

REPORT OF  
GEOTECHNICAL INVESTIGATION  
**WOODSIDE HEIGHTS WASTEWATER RETROFIT**  
LEON COUNTY, FLORIDA

*Prepared For:*

**GENESIS GROUP, INC.**  
2507 CALLAWAY ROAD  
SUITE 100  
TALLAHASSEE, FLORIDA 32303

*Prepared By:*

**ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.**  
104 NORTH MAGNOLIA DRIVE  
TALLAHASSEE, FLORIDA 32301  
(850) 386-1253

*April 2017*  
18-139-16-02

# ENVIRONMENTAL AND GEOTECHNICAL SPECIALISTS, INC.

April 19, 2017

EGS File Number: 18-139-16-02

Genesis Group, Inc.  
2507 Callaway Road  
Suite 100  
Tallahassee, Florida 32303

**ATTN:** David Hutcheson, P.E.  
Vice President

**SUBJECT:** Report of Geotechnical Investigation  
Woodside Heights Wastewater Retrofit  
Leon County, Florida

Dear David:

Environmental and Geotechnical Specialists, Inc. (**EGS**) has completed the Geotechnical Investigation as authorized by Genesis Group, Inc. and Leon County, for the proposed wastewater improvements in Leon County, Florida. The information provided herein is to aid in the design and construction of the proposed wastewater pipe system with respect to in-situ soils and groundwater conditions. This Geotechnical Report presents the following:

- A summary of the field and laboratory testing with classification of soils encountered;
- Groundwater conditions encountered during the subsurface investigation and the estimated “normal” seasonal high groundwater level along the proposed sewer alignment;
- Geotechnical design recommendations and construction considerations; and,
- Report of Soil Borings plan sheet to be included in the construction plans.

## SITE LOCATION AND CONDITIONS

The project site is located in southern Tallahassee, in the Woodside Heights subdivision, adjacent to the intersection of Woodville Highway (SR 363) and Capital Circle Southeast (SR 261). The proposed improvements are inclusive of the Woodside Heights subdivision and extend across Woodville Highway along Crossway Road. A Project Location Map has been included as **Figure 1**, at the end of this report. The United States Geological Survey (USGS) topographic contours, as well as identified potential Karst features, have been overlain on an aerial map of the project site, provided as **Figure 2**. The existing ground surface elevation is relatively flat, varying from approximately 40 feet to 50 feet. Photographs of the existing site conditions, taken by **EGS** personnel March 2017, have been included as **Figures 3A** through **3D**.

## PROPOSED CONSTRUCTION

Based upon the Plans provided by Genesis, **EGS** understands the proposed wastewater retrofit construction will include the addition of an eight (8) inch diameter PVC pipeline throughout the project limits. The proposed sewer will be aligned along the existing roadways in Woodside Heights and within close proximity to private residences throughout most of the project limits. The primary intent of this geotechnical investigation is to provide subsurface data that will help identify potential design and construction concerns.

## SUBSURFACE INVESTIGATION

The subsurface investigation outlined in this Report was conducted in March 2017. Joshua Jenkins, P.E., was the Project Engineer with the assistance of Kevin Sweeney, E.I., as the Field and Staff Engineer. Myron Hayden, P.E., served as the supervising Senior Geotechnical Engineer for this investigation.

In order to evaluate the soil and groundwater conditions, **EGS** performed a total of ten (10) soil borings to a depths ranging from 10.5 to 20.0 feet spaced along the proposed pipe with emphasis on deeply buried sections. The approximate location of each soil boring installed during this investigation has been provided in **Figure 4**, with a summary of the soil boring location data provided in **Table 1**, at the end of this report.

Hand-auger Soil Borings SS-1 and SS-2 were sampled on one (1) foot intervals in conjunction with hand-held static cone penetration tests were performed on two (2) feet intervals. The remaining eight (8) Standard Penetration Test (SPT) soil borings were installed using a rotary drilling rig with SPT's conducted on two and one-half (2 ½) feet intervals to the boring termination depth. Due to the proximity of marked utilities, hand-auger sampling was performed up to approximately seven (7) feet on all SPT borings. Static cone penetration tests values (C) were converted to equivalent SPT N-values using the correlation  $N=C/4$ . SPT sampling was conducted with an automatic hammer and in accordance with ASTM D1586.

Soil samples were collected, classified in the field by **EGS** personnel, and then sealed and transported to **EGS'** laboratory for determination of soil index properties. The testing performed during this investigation included determination of the water content, grain-size distributions, and Atterberg limits. The subsoils have been classified with respect to the American Association of State Highway and Transportation Officials (AASHTO) Soil Classification System.

## GENERAL SUBSURFACE CONDITIONS

### Soils

The soil conditions encountered during this investigation have been illustrated on the Report of Soil Borings provided as **Appendix A**. Additionally, detailed Soil Boring Logs and Soil Classification Data have been provided in Appendix B and C, respectively.

The project site consists primarily of loose to medium dense, fine to silty fine sands (A-3 to A-2-4). At the location of soil boring SS-9, clayey fine sand (A-2-6) was encountered at a depth of about 18 feet ( $\approx$  EL 28 feet). As reported in the Geophysical Investigation Report (**EGS** Project No. 18-139-16-03), the clayey fine sand strata is relatively consistent with the soil strata encountered at the proposed pump station located approximately 250 feet southwest.

### Groundwater

A summary of the field encountered groundwater conditions at each soil boring has been presented in **Table 1**, which also includes the estimated “normal” seasonal high. It should be noted that **EGS** did not encounter groundwater in any of the soil borings performed for this investigation.

### NRCS Soil Survey

To supplement the subsurface investigation provided herein, **EGS** reviewed the USDA’s Natural Resources Conservation Service (NRCS) Soil Survey of Leon County. The NRCS material number, name, soil types, corrosion potential, and approximate seasonal high groundwater for each material reported within the project limits has been summarized in **Table 2**. In order to correlate the soils data with respect to location throughout the project, the NRCS Soil Survey map has been provided as **Figure D**.

The soil types and groundwater conditions presented in the NRCS soil survey are relatively consistent with the results of the geotechnical investigation conducted for this project. It should be noted, however, the NRCS soil survey is used as an approximation of the soils within the area. Variations in the soil and groundwater conditions should be anticipated.

## GEOTECHNICAL DESIGN RECOMMENDATIONS

### Soil Reuse

Based on the soils data collected during this Geotechnical Investigation, **EGS** **anticipates** the existing soils encountered will be suitable for use as backfill. However, soils encountered during construction may differ from the conditions presented at the boring locations identified herein. Removal and reuse of materials encountered should be in accordance with the COT Technical Specifications for Water and Sewer Construction, as noted in the plans.

### **Groundwater Impact and Control**

As previously noted, groundwater was not encountered during this subsurface investigation. Based on the depth of the proposed pipe shown on the Conceptual Plans, **EGS** does not anticipate groundwater will be encountered during construction of the pipeline. However, as previously noted, clayey fine sand (A-2-6) material was encountered around elevation 28 feet at the location of Soil Boring SS-9 and the pump station. Due to the high fines content and low permeability, **EGS cautions surface water from precipitation or construction may “pond” in open excavations made below EL 30 feet.**

## **CONSTRUCTION CONSIDERATIONS**

As previously mentioned, existing structures are in close proximity to planned construction throughout the project limits. **EGS believes** that construction efforts expected for this project, such as vibrations caused by dynamic compaction of pipe subgrade and backfill soils, may cause adverse impacts to these adjacent structures. Therefore, **EGS recommends consideration be given to precluding use of heavy vibratory equipment on this project.**

## CLOSURE

The data and results presented in this Report are intended for use by Genesis Group, Inc. and the Leon County for the Woodside Heights Wastewater Retrofit Project, as identified herein. This data may not be used without the expressed written consent of Genesis Group, Inc. and Leon County. This Report is not intended for any other use and will likely not be applicable. This Report shall not be reproduced, except in full, without the written approval of Environmental and Geotechnical Specialists, Inc. The data and recommendations presented in this Report are based on soil borings made at the specific locations and depths noted. Subsurface conditions at other locations may vary significantly from those presented herein. Should data become available which is different from the data presented herein, Environmental and Geotechnical Specialists, Inc. requests the opportunity to review the data and make any modifications to the design recommendations which may be appropriate.

If you have any questions concerning the information contained in this Report, please do not hesitate to call myself or Kevin Sweeney at (850) 386-1253.

Sincerely,

Environmental and Geotechnical Specialists, Inc.  
Florida Certification of Engineering Authorization No. 6222

Joshua M. Jenkins, P.E.  
Geotechnical Project Engineer  
FL P.E. Number 77686

# *TABLES*

**TABLE 1**  
**SOIL BORING AND GROUNDWATER DATA**  
**WOODSIDE HEIGHTS WASTEWATER RETROFIT**  
**LEON COUNTY, FLORIDA**

BORING NUMBER	DEPTH OF SOIL BORING  (FEET)	NORTHING  (FEET)	EASTING  (FEET)	GROUND SURFACE ELEVATION  (FEET)	MEASURED GROUNDWATER		ESTIMATED "NORMAL" SEASONAL HIGH GROUNDWATER	
					DEPTH (FEET)	ELEVATION (FEET)	DEPTH (FEET)	ELEVATION (FEET)
<b>CROSSWAY ROAD</b>								
SS-1	10.5	501150	2038383	45.2	> 10.5	< 34.7	> 10.5	< 34.7
SS-2	10.5	501158	2039629	51.5	> 10.5	< 41.0	> 10.5	< 41.0
<b>SHANNON STREET</b>								
SS-3	20.0	500664	2041112	55.3	> 20.0	< 35.3	> 20.0	< 35.3
<b>BRENT DRIVE</b>								
SS-4	15.0	501001	2042567	55.4	> 15.0	< 40.4	> 15.0	< 40.4
<b>GREENLEAF DRIVE</b>								
SS-5	20.0	501344	2041458	45.7	> 20.0	< 25.7	> 20.0	< 25.7
<b>BRIANDAV STREET</b>								
SS-6	15.0	501695	2040994	47.2	> 15.0	< 32.2	> 15.0	< 32.2
SS-7	15.0	501690	2041940	46.1	> 15.0	< 31.1	> 15.0	< 31.1
<b>FLAGG STREET</b>								
SS-8	20.0	502043	2042423	51.1	> 20.0	< 31.2	> 20.0	< 31.2
<b>MARGO STREET</b>								
SS-9	20.0	502356	2041624	46.4	> 20.0	< 26.1	> 20.0	< 26.1
<b>SUSAN AVENUE</b>								
SS-10	20.0	502746	2042222	53.1	> 20.0	< 33.1	> 20.0	< 33.1

- NOTES:**
1. DEPTH MEASURED BELOW EXISTING GROUND SURFACE.
  2. NORTHING AND EASTING DETERMINED USING TRIMBLE GEO7X HANDHELD GPS.
  3. ELEVATIONS ESTIMATED USING PLANS PROVIDED BY GENESIS GROUP, INC.

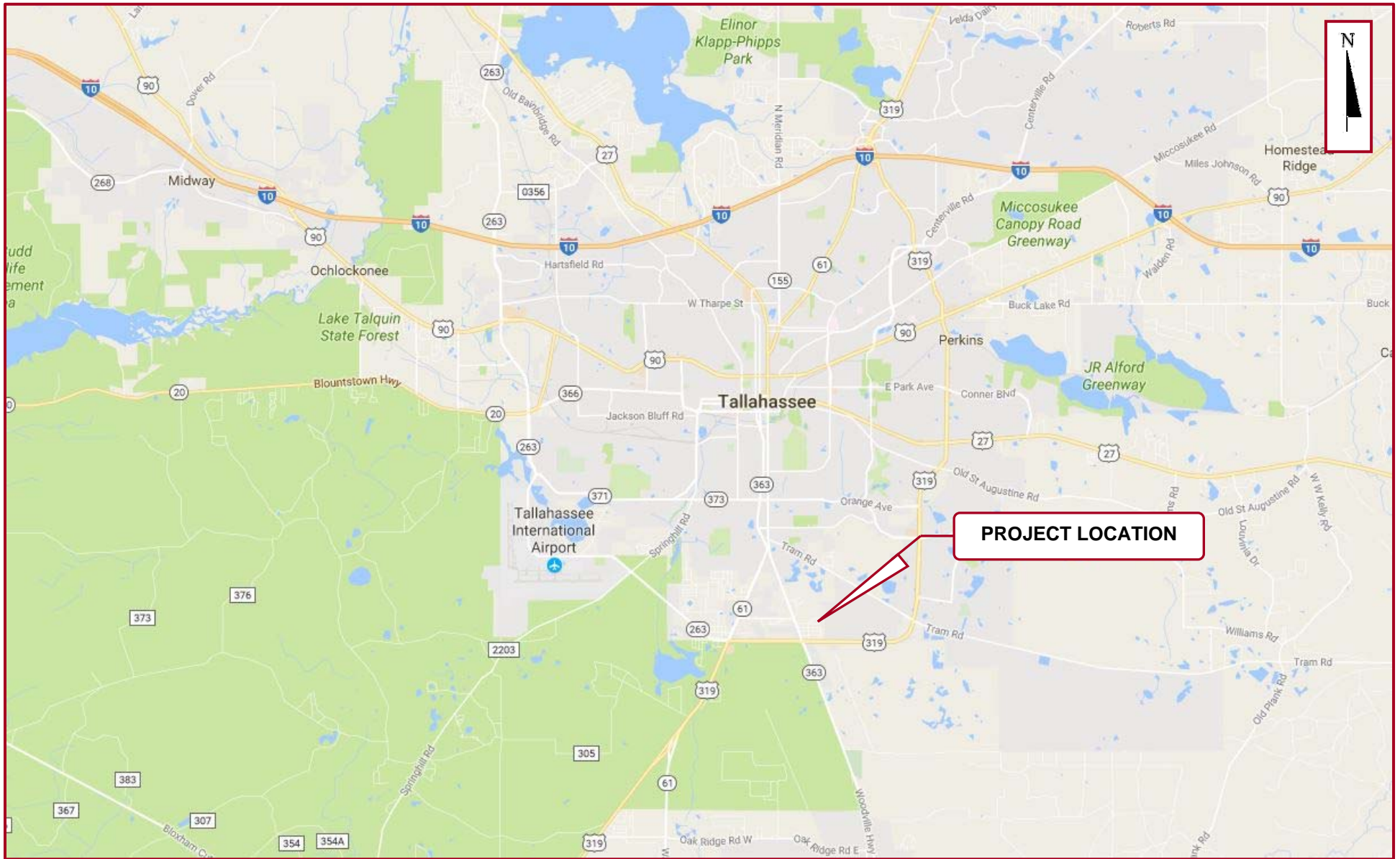


**TABLE 2**  
**NRCS SOIL SURVEY DATA**  
**WOODSIDE HEIGHTS WASTEWATER RETROFIT**  
**LEON COUNTY, FLORIDA**

NRCS SOIL REFERENCE NUMBER	MATERIAL NAME	DEPTH  (INCHES)	MATERIAL DESCRIPTION	MATERIAL CLASSIFICATION		REACTION  (pH)	CORROSION POTENTIAL		DEPTH TO SEASONAL HIGH GROUNDWATER  (FEET)
				UNIFIED	AASHTO		UNCOATED STEEL	CONCRETE	
18	KERSHAW SAND, 0 TO 5 PERCENT SLOPES	0-7	SAND	SP, SP-SM	A-3, A-2	4.5-6.0	LOW	HIGH	--
		7-80	FINE SAND, SAND	SP, SP-SM	A-3, A-2	4.5-6.0			
20	KERSHAW-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES	0-7	SAND	SP, SP-SM	A-3, A-2	4.5-6.0	LOW	HIGH	--
		7-80	FINE SAND, SAND	SP, SP-SM	A-3, A-2	4.5-6.0			

**NOTES:** 1. BASED ON THE NRCS SOIL SURVEY REPORT FOR LEON COUNTY, FLORIDA.  
2. SEE APPENDIX D FOR DETAILED NRCS SURVEY INFORMATION.

# FIGURES



DRAWN: <b>S. SCARPA</b>	CHECKED: <b>K. SWEENEY, E.I.</b>	<b>Environmental &amp; Geotechnical Specialists, Inc.</b>  104 North Magnolia Drive Tallahassee, Florida 32301 Office #: (850) 386-1253	TITLE: <b>PROJECT LOCATION MAP          WOODSIDE HEIGHTS WASTEWATER RETROFIT          LEON COUNTY, FLORIDA</b>	
ENGINEER: <b>J. JENKINS, P.E.</b>			DATE: <b>APRIL 2017</b>	FIGURE NO.: <b>1</b>
CLIENT: <b>GENESIS GROUP, INC.</b>				
PROJ. NO.: <b>18-139-16-02</b>	SCALE:			



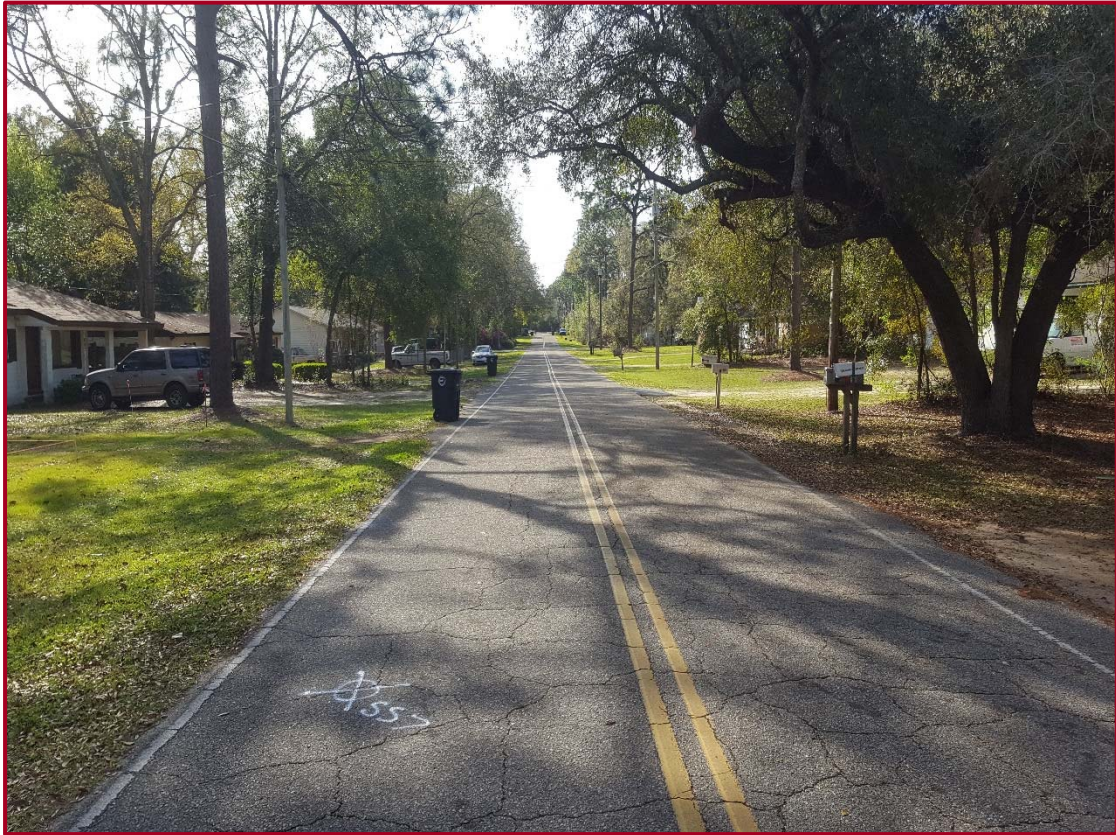
DRAWN: <b>S. SCARPA</b>	CHECKED: <b>K. SWEENEY, E.I.</b>	<b>Environmental and Geotechnical Specialists, Inc.</b>  104 North Magnolia Drive Tallahassee, Florida 32301 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE:  <b>USGS TOPOGRAPHIC MAP          WOODSIDE HEIGHTS WASTEWATER RETROFIT          LEON COUNTY, FLORIDA</b>	
ENGINEER: <b>J. JENKINS, P.E.</b>			DATE: <b>APRIL 2017</b>	FIGURE NO.: <b>2</b>
CLIENT: <b>GENESIS GROUP, INC.</b>				
PROJ. NO.: <b>18-139-16-02</b>	SCALE:			



**FIGURE 3A: EXISTING SITE CONDITIONS ALONG CROSSWAY ROAD  
NEAR SOIL BORING SS-2 (FACING WEST)**



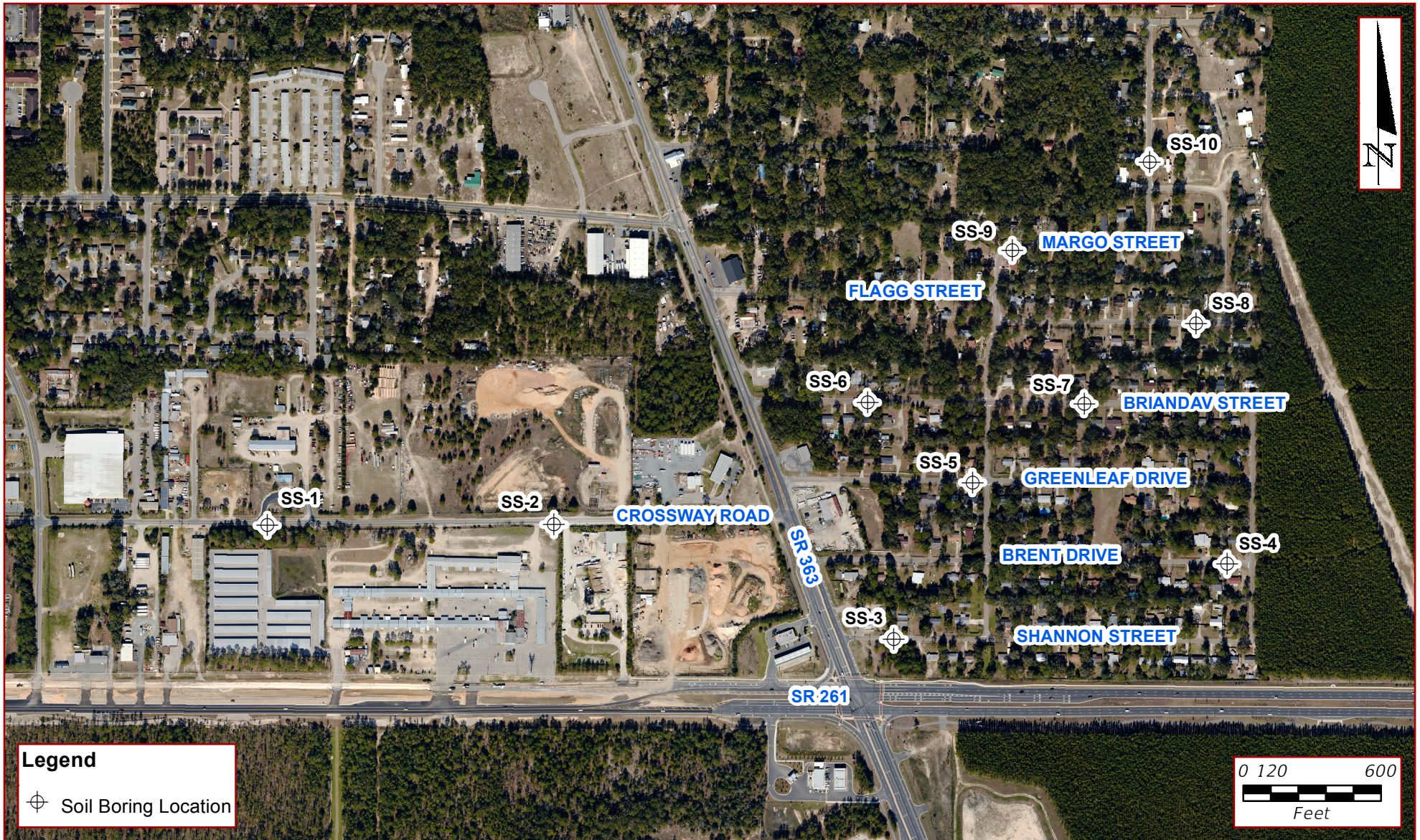
**FIGURE 3B: EXISTING SITE CONDITIONG ALONG BRENT DRIVE  
NEAR SOIL BORING SS-4 (FACING NORTHWEST)**



**FIGURE 3C: EXISTING SITE CONDITIONS ALONG BRIANDAV STREET  
NEAR SOIL BORING SS-7 (FACING NORTHWEST)**



**FIGURE 3D: EXISTING SITE CONDITIONS ALONG MARGO STREET  
NEAR SOIL BORING SS-9 (FACING WEST)**



DRAWN: <b>O. NAMUCHE</b>	CHECKED: <b>K. SWEENEY, E.I.</b>	<b>Environmental and Geotechnical Specialists, Inc.</b>  104 North Magnolia Drive Tallahassee, Florida 32301 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE:  <b>BORING LOCATION MAP          WOODSIDE HEIGHTS WASTEWATER RETROFIT          LEON COUNTY, FLORIDA</b>	
ENGINEER: <b>J. JENKINS, P.E.</b>			DATE: <b>APRIL 2017</b>	FIGURE NO.: <b>4</b>
CLIENT: <b>GENESIS GROUP, INC.</b>				
PROJ. NO.: <b>18-139-16-02</b>	SCALE:			





APPENDIX A  
GEOTECHNICAL PLAN SHEETS



**LEGEND**

LABORATORY TESTING RESULTS

WATER CONTENT (%) WC=  
 -200 SIEVE -200=  
 LIQUID LIMIT LL=  
 PLASTICITY INDEX PI=  
 N-VALUE EQUIVALENT (NOTE 2) \*N  
 GROUND WATER NOT ENCOUNTERED GNE

-  ASPHALT
  -  FINE SAND (A-3)
  -  SILTY FINE SAND (A-2-4)
  -  CLAYEY FINE SAND (A-2-6)
- (A-2-4) AASHTO SOIL CLASSIFICATION GROUP SYMBOL

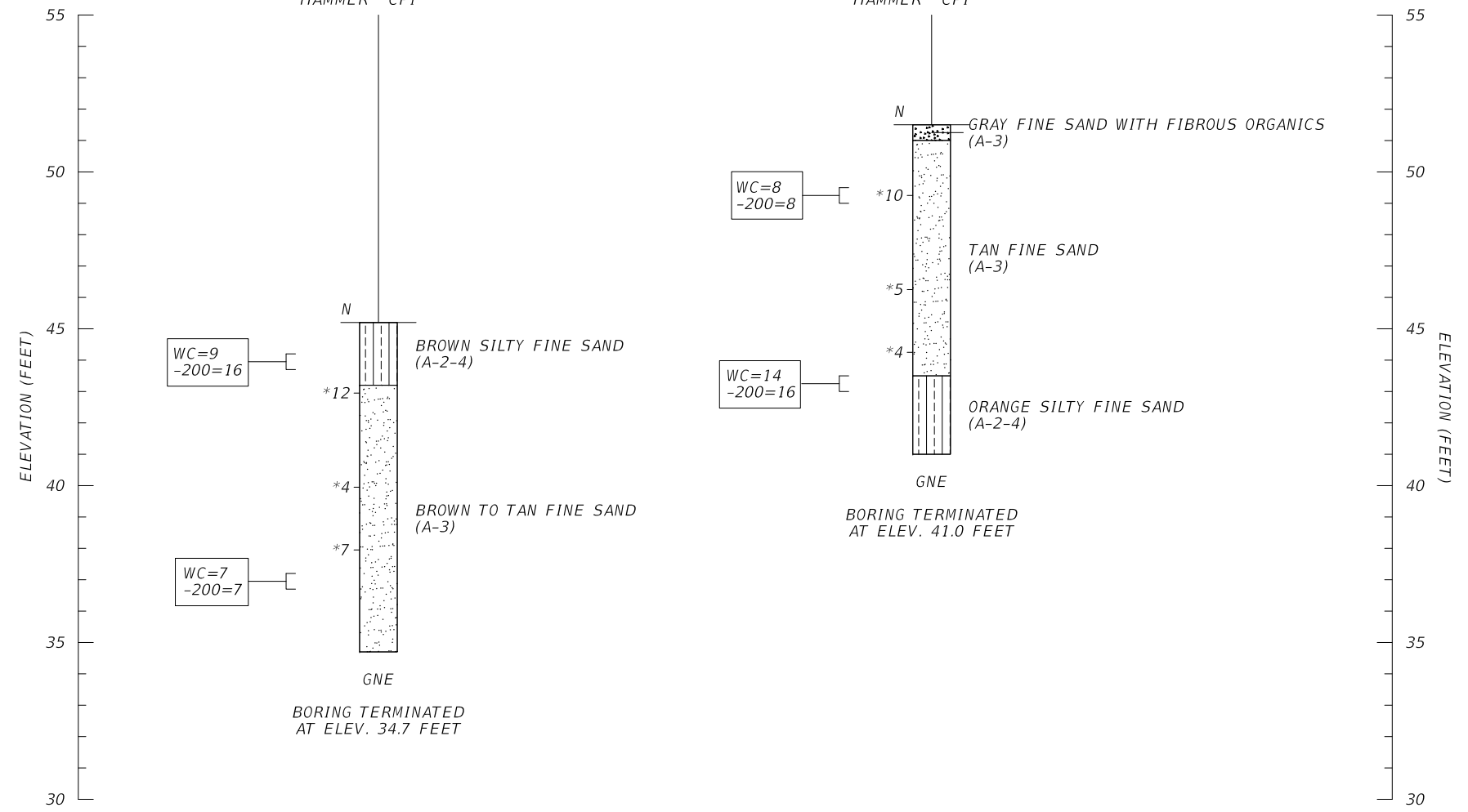
**NOTES**

1. NUMBERS LEFT OF BORING INDICATE STANDARD PENETRATION TEST (SPT) N-VALUES FOR 12 INCH PENETRATION (UNLESS OTHERWISE NOTED).
2. ASTERISK (\*) INDICATES EQUIVALENT SPT N-VALUE DETERMINED FROM HAND STATIC CONE PENETROMETER INDEX (CPI) TEST.
3. SOIL DESCRIPTIONS, TEST DATA, AND STANDARD PENETRATION VALUES SHOWN ARE FOR THE SOIL BORING ONLY AND MAY NOT APPLY TO ANY OTHER LOCATIONS EXCEPT AT THE LOCATIONS OF THE SOIL BORING. EXTRAPOLATION OF THE SOIL DATA TO OTHER LOCATIONS IS THE SOLE RESPONSIBILITY OF THE PERSON PERFORMING THE EXTRAPOLATION.

AUTOMATIC HAMMER			
GRANULAR MATERIALS RELATIVE DENSITY	SPT (BLOWS/12 IN.)	SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/12 IN.)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 - 8	SOFT	1 - 3
MEDIUM DENSE	8 - 24	FIRM	3 - 6
DENSE	24 - 40	STIFF	6 - 12
VERY DENSE	GREATER THAN 40	VERY STIFF HARD	12 - 24 GREATER THAN 24

BOR # SS-1  
 NORTH. 501150  
 EAST. 2038383  
 ELEV. 45.2 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER CPI

BOR # SS-2  
 NORTH. 501158  
 EAST. 2039629  
 ELEV. 51.5 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER CPI

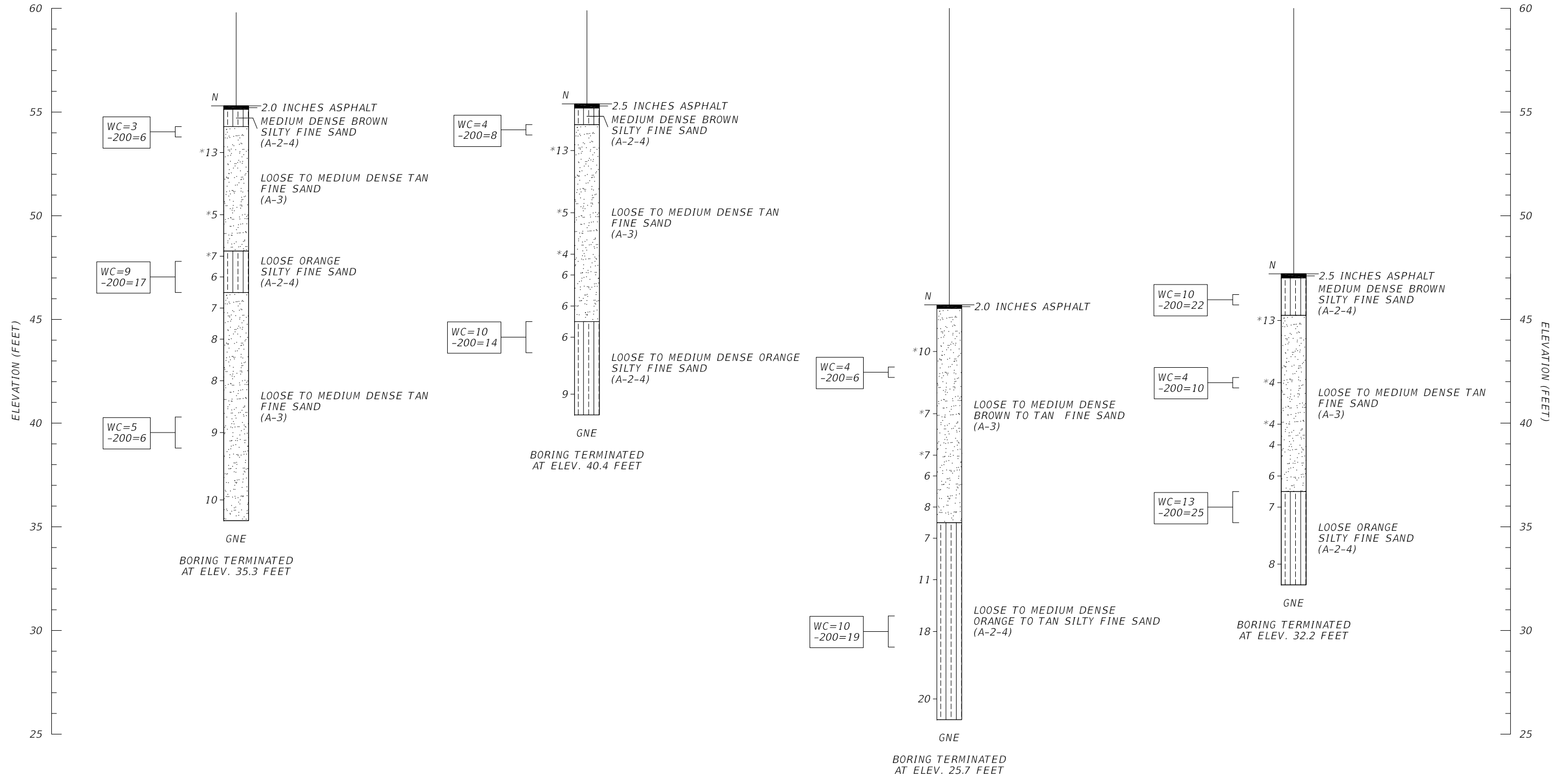


BOR # SS-3  
 NORTH. 500664  
 EAST. 2041112  
 ELEV. 55.3 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER AUTOMATIC

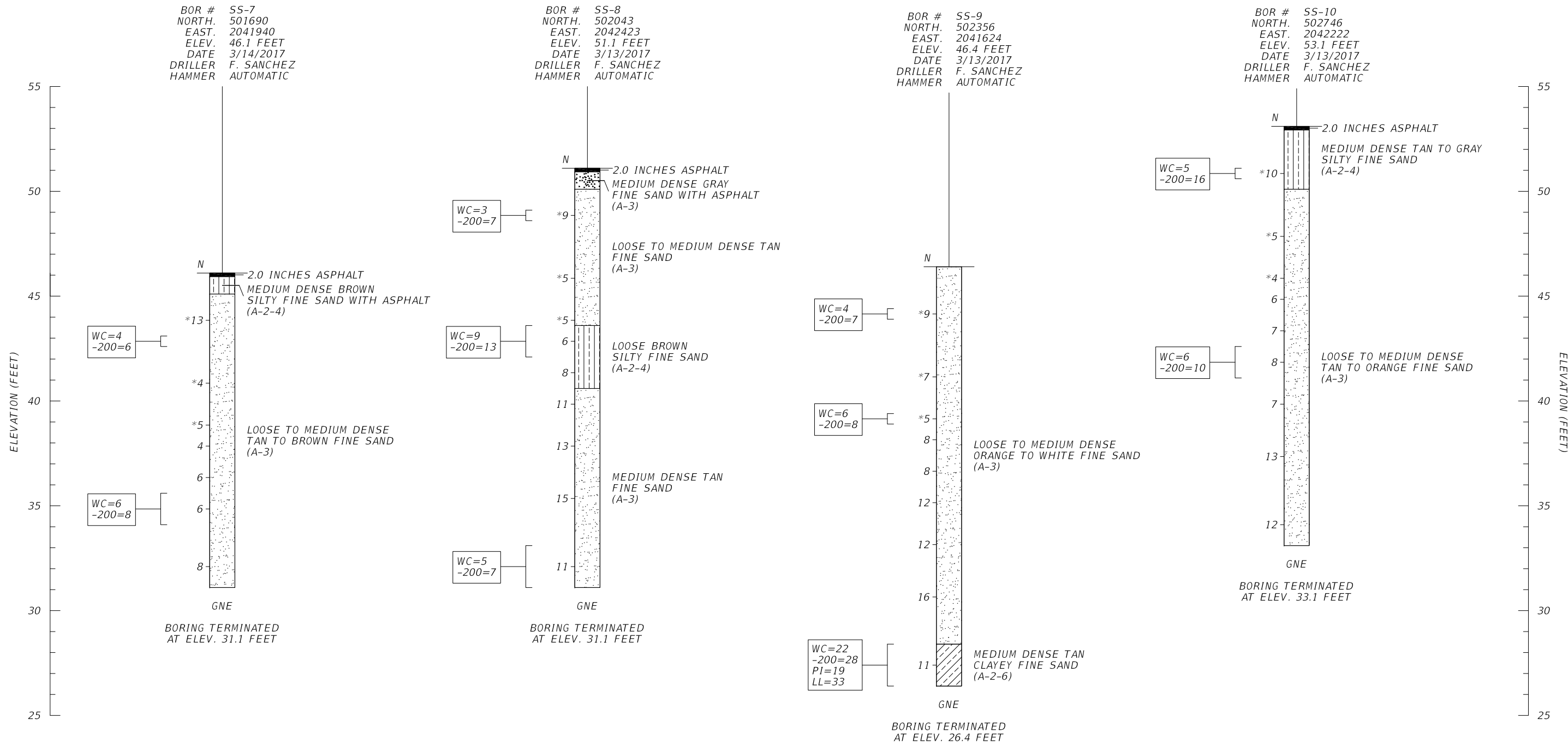
BOR # SS-4  
 NORTH. 501001  
 EAST. 2042567  
 ELEV. 55.4 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER AUTOMATIC

BOR # SS-5  
 NORTH. 501344  
 EAST. 2041458  
 ELEV. 45.7 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER AUTOMATIC

BOR # SS-6  
 NORTH. 501695  
 EAST. 2040994  
 ELEV. 47.2 FEET  
 DATE 3/14/2017  
 DRILLER F. SANCHEZ  
 HAMMER AUTOMATIC



SEAL:	<b>Environmental &amp; Geotechnical Specialists, Inc.</b> <b>EGS</b> Cert. of Auth.: 6222	<b>GENESIS GROUP, INC.</b> PROJECT TITLE WOODSIDE HEIGHTS WASTEWATER RETROFIT	<b>REPORT OF SOIL BORINGS</b> <b>(SHEET 2 OF 3)</b>
J. JENKINS, P.E.			
P.E. NO.: 77686			



SEAL:		<b>Environmental &amp; Geotechnical Specialists, Inc.</b> <b>EGS</b> Cert. of Auth.: 6222	<b>GENESIS GROUP, INC.</b> PROJECT TITLE WOODSIDE HEIGHTS WASTEWATER RETROFIT	<b>REPORT OF SOIL BORINGS</b> <b>(SHEET 3 OF 3)</b>
J. JENKINS, P.E.				
P.E. NO.: 77686				
104 NORTH MAGNOLIA DRIVE TALLAHASSEE, FLORIDA 32301 OFFICE: (850) 386-1253 FAX: (850) 385-8050				

APPENDIX B  
SOIL BORING LOGS



**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-2

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER: INITIAL:**  $\nabla$  > 10.5'

**24 HR:**  $\nabla$

**HAMMER TYPE:** CPI

**NORTHING:** 501158

**EASTING:** 2039629

**ELEVATION (FEET):** 51.5

**DATE:** 03/14/2017

**FLUID LOSS:** N/A

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value	
								10	20		10	20
0	0			GRAY FINE SAND WITH FIBROUS ORGANICS	A-3		18					
3	3			TAN FINE SAND	A-3	-200%=8	9			10		
			8									
			7									
			8									
6	6			ORANGE SILTY FINE SAND	A-2-4	-200%=16	8			5		
			8									
			9									
			7									
9	9						14			4		
							11					
							8					
12	12											
15	15											
18	18											
21	21											

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-3

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 20.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 500664

**EASTING:** 2041112

**ELEVATION (FEET):** 55.3

**DATE:** 03/14/2017

**FLUID LOSS:** NONE

**N/M**

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value	
								10	20		10	20
0	0			2.0 INCHES ASPHALT	--	--	--					
				MEDIUM DENSE BROWN SILTY FINE SAND	A-2-4	-200%=6	9					
	3			MEDIUM DENSE TAN FINE SAND	A-3		3			13		
	6			LOOSE TAN FINE SAND	A-3		2			5		
	9			LOOSE ORANGE SILTY FINE SAND	A-2-4	-200%=17	5			7		
	12			LOOSE TAN FINE SAND	A-3		9			6		
	15			MEDIUM DENSE TAN FINE SAND	A-3	-200%=6	7			7		
	18						7			8		
	21						5			8		
							6			9		
										10		

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE





**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-5

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 20.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 501344

**EASTING:** 2041458

**ELEVATION (FEET):** 45.7

**DATE:** 03/14/2017

**FLUID LOSS:** NONE

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)		N	N-Value	
							Wc (%)				
0	0			2.0 INCHES ASPHALT	--		--				
				MEDIUM DENSE BROWN FINE SAND			6				
				MEDIUM DENSE TAN FINE SAND	A-3		3		10		
	3			MEDIUM DENSE TAN FINE SAND		-200%=6	4				
							4				
	6			LOOSE TAN FINE SAND	A-3		4		7		
							4				
	9			LOOSE TAN FINE SAND			4		7		
							4				
	12			LOOSE ORANGE SILTY FINE SAND	A-2-4		4		6		
							4				
	15			MEDIUM DENSE ORANGE SILTY FINE SAND			7		8		
							10				
	18			MEDIUM DENSE TAN SILTY FINE SAND	A-2-4	-200%=19	8		7		
							10				
	21						13		11		
									18		
									20		

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-6

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 15.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 501695

**EASTING:** 2040994

**ELEVATION (FEET):** 47.2

**DATE:** 03/14/2017

**FLUID LOSS:** NONE

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value			
								10	20		10	20		
0	0			2.5 INCHES ASPHALT	--		--							
				MEDIUM DENSE BROWN SILTY FINE SAND	A-2-4	-200%=22	8							
	3			MEDIUM DENSE TAN FINE SAND	A-3		4			13				
	6			LOOSE TAN FINE SAND	A-3	-200%=10	4			4				
	9						4			4			4	
	12						4			4			4	
	15						4			4			4	
	3						5			6				
	6			LOOSE ORANGE SILTY FINE SAND	A-2-4	-200%=25	13			7				
	9						12			8				
	12													
	15													
	18													
	21													

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-7

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 15.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 501690

**EASTING:** 2041940

**ELEVATION (FEET):** 46.1

**DATE:** 03/14/2017

**FLUID LOSS:** NONE

**N/M** **CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value	
								10	20		30	40
0	0			2.0 INCHES ASPHALT	--	--	--					
				MEDIUM DENSE BROWN SILTY FINE SAND WITH ASPHALT	A-2-4		8					
				MEDIUM DENSE TAN FINE SAND	A-3	-200%=6	4			13		
	3						4					
	6			LOOSE TAN FINE SAND			3			4		
	9						3					
	12			LOOSE BROWN FINE SAND	A-3	-200%=8	4			5		
	15						4			4		
	18						6			6		
	21						5			8		

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-8

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 20.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 502043

**EASTING:** 2042423

**ELEVATION (FEET):** 51.1

**DATE:** 03/13/2017

**FLUID LOSS:** NONE

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value	
								10	20		30	40
0	0			2.0 INCHES ASPHALT	--		--					
				MEDIUM DENSE GRAY FINE SAND WITH ASPHALT	A-3		2					
				MEDIUM DENSE TAN FINE SAND	A-3	-200%=7	3			9		
	3						4					
				LOOSE TAN FINE SAND	A-3		4			5		
	6						3					
				LOOSE BROWN SILTY FINE SAND	A-2-4	-200%=13	4			5		
	9						9			6		
							10			8		
	3						4			11		
				MEDIUM DENSE TAN FINE SAND	A-3		5			13		
	12						5					
							5			15		
	4.5						5					
							5			11		
	18						5					
							5					
	6						5					
							5					
	21											

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-9

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 20.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 502356

**EASTING:** 2041624

**ELEVATION (FEET):** 46.4

**DATE:** 03/13/2017

**FLUID LOSS:** NONE

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)				N	N-Value			
								10	20	30	40		60	10	20	30
0	0			MEDIUM DENSE GRAY FINE SAND			7									
				MEDIUM DENSE TAN FINE SAND	A-3	-200%=7	3					9				
	3						4									
				LOOSE TAN FINE SAND	A-3		4									
	6						3					7				
				LOOSE ORANGE AND TAN FINE SAND		-200%=8	4									
	9						6					5				
				MEDIUM DENSE ORANGE AND TAN FINE SAND			5					8				
	3						6					8				
							5					12				
	12						3					12				
				MEDIUM DENSE WHITE FINE SAND	A-3		3					16				
	4.5						3									
	15						3									
	18			MEDIUM DENSE TAN CLAYEY FINE SAND	A-2-6	-200%=28 LL=33 PI=19	22					11				
	6															
	21															

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

**ENVIRONMENTAL & GEOTECHNICAL  
SPECIALISTS, INC.**

104 North Magnolia Drive  
Tallahassee, Florida 32301  
Office #: (850) 386-1253  
Fax #: (850) 385-8050

**PROJECT:** WOODSIDE HEIGHTS WASTEWATER RETROFIT

**CLIENT:** GENESIS GROUP, INC.

**PROJECT NO.:** 18-139-16-02

**PROJECT LOCATION:** LEON COUNTY, FLORIDA

**BORING NO.:** SS-10

**DRILLER:** F. SANCHEZ

**DEPTH TO WATER:** INITIAL:  $\nabla$  > 20.0'

**24 HR:**  $\nabla$

**HAMMER TYPE:** AUTOMATIC

**NORTHING:** 502746

**EASTING:** 2042222

**ELEVATION (FEET):** 53.1

**DATE:** 03/13/2017

**FLUID LOSS:** NONE

N/M

**CAVING:** C NONE

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DEPTH (METERS)	DEPTH (FEET)	SAMPLE	SYMBOL	DESCRIPTION	AASHTO	TEST RESULTS	Wc (%)	Wc (%)		N	N-Value	
								10	20		30	40
0	0			2.0 INCHES ASPHALT	--	--						
				MEDIUM DENSE GRAY SILTY FINE SAND	A-2-4	-200%=16	7					
				MEDIUM DENSE TAN SILTY FINE SAND			4			10		
	3						5					
				LOOSE TAN FINE SAND			5					
	1.5						5			5		
	6						4					
							4			4		
							4					
							4			6		
	9				A-3		5					
				LOOSE ORANGE AND TAN FINE SAND		-200%=10	7			7		
	3						6					
							6			8		
							7					
							7			7		
	4.5						10					
				MEDIUM DENSE TAN FINE SAND	A-3		10			13		
	15						8					
							8			12		
	18											
	6											
	21											

**NOTES:** N/M MEANS NOT MEASURED  
N/A MEANS NOT AVAILABLE

APPENDIX C  
SOIL CLASSIFICATION DATA

**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-1**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.5	6												A-2-4	BROWN SILTY FINE SAND
1.0-1.5	9	100	100	98	83	46	27	16					A-2-4	BROWN SILTY FINE SAND
2.0-2.5	4											12	A-3	TAN FINE SAND
3.0-3.5	5												A-3	TAN FINE SAND
4.0-4.5	4												A-3	TAN FINE SAND
5.0-5.5	4											4	A-3	TAN FINE SAND
6.0-6.5	4												A-3	TAN FINE SAND
7.0-7.5	4											7	A-3	TAN FINE SAND
8.0-8.5	7	100	100	98	84	45	21	7					A-3	BROWN FINE SAND
9.0-9.5	6												A-3	BROWN FINE SAND
10.0-10.5	4												A-3	TAN FINE SAND



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-2**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.5	18												A-3	GRAY FINE SAND WITH FIBROUS ORGANICS
1.0-1.5	9												A-3	TAN FINE SAND
2.0-2.5	8	100	100	99	88	47	23	8				10	A-3	TAN FINE SAND
3.0-3.5	7												A-3	TAN FINE SAND
4.0-4.5	8												A-3	TAN FINE SAND
5.0-5.5	8											5	A-3	TAN FINE SAND
6.0-6.5	9												A-3	TAN FINE SAND
7.0-7.5	7											4	A-3	TAN FINE SAND
8.0-8.5	14	100	100	99	91	63	33	16					A-2-4	ORANGE SILTY FINE SAND
9.0-9.5	11												A-2-4	ORANGE SILTY FINE SAND
10.0-10.5	8												A-2-4	ORANGE SILTY FINE SAND

**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-3**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.0 INCHES ASPHALT
0.2-0.5	9												A-2-4	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	3	100	100	99	93	54	21	6					A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	3											13	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	3												A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	2												A-3	LOOSE TAN FINE SAND
5.0-5.5	3											5	A-3	LOOSE TAN FINE SAND
6.0-6.5	3												A-3	LOOSE TAN FINE SAND
7.0-7.5	5											7	A-2-4	LOOSE ORANGE SILTY FINE SAND
7.5-9.0	9	100	100	98	88	58	30	17				6	A-2-4	LOOSE ORANGE SILTY FINE SAND
9.0-10.5	7											7	A-3	LOOSE TAN FINE SAND
10.5-12.0	7											8	A-3	MEDIUM DENSE TAN FINE SAND
12.5-14.0	5											8	A-3	MEDIUM DENSE TAN FINE SAND
15.0-16.5	5	100	100	99	82	36	11	6				9	A-3	MEDIUM DENSE



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-4**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.5 INCHES ASPHALT
0.2-0.5	5												A-2-4	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	4	100	100	100	90	49	34	8					A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	4											13	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4												A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	4												A-3	LOOSE TAN FINE SAND
5.0-5.5	4											5	A-3	LOOSE TAN FINE SAND
6.0-6.5	4												A-3	LOOSE TAN FINE SAND
7.0-7.5	4											4	A-3	LOOSE TAN FINE SAND
7.5-9.0	4											6	A-3	LOOSE TAN FINE SAND
9.0-10.5	4											6	A-3	LOOSE TAN FINE SAND
10.5-12.0	10	100	100	99	91	64	36	14				6	A-2-4	LOOSE ORANGE SILTY FINE SAND
13.0-15.0	14											9	A-2-4	MEDIUM DENSE ORANGE SILTY FINE SAND

**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-5**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.0 INCHES ASPHALT
0.2-0.5	6												A-3	MEDIUM DENSE BROWN FINE SAND
1.0-1.5	3												A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	4										10		A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4	100	100	99	89	45	18	6					A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	4												A-3	LOOSE TAN FINE SAND
5.0-5.5	4										7		A-3	LOOSE TAN FINE SAND
6.0-6.5	4												A-3	LOOSE TAN FINE SAND
7.0-7.5	4										7		A-3	LOOSE TAN FINE SAND
7.5-9.0	4										6		A-3	LOOSE TAN FINE SAND
9.0-10.5	7										8		A-3	LOOSE TAN FINE SAND
10.5-12.0	10										7		A-2-4	LOOSE ORANGE SILTY FINE SAND
12.5-14.0	8										11		A-2-4	MEDIUM DENSE ORANGE SILTY FINE SAND
15.0-16.5	10	100	100	99	81	59	37	19				18	A-2-4	MEDIUM DENSE



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-6**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.5 INCHES ASPHALT
0.2-0.5	8												A-2-4	MEDIUM DENSE BROWN SILTY FINE SAND
1.0-1.5	10	100	100	98	80	50	33	22					A-2-4	MEDIUM DENSE BROWN SILTY FINE SAND
2.0-2.5	4											13	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4												A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	4												A-3	LOOSE TAN FINE SAND
5.0-5.5	4	100	100	99	86	43	22	10				4	A-3	LOOSE TAN FINE SAND
6.0-6.5	4												A-3	LOOSE TAN FINE SAND
7.0-7.5	4											4	A-3	LOOSE TAN FINE SAND
7.5-9.0	4											4	A-3	LOOSE TAN FINE SAND
9.0-10.5	5											6	A-3	LOOSE TAN FINE SAND
10.5-12.0	13	100	100	100	94	66	37	25				7	A-2-4	LOOSE ORANGE SILTY FINE SAND
13.0-15.0	12											8	A-2-4	LOOSE ORANGE SILTY FINE SAND

**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-7**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.0 INCHES ASPHALT
0.2-0.5	8												A-2-4	MEDIUM DENSE BROWN SILTY FINE SAND WITH ASPHALT
1.0-1.5	4												A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	4											13	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4	100	100	100	92	47	21	6					A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	3												A-3	LOOSE TAN FINE SAND
5.0-5.5	3											4	A-3	LOOSE TAN FINE SAND
6.0-6.5	3												A-3	LOOSE TAN FINE SAND
7.0-7.5	3											5	A-3	LOOSE TAN FINE SAND
7.5-9.0	4											4	A-3	LOOSE TAN FINE SAND
9.0-10.5	4											6	A-3	LOOSE TAN FINE SAND
10.5-12.0	6	100	100	100	92	55	25	8				6	A-3	LOOSE BROWN FINE SAND
13.0-15.0	5											8	A-3	LOOSE BROWN FINE SAND



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-8**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.0 INCHES ASPHALT
0.2-0.5	2												A-3	MEDIUM DENSE GRAY FINE SAND WITH ASPHALT
1.0-1.5	4												A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	3	100	100	99	89	41	20	7				9	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4												A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	4												A-3	LOOSE TAN FINE SAND
5.0-5.5	4											5	A-3	LOOSE TAN FINE SAND
6.0-6.5	3												A-3	LOOSE TAN FINE SAND
7.0-7.5	4											5	A-3	LOOSE TAN FINE SAND
7.5-9.0	9	100	100	98	84	39	22	13				6	A-2-4	LOOSE BROWN SILTY FINE SAND
9.0-10.5	10											8	A-2-4	LOOSE BROWN SILTY FINE SAND
10.5-12.0	4											11	A-3	MEDIUM DENSE TAN FINE SAND
12.5-14.0	5											13	A-3	MEDIUM DENSE TAN FINE SAND
15.0-16.5	5											15	A-3	MEDIUM DENSE



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-9**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.5	7												A-3	MEDIUM DENSE GRAY FINE SAND
1.0-1.5	3												A-3	MEDIUM DENSE TAN FINE SAND
2.0-2.5	4	100	100	100	92	43	23	7				9	A-3	MEDIUM DENSE TAN FINE SAND
3.0-3.5	4												A-3	MEDIUM DENSE TAN FINE SAND
4.0-4.5	4												A-3	LOOSE TAN FINE SAND
5.0-5.5	3											7	A-3	LOOSE TAN FINE SAND
6.0-6.5	4												A-3	LOOSE TAN FINE SAND
7.0-7.5	6	100	100	100	93	50	24	8				5	A-3	LOOSE ORANGE AND TAN FINE SAND
7.5-9.0	5											8	A-3	MEDIUM DENSE ORANGE AND TAN FINE SAND
9.0-10.5	6											8	A-3	MEDIUM DENSE ORANGE AND TAN FINE SAND
10.5-12.0	5											12	A-3	MEDIUM DENSE ORANGE AND TAN FINE SAND
12.5-14.0	3											12	A-3	MEDIUM DENSE WHITE FINE SAND
15.0-16.5	3											16	A-3	MEDIUM DENSE WHITE



**SOIL CLASSIFICATION DATA**

**Project: WOODSIDE HEIGHTS WASTEWATER RETROFIT**

**Client: GENESIS GROUP, INC.**

**Project No.: 18-139-16-02**

**Boring: SS-10**

**Location: LEON COUNTY, FLORIDA**

DEPTH (FEET)	Wc (%)	-4 (%)	-10 (%)	-20 (%)	-40 (%)	-60 (%)	-100 (%)	-200 (%)	LL	PI	Org. (%)	N Value	AASHTO	Description
0.0-0.2	--												--	2.0 INCHES ASPHALT
0.2-0.5	7												A-2-4	MEDIUM DENSE GRAY SILTY FINE SAND
1.0-1.5	4												A-2-4	MEDIUM DENSE TAN SILTY FINE SAND
2.0-2.5	5	100	100	100	92	56	30	16				10	A-2-4	MEDIUM DENSE TAN SILTY FINE SAND
3.0-3.5	5												A-3	LOOSE TAN FINE SAND
4.0-4.5	5												A-3	LOOSE TAN FINE SAND
5.0-5.5	4											5	A-3	LOOSE TAN FINE SAND
6.0-6.5	4												A-3	LOOSE TAN FINE SAND
7.0-7.5	4											4	A-3	LOOSE TAN FINE SAND
7.5-9.0	5											6	A-3	LOOSE ORANGE AND TAN FINE SAND
9.0-10.5	7											7	A-3	LOOSE ORANGE AND TAN FINE SAND
10.5-12.0	6	100	100	100	91	50	28	10				8	A-3	LOOSE ORANGE AND TAN FINE SAND
12.5-14.0	7											7	A-3	LOOSE ORANGE AND TAN FINE SAND
15.0-16.5	10											13	A-3	MEDIUM DENSE



APPENDIX D  
NRCS SOIL SURVEY



**Legend**

- Map Unit Symbol, Map Unit Name
- 18 ,Kershaw sand, 0 to 5 percent slopes
  - 20 ,Kershaw-Urban land complex, 0 to 5 percent slopes

DRAWN: O. NAMUCHE	CHECKED: K. SWEENEY, E.I.	Environmental and Geotechnical Specialists, Inc.  104 North Magnolia Drive Tallahassee, Florida 32301 Office #: (850) 386-1253 Fax #: (850) 385-8050	TITLE:  NRCS SOIL SURVEY MAP WOODSIDE HEIGHTS WASTEWATER RETROFIT LEON COUNTY, FLORIDA	
ENGINEER: J. JENKINS, P.E.			DATE: APRIL 2017	FIGURE NO.: D
CLIENT: GENESIS GROUP, INC.	PROJ. NO.: 18-139-16-02		SCALE:	





Custom Soil Resource Report

Absence of an entry indicates that the data were not estimated. The asterisk '\*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Leon County, Florida														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
18—Kershaw sand, 0 to 5 percent slopes														
Kershaw	85	A	0-7	Sand	SP, SP-SM	A-3, A-2	0- 0- 0	0- 0- 0	98-99-100	98-99-100	50-65-80	1- 4- 7	0-7 -14	NP
			7-80	Fine sand, sand	SP, SP-SM	A-3, A-2	0- 0- 0	0- 0- 0	98-99-100	98-99-100	50-65-80	1- 4- 7	0-7 -14	NP
20—Kershaw-Urban land complex, 0 to 5 percent slopes														
Kershaw	55	A	0-7	Sand	SP, SP-SM	A-3, A-2	0- 0- 0	0- 0- 0	98-99-100	98-99-100	50-65-80	1- 4- 7	0-7 -14	NP
			7-80	Fine sand, sand	SP, SP-SM	A-3, A-2	0- 0- 0	0- 0- 0	98-99-100	98-99-100	50-65-80	1- 4- 7	0-7 -14	NP

Custom Soil Resource Report

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Leon County, Florida														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	<i>In</i>	<i>Pct</i>	<i>Pct</i>	<i>Pct</i>	<i>g/cc</i>	<i>micro m/sec</i>	<i>In/In</i>	<i>Pct</i>	<i>Pct</i>					
18—Kershaw sand, 0 to 5 percent slopes														
Kershaw	0-7	-94-	0- 5- 15	1- 2- 5	1.35-1.45-1.55	141.00-247.00-353.00	0.02-0.04-0.05	0.0- 1.5- 2.9	0.3- 0.5- 1.0	.15	.15	5	1	220
	7-80	-98-	0- 1- 15	1- 1- 5	1.35-1.45-1.55	141.00-247.00-353.00	0.02-0.04-0.05	0.0- 1.5- 2.9	0.0- 0.1- 0.5	.02	.02			
20—Kershaw-Urban land complex, 0 to 5 percent slopes														
Kershaw	0-7	-94-	0- 5- 15	1- 2- 5	1.35-1.45-1.55	141.00-247.00-353.00	0.02-0.04-0.05	0.0- 1.5- 2.9	0.3- 0.5- 1.0	.15	.15	5	1	220
	7-80	-98-	0- 1- 15	1- 1- 5	1.35-1.45-1.55	141.00-247.00-353.00	0.02-0.04-0.05	0.0- 1.5- 2.9	0.0- 0.1- 0.5	.02	.02			
Urban land	—	—	—	—	—	—	—	—	—					

Custom Soil Resource Report

Soil Features—Leon County, Florida									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		<i>Low-RV-High</i>	<i>Range</i>		<i>Low-High</i>	<i>Low-High</i>			
		<i>In</i>	<i>In</i>		<i>In</i>	<i>In</i>			
18—Kershaw sand, 0 to 5 percent slopes									
Kershaw		—	—		—	—	None	Low	High
20—Kershaw-Urban land complex, 0 to 5 percent slopes									
Kershaw		—	—		—	—	None	Low	High
Urban land		—	—		—	—			

### Custom Soil Resource Report

Map unit symbol and soil name	Hydrologic group	Surface runoff	Month	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>		<i>Ft</i>				
18—Kershaw sand, 0 to 5 percent slopes											
Kershaw	A	Negligible	Jan-Dec	—	—	—	—	—	None	—	None
20—Kershaw-Urban land complex, 0 to 5 percent slopes											
Kershaw	A	Negligible	Jan-Dec	—	—	—	—	—	None	—	None
Urban land			Jan-Dec	—	—	—	—	—	None	—	None