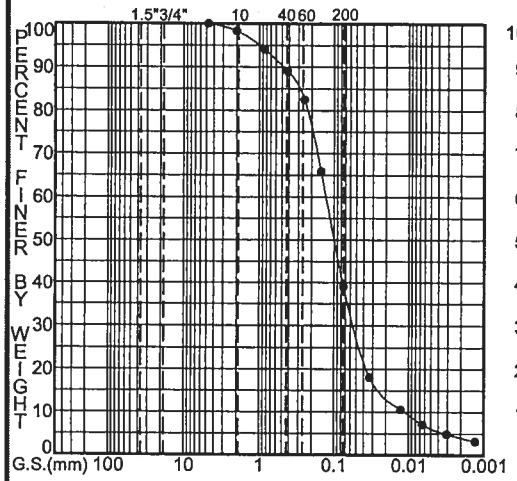


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	98.7
% Finer No. 10 Sieve	92.5
% Finer No. 40 Sieve	85.4
% Finer No. 60 Sieve	81.9
% Finer No. 200 Sieve	66.1
Clay Content (%)	35.5
Total Volume Change (%)	12.6
Swell (%)	7.5
Shrinkage (%)	5.1
Maximum Dry Density (pcf)	94.3
Opt. Moisture Content (%)	23.2
Nat. Moisture Content (%)	29.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2
Soil Support Value	---

WILLMER ENGINEERING INC. | WE

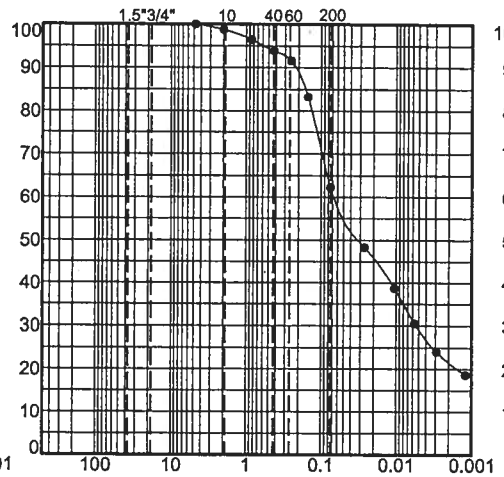
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1168+00, 120 ft Right of CL**
Sample No.: **SS-74-RL (1-7 ft)**
Soil Desc.: **Gray silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



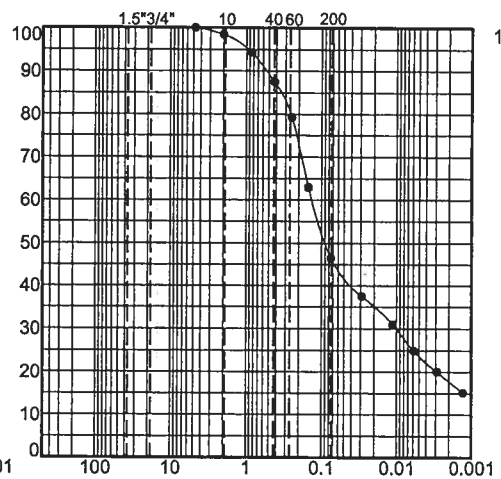
% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.3
No. 40 Sieve	89.2
No. 60 Sieve	82.5
No. 200 Sieve	39.1
Clay Content (%)	4.0
Total Volume Change (%)	10.1
Swell (%)	8.7
Shrinkage (%)	1.4
Maximum Dry Density (pcf)	118.9
Opt. Moisture Content (%)	10.5
Nat. Moisture Content (%)	6.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.32
Soil Support Value	---

Station: **1172+00, 140 ft Left of CL**
Sample No.: **SS-75-LL (1-16 ft)**
Soil Desc.: **Red and brown medium to fine sandy SILT (slightly micaceous)**
GDOT Soil Class: **III C3**



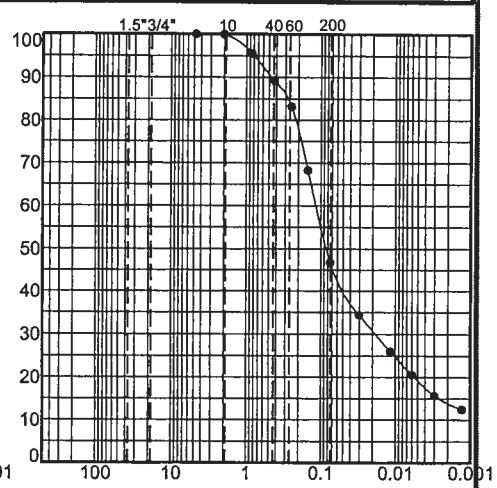
% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.7
No. 40 Sieve	93.9
No. 60 Sieve	91.6
No. 200 Sieve	62.2
Clay Content (%)	21.8
Total Volume Change (%)	38.1
Swell (%)	34.3
Shrinkage (%)	3.8
Maximum Dry Density (pcf)	99.7
Opt. Moisture Content (%)	20.0
Nat. Moisture Content (%)	19.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.48
Soil Support Value	---

Station: **1174+50, 140 ft Right of CL**
Sample No.: **SS-76-RL (1-26 ft)**
Soil Desc.: **Red-brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.4
No. 40 Sieve	87.5
No. 60 Sieve	79.3
No. 200 Sieve	46.5
Clay Content (%)	17.8
Total Volume Change (%)	19.1
Swell (%)	18.5
Shrinkage (%)	0.6
Maximum Dry Density (pcf)	100.6
Opt. Moisture Content (%)	19.3
Nat. Moisture Content (%)	26.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.41
Soil Support Value	---

Station: **1178+00, CL**
Sample No.: **SS-77-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**

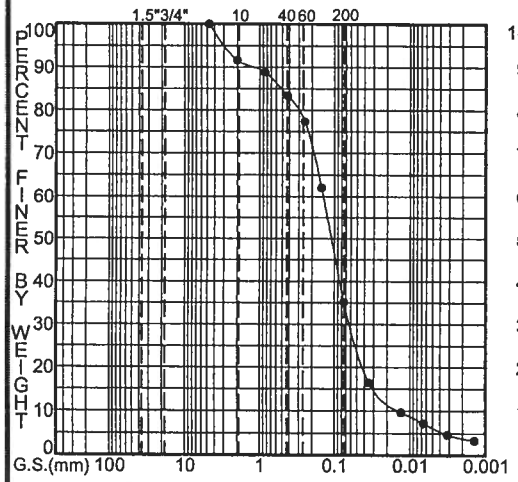


% Finer 1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.9
No. 40 Sieve	89.3
No. 60 Sieve	83.2
No. 200 Sieve	46.8
Clay Content (%)	14.1
Total Volume Change (%)	19.1
Swell (%)	15.9
Shrinkage (%)	3.2
Maximum Dry Density (pcf)	107.0
Opt. Moisture Content (%)	16.2
Nat. Moisture Content (%)	24.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.37
Soil Support Value	---

WILLMER ENGINEERING INC. WE

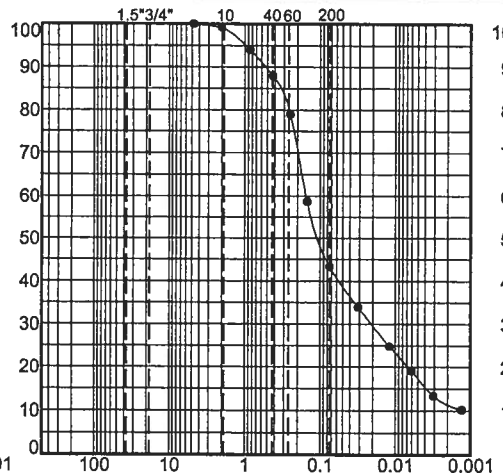
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1184+20, 140 ft Right of CL**
Sample No.: **SS-79-RL (1-6 ft)**
Soil Desc.: **Yellow and gray silty coarse to fine SAND (micaceous)**
GDOT Soil Class: **II B2**



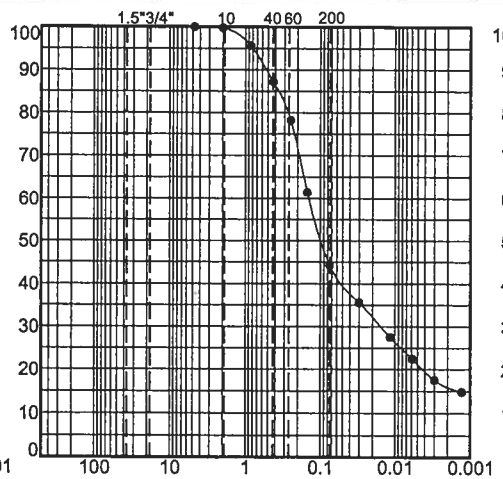
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	91.6
No. 40 Sieve	83.4
No. 60 Sieve	77.4
No. 200 Sieve	35.2
Clay Content (%)	4.0
Total Volume Change (%)	10.8
Swell (%)	10.7
Shrinkage (%)	0.1
Maximum Dry Density (pcf)	120.3
Opt. Moisture Content (%)	10.6
Nat. Moisture Content (%)	5.4
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.81
Soil Support Value	---

Station: **1187+00, CL**
Sample No.: **SS-80-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



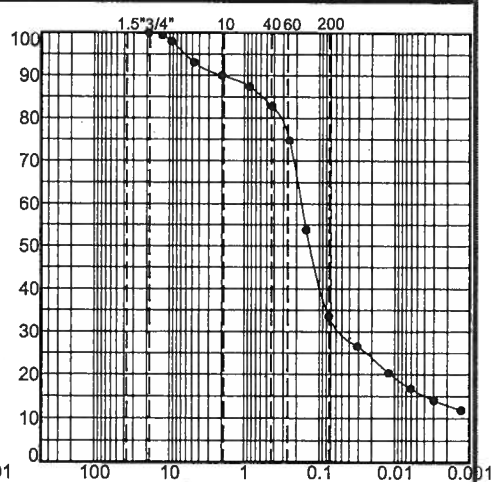
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.2
No. 40 Sieve	88.0
No. 60 Sieve	79.0
No. 200 Sieve	43.4
Clay Content (%)	11.8
Total Volume Change (%)	14.7
Swell (%)	11.2
Shrinkage (%)	3.5
Maximum Dry Density (pcf)	102.1
Opt. Moisture Content (%)	18.5
Nat. Moisture Content (%)	23.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.79
Soil Support Value	---

Station: **1193+00, CL**
Sample No.: **SS-82-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.8
No. 40 Sieve	87.2
No. 60 Sieve	78.2
No. 200 Sieve	44.3
Clay Content (%)	16.3
Total Volume Change (%)	13.6
Swell (%)	11.9
Shrinkage (%)	1.7
Maximum Dry Density (pcf)	105.8
Opt. Moisture Content (%)	16.6
Nat. Moisture Content (%)	14.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.68
Soil Support Value	---

Station: **1196+00, 100 ft Left of CL**
Sample No.: **SS-83-LL (1-16 ft)**
Soil Desc.: **Red and brown silty coarse to fine SAND (micaceous)**
GDOT Soil Class: **I A3**

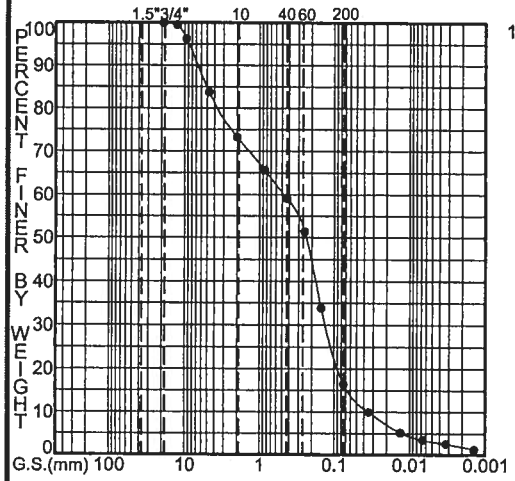


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	90.0
No. 40 Sieve	82.8
No. 60 Sieve	74.8
No. 200 Sieve	33.6
Clay Content (%)	13.0
Total Volume Change (%)	14.3
Swell (%)	13.3
Shrinkage (%)	1.0
Maximum Dry Density (pcf)	101.8
Opt. Moisture Content (%)	18.6
Nat. Moisture Content (%)	16.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6
Soil Support Value	---

WILLMER ENGINEERING INC. WE

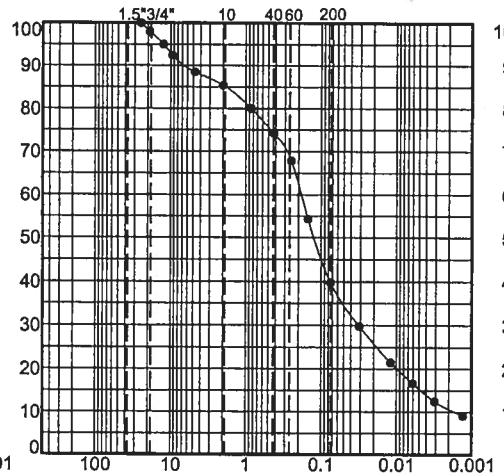
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1199+25, 110 ft Right of CL**
Sample No.: **SS-84-RL (1-24 ft)**
Soil Desc.: **Light brown silty coarse to fine SAND with gravel (micaceous)**
GDOT Soil Class: **II B4**



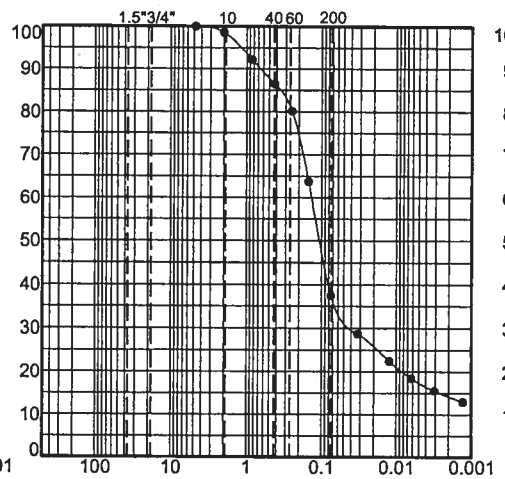
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	73.3
No. 40 Sieve	59.0
No. 60 Sieve	51.4
No. 200 Sieve	16.5
Clay Content (%)	1.8
Total Volume Change (%)	14.3
Swell (%)	11.9
Shrinkage (%)	2.4
Maximum Dry Density (pcf)	97.1
Opt. Moisture Content (%)	17.9
Nat. Moisture Content (%)	9.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	8.11
Soil Support Value	---

Station: **1202+00, CL**
Sample No.: **SS-85-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



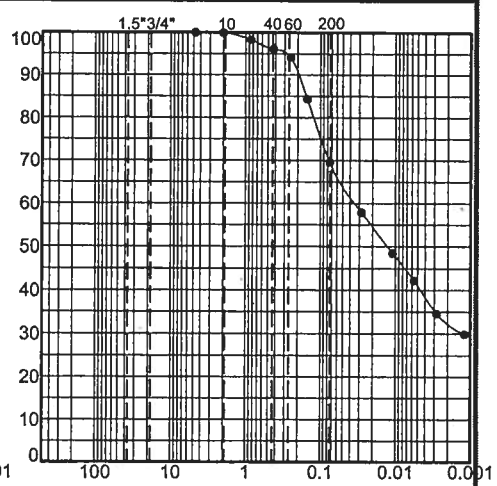
% Finer	
1.5" Sieve	100.0
3/4" Sieve	98.0
No. 10 Sieve	85.4
No. 40 Sieve	74.3
No. 60 Sieve	67.9
No. 200 Sieve	39.8
Clay Content (%)	10.8
Total Volume Change (%)	16.9
Swell (%)	15.5
Shrinkage (%)	1.4
Maximum Dry Density (pcf)	100.6
Opt. Moisture Content (%)	19.3
Nat. Moisture Content (%)	25.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.23
Soil Support Value	---

Station: **1208+00, 160 ft Right of CL**
Sample No.: **SS-87-RL (1-20 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.6
No. 40 Sieve	86.5
No. 60 Sieve	80.1
No. 200 Sieve	37.4
Clay Content (%)	14.3
Total Volume Change (%)	6.7
Swell (%)	4.7
Shrinkage (%)	2.0
Maximum Dry Density (pcf)	101.6
Opt. Moisture Content (%)	18.7
Nat. Moisture Content (%)	19.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.53
Soil Support Value	---

Station: **1211+00, CL**
Sample No.: **SS-88-CL (1-6 ft)**
Soil Desc.: **Red brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**

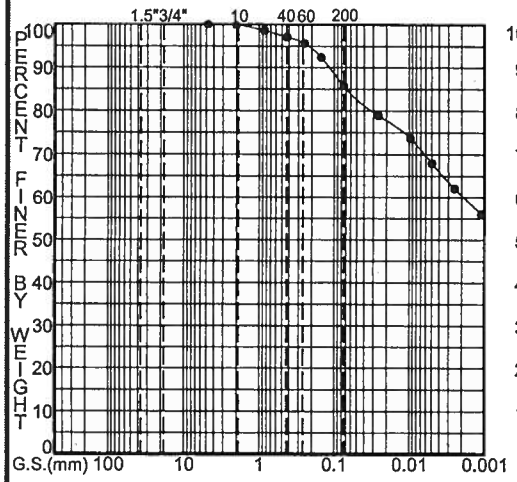


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.9
No. 40 Sieve	96.1
No. 60 Sieve	94.1
No. 200 Sieve	69.5
Clay Content (%)	32.7
Total Volume Change (%)	14.5
Swell (%)	10.7
Shrinkage (%)	3.8
Maximum Dry Density (pcf)	92.6
Opt. Moisture Content (%)	24.4
Nat. Moisture Content (%)	25.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	1.58
Soil Support Value	---

WILLMER ENGINEERING INC. WE

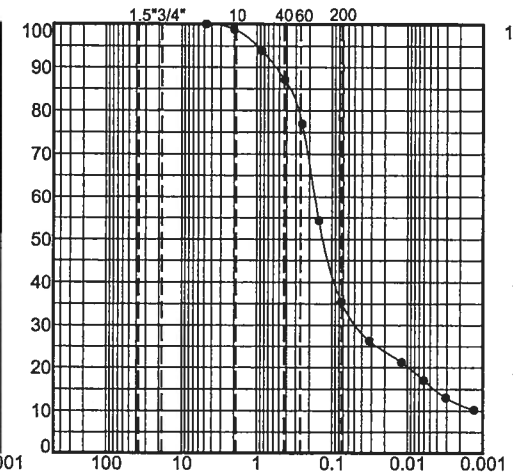
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1217+00, 160 ft Left of CL**
Sample No.: **SS-90-LL (1-5 ft)**
Soil Desc.: **Red fat CLAY (micaceous)**
GDOT Soil Class: **III C2**



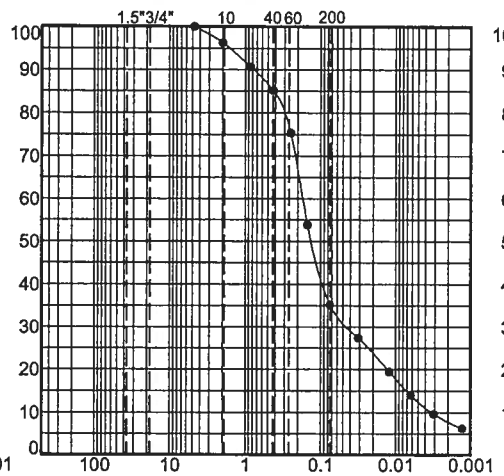
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.8
No. 40 Sieve	97.1
No. 60 Sieve	95.7
No. 200 Sieve	85.7
Clay Content (%)	60.5
Total Volume Change (%)	21.3
Swell (%)	11.0
Shrinkage (%)	10.3
Maximum Dry Density (pcf)	81.5
Opt. Moisture Content (%)	33.4
Nat. Moisture Content (%)	41.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	.25
Soil Support Value	---

Station: **1220+00, CL**
Sample No.: **SS-91-CL (1-7 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



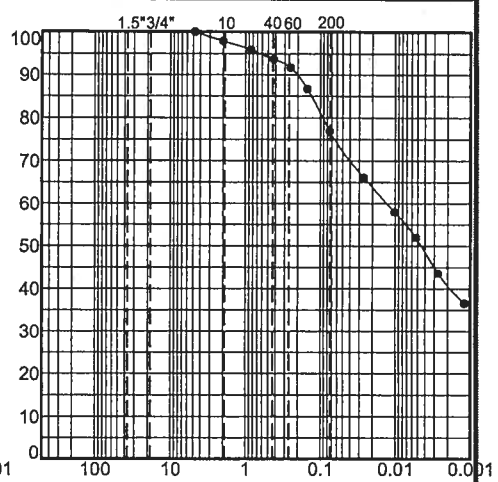
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.8
No. 40 Sieve	87.1
No. 60 Sieve	77.0
No. 200 Sieve	35.5
Clay Content (%)	11.7
Total Volume Change (%)	14.0
Swell (%)	12.3
Shrinkage (%)	1.7
Maximum Dry Density (pcf)	104.2
Opt. Moisture Content (%)	17.4
Nat. Moisture Content (%)	19.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.77
Soil Support Value	---

Station: **1223+00, 100 ft Left of CL**
Sample No.: **SS-92-LL (1-5 ft)**
Soil Desc.: **Dark brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	96.3
No. 40 Sieve	85.1
No. 60 Sieve	75.4
No. 200 Sieve	35.3
Clay Content (%)	8.0
Total Volume Change (%)	11.5
Swell (%)	10.4
Shrinkage (%)	1.1
Maximum Dry Density (pcf)	100.7
Opt. Moisture Content (%)	19.3
Nat. Moisture Content (%)	14.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.79
Soil Support Value	---

Station: **1226+00, 140 ft Right of CL**
Sample No.: **SS-93-RL (1-13 ft)**
Soil Desc.: **Red-brown fat CLAY with medium to fine sand (micaceous)**
GDOT Soil Class: **III C2**

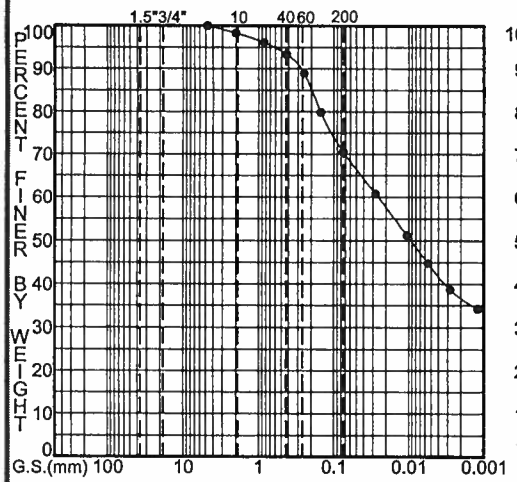


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	97.9
No. 40 Sieve	93.7
No. 60 Sieve	91.7
No. 200 Sieve	77.0
Clay Content (%)	41.0
Total Volume Change (%)	15.4
Swell (%)	11.7
Shrinkage (%)	3.7
Maximum Dry Density (pcf)	88.7
Opt. Moisture Content (%)	27.3
Nat. Moisture Content (%)	32.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	.66
Soil Support Value	2.9

WILLMER ENGINEERING INC. WE

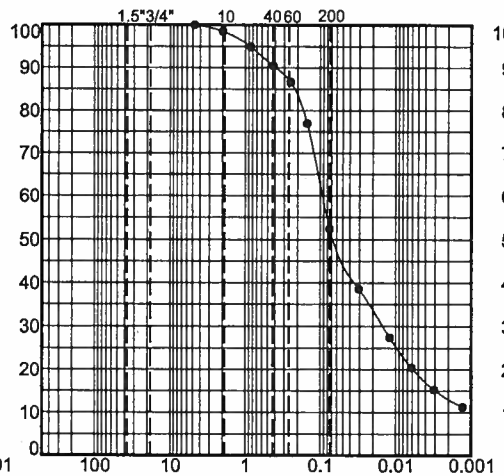
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1229+00, CL**
Sample No.: **SS-94-CL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy fat CLAY (micaceous)**
GDOT Soil Class: **III C2**



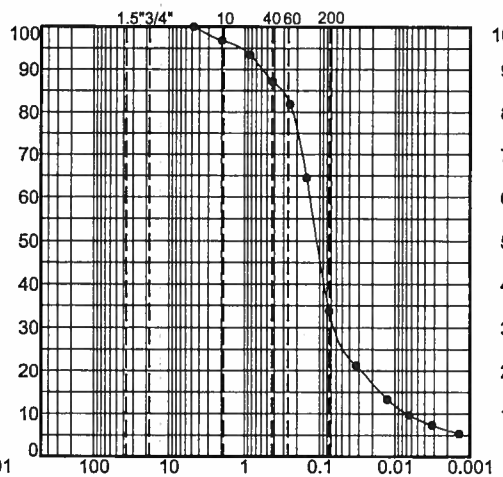
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.3
% Finer No. 40 Sieve	93.4
% Finer No. 60 Sieve	89.0
No. 200 Sieve	70.6
Clay Content (%)	37.0
Total Volume Change (%)	17.0
Swell (%)	10.3
Shrinkage (%)	6.7
Maximum Dry Density (pcf)	88.6
Opt. Moisture Content (%)	27.4
Nat. Moisture Content (%)	20.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	1.45
Soil Support Value	---

Station: **1232+00, 140 ft Left of CL**
Sample No.: **SS-95-LL (8-24 ft)**
Soil Desc.: **Red-brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



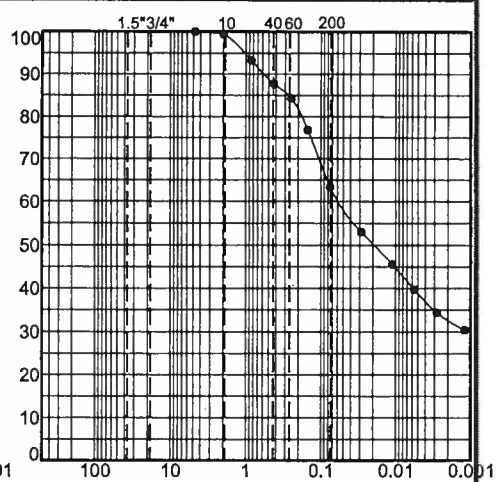
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.5
% Finer No. 40 Sieve	90.5
% Finer No. 60 Sieve	86.7
No. 200 Sieve	52.5
Clay Content (%)	13.3
Total Volume Change (%)	19.5
Swell (%)	16.9
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	99.5
Opt. Moisture Content (%)	20.0
Nat. Moisture Content (%)	25.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.67
Soil Support Value	---

Station: **1235+00, 140 ft Right of CL**
Sample No.: **SS-96-RL (1-23 ft)**
Soil Desc.: **Red and brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	96.8
% Finer No. 40 Sieve	87.2
% Finer No. 60 Sieve	81.9
No. 200 Sieve	33.8
Clay Content (%)	6.3
Total Volume Change (%)	11.6
Swell (%)	8.2
Shrinkage (%)	3.4
Maximum Dry Density (pcf)	100.9
Opt. Moisture Content (%)	19.2
Nat. Moisture Content (%)	15.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.97
Soil Support Value	---

Station: **1238+00, CL**
Sample No.: **SS-97-CL (1-6 ft)**
Soil Desc.: **Red brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B4**

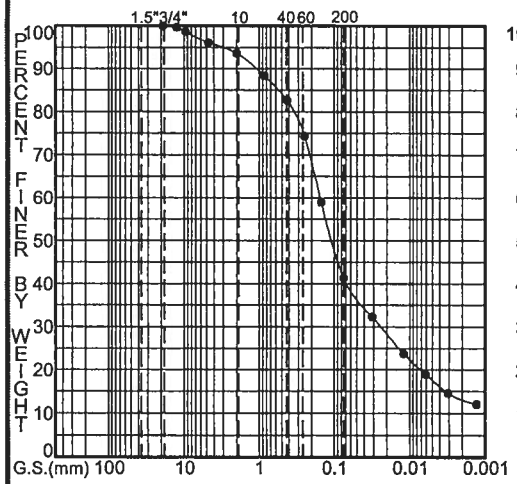


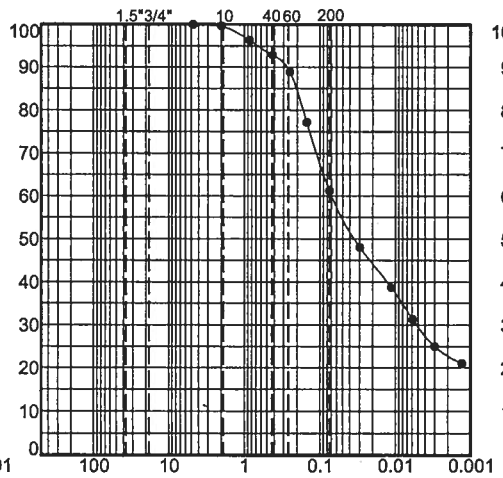
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.5
% Finer No. 40 Sieve	87.7
% Finer No. 60 Sieve	84.3
No. 200 Sieve	63.4
Clay Content (%)	32.9
Total Volume Change (%)	11.9
Swell (%)	7.7
Shrinkage (%)	4.2
Maximum Dry Density (pcf)	102.1
Opt. Moisture Content (%)	18.5
Nat. Moisture Content (%)	16.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.33
Soil Support Value	---

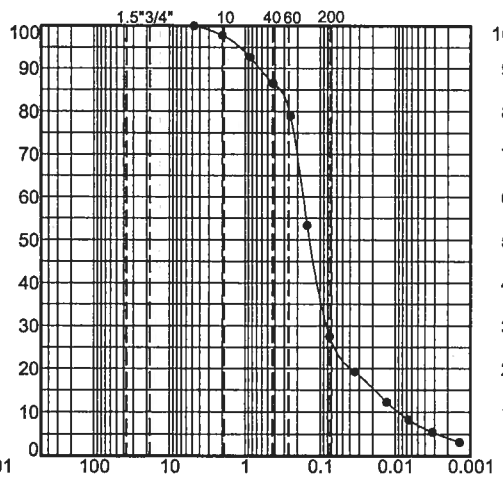
WILLMER ENGINEERING INC. | WE

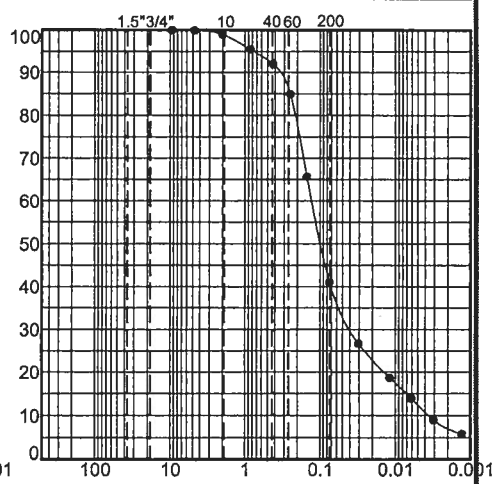
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1244+00, CL**	Station: **1247+00, CL**	Station: **1253+00, 100 ft Left of CL**	Station: **1256+00, CL**
Sample No.: **SS-99-CL (1-7 ft)**	Sample No.: **SS-100-CL (1-8 ft)**	Sample No.: **SS-102-LL (1-5 ft)**	Sample No.: **SS-103-CL (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**	Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**	Soil Desc.: **Brown silty medium to fine SAND (micaceous)**	Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**	GDOT Soil Class: **II B4**	GDOT Soil Class: **II B4**	GDOT Soil Class: **III C1**







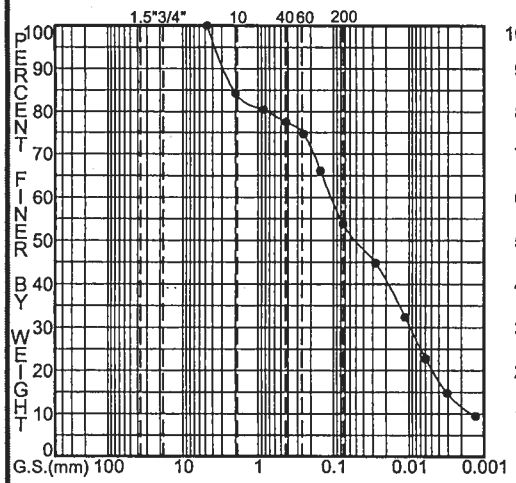


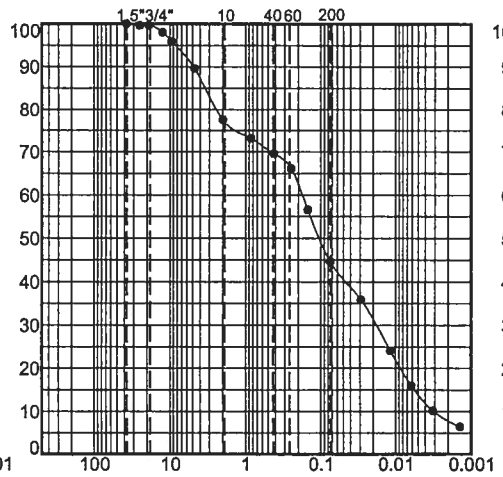
	Station 1244+00	Station 1247+00	Station 1253+00	Station 1256+00
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
3/4" Sieve	100.0	100.0	100.0	100.0
No. 10 Sieve	93.7	99.6	97.8	99.0
No. 40 Sieve	82.6	92.9	86.5	92.0
No. 60 Sieve	74.4	88.9	79.0	84.9
No. 200 Sieve	41.4	61.2	27.6	41.0
Clay Content (%)	13.3	23.1	4.2	7.4
Total Volume Change (%)	13.1	13.9	19.9	26.0
Swell (%)	12.0	10.9	18.0	24.3
Shrinkage (%)	1.1	3.0	1.9	1.7
Maximum Dry Density (pcf)	101.9	97.8	97.0	101.5
Opt. Moisture Content (%)	18.5	21.0	21.4	15.8
Nat. Moisture Content (%)	25.0	25.3	16.6	9.8
Liquid Limit (%)	---	---	---	---
Plasticity Index (%)	---	---	---	---
Erosion Index	5.04	2.6	6.74	5.09
Soil Support Value	---	---	---	---

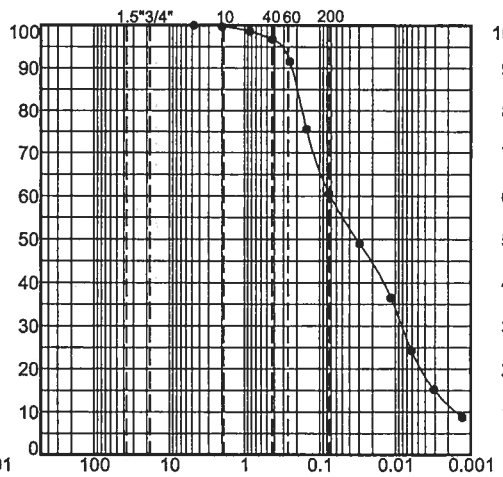
WILLMER ENGINEERING INC. WE

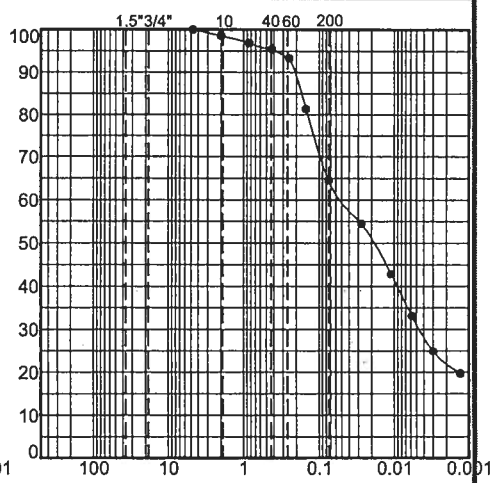
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1259+00, 165 ft Right of CL**	Station: **1262+00, 189 ft Right of CL**	Station: **1265+00, CL**	Station: **1268+00, 140 ft Right of CL**
Sample No.: **SS-104-RL (1-16 ft)**	Sample No.: **SS-105-RL (1-12 ft)**	Sample No.: **SS-106-CL (1-5 ft)**	Sample No.: **SS-107-RL (1-7 ft)**
Soil Desc.: **Black and red-brown coarse to fine sandy SILT (slightly micaceous)**	Soil Desc.: **Brown silty coarse to fine SAND (slightly micaceous)**	Soil Desc.: **Brown fine sandy SILT (micaceous)**	Soil Desc.: **Red-brown fine sandy elastic SILT (micaceous) (MH)**
GDOT Soil Class: **III C1**	GDOT Soil Class: **II B4**	GDOT Soil Class: **III C3**	GDOT Soil Class: **III C1**







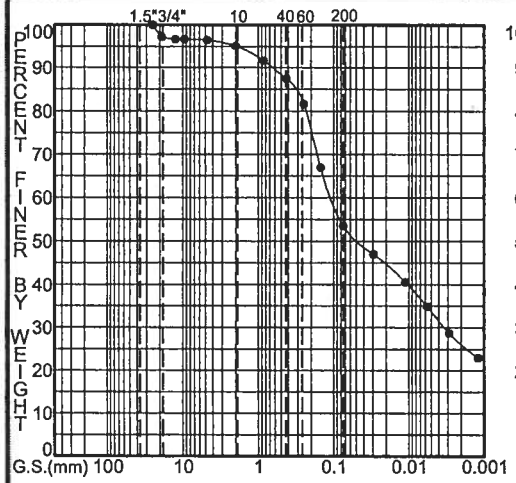


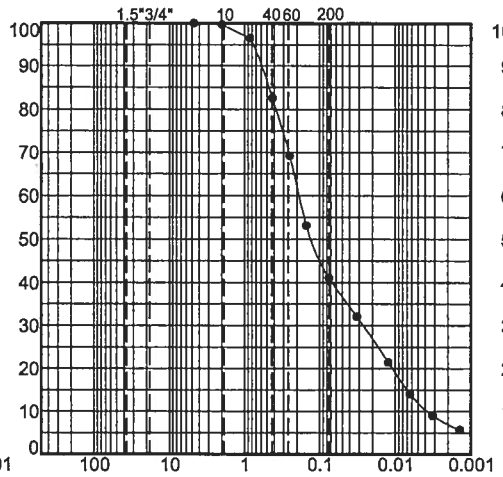
	Station 1259+00	Station 1262+00	Station 1265+00	Station 1268+00
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
% Finer: 3/4" Sieve	100.0	99.7	100.0	100.0
% Finer: No. 10 Sieve	84.3	77.6	99.7	98.6
% Finer: No. 40 Sieve	77.5	69.6	96.8	95.4
% Finer: No. 60 Sieve	74.7	66.2	91.6	93.4
% Finer: No. 200 Sieve	53.9	44.6	60.7	64.5
Clay Content (%)	12.1	8.1	12.0	22.4
Total Volume Change (%)	26.7	19.9	36.2	28.3
Swell (%)	25.1	19.2	34.2	26.8
Shrinkage (%)	1.6	0.7	2.0	1.5
Maximum Dry Density (pcf)	96.4	95.7	93.9	96.4
Opt. Moisture Content (%)	21.6	22.1	23.5	21.6
Nat. Moisture Content (%)	26.1	21.8	22.1	24.7
Liquid Limit (%)	---	---	---	61
Plasticity Index (%)	---	---	---	22
Erosion Index	3.5	4.64	2.67	2.19
Soil Support Value	2.5	---	---	---

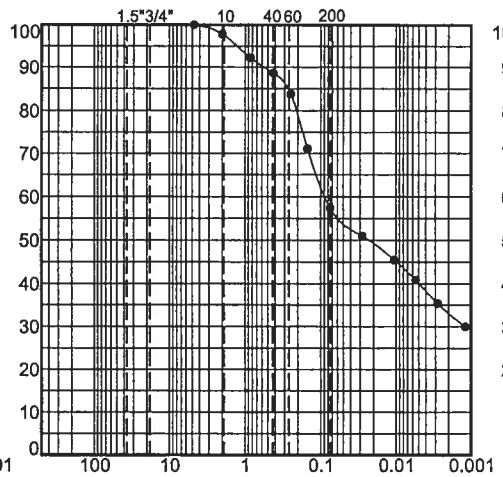
WILLMER ENGINEERING INC. | WE

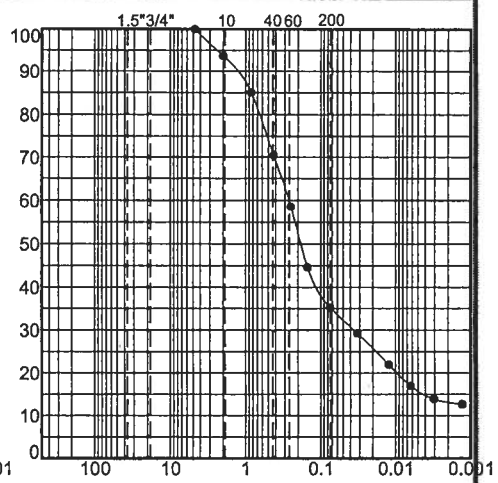
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1274+00, CL**	Station: **1274+00, 170 ft Right of CL**	Station: **1277+00, 140 ft Right of CL**	Station: **1280+00, 175 ft Right of CL**
Sample No.: **SS-109-CL (1-8 ft)**	Sample No.: **SS-109-RL (1-15 ft)**	Sample No.: **SS-110-RL (1-5 ft)**	Sample No.: **SS-111-RL (9-15 ft)**
Soil Desc.: **Red brown medium to fine sandy SILT (micaceous)**	Soil Desc.: **Light Yellow- brown silty medium to fine SAND (micaceous)**	Soil Desc.: **Red-brown medium to fine sandy lean CLAY (slightly micaceous)**	Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**	GDOT Soil Class: **II B4**	GDOT Soil Class: **II B4**	GDOT Soil Class: **II B3**







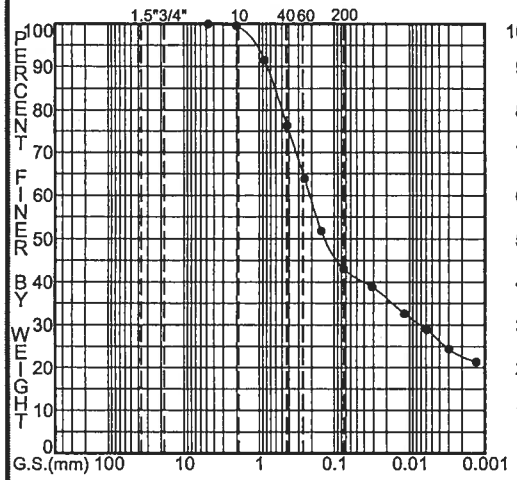


	Station 1274+00, CL	Station 1274+00, 170 ft Right of CL	Station 1277+00, 140 ft Right of CL	Station 1280+00, 175 ft Right of CL
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
% Finer: 3/4" Sieve	97.2	100.0	100.0	100.0
% Finer: No. 10 Sieve	95.1	99.7	97.8	93.7
% Finer: No. 40 Sieve	87.4	82.6	88.7	70.5
% Finer: No. 60 Sieve	81.6	69.3	83.8	58.6
% Finer: No. 200 Sieve	53.5	41.1	57.4	35.3
Clay Content (%)	26.3	7.1	33.3	13.3
Total Volume Change (%)	15.0	23.2	18.9	11.3
Swell (%)	9.3	21.6	15.1	9.8
Shrinkage (%)	5.7	1.6	3.8	1.5
Maximum Dry Density (pcf)	105.3	108.2	101.9	109.4
Opt. Moisture Content (%)	16.8	15.6	18.5	15.0
Nat. Moisture Content (%)	18.4	14.3	20.1	11.2
Liquid Limit (%)	---	---	---	---
Plasticity Index (%)	---	---	---	---
Erosion Index	3.55	5.08	3.07	5.79
Soil Support Value	---	3.2	---	4.5

WILLMER ENGINEERING INC. WE

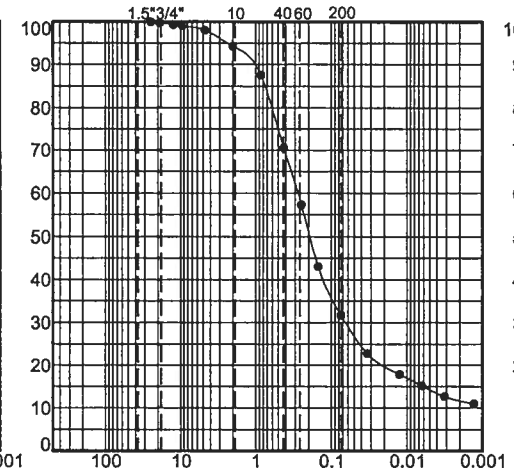
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1283+00, CL**
Sample No.: **SS-112-CL (1-8 ft)**
Soil Desc.: **Brown clayey medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



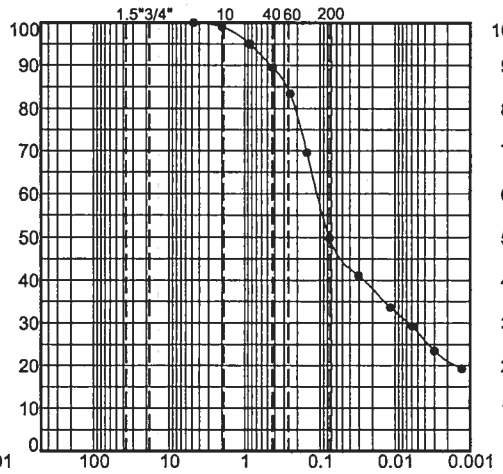
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.6
No. 40 Sieve	76.3
No. 60 Sieve	63.8
No. 200 Sieve	43.0
Clay Content (%)	22.9
Total Volume Change (%)	5.7
Swell (%)	3.1
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	107.4
Opt. Moisture Content (%)	16.0
Nat. Moisture Content (%)	18.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.84
Soil Support Value	---

Station: **1286+00, 155 ft Right of CL**
Sample No.: **SS-113-RL (1-6 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A2**



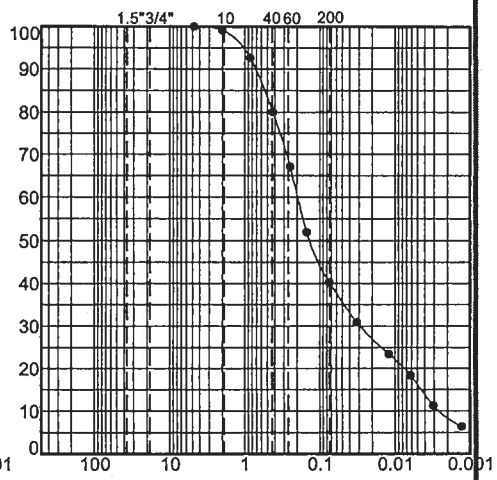
% Finer	
1.5" Sieve	100.0
3/4" Sieve	99.8
No. 10 Sieve	94.3
No. 40 Sieve	70.6
No. 60 Sieve	57.3
No. 200 Sieve	31.7
Clay Content (%)	11.8
Total Volume Change (%)	4.3
Swell (%)	4.1
Shrinkage (%)	0.2
Maximum Dry Density (pcf)	116.2
Opt. Moisture Content (%)	12.3
Nat. Moisture Content (%)	8.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.23
Soil Support Value	---

Station: **1292+00, CL**
Sample No.: **SS-115-CL (1-8 ft)**
Soil Desc.: **Red brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.0
No. 40 Sieve	89.5
No. 60 Sieve	83.5
No. 200 Sieve	49.8
Clay Content (%)	21.5
Total Volume Change (%)	21.8
Swell (%)	19.2
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	101.8
Opt. Moisture Content (%)	18.6
Nat. Moisture Content (%)	22.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4
Soil Support Value	---

Station: **1295+00, CL**
Sample No.: **SS-116-CL (1-16 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**

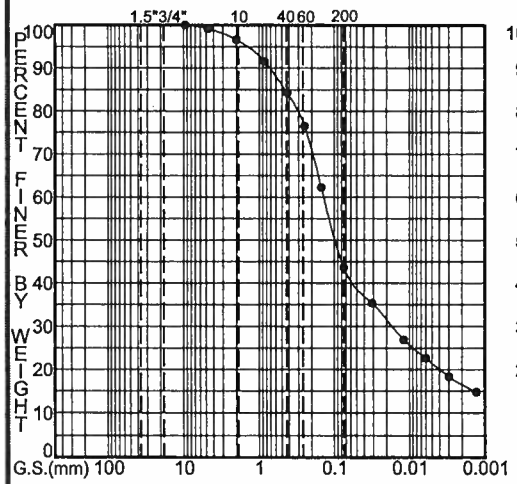


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.1
No. 40 Sieve	80.1
No. 60 Sieve	67.1
No. 200 Sieve	40.3
Clay Content (%)	8.8
Total Volume Change (%)	16.6
Swell (%)	14.3
Shrinkage (%)	2.3
Maximum Dry Density (pcf)	109.0
Opt. Moisture Content (%)	15.2
Nat. Moisture Content (%)	17.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.17
Soil Support Value	---

WILLMER ENGINEERING INC. WE

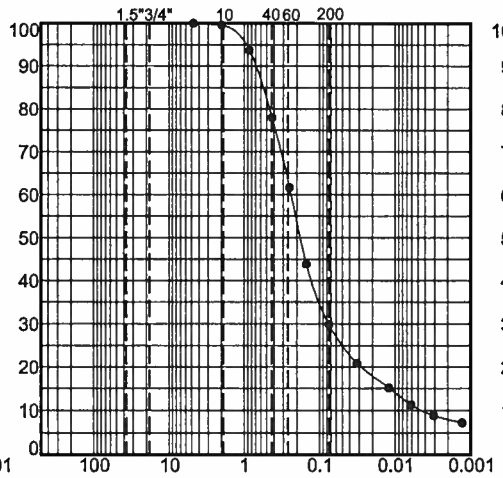
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1298+00, CL**
Sample No.: **SS-117-CL (6-17 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



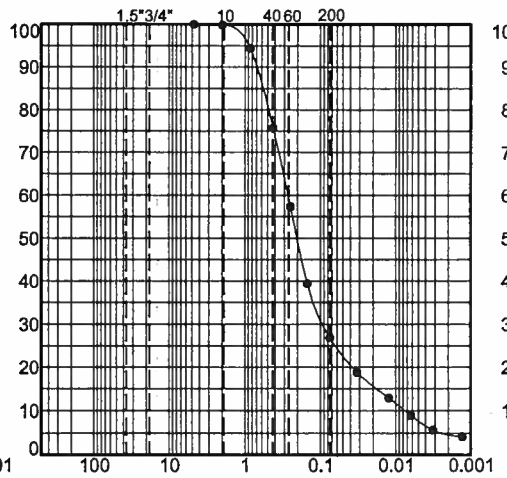
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	96.6
% Finer No. 40 Sieve	84.2
% Finer No. 60 Sieve	76.5
% Finer No. 200 Sieve	43.7
Clay Content (%)	16.7
Total Volume Change (%)	17.8
Swell (%)	14.6
Shrinkage (%)	3.2
Maximum Dry Density (pcf)	103.5
Opt. Moisture Content (%)	17.7
Nat. Moisture Content (%)	25.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.76
Soil Support Value	---

Station: **1301+00, CL**
Sample No.: **SS-118-CL (17-24 ft)**
Soil Desc.: **Gray silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



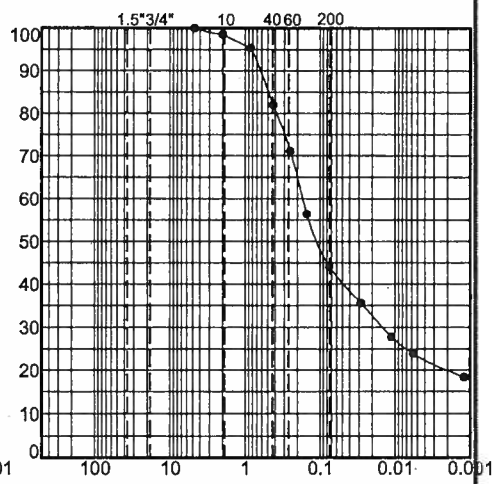
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.6
% Finer No. 40 Sieve	78.0
% Finer No. 60 Sieve	61.7
% Finer No. 200 Sieve	29.9
Clay Content (%)	8.1
Total Volume Change (%)	4.3
Swell (%)	2.8
Shrinkage (%)	1.5
Maximum Dry Density (pcf)	115.4
Opt. Moisture Content (%)	11.5
Nat. Moisture Content (%)	12.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.45
Soil Support Value	5.2

Station: **1304+00, CL**
Sample No.: **SS-119-CL (1-29 ft)**
Soil Desc.: **Gray silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	75.8
% Finer No. 60 Sieve	57.4
% Finer No. 200 Sieve	26.9
Clay Content (%)	4.9
Total Volume Change (%)	13.8
Swell (%)	12.3
Shrinkage (%)	1.5
Maximum Dry Density (pcf)	109.0
Opt. Moisture Content (%)	15.2
Nat. Moisture Content (%)	23.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.82
Soil Support Value	---

Station: **1307+00, CL**
Sample No.: **SS-120-CL (7-14 ft)**
Soil Desc.: **Red brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**

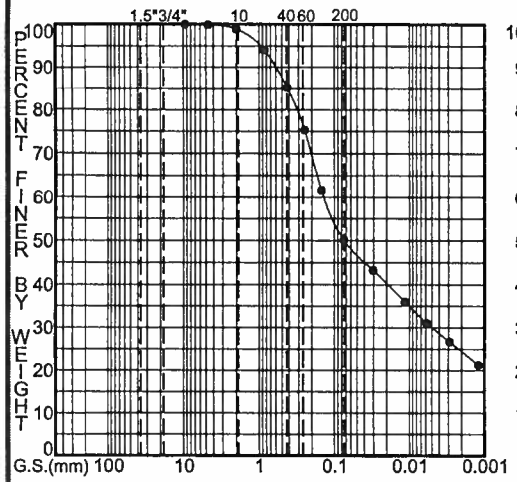


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.5
% Finer No. 40 Sieve	82.0
% Finer No. 60 Sieve	71.2
% Finer No. 200 Sieve	44.2
Clay Content (%)	20.2
Total Volume Change (%)	8.9
Swell (%)	6.0
Shrinkage (%)	2.9
Maximum Dry Density (pcf)	106.0
Opt. Moisture Content (%)	16.6
Nat. Moisture Content (%)	16.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.69
Soil Support Value	---

WILLMER ENGINEERING INC. WE

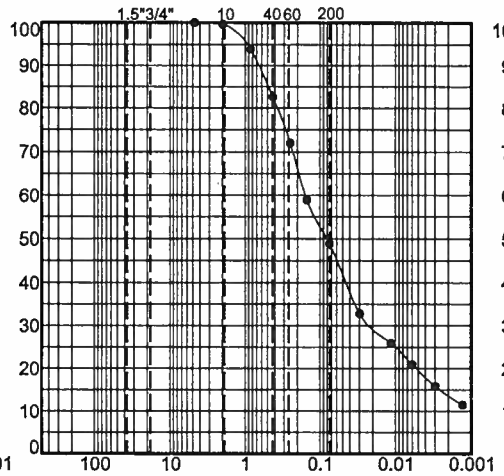
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1310+00, CL**
Sample No.: **SS-121-CL (1-15 ft)**
Soil Desc.: **Red brown medium to fine sandy lean CLAY (micaceous) (CL)**
GDOT Soil Class: **II B4**



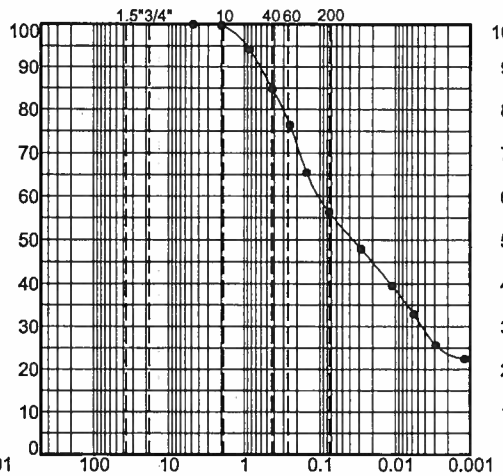
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.9
No. 40 Sieve	85.2
No. 60 Sieve	75.4
No. 200 Sieve	50.2
Clay Content (%)	24.4
Total Volume Change (%)	8.5
Swell (%)	5.6
Shrinkage (%)	2.9
Maximum Dry Density (pcf)	104.3
Opt. Moisture Content (%)	17.4
Nat. Moisture Content (%)	20.1
Liquid Limit (%)	44
Plasticity Index (%)	19
Erosion Index	3.96
Soil Support Value	3.9

Station: **1313+00, CL**
Sample No.: **SS-122-CL (1-7 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



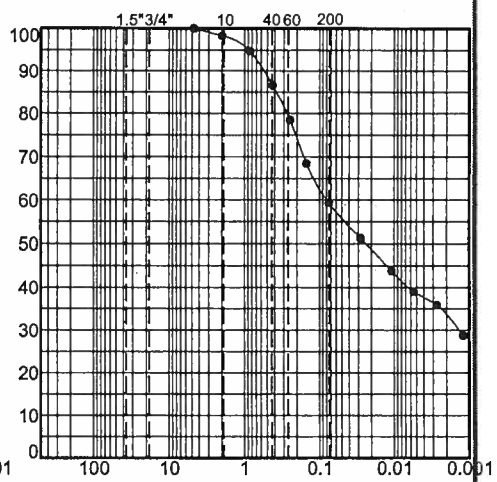
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.7
No. 40 Sieve	82.5
No. 60 Sieve	72.0
No. 200 Sieve	49.0
Clay Content (%)	13.8
Total Volume Change (%)	23.7
Swell (%)	21.1
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	107.8
Opt. Moisture Content (%)	15.7
Nat. Moisture Content (%)	18.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.1
Soil Support Value	---

Station: **1319+00, CL**
Sample No.: **SS-124-CL (1-5 ft)**
Soil Desc.: **Red and brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.7
No. 40 Sieve	84.8
No. 60 Sieve	76.4
No. 200 Sieve	56.3
Clay Content (%)	24.4
Total Volume Change (%)	22.3
Swell (%)	19.5
Shrinkage (%)	2.8
Maximum Dry Density (pcf)	103.3
Opt. Moisture Content (%)	17.9
Nat. Moisture Content (%)	19.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.2
Soil Support Value	---

Station: **1322+00, 125 ft Right of CL**
Sample No.: **SS-125-RL (1-5 ft)**
Soil Desc.: **Red-brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.3
No. 40 Sieve	86.6
No. 60 Sieve	78.5
No. 200 Sieve	59.4
Clay Content (%)	33.3
Total Volume Change (%)	12.7
Swell (%)	7.9
Shrinkage (%)	4.8
Maximum Dry Density (pcf)	98.4
Opt. Moisture Content (%)	20.6
Nat. Moisture Content (%)	23.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.82
Soil Support Value	---

WILLMER ENGINEERING INC. WE

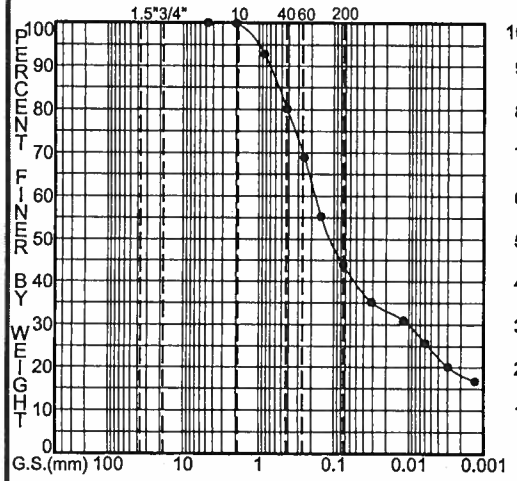
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1325+00, 120 ft Left of CL**

Sample No.: **SS-126-LL (1-10 ft)**

Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**

GDOT Soil Class: **II B3**



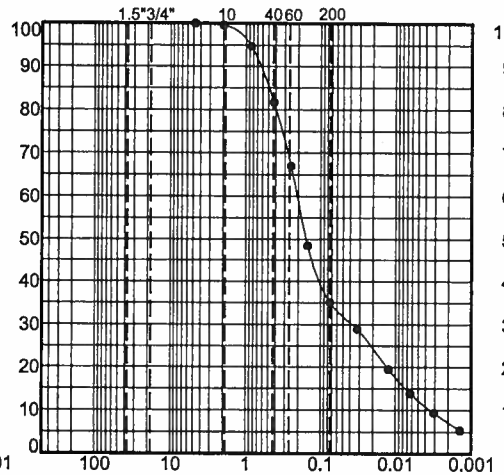
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	80.2
% Finer No. 60 Sieve	69.0
% Finer No. 200 Sieve	43.9
Clay Content (%)	18.6
Total Volume Change (%)	11.6
Swell (%)	9.0
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	109.0
Opt. Moisture Content (%)	15.2
Nat. Moisture Content (%)	14.3
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.73
Soil Support Value	---

Station: **1328+00, CL**

Sample No.: **SS-127-CL (1-5 ft)**

Soil Desc.: **Brown silty medium to fine SAND (micaceous)**

GDOT Soil Class: **II B3**



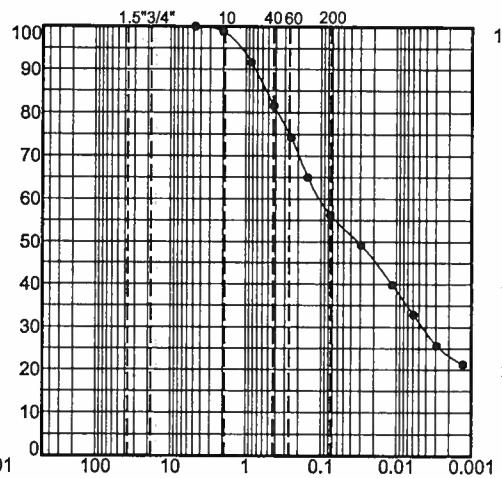
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.6
% Finer No. 40 Sieve	81.7
% Finer No. 60 Sieve	66.9
% Finer No. 200 Sieve	35.1
Clay Content (%)	7.2
Total Volume Change (%)	19.1
Swell (%)	18.0
Shrinkage (%)	1.1
Maximum Dry Density (pcf)	107.2
Opt. Moisture Content (%)	16.0
Nat. Moisture Content (%)	21.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.82
Soil Support Value	---

Station: **1331+00, 140 ft Left of CL**

Sample No.: **SS-128-LL (1-13 ft)**

Soil Desc.: **Red and brown medium to fine sandy SILT (micaceous)**

GDOT Soil Class: **II B4**



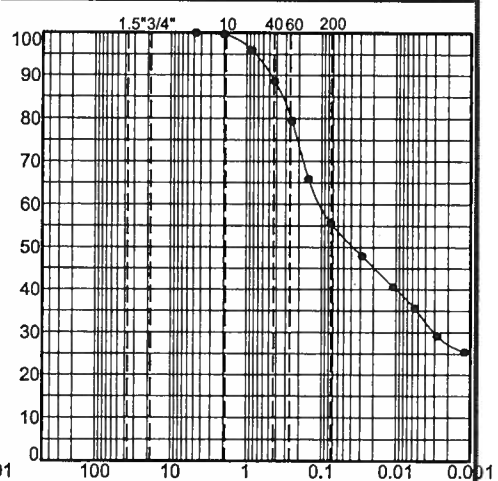
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.8
% Finer No. 40 Sieve	81.6
% Finer No. 60 Sieve	74.3
% Finer No. 200 Sieve	56.3
Clay Content (%)	23.7
Total Volume Change (%)	24.8
Swell (%)	22.8
Shrinkage (%)	2.0
Maximum Dry Density (pcf)	100.0
Opt. Moisture Content (%)	19.8
Nat. Moisture Content (%)	25.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.2
Soil Support Value	---

Station: **1337+00, CL**

Sample No.: **SS-130-CL (1-5 ft)**

Soil Desc.: **Red -brown medium to fine sandy SILT (slightly micaceous)**

GDOT Soil Class: **II B4**

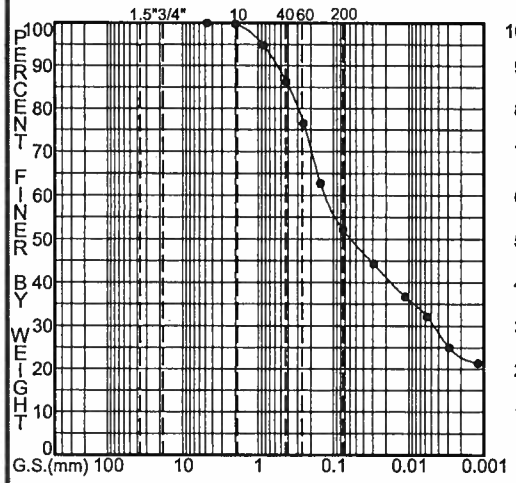


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.6
% Finer No. 40 Sieve	88.6
% Finer No. 60 Sieve	79.5
% Finer No. 200 Sieve	55.7
Clay Content (%)	27.7
Total Volume Change (%)	11.0
Swell (%)	9.8
Shrinkage (%)	1.2
Maximum Dry Density (pcf)	103.5
Opt. Moisture Content (%)	17.7
Nat. Moisture Content (%)	21.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.28
Soil Support Value	3.7

WILLMER ENGINEERING INC. | WE

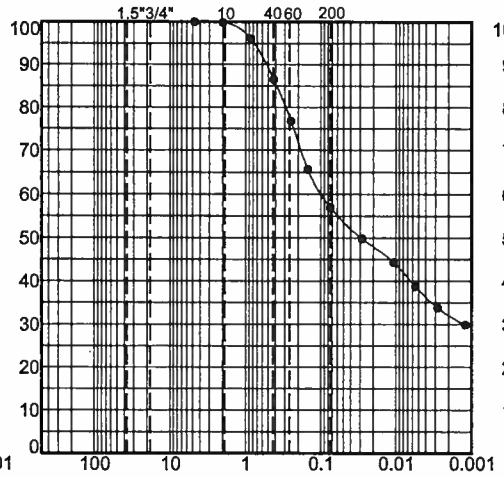
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1340+00, 80 ft Left of CL**
Sample No.: **SS-131-LL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



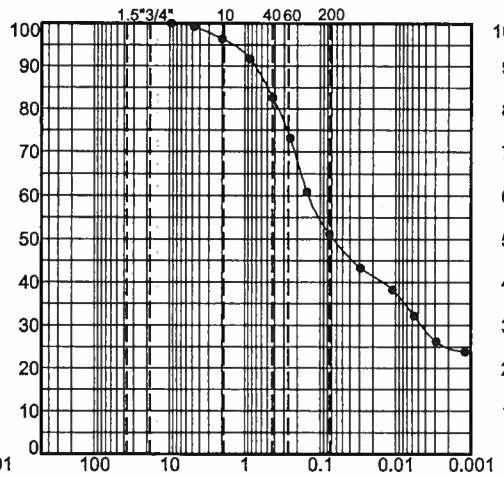
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	86.3
% Finer No. 60 Sieve	76.5
% Finer No. 200 Sieve	52.3
Clay Content (%)	23.5
Total Volume Change (%)	11.1
Swell (%)	8.0
Shrinkage (%)	3.1
Maximum Dry Density (pcf)	104.5
Opt. Moisture Content (%)	17.3
Nat. Moisture Content (%)	18.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.69
Soil Support Value	---

Station: **1352+00, 80 ft Left of CL**
Sample No.: **SS-135-LL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B3**



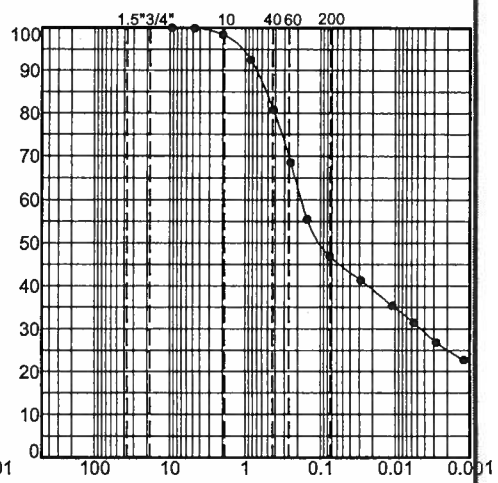
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.9
% Finer No. 40 Sieve	86.6
% Finer No. 60 Sieve	76.8
% Finer No. 200 Sieve	57.1
Clay Content (%)	32.3
Total Volume Change (%)	17.1
Swell (%)	11.4
Shrinkage (%)	5.7
Maximum Dry Density (pcf)	107.2
Opt. Moisture Content (%)	16.0
Nat. Moisture Content (%)	19.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.11
Soil Support Value	---

Station: **1358+00, 80 ft Right of CL**
Sample No.: **SS-137-RL (1-5 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (slightly micaceous)**
GDOT Soil Class: **II B3**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	96.4
% Finer No. 40 Sieve	82.6
% Finer No. 60 Sieve	73.1
% Finer No. 200 Sieve	51.2
Clay Content (%)	25.3
Total Volume Change (%)	9.3
Swell (%)	6.8
Shrinkage (%)	2.5
Maximum Dry Density (pcf)	110.7
Opt. Moisture Content (%)	14.5
Nat. Moisture Content (%)	22.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.83
Soil Support Value	---

Station: **1364+00, 80 ft Left of CL**
Sample No.: **SS-139-LL (1-5 ft)**
Soil Desc.: **Brown and gray clayey medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B3**

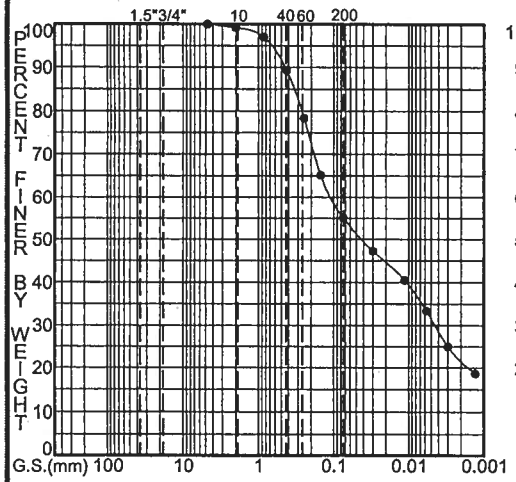


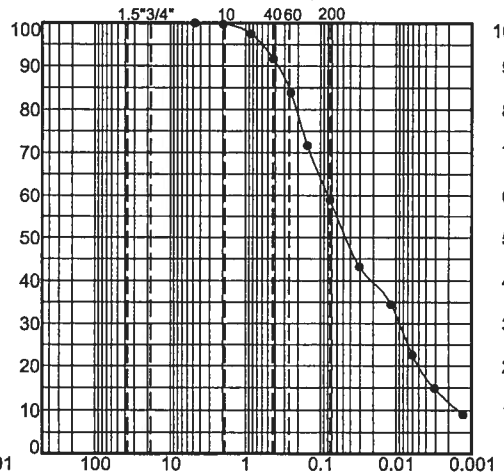
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.4
% Finer No. 40 Sieve	80.8
% Finer No. 60 Sieve	68.5
% Finer No. 200 Sieve	46.9
Clay Content (%)	25.3
Total Volume Change (%)	7.7
Swell (%)	5.1
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	114.0
Opt. Moisture Content (%)	13.2
Nat. Moisture Content (%)	22.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.36
Soil Support Value	---

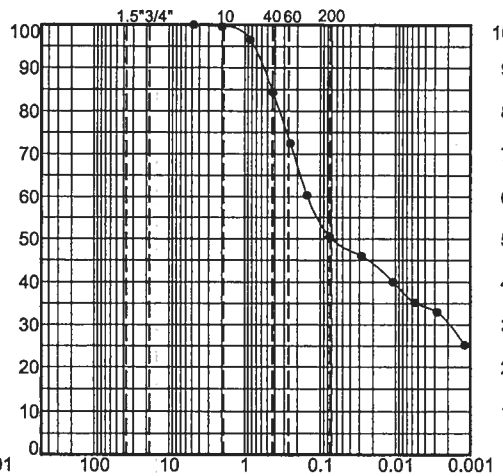
WILLMER ENGINEERING INC. WE

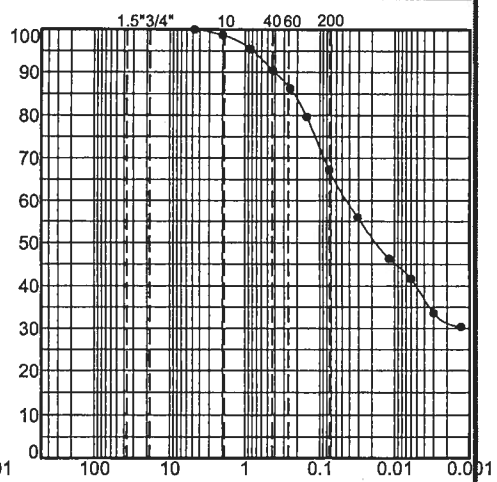
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **1367+00, 80 ft Right of CL**	Station: **1376+00, 80 ft Right of CL**	Station: **17+00, 36 ft Left of CL (Herrington Rd**	Station: **41+00, 80 ft Right of CL (Lawrenceville Suwanee Rd)**
Sample No.: **SS-140-RL (1-5 ft)**	Sample No.: **SS-143-RL (1-5 ft)**	Sample No.: **SS-149-SR (1-5 ft)**	Sample No.: **SS-153-SR (1-7 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**	Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**	Soil Desc.: **Brown medium to fine sandy lean CLAY (micaceous)**	Soil Desc.: **Red medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **III C1**	GDOT Soil Class: **III C3**	GDOT Soil Class: **II B3**	GDOT Soil Class: **II B4**







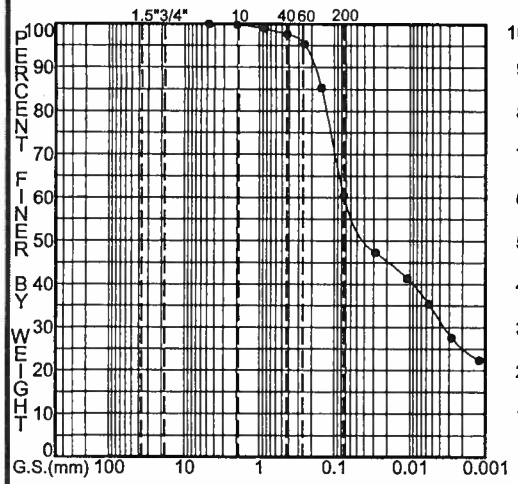


	Station 1367+00	Station 1376+00	Station 17+00	Station 41+00
% Finer: 1.5" Sieve	100.0	100.0	100.0	100.0
% Finer: 3/4" Sieve	100.0	100.0	100.0	100.0
% Finer: No. 10 Sieve	99.2	99.7	99.6	98.7
% Finer: No. 40 Sieve	89.3	91.6	84.3	90.4
% Finer: No. 60 Sieve	78.4	83.9	72.5	86.3
No. 200 Sieve	55.2	58.9	50.6	67.3
Clay Content (%)	21.9	12.0	29.9	32.0
Total Volume Change (%)	28.9	38.4	16.7	12.5
Swell (%)	25.9	37.1	10.0	2.6
Shrinkage (%)	3.0	1.3	6.7	9.9
Maximum Dry Density (pcf)	110.1	95.8	105.7	94.3
Opt. Moisture Content (%)	14.7	22.0	16.6	23.2
Nat. Moisture Content (%)	23.1	38.0	15.9	34.8
Liquid Limit (%)	---	---	---	---
Plasticity Index (%)	---	---	---	---
Erosion Index	3.34	2.88	3.91	1.85
Soil Support Value	---	---	---	3.9

WILLMER ENGINEERING INC.

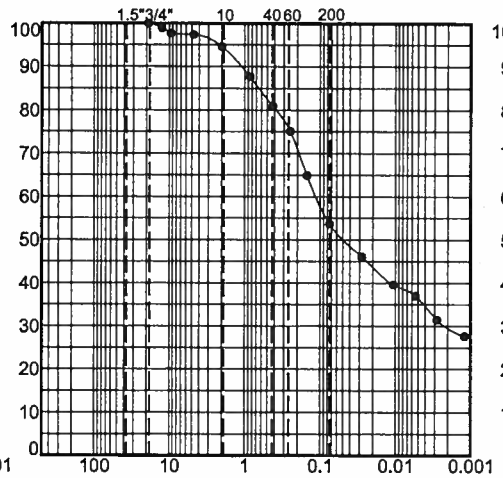
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **47+00, 75 ft Right of CL (Lawrenceville Suwanee Rd)**
Sample No.: **SS-155-SR (1-10 ft)**
Soil Desc.: **Brown fine sandy SILT (slightly micaceous)**
GDOT Soil Class: **III C2**



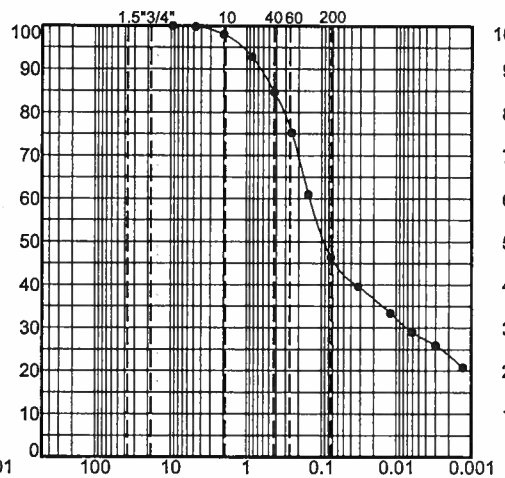
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	99.8
	No. 40 Sieve	97.7
	No. 60 Sieve	95.3
	No. 200 Sieve	60.4
Clay Content (%)		25.5
Total Volume Change (%)		33.6
Swell (%)		27.9
Shrinkage (%)		5.7
Maximum Dry Density (pcf)		102.7
Opt. Moisture Content (%)		18.2
Nat. Moisture Content (%)		23.3
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		2.7
Soil Support Value		1.0

Station: **58+00, CL (Lawrenceville Suwanee Rd)**
Sample No.: **SS-157-SR (1-5 ft)**
Soil Desc.: **Red-brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B3**



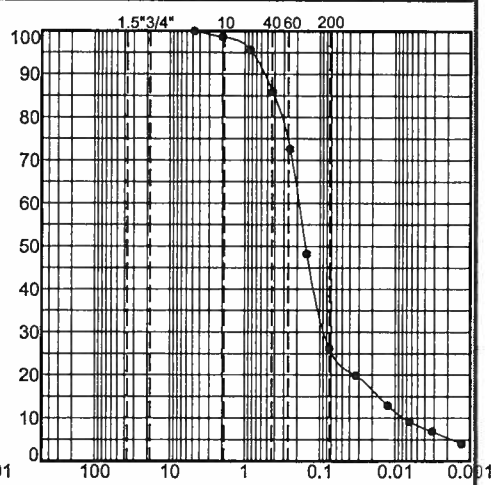
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	94.6
	No. 40 Sieve	80.9
	No. 60 Sieve	75.1
	No. 200 Sieve	53.7
Clay Content (%)		30.0
Total Volume Change (%)		12.8
Swell (%)		9.4
Shrinkage (%)		3.4
Maximum Dry Density (pcf)		108.8
Opt. Moisture Content (%)		15.3
Nat. Moisture Content (%)		10.6
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		3.53
Soil Support Value		---

Station: **51+00, 30 ft Right of CL (SR 120/ Duluth Hwy)**
Sample No.: **SS-159-SR ((1-5 ft)**
Soil Desc.: **Red clayey medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	98.0
	No. 40 Sieve	84.7
	No. 60 Sieve	75.3
	No. 200 Sieve	46.4
Clay Content (%)		23.5
Total Volume Change (%)		12.3
Swell (%)		6.1
Shrinkage (%)		6.2
Maximum Dry Density (pcf)		109.7
Opt. Moisture Content (%)		15.0
Nat. Moisture Content (%)		16.5
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		4.41
Soil Support Value		---

Station: **58+00, 60 ft Right of CL (SR 120/ Duluth Hwy)**
Sample No.: **SS-161-SR ((1-5 ft)**
Soil Desc.: **Red-brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A3**

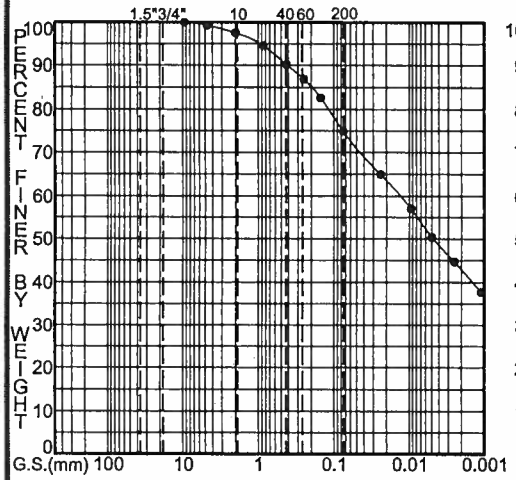


% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	98.6
	No. 40 Sieve	85.9
	No. 60 Sieve	72.7
	No. 200 Sieve	26.3
Clay Content (%)		5.4
Total Volume Change (%)		14.2
Swell (%)		12.2
Shrinkage (%)		2.0
Maximum Dry Density (pcf)		101.4
Opt. Moisture Content (%)		18.8
Nat. Moisture Content (%)		18.2
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		6.89
Soil Support Value		---

WILLMER ENGINEERING INC. | WE

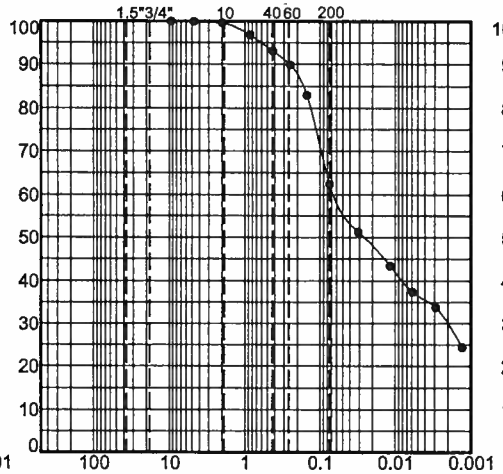
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **69+00, 50 ft Right of CL (SR 120/ Duluth Hwy)**
Sample No.: **SS-163-SR ((1-6 ft)**
Soil Desc.: **Red medium to fine sandy fat CLAY**
GDOT Soil Class: **II B4**



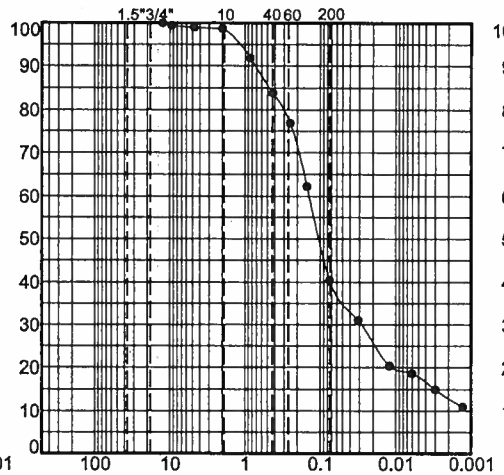
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	97.5
% Finer No. 40 Sieve	90.2
% Finer No. 60 Sieve	86.9
% Finer No. 200 Sieve	74.9
Clay Content (%)	42.8
Total Volume Change (%)	19.4
Swell (%)	12.3
Shrinkage (%)	7.1
Maximum Dry Density (pcf)	91.7
Opt. Moisture Content (%)	25.1
Nat. Moisture Content (%)	30.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	.91
Soil Support Value	---

Station: **66+00, CL (Walther Rd)**
Sample No.: **SS-166-SR (1-5 ft)**
Soil Desc.: **Red medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



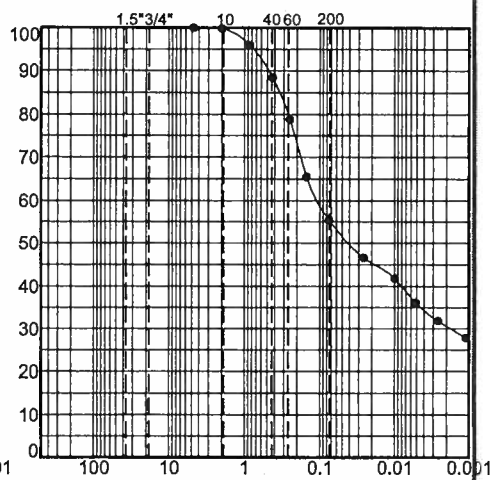
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.7
% Finer No. 40 Sieve	93.0
% Finer No. 60 Sieve	89.9
% Finer No. 200 Sieve	62.5
Clay Content (%)	29.4
Total Volume Change (%)	18.3
Swell (%)	10.8
Shrinkage (%)	7.5
Maximum Dry Density (pcf)	98.1
Opt. Moisture Content (%)	20.8
Nat. Moisture Content (%)	25.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.44
Soil Support Value	---

Station: **73+00, 20 ft Right of CL (Walther Rd)**
Sample No.: **SS-167-SR (1-5 ft)**
Soil Desc.: **Red silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.7
% Finer No. 40 Sieve	83.9
% Finer No. 60 Sieve	76.9
% Finer No. 200 Sieve	40.5
Clay Content (%)	13.1
Total Volume Change (%)	19.9
Swell (%)	13.9
Shrinkage (%)	6.0
Maximum Dry Density (pcf)	104.0
Opt. Moisture Content (%)	17.5
Nat. Moisture Content (%)	14.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.15
Soil Support Value	---

Station: **82+15, 50 ft Left of CL (Collins Hill Rd**
Sample No.: **SS-178-SR (1-5 ft)**
Soil Desc.: **Red-brown medium to fine sandy lean CLAY (slightly micaceous)**
GDOT Soil Class: **II B4**

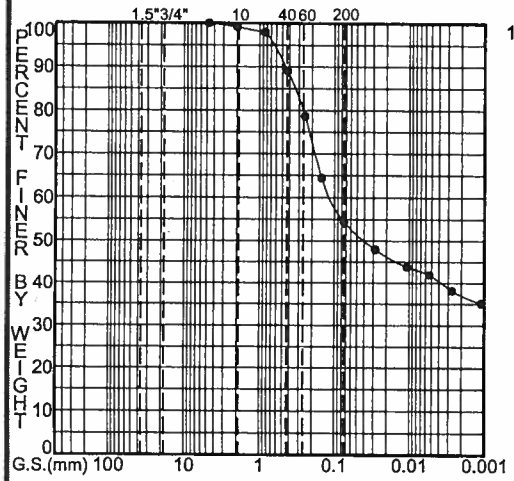


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.8
% Finer No. 40 Sieve	88.5
% Finer No. 60 Sieve	78.9
% Finer No. 200 Sieve	55.4
Clay Content (%)	30.7
Total Volume Change (%)	7.8
Swell (%)	5.1
Shrinkage (%)	2.7
Maximum Dry Density (pcf)	104.1
Opt. Moisture Content (%)	17.4
Nat. Moisture Content (%)	17.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.31
Soil Support Value	4.2

WILLMER ENGINEERING INC. | WE

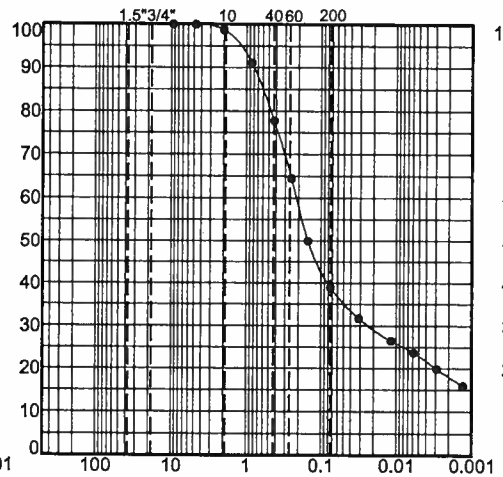
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **82+00, 50 ft Right of CL (Buford Drive (SR 20))**
Sample No.: **SS-183-SR (1-5 ft)**
Soil Desc.: **Red medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B4**



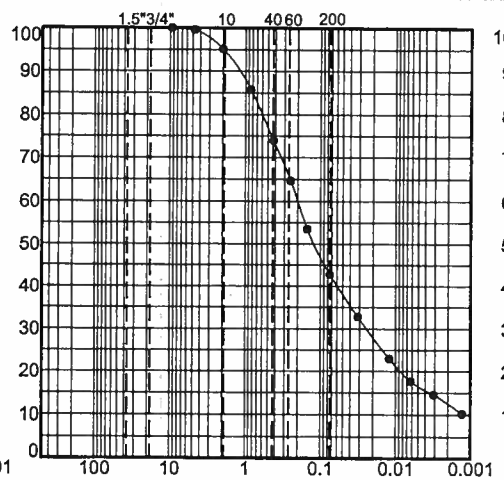
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.2
No. 40 Sieve	89.1
No. 60 Sieve	78.7
No. 200 Sieve	54.5
Clay Content (%)	37.2
Total Volume Change (%)	9.6
Swell (%)	3.8
Shrinkage (%)	5.8
Maximum Dry Density (pcf)	99.9
Opt. Moisture Content (%)	19.8
Nat. Moisture Content (%)	19.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.43
Soil Support Value	---

Station: **94+00, 50 ft Right of CL (Buford Drive (SR 20))**
Sample No.: **SS-185-SR (1-5 ft)**
Soil Desc.: **Red and brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B2**



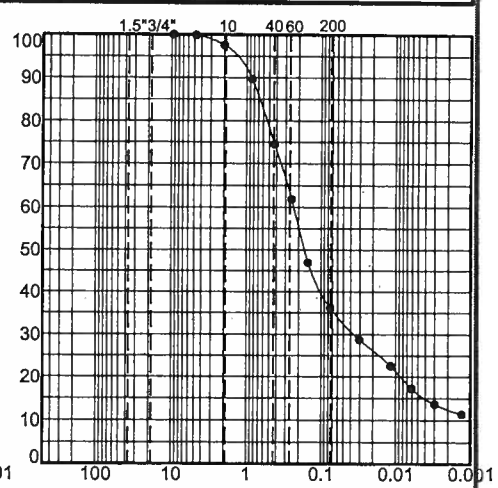
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.7
No. 40 Sieve	77.8
No. 60 Sieve	64.5
No. 200 Sieve	39.0
Clay Content (%)	18.0
Total Volume Change (%)	7.0
Swell (%)	4.7
Shrinkage (%)	2.3
Maximum Dry Density (pcf)	116.7
Opt. Moisture Content (%)	12.2
Nat. Moisture Content (%)	17.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.33
Soil Support Value	---

Station: **88+00, 42 ft Right of CL (Hi Hope Rd)**
Sample No.: **SS-187-SR (1-10 ft)**
Soil Desc.: **Red-brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	95.1
No. 40 Sieve	74.0
No. 60 Sieve	64.7
No. 200 Sieve	42.8
Clay Content (%)	12.4
Total Volume Change (%)	21.4
Swell (%)	20.0
Shrinkage (%)	1.4
Maximum Dry Density (pcf)	109.8
Opt. Moisture Content (%)	14.9
Nat. Moisture Content (%)	23.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.86
Soil Support Value	---

Station: **93+00, 36 ft Left of CL (Hi Hope Rd)**
Sample No.: **SS-189-SR (1-5 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B2**

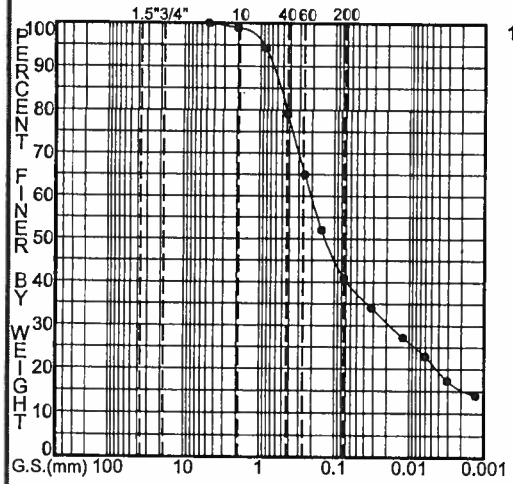


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	97.6
No. 40 Sieve	74.6
No. 60 Sieve	61.9
No. 200 Sieve	36.1
Clay Content (%)	12.6
Total Volume Change (%)	8.9
Swell (%)	7.0
Shrinkage (%)	1.9
Maximum Dry Density (pcf)	118.5
Opt. Moisture Content (%)	10.6
Nat. Moisture Content (%)	16.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.7
Soil Support Value	---

WILLMER ENGINEERING INC. | WE

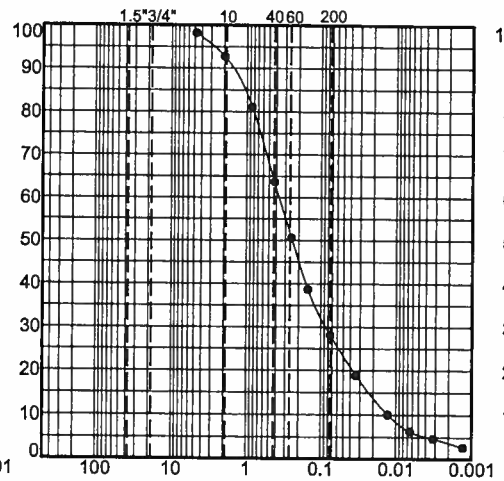
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **103+00, 36 ft Right of CL (Hi Hope Rd)**
Sample No.: **SS-191-SR (1-20 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **III C1**



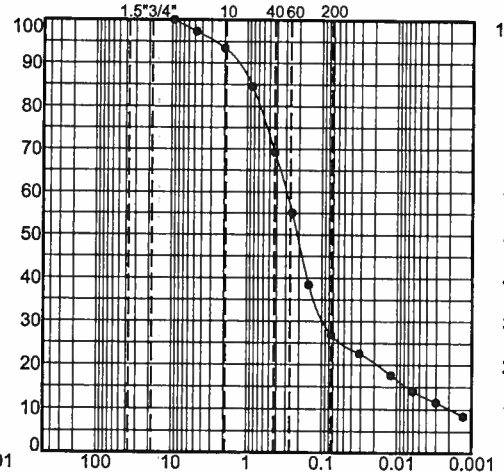
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.9
No. 40 Sieve	79.1
No. 60 Sieve	65.0
No. 200 Sieve	40.9
Clay Content (%)	15.7
Total Volume Change (%)	25.3
Swell (%)	24.6
Shrinkage (%)	0.7
Maximum Dry Density (pcf)	108.3
Opt. Moisture Content (%)	15.5
Nat. Moisture Content (%)	24.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.1
Soil Support Value	---

Station: **905+00, CL (Airport Rd)**
Sample No.: **SS-194-SR (1-5 ft)**
Soil Desc.: **Gray silty coarse to fine SAND (slightly micaceous)**
GDOT Soil Class: **I A3**



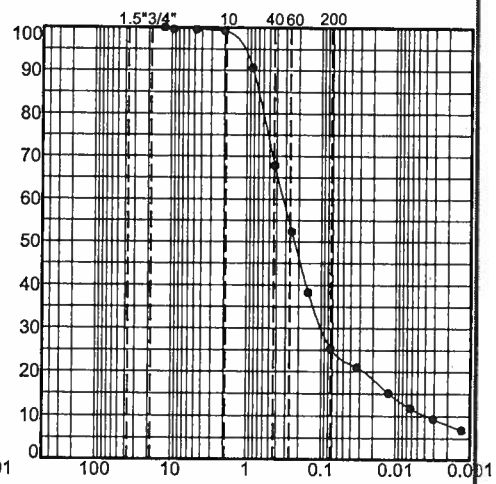
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	92.8
No. 40 Sieve	63.7
No. 60 Sieve	50.6
No. 200 Sieve	28.1
Clay Content (%)	3.7
Total Volume Change (%)	6.3
Swell (%)	4.7
Shrinkage (%)	1.6
Maximum Dry Density (pcf)	105.3
Opt. Moisture Content (%)	16.8
Nat. Moisture Content (%)	18.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.68
Soil Support Value	---

Station: **890+00,CL (Wimberly Way)**
Sample No.: **SS-196-SR (1.5-5 ft)**
Soil Desc.: **Gray silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A2**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	93.5
No. 40 Sieve	69.2
No. 60 Sieve	55.2
No. 200 Sieve	26.9
Clay Content (%)	10.1
Total Volume Change (%)	3.9
Swell (%)	2.0
Shrinkage (%)	1.9
Maximum Dry Density (pcf)	118.9
Opt. Moisture Content (%)	11.3
Nat. Moisture Content (%)	18.4
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	6.82
Soil Support Value	---

Station: **2064+00, 20 ft Right of CL (Ramp F-Sugarloaf Parkway)**
Sample No.: **SS-201-R (1-13 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **I A2**

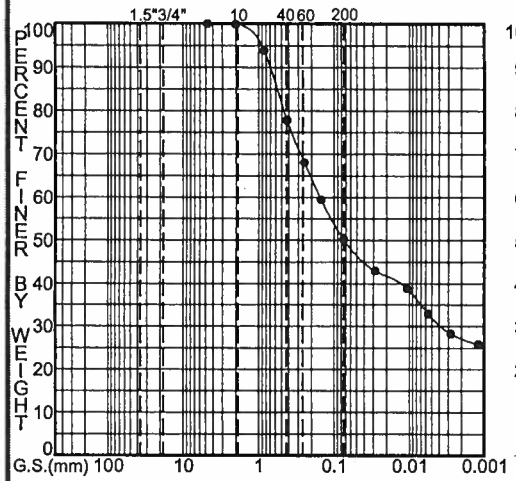


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.2
No. 40 Sieve	67.9
No. 60 Sieve	52.4
No. 200 Sieve	25.4
Clay Content (%)	8.1
Total Volume Change (%)	6.3
Swell (%)	6.1
Shrinkage (%)	0.2
Maximum Dry Density (pcf)	114.2
Opt. Moisture Content (%)	13.2
Nat. Moisture Content (%)	10.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	7.01
Soil Support Value	---

WILLMER ENGINEERING INC.

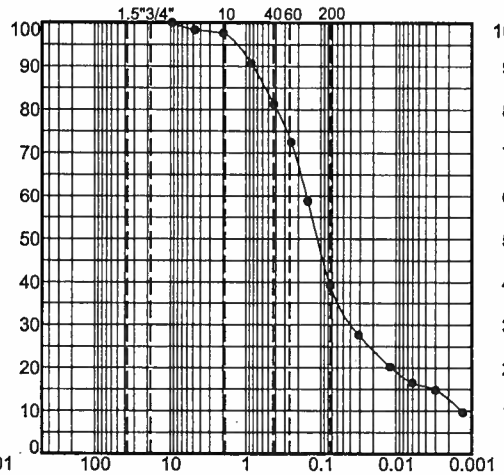
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **2079+50, 20 ft Right of CL (Ramp G-Sugarloaf Parkway)**
Sample No.: **SS-205-R (1-10 ft)**
Soil Desc.: **Reddish brown medium to fine sandy lean CLAY (micaceous)**
GDOT Soil Class: **II B4**



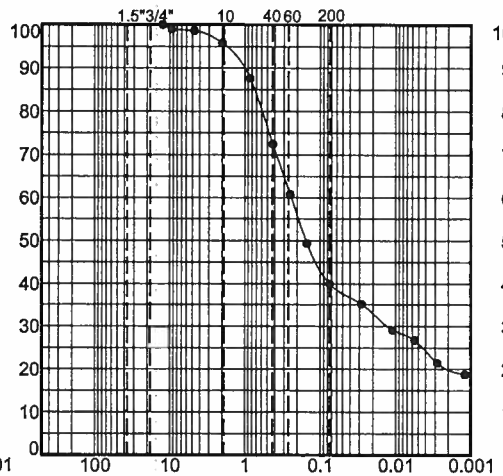
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	99.9
	No. 40 Sieve	77.8
	No. 60 Sieve	68.1
	No. 200 Sieve	50.2
Clay Content (%)		27.3
Total Volume Change (%)		19.8
Swell (%)		16.2
Shrinkage (%)		3.6
Maximum Dry Density (pcf)		97.7
Opt. Moisture Content (%)		21.3
Nat. Moisture Content (%)		21.5
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		3.96
Soil Support Value		---

Station: **2089+00, 20 ft Right of CL (Ramp L-Riverside Parkway)**
Sample No.: **SS-206-R (1-5 ft)**
Soil Desc.: **Dark brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



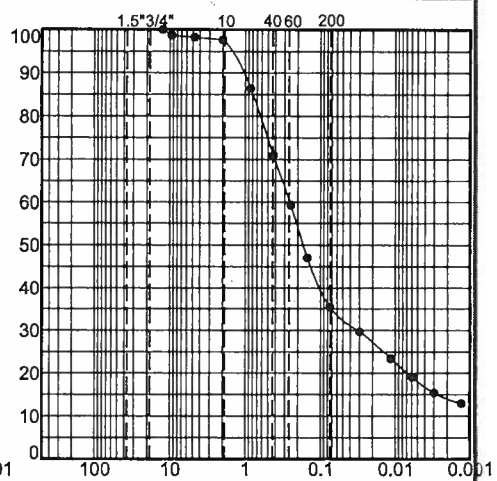
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	97.6
	No. 40 Sieve	81.3
	No. 60 Sieve	72.5
	No. 200 Sieve	39.2
Clay Content (%)		12.4
Total Volume Change (%)		20.5
Swell (%)		18.4
Shrinkage (%)		2.1
Maximum Dry Density (pcf)		118.5
Opt. Moisture Content (%)		11.4
Nat. Moisture Content (%)		17.1
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.31
Soil Support Value		---

Station: **2095+00, CL (Ramp L-Riverside Parkway)**
Sample No.: **SS-208-R (1-2 ft)**
Soil Desc.: **Gray clayey medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	95.8
	No. 40 Sieve	72.5
	No. 60 Sieve	60.8
	No. 200 Sieve	40.0
Clay Content (%)		20.4
Total Volume Change (%)		13.5
Swell (%)		10.0
Shrinkage (%)		3.5
Maximum Dry Density (pcf)		109.5
Opt. Moisture Content (%)		15.0
Nat. Moisture Content (%)		21.3
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.21
Soil Support Value		---

Station: **2119+00, 10 ft Right of CL (Ramp I-Riverside Parkway)**
Sample No.: **SS-210-R (1-5 ft)**
Soil Desc.: **Gray silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B2**

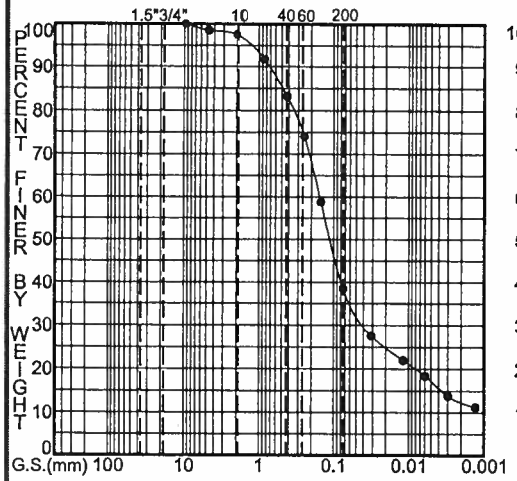


% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	97.6
	No. 40 Sieve	71.0
	No. 60 Sieve	59.4
	No. 200 Sieve	35.5
Clay Content (%)		14.2
Total Volume Change (%)		14.0
Swell (%)		13.8
Shrinkage (%)		0.2
Maximum Dry Density (pcf)		115.5
Opt. Moisture Content (%)		12.7
Nat. Moisture Content (%)		12.0
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.77
Soil Support Value		---

WILLMER ENGINEERING, INC. | WE

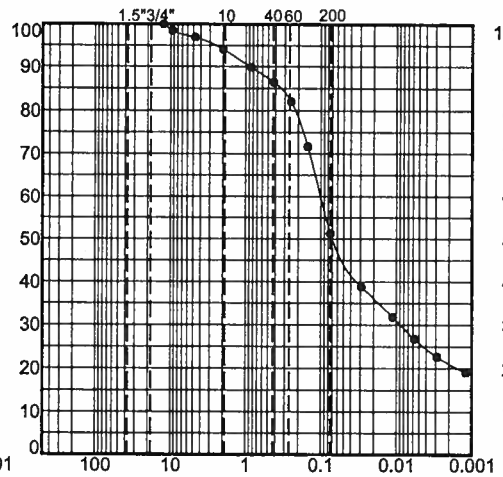
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **2155+00, 15 ft Right of CL (Ramp K-Riverside Parkway)**
Sample No.: **SS-212-R (1-5 ft)**
Soil Desc.: **Dark brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B2**



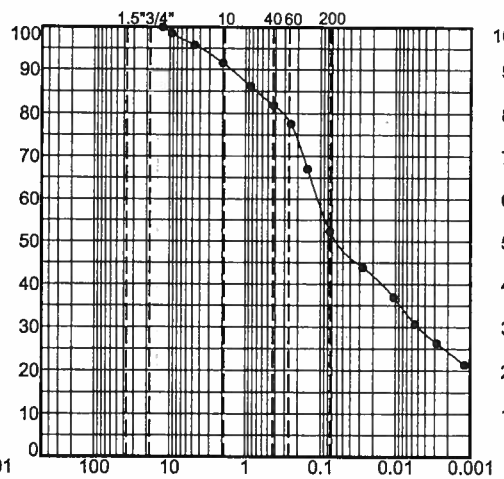
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	97.6
	No. 40 Sieve	83.3
	No. 60 Sieve	74.2
	No. 200 Sieve	38.5
Clay Content (%)		12.6
Total Volume Change (%)		11.9
Swell (%)		10.9
Shrinkage (%)		1.0
Maximum Dry Density (pcf)		117.4
Opt. Moisture Content (%)		11.8
Nat. Moisture Content (%)		10.3
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.4
Soil Support Value		---

Station: **2143+00, 40 ft Right of CL (Ramp J-Riverside Parkway)**
Sample No.: **SS-215-R (1-10 ft)**
Soil Desc.: **Brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B3**



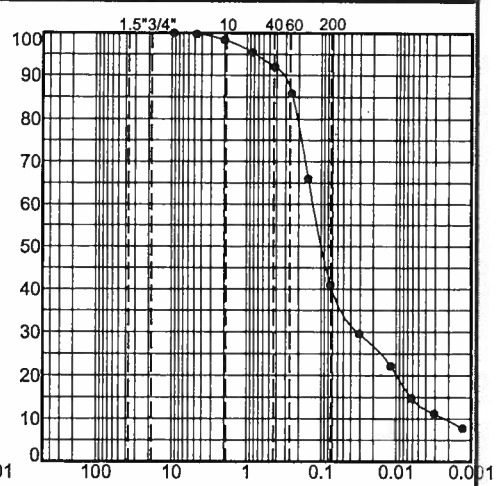
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	94.1
	No. 40 Sieve	86.5
	No. 60 Sieve	82.1
	No. 200 Sieve	51.3
Clay Content (%)		21.2
Total Volume Change (%)		16.6
Swell (%)		15.1
Shrinkage (%)		1.5
Maximum Dry Density (pcf)		112.8
Opt. Moisture Content (%)		13.7
Nat. Moisture Content (%)		18.0
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		3.82
Soil Support Value		---

Station: **2236+00, 20 ft Left of CL (Ramp P-SR120/Duluth Hwy)**
Sample No.: **SS-223-R (5-20 ft)**
Soil Desc.: **Red brown medium to fine sandy SILT (micaceous)**
GDOT Soil Class: **II B4**



% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	91.6
	No. 40 Sieve	81.9
	No. 60 Sieve	77.6
	No. 200 Sieve	52.4
Clay Content (%)		24.4
Total Volume Change (%)		9.0
Swell (%)		5.1
Shrinkage (%)		3.9
Maximum Dry Density (pcf)		102.8
Opt. Moisture Content (%)		18.1
Nat. Moisture Content (%)		18.7
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		3.68
Soil Support Value		---

Station: **2204+00, 40 ft Right of CL (Ramp O-SR 120/ Duluth Hwy)**
Sample No.: **SS-226-R (1-22 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**

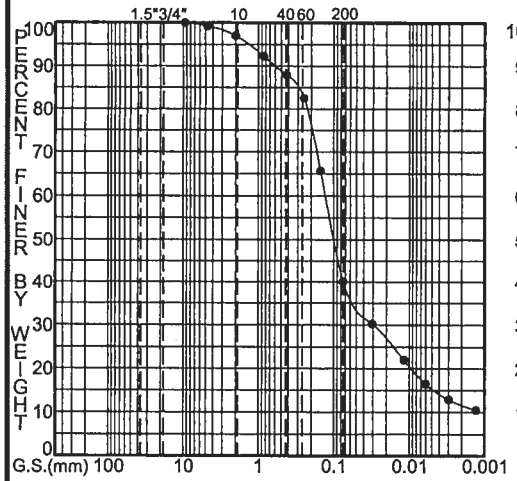


% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	98.4
	No. 40 Sieve	92.0
	No. 60 Sieve	85.9
	No. 200 Sieve	41.0
Clay Content (%)		9.5
Total Volume Change (%)		19.0
Swell (%)		18.2
Shrinkage (%)		0.8
Maximum Dry Density (pcf)		103.0
Opt. Moisture Content (%)		18.0
Nat. Moisture Content (%)		10.8
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.09
Soil Support Value		---

WILLMER ENGINEERING INC. WE

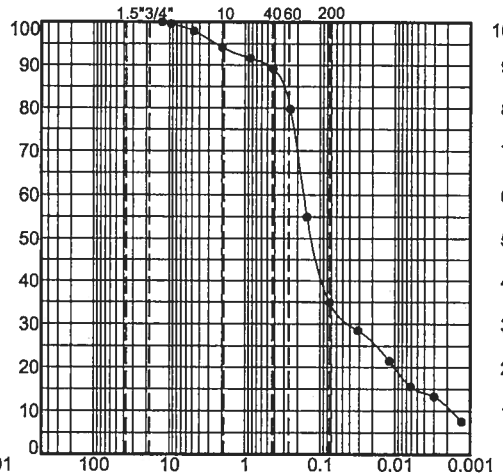
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **2207+00, 65 ft Right of CL (Ramp O-SR 120/ Duluth Hwy)**
Sample No.: **SS-227-R (1-34 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



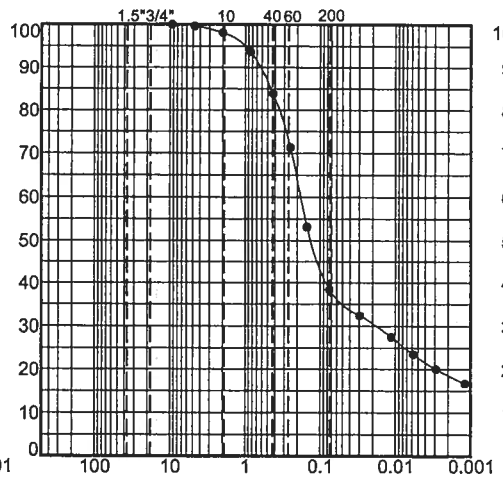
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	97.0
	No. 40 Sieve	88.0
	No. 60 Sieve	82.5
	No. 200 Sieve	40.1
Clay Content (%)		11.7
Total Volume Change (%)		14.9
Swell (%)		14.1
Shrinkage (%)		0.8
Maximum Dry Density (pcf)		104.0
Opt. Moisture Content (%)		17.5
Nat. Moisture Content (%)		9.6
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.2
Soil Support Value		---

Station: **495+00, 12 ft Right of CL (Ramp T-Collins Hill Rd)**
Sample No.: **SS-230-R (5-15 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



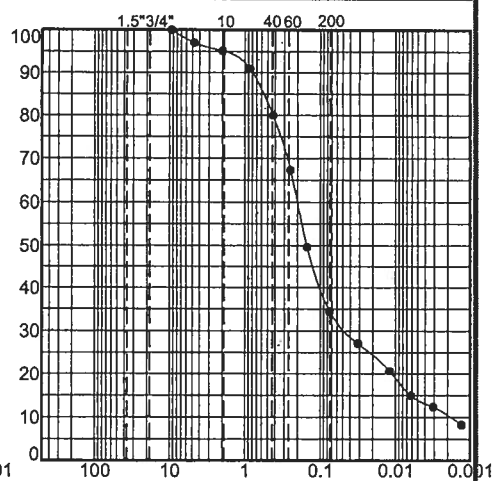
% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	94.2
	No. 40 Sieve	89.2
	No. 60 Sieve	79.7
	No. 200 Sieve	34.9
Clay Content (%)		10.5
Total Volume Change (%)		9.4
Swell (%)		9.3
Shrinkage (%)		0.1
Maximum Dry Density (pcf)		103.0
Opt. Moisture Content (%)		18.0
Nat. Moisture Content (%)		12.8
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.84
Soil Support Value		---

Station: **797+50, 20 ft Right of CL (Ramp W-CollinsHill Rd)**
Sample No.: **SS-235-R (1-10 ft)**
Soil Desc.: **Light reddish brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B3**



% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	98.1
	No. 40 Sieve	83.9
	No. 60 Sieve	71.4
	No. 200 Sieve	38.4
Clay Content (%)		18.7
Total Volume Change (%)		6.6
Swell (%)		4.4
Shrinkage (%)		2.2
Maximum Dry Density (pcf)		107.7
Opt. Moisture Content (%)		15.8
Nat. Moisture Content (%)		9.4
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.41
Soil Support Value		---

Station: **690+00, 10 ft Left of CL (Ramp V-CollinsHill Rd)**
Sample No.: **SS-237-R (0.16-3 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **I A2**

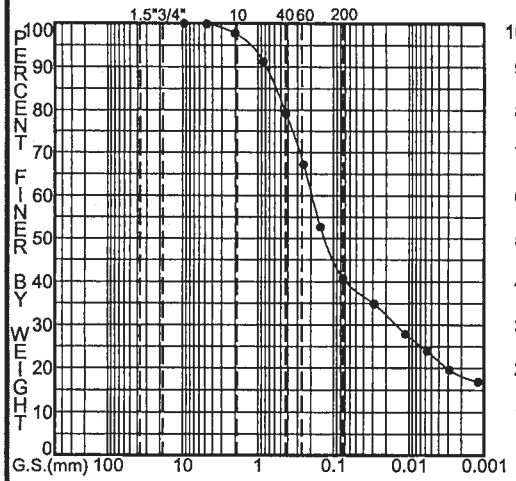


% Finer	1.5" Sieve	100.0
	3/4" Sieve	100.0
	No. 10 Sieve	95.1
	No. 40 Sieve	80.0
	No. 60 Sieve	67.3
	No. 200 Sieve	34.5
Clay Content (%)		10.3
Total Volume Change (%)		9.5
Swell (%)		8.0
Shrinkage (%)		1.4
Maximum Dry Density (pcf)		114.5
Opt. Moisture Content (%)		13.1
Nat. Moisture Content (%)		4.8
Liquid Limit (%)		---
Plasticity Index (%)		---
Erosion Index		5.89
Soil Support Value		---

WILLMER ENGINEERING INC. WE

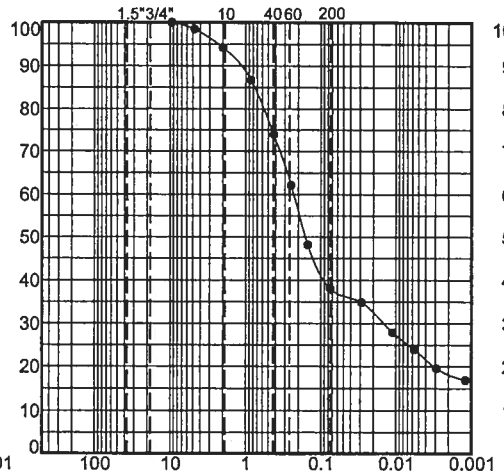
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **501+50, 12 ft Right of CL (Ramp U-Collins Hill Rd)**
Sample No.: **SS-240-R (10-20 ft)**
Soil Desc.: **Grayish green silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



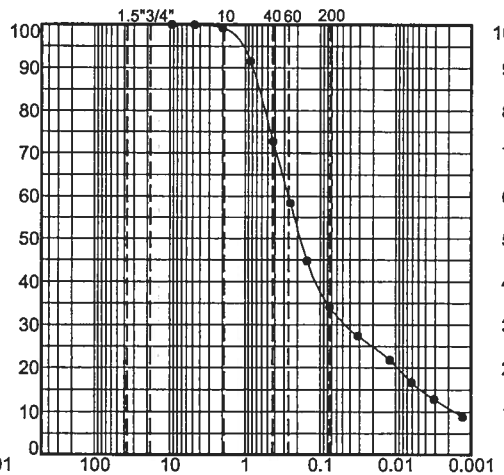
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	97.7
No. 40 Sieve	79.1
No. 60 Sieve	67.2
No. 200 Sieve	40.8
Clay Content (%)	18.5
Total Volume Change (%)	7.3
Swell (%)	6.0
Shrinkage (%)	1.3
Maximum Dry Density (pcf)	114.1
Opt. Moisture Content (%)	13.3
Nat. Moisture Content (%)	17.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.11
Soil Support Value	---

Station: **506+00, 12 ft Right of CL (Ramp U-Collins Hill Rd)**
Sample No.: **SS-242-R (5-20 ft)**
Soil Desc.: **Light brown silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



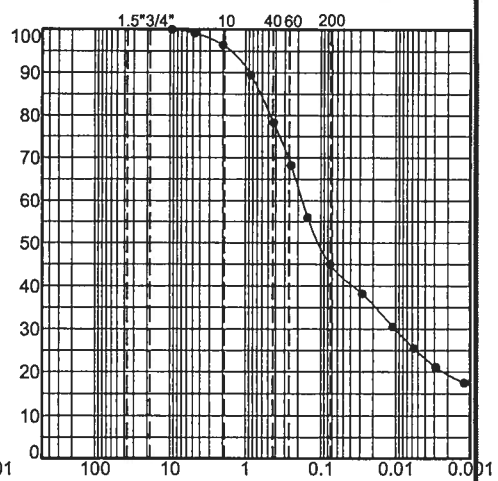
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	94.2
No. 40 Sieve	74.0
No. 60 Sieve	62.1
No. 200 Sieve	38.1
Clay Content (%)	18.5
Total Volume Change (%)	7.0
Swell (%)	5.8
Shrinkage (%)	1.2
Maximum Dry Density (pcf)	114.2
Opt. Moisture Content (%)	13.2
Nat. Moisture Content (%)	12.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.45
Soil Support Value	5

Station: **507+00, 12 ft Right of CL (Ramp U-Collins Hill Rd)**
Sample No.: **SS-243-SR (10-30 ft)**
Soil Desc.: **Red and gray silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **I A3**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.2
No. 40 Sieve	72.8
No. 60 Sieve	58.3
No. 200 Sieve	34.1
Clay Content (%)	10.9
Total Volume Change (%)	14.5
Swell (%)	13.9
Shrinkage (%)	0.6
Maximum Dry Density (pcf)	112.9
Opt. Moisture Content (%)	13.7
Nat. Moisture Content (%)	20.9
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.94
Soil Support Value	---

Station: **317+00, 20 ft Left of CL (Appleland Drive)**
Sample No.: **SS-247-SR (1-15 ft)**
Soil Desc.: **Brown silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**

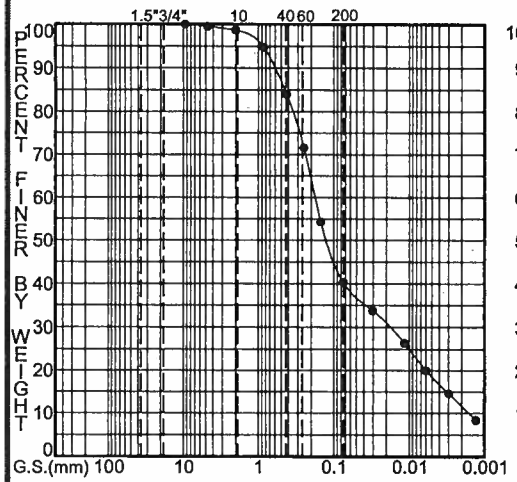


% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	96.4
No. 40 Sieve	78.3
No. 60 Sieve	68.2
No. 200 Sieve	45.0
Clay Content (%)	19.6
Total Volume Change (%)	5.5
Swell (%)	4.9
Shrinkage (%)	0.6
Maximum Dry Density (pcf)	112.7
Opt. Moisture Content (%)	13.7
Nat. Moisture Content (%)	8.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.59
Soil Support Value	---

WILLMER ENGINEERING INC. WE

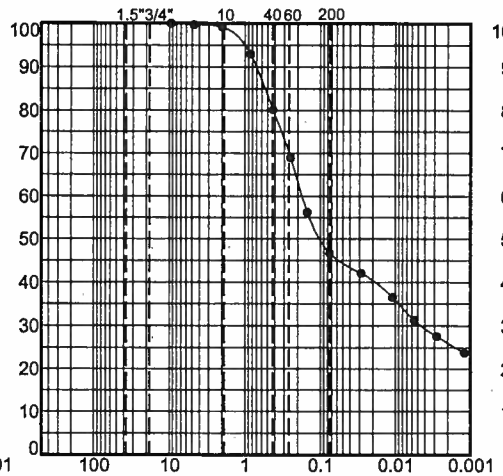
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **323+00, 20 ft Left of CL (Appleland Drive)**
Sample No.: **SS-249-SR (1-15 ft)**
Soil Desc.: **Brown silty medium to fine SAND (micaceous)**
GDOT Soil Class: **II B4**



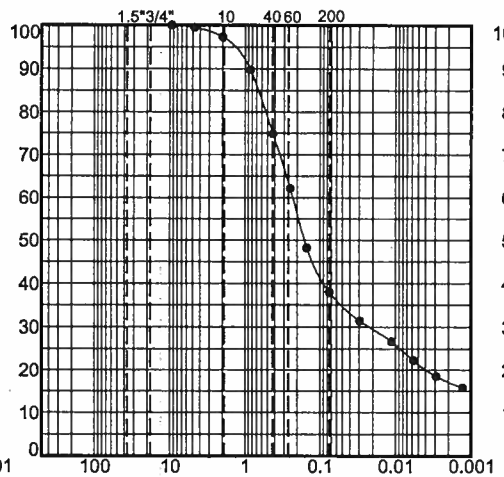
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	98.6
% Finer No. 40 Sieve	84.0
% Finer No. 60 Sieve	71.6
% Finer No. 200 Sieve	40.3
Clay Content (%)	11.6
Total Volume Change (%)	20.3
Swell (%)	20.1
Shrinkage (%)	0.2
Maximum Dry Density (pcf)	114.2
Opt. Moisture Content (%)	13.2
Nat. Moisture Content (%)	15.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.17
Soil Support Value	---

Station: **326+00, 20 ft Left of CL (Appleland Drive)**
Sample No.: **SS-250-SR (5-20 ft)**
Soil Desc.: **Brown clayey medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B3**



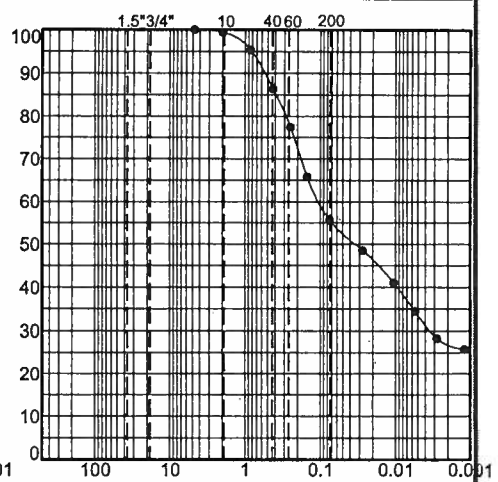
% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.1
% Finer No. 40 Sieve	80.2
% Finer No. 60 Sieve	69.0
% Finer No. 200 Sieve	46.7
Clay Content (%)	26.1
Total Volume Change (%)	5.4
Swell (%)	2.8
Shrinkage (%)	2.6
Maximum Dry Density (pcf)	110.7
Opt. Moisture Content (%)	14.5
Nat. Moisture Content (%)	15.0
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.38
Soil Support Value	---

Station: **329+00, CL (Appleland Drive)**
Sample No.: **SS-252-SR (1-7 ft)**
Soil Desc.: **Brown silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B2**



% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	97.3
% Finer No. 40 Sieve	74.9
% Finer No. 60 Sieve	62.1
% Finer No. 200 Sieve	38.0
Clay Content (%)	17.3
Total Volume Change (%)	8.1
Swell (%)	5.0
Shrinkage (%)	3.1
Maximum Dry Density (pcf)	113.0
Opt. Moisture Content (%)	13.7
Nat. Moisture Content (%)	13.8
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	5.46
Soil Support Value	---

Station: **2298+00, 20 ft Left of CL (Ramp X-SR 20/ Buford Rd)**
Sample No.: **SS-256-R (1-15 ft)**
Soil Desc.: **Reddish brown medium to fine sandy SILT (slightly micaceous)**
GDOT Soil Class: **II B3**

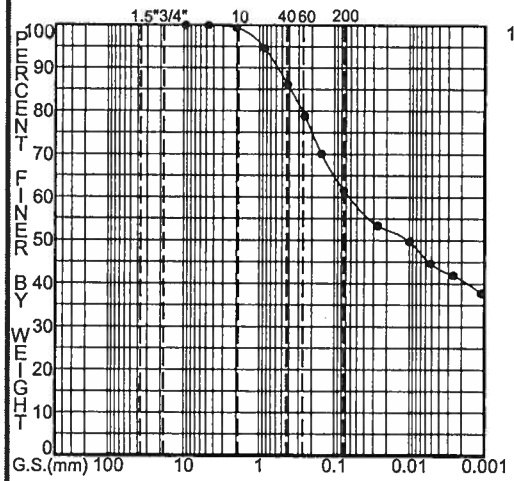


% Finer 1.5" Sieve	100.0
% Finer 3/4" Sieve	100.0
% Finer No. 10 Sieve	99.4
% Finer No. 40 Sieve	86.4
% Finer No. 60 Sieve	77.4
% Finer No. 200 Sieve	55.7
Clay Content (%)	27.3
Total Volume Change (%)	13.4
Swell (%)	11.8
Shrinkage (%)	1.6
Maximum Dry Density (pcf)	107.9
Opt. Moisture Content (%)	15.8
Nat. Moisture Content (%)	18.7
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.28
Soil Support Value	---

WILLMER ENGINEERING INC. | WE

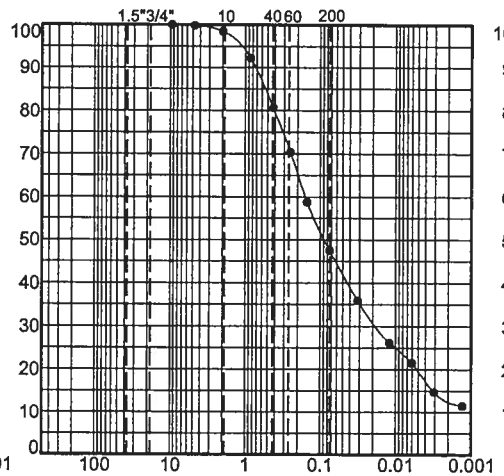
Project: **SR 316 HOV Lanes from I-85 to SR 20**
Location: **Gwinnett County**
Supervisor: **HVM**
Prime Consultant: **PBS&J**
Willmer Project No.: **171-2867**
GDOT Project No.: **MSL-0003-00(168), P.I.No-0003168**

Station: **3328+00,CL (Ramp Z-SR 20/ Buford Rd)**
Sample No.: **SS-258-R (1-10 ft)**
Soil Desc.: **Reddish brown medium to fine sandy fat CLAY (micaceous)**
GDOT Soil Class: **II B4**



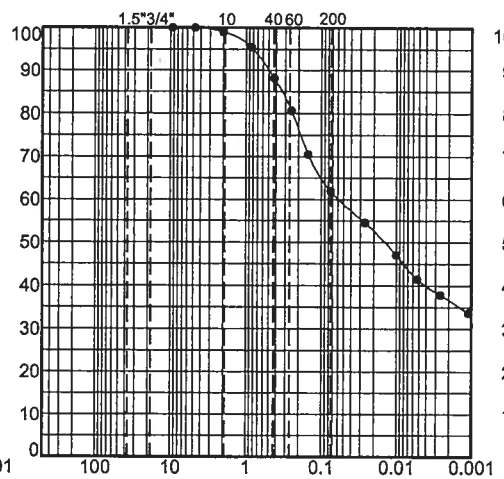
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.4
No. 40 Sieve	86.1
No. 60 Sieve	78.8
No. 200 Sieve	61.6
Clay Content (%)	40.6
Total Volume Change (%)	9.6
Swell (%)	4.0
Shrinkage (%)	5.6
Maximum Dry Density (pcf)	94.6
Opt. Moisture Content (%)	23.0
Nat. Moisture Content (%)	23.5
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.55
Soil Support Value	---

Station: **2307+00, 20 ft Right of CL (Ramp Y-SR 20/ Buford Rd)**
Sample No.: **SS-262-R (2-10 ft)**
Soil Desc.: **Light red and gray silty medium to fine SAND (slightly micaceous)**
GDOT Soil Class: **II B4**



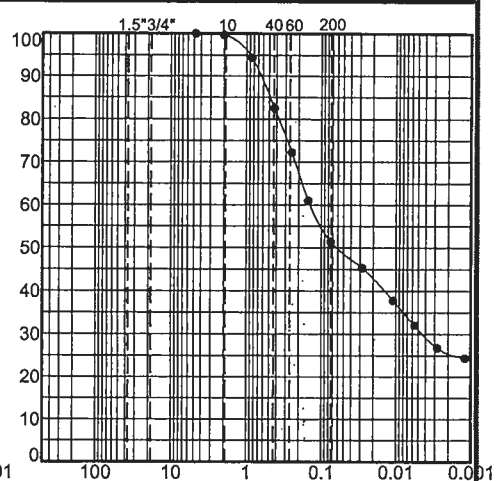
% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	98.5
No. 40 Sieve	80.7
No. 60 Sieve	70.5
No. 200 Sieve	47.5
Clay Content (%)	13.1
Total Volume Change (%)	21.3
Swell (%)	18.8
Shrinkage (%)	2.5
Maximum Dry Density (pcf)	110.4
Opt. Moisture Content (%)	14.6
Nat. Moisture Content (%)	17.6
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	4.29
Soil Support Value	---

Station: **2312+00, 20 ft Right of CL (Ramp Y-SR 20/ Buford Rd)**
Sample No.: **SS-264-R (1-15 ft)**
Soil Desc.: **Reddish brown medium to fine sandy fat CLAY (slightly micaceous)**
GDOT Soil Class: **II B4**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.0
No. 40 Sieve	88.2
No. 60 Sieve	80.6
No. 200 Sieve	61.9
Clay Content (%)	36.6
Total Volume Change (%)	8.5
Swell (%)	2.5
Shrinkage (%)	6.0
Maximum Dry Density (pcf)	102.3
Opt. Moisture Content (%)	18.4
Nat. Moisture Content (%)	19.1
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	2.51
Soil Support Value	---

Station: **3302+25, CL (Ramp AA-SR 20/ Buford Rd)**
Sample No.: **SS-267-R (2-15 ft)**
Soil Desc.: **Reddish brown medium to fine sandy lean CLAY (slightly micaceous)**
GDOT Soil Class: **II B3**



% Finer	
1.5" Sieve	100.0
3/4" Sieve	100.0
No. 10 Sieve	99.7
No. 40 Sieve	82.5
No. 60 Sieve	72.3
No. 200 Sieve	51.5
Clay Content (%)	25.8
Total Volume Change (%)	11.6
Swell (%)	7.6
Shrinkage (%)	4.0
Maximum Dry Density (pcf)	107.9
Opt. Moisture Content (%)	15.8
Nat. Moisture Content (%)	16.2
Liquid Limit (%)	---
Plasticity Index (%)	---
Erosion Index	3.8
Soil Support Value	---

Table A3-2

Corrosion Series Test Results for Water Samples from Proposed Culvert Locations SR 316 HOV Lanes from I-85 to SR 20, Gwinnett County, Georgia Willmer Project No. 171-2867 GDOT Project No. MSL-0003-00(168), PI 0003168

Station	Sample No.	Resistivity (ohm-cm)	pH
970+00±	W-1	15,118	6.6
974+75±	W-2	18,500	6.6
1017+50±	W-3	17,107	6.6
1152+50±	W-4	4,615	6.8
1214+50±	W-5	21,185	6.5
1242+75±	W-6	19,395	6.5
1337+50±	W-7	19,395	6.3