ECS Florida, LLC

Preliminary Geotechnical Engineering Report

Goat Farm Apartments

8830 College Parkway
Fort Myers, Florida

ECS Project No. 60:1149

August 28, 2019

ECS FLORIDA, LLC
"Setting the Standard for Service"
Geotechnical • Construction Materials • Environmental • Facilities

August 28, 2019

Cameron Rees
Assistant Development Manager
Zimmer Development Company
111 Princess Street Wilmington, North Carolina 28402

ECS Project No. 60:1149-GP

Reference: Preliminary Geotechnical Engineering Report
Goat Farm Apartments
8830 College Parkway
Fort Myers, Florida

Dear Mr. Rees:

ECS Florida, LLC (ECS) has completed the limited subsurface exploration, laboratory testing, and preliminary geotechnical engineering services for the above-referenced project. Our services were performed in general accordance with our Proposal No. 60:614-GP, dated July 24, 2019. This report presents our understanding of the geotechnical aspects of the project, the results of the field exploration and laboratory testing conducted, as well as our understanding of the design and construction aspects.

It has been our pleasure to be of service to Zimmer Development Company, during the preliminary phase of this project. We would appreciate the opportunity to remain involved during the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Florida, LLC

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MWR/JNG/mwr

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EXECUTIVE SUMMARY

The following summarizes our understanding of the project as well as the preliminary geotechnical exploration and engineering analysis, particularly those that may have a cost impact on the planned four-story structures. Further, our preliminary foundation recommendations are summarized. Information gleaned from the executive summary should not be utilized in lieu of reading the entire geotechnical report.

- We understand the development will consist of four-story apartment buildings, a one-story clubhouse, a c-store with associated canopy, car wash, underground storage tanks, paved parking areas, driveways, and stormwater management system. The development is at a preliminary stage and the site plan is subject to change. Based on our experience with similar structures we have assumed the maximum structural loading conditions will consist of column loads and wall loads on the order of 150 kips and 12 kips per linear foot (klf), respectively; these loads must be confirmed by the structural engineer.

- The geotechnical exploration included 24 Standard Penetration Test (SPT) borings advanced to depths from six feet to 40 feet below the existing ground surface (bgs).

- The borings generally encountered very loose to medium dense Sands (SP) underlain by loose Sands with varying fines (SP to SM) to a depth of approximately 12 feet, where interbedded weathered limestone (WR) and high plasticity Clay (CH) was encountered to the boring termination depth of approximately 40 feet. The groundwater table was encountered from ground surface to six inches bgs at the boring locations. It should be noted, standing water was observed on site during our exploration.

- Based on the boring results and the assumed loads, the planned structures could be supported on shallow foundations bearing on natural soils or properly compacted fill with a bearing capacity of 3,000 for columns and 2,500 psf for walls.

- Pavement section general design recommendations are given for standard and heavy-duty asphalt and concrete surface courses based on assumed pavement design parameters, as included in Section 5.2.1.

1.0 INTRODUCTION

1.1 GENERAL

The purpose of this study was to provide preliminary geotechnical information for the design and construction of the multi-family development located in Fort Myers, Florida. The project will include the design and construction of four-story apartment buildings, a one-story clubhouse, c-store with associated canopy, underground storage tanks, paved parking, driveways, and stormwater management system.

The preliminary recommendations developed for this report are based on project information supplied by Zimmer Development Company and a conceptual site plan provided by Johnson Engineering, dated July 2019. We understand the development is at a preliminary stage and the site plan is subject to change. This report contains our assumptions, the results of our subsurface explorations, site characterization, geotechnical engineering analyses, and recommendations for the design and construction of the planned construction.

1.2 SCOPE OF SERVICES

To obtain the necessary preliminary geotechnical information required for the foundation design of the proposed development in Lee County, Florida, a total of 24 SPT borings were conducted to the depths from six feet to 40 feet below the existing ground surface. These borings were performed at approximate locations displayed on the Boring Location Diagram, located in Appendix A.

This report discusses our exploratory and testing procedures, presents our findings and evaluations and includes the following.

- A brief review and description of our field and laboratory test procedures and the results of testing conducted.
- A review of surface topographical features and site conditions.
- A review of area and site geologic conditions.
- A review of subsurface soil stratigraphy with pertinent available physical properties.
- Final copies of our soil test boring logs.
- Preliminary recommendations for foundation design and estimates of predicted foundation settlement based on assumed structural loads
- Preliminary recommendations for foundation types.
- Preliminary recommendations on pavement sections.

1.3 AUTHORIZATION

Our services were performed in general accordance with our Proposal No. 60:614-GP, executed August 2, 2019 by Mr. Adam Tucker of Zimmer Development Company, and include the scope and special needs contract between ECS and Zimmer Development Company.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The site is located in Fort Myers, Lee County, Florida and the location is shown in Figure 2.1.1 below. The site is bounded by College Pkwy. followed by commercial developments to the south, a utility site to the east, E College Pointe Dr. followed by a multi-family development to the north, and Wesleyan Dr. followed by a commercial development to the west, as shown in the figure below.

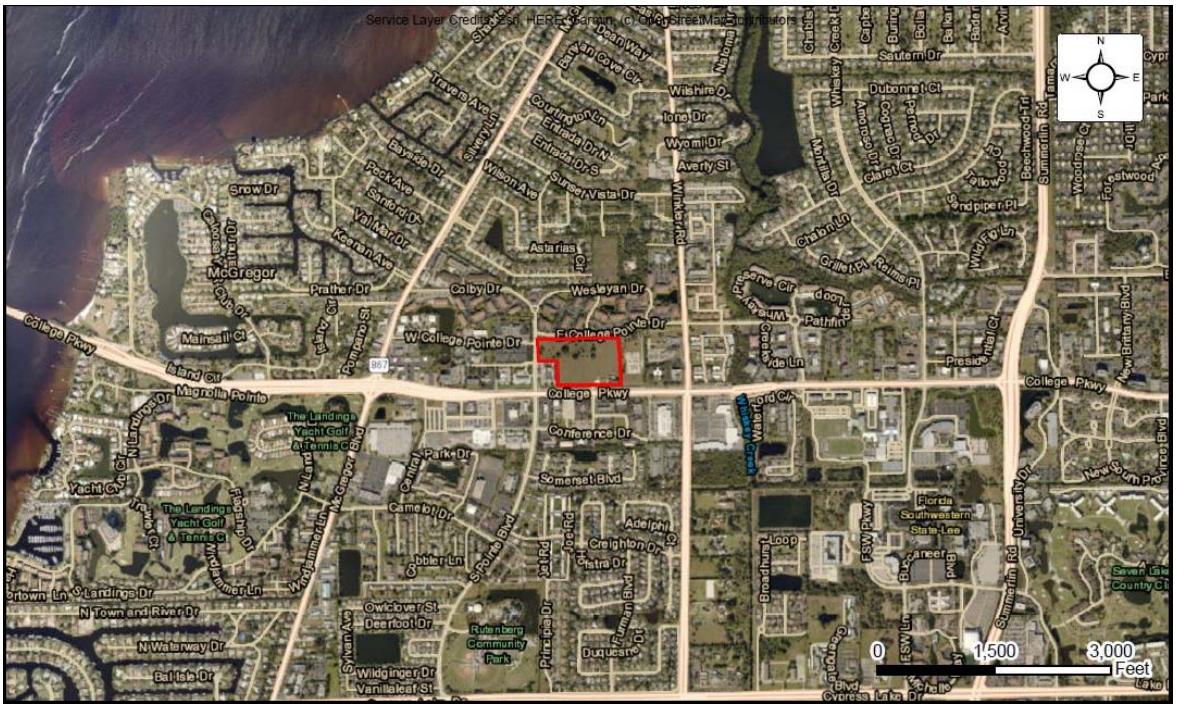


Figure 2.1.1 Site Location

2.2 PAST SITE HISTORY/USES

ECS reviewed aerial photographs of the subject property and immediate surrounding properties using the University of Florida's Historical Aerial Photography Archives and Google Earth©. The aerial photographs reviewed were dated 1995, 1999, 2004 through 2010, 2012 through 2014, 2016, and 2017 through 2019.

- The 1995 aerial photograph shows the neighboring pond had been constructed along with Veterans Boulevard and the site was heavily wooded.
- The 1999 through 2009 aerial photographs show no major changes to the subject site.
- The 2010 aerial photograph shows the site had been cleared and Beatrix Boulevard as well as the other auxiliary roadways had been constructed.
- The 2012 through 2019 aerial photographs show no major changes.

2.3 CURRENT SITE CONDITIONS

The site is vacant and sparsely wooded. Based on available topographic information and our site visit, the site is generally flat with ground surface elevation of approximately from +5 feet (NAV88) based on USGS 7.5 minute topographic quadrangle. These elevations are approximate and should not be relied upon for design.

2.3.1 Planned Construction

Based on the information provided to us, we understand the development will consist of construction of multiple four-story multi-family buildings, a one-story clubhouse, a c-store with associated canopy, underground storage tanks, car wash, paved parking, driveways, and stormwater management system.

2.3.2 Structural Information/Loads

The following information on design values explains our understanding of the structures and the assumed structural loads(these loads must be confirmed by the structural engineer):

Table 2.3.2.1 Design Values

SUBJECT	PRELIMINARY DESIGN INFORMATION / EXPECTATIONS
# of Stories	Four
Usage	Multi-family Buildings
Construction Type	We anticipate that the buildings will be of masonry
Column Loads(1)	Assumed, 150 kips (Full Dead and Factored Live) maximum
Wall Loads(1)	Assumed, 12.0 kips per linear foot (klf) maximum
Lowest Finish Floor Elevation(2)	Approximately +7.0 ft.

(1) If the assumed loads differ from final structural loads, ECS must be contacted to revise foundation design recommendations, bearing capacity, and settlement calculations.
(2) Please note that the ground surface elevations are interpolated based on USGS published topographical information. In addition, the elevations at boring locations are approximate and should not be relied upon for design.

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

The field exploration was planned with the objective of characterizing the project site in general geotechnical and geological terms to evaluate subsequent field and laboratory data to assist in the determination of geotechnical recommendations.

3.1.1 Test Borings

The subsurface conditions were explored by drilling 24 Standard Penetration Test (SPT) borings. The borings were drilled to the depths from six feet to 40 feet below the ground surface. Subsurface explorations were completed under the general supervision of an ECS geotechnical engineer.

A truck-mounted drill rig was utilized to drill the soil test borings. Subsurface explorations were completed under the general supervision of an ECS geotechnical engineer.

Borings were located in the field using Google Earth©. The approximate as-drilled boring locations are shown on the Boring Location Diagram, Figure 2 included in Appendix A.

Standard Penetration Tests (SPTs) were conducted in the borings at regular intervals in general accordance with ASTM D 1586. Small representative samples were obtained from the borings and were used to classify the soils encountered. The standard penetration resistances obtained to provide a general indication of soil shear strength and compressibility.

3.2 REGIONAL/SITE GEOLOGY

Southwest Florida region is located on the southern flank of Florida Plateau, a stable, carbonate platform on which thick deposits of limestone, dolomites, and evaporates have accumulated. The general geology of the upper 200 feet of this platform within the area of South Florida where the proposed project is to be located is composed predominantly of limestone and quartz sand. The major geological formations that are usually encountered from top to bottom within Lee County are Shelly Sediments of Plio-Pleistone age and the Tamiami formation.

The following table below describes the generalized stratigraphic column of the general local geology and subsurface materials that may be associated with the geologic unit shown:

Table 3.2.1 Regional Site Geology

Geologic Formation	Subsurface Materials
Shelly sediments of Plio-Pleistocene (TQsu)	Shell beds, undifferentiated, includes sediments previously placed in units primarily differentiated by the included fauna
Tamiami formation (Tt)	Poorly defined lithostratigraphic unit containing a wide range of mixed carbonate-siliciclastic lithologies and associated faunas

Geologic map of the state of Florida – Southern Peninsula including the approximate site location is shown in Figure 3.2.1 below:

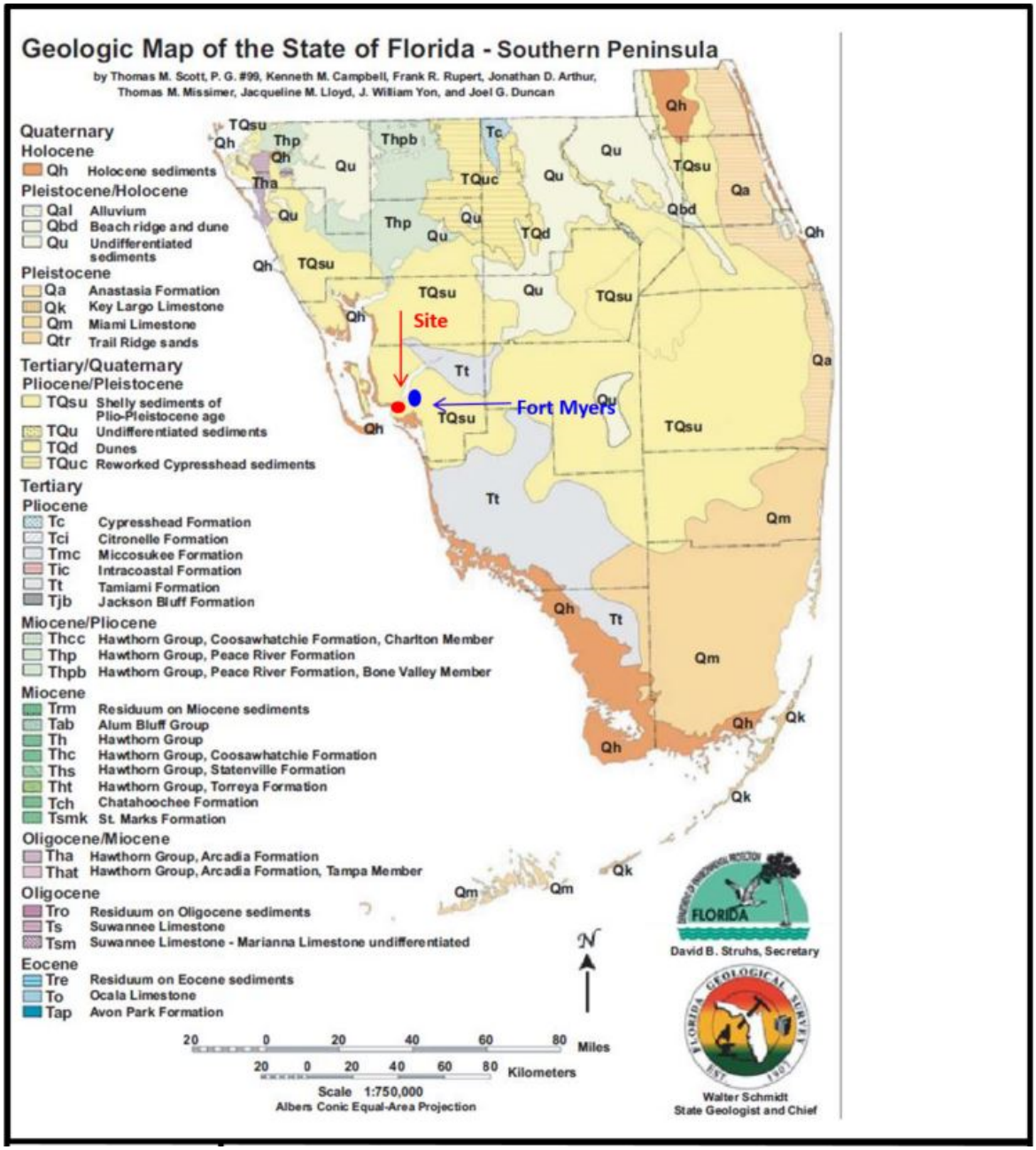


Figure 3.2.1 Geologic Map

3.3 SOIL SURVEY MAPPING

Based on the Soil Survey for Lee County, Florida by the US Department of Agriculture Soil Conservation Service (USDA) the predominant predevelopment soil types at the site are identified and a summary of characteristics of this soil series is included in table the below:

Table 3.3.1 Soil Survey

Soil Type	Constituents	Drainage Class	Water Table
36 – Immokalee sand – Urban land complex, wet, fine sand, 0 to 2 percent slopes	Sand	Poorly drained	6 to 18 inches
102 – Boca fine sand – Urban land complex, 0 to 2 percent slopes	Fine sand, fine sandy loam	Poorly Drained	3 to 18 inches

Soil mapping of the site vicinity showing soil type numbers is presented in Figure 3.3.1 obtained from the United States Department of Agriculture (USDA) Web Soil Site.

Figure 3.3.1 Site Soil Survey

3.4 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. Table 3.4.1 Subsurface Stratigraphy shows general subsurface conditions based on our exploration. The following sections also provide generalized characterizations of the soil strata encountered during our subsurface exploration. For subsurface information at a specific location, refer to the Boring Logs and Subsurface Soil Profiles included in Appendix B.

Table 3.4.1 Subsurface Stratigraphy

Approximate Depth Range (ft)	Approximate Elev. Range (ft) [2]	Stratum	Description	Ranges of SPT[(1)] N-values (bpf)
0 to 0.5	5.0 to 4.5	I	Top Soil	-
0.5 to 4.0	4.5 to 1.0	II	(SP) fine to medium Sand, moist to wet, very loose to medium dense	3 to 11
4.0 to 12.0	1.0 to -7.0	III	(SP-SM) fine to medium Sand with silt, wet, very loose to medium dense	3 to 14
12.0 to 33.5	-7.0 to -28.5	IV	(CH) high plasticity sandy Clay, wet, very soft to firm, with some limestone fragments	2 to 9
33.5 to 40.0	-28.5 to -35.0	V	(WR) Weathered Granular Limestone, wet, very loose to medium dense	3 to 13

Notes: (1) Standard Penetration Test
(2) Please note that the ground surface elevations are based on Google Earth©. In addition, the elevations at boring locations are approximate and should not be relied upon for design.

3.5 GROUNDWATER OBSERVATIONS

Water levels were measured in our borings (August, rainy season) as noted on the soil boring logs located in Appendix B. Groundwater depth measured at the time of drilling ranged from ground surface to six inches (bgs) at the boring locations. No further water measurements were conducted after finishing the borings. Variations in the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors. The groundwater will fluctuate seasonally depending upon local rainfall. The rainy season in Florida is normally between June and September. It should be noted, standing water was observed on site during our exploration.

Based upon our site-specific field data, our review of the USDA Soils Survey, the USGS topographic map of the area, published lake level data, the expected regional hydrogeology and our experience in the area, we estimate the seasonal high groundwater levels will be at or above current levels.

4.0 LABORATORY TESTING

The laboratory testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. Classification and soil property tests were performed on representative soil samples obtained from the test borings in order to aid in classifying soils according to the Unified Soil Classification System and to quantify and correlate engineering properties. Laboratory tests performed on selected samples included grain size analysis tests and moisture content tests. The results of the laboratory testing program are presented in Appendix C, Laboratory Testing Summary.

An experienced geotechnical engineer/engineering geologist visually classified each soil sample from the test borings on the basis of texture and plasticity in accordance with the Unified Soil Classification System (USCS) and ASTM D-2488 (Description and Identification of Soils-Visual/Manual Procedures). After classification, the geotechnical engineer grouped the various soil

types into the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses beginning the soil descriptions on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual.

5.0 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

5.1 PRELIMINARY BUILDING DESIGN

The following sections provide recommendations for foundation design, soil supported slabs, site design considerations, and pavement recommendations.

It should be noted, low plasticity and high plasticity clay (CL/CH) was encountered in the borings. This type of material is known to consolidate when loaded and can cause buildings to settle differentially. The compressible material encountered in the borings is located at a depth that is away from bottom of footing as to be relatively harmless for the loads assumed for the proposed development. However, this project foundation design is very sensitive to the magnitude of the structural loads. As such, the project structural engineer must provide the actual column loads for each column.

As previously noted, standing water was observed on site during the field exploration. Dewatering may be necessary during construction.

5.1.1 Foundations

According to the soil borings and soil testing results for the location of the planned four-story structures, the materials anticipated at normal footing depths and below the proposed floor slabs should consist of natural sandy soils with varying densities and amounts of fines, with no roots and less than five percent organic content.

Based on the project information available, we have assumed the structural loads for the proposed structures are on the order of 150 kips and 12 kips/lf for columns and walls or less, respectively. Should these loads change, ECS must be contacted to update foundation recommendations based on new bearing pressures and settlement estimates.

Once the site is prepared based upon our geotechnical recommendations including the placement of at least two-feet of selected fill, shallow foundation could be used if our assumed structural loads per column are correct; the test boring data indicate the existing sandy soils or selected sandy fill expected at footing bearing levels and provided subgrades and structural fills are prepared as discussed herein, the proposed structure can be supported by conventional shallow foundations: individual column footings and continuous wall footings. The design of the foundation shall utilize the following parameters indicated in Table 5.1.1.1 below:

Table 5.1.1.1 Preliminary Foundation Design Parameters

Design Parameter	Column Footing	Wall Footing (office building)
Net Allowable Bearing Pressure(1)	3,000 psf	2,500 psf
Acceptable Bearing Soil Material	(SP, SP-SM) Medium Dense SAND – Structural Fill Material	(SP, SP-SM) Medium Dense SAND – Structural Fill Material
Minimum Width	24 inches	24 inches
Minimum Footing Embedment Depth (below slab or finished grade)	24 inches	24 inches
Estimated Total Settlement (with assumed loads) (2)	One to one and a half inch	One to one and a half inch
Estimated Differential Settlement (with assumed loads) (2)	0.75 inch between columns	0.75 inch between columns

Notes: (1) Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation.
(2) If assumed structural loads differ from final ones, ECS must be contacted to update foundation recommendations, bearing capacity, and to recalculate settlements accordingly.

Settlement of individual footings designed in accordance with recommendations outlined above is estimated to be borderline tolerable limits for the proposed structure based on the assumed structural loads. Within the proposed building, total settlements of one to one and a half inch are anticipated with differential settlements per 50 foot of wall footing expected to be on the order of 0.75 inches. These settlement estimates are based on our engineering experience with these soils and are provided to guide the structural engineer for design. It should be noted, settlements may be larger than anticipated due to consolidation settlement of the clay soils found in the borings. Further testing of the clay through consolidation testing is recommended during the follow up exploration.

Our settlement calculations assumes the soils from the bottom of the footings to a depth of one foot below the bottom of the footings have been compacted prior to placing concrete in the footings when placed on structural fill material, which is the case for this project that will have one foot of fill; if less height of fill material is placed we need to be contacted to reevaluate our settlement analysis. As such, we recommend this zone be compacted to at least 95% of the maximum dry density, as determined by the Modified Proctor Compaction Test (ASTM D-1557), and bearing capacity check for each footing to a depth of five feet underneath the footing with Dynamic Cone Penetrometer (DCP) within each spread footing footprint and every 50 linear feet for continuous footings.

5.1.2 Floor Slabs

The on-site natural soils are considered suitable for support of the slab on grade, although moisture control during earthwork operations may be necessary. It appears that the slabs for the structure will bear on fill material. The following graphic (Figure 5.1.2.1) depicts our soil-supported slab recommendations.

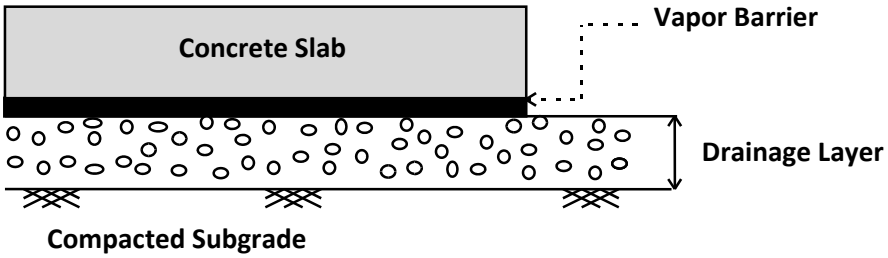


Figure 5.1.2.1 Soil-Supported Slab

1. Drainage layer thickness: Four inches
2. Drainage Layer Material: SAND (SP, SW)
3. Subgrade compacted to 95% maximum dry density per ASTM D1557

Based on the granular soils (SP) encountered in the borings it is our opinion that these soils can be used as the required drainage layer.

Subgrade Modulus: Provided the placement of Structural Fill and Granular Drainage Layer per the recommendations discussed herein, the slab may be designed assuming a modulus of subgrade reaction, k_1 of 150 pci (lbs/cu. inch). The modulus of subgrade reaction value is based on a one-foot by one-foot plate load test and assumes that subgrade is properly compacted.

5.2 PRELIMINARY SITE DESIGN CONSIDERATIONS

5.2.1 Pavement Sections

General Preliminary Recommendations: Our scope of services did not include extensive sampling and LBR testing of existing subgrade or potential sources of imported fill for the specific purpose of a detailed pavement analysis. Instead, we have assumed general pavement design parameters that are considered to be typical for the area soil types. The recommended pavement thicknesses presented in this report section are considered typical and minimum for the assumed parameters in the general site area. We understand that budgetary considerations sometimes warrant thinner pavement sections than those presented. However, the client, the owner, and the project designers should be aware that thinner pavement sections may result in increased maintenance costs and lower than anticipated pavement life. We recommend the following general pavement design sections included in Table 5.2.1.1 below.

Table 5.2.1.1: Pavement Structures Sections

	Asphalt		Concrete	
Component	**Standard**	**Heavy**	**Standard**	**Heavy**
Stabilized Subgrade	12”	12”	12”	12”
Base Course (Limerock)	6”	8”	N/A	N/A
Surface Course	1½”	2”	5”	6”
Maximum Joint Control Spacing	-	-	10’ x 10’	12’ x 12’
Recommended Sawcut Depth	-	-	1 ¼”	1 ½”

All pavement subgrades should be prepared in accordance with the recommendations presented in Section 6.2 Earthwork Operations.

Perform compliance testing for the base course to a depth of one foot at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater.

Effects of Groundwater: One of the most critical influences on the pavement performance in Southwest Florida is the relationship between the pavement subgrade elevation and the seasonal high groundwater level. Many roadways and parking areas have been destroyed as a result of deterioration of the base and the base/surface course bond. Regardless of the type of base selected, we recommend that the seasonal high groundwater and the bottom of the base course be separated by at least 12 inches for crushed concrete and 18 inches for limerock.

Groundwater levels and seasonal high groundwater levels may be affected by the proposed construction which will modify the surface and subsurface hydrology. It may be necessary to provide a permanent subsurface drainage system for some improvements to maintain the recommended separation between the water table and various structural elements in the building and pavement areas.

If construction is begun during wet weather, it is recommended the building and pavement subgrades not be disturbed. Dewatering efforts should begin prior to starting the grading operations. Fill and grading operations should be performed with a minimum disturbance to the surficial soils.

Landscape Drains and Curbing: If needed, where landscaped sections are located adjacent to parking lots or driveways, we recommend that drains be installed around these landscaped sections to protect the asphalt pavement from excess rainfall and over irrigation. Migration of irrigation water from the landscape areas to the interface between the asphalt and the base usually occurs unless landscape drains are installed. The underdrains or strip drains should be routed to a positive outfall at the pavement area catch basins. It is recommended that curbing around landscaped sections adjacent to parking lots and driveways be constructed with full-depth curb sections. Using extended curb sections which lie directly on top of the final asphalt level, or eliminating curbing entirely, can allow migration of irrigation water from the landscaped areas to the interface between the asphalt and the base. This migration often causes separation of the wearing surface from the base and subsequent rippling and pavement deterioration.

6.0 PRELIMINARY SITE CONSTRUCTION RECOMMENDATIONS

6.1 SUBGRADE PREPARATION

6.1.1 Subgrade Preparation, Stripping, Grubbing, and Dredging

Stripping soft or unsuitable material from the pavement areas should also be performed. Unsuitable material consists of soils with more than five percent organics content or more than 12 percent passing the No. 200 sieve. ECS should be called to verify that topsoil and unsuitable surficial materials have been completely removed prior to the placement of Structural Fill or construction of structures.

6.1.2 Proofrolling

After removing all unsuitable surface materials and prior to the placement of any structural fill or other construction materials, the exposed subgrade should be examined by the Geotechnical Engineer or authorized representative. The exposed subgrade should be thoroughly compacted and then proofrolled with previously approved construction equipment having a minimum axle load of 20 tons (e.g. fully loaded tandem-axle dump truck). The areas subject to proofrolling should be traversed by the equipment in two perpendicular (orthogonal) directions with overlapping passes of the vehicle under the observation of the Geotechnical Engineer or authorized representative. This procedure is intended to assist in identifying any localized yielding materials. In the event that unstable or "pumping" subgrade is identified by the proofrolling, those areas should be marked for repair prior to the placement of any subsequent structural fill or other construction materials. Methods of repair of unstable subgrade, such as undercutting or moisture conditioning should be discussed with the Geotechnical Engineer to determine the appropriate procedure with regard to the existing conditions causing the instability. Test pits may be excavated to explore the shallow subsurface materials in the area of the instability to help in determined the cause of the observed unstable materials and to assist in the evaluation of the appropriate remedial action to stabilize the subgrade.

6.1.3 Subgrade Stabilization

Subgrade Compaction: Upon completion of subgrade documentation, the exposed subgrade within the 10-foot expanded building and five-foot expanded pavement limits should be moisture conditioned to within -one and +three percent of the soil's optimum moisture content and be compacted with suitable equipment (roller with minimum weight of 20-tons and width of six feet) to a depth of 12 inches. Subgrade compaction within the expanded building and pavement limits should be to a dry density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557). ECS should be called on to document that proper subgrade compaction has been achieved.

Subgrade Compaction Control: The expanded limits of the proposed construction areas should be well defined, including the limits for buildings, pavements, fills, and slopes, etc. Field density testing of subgrades will be performed at frequencies in Table 6.1.3.1.

Table 6.1.3.1 Frequency of Subgrade Compaction Testing

Location	Frequency of Tests
Building Limits	One test per 2,500 sq. ft. per lift
Pavement Areas	One test per 5,000 sq. ft. per lift
Utility Trenches	One test per 300 linear ft. per lift
All Other Non-Critical Areas	One test per 10,000 sq. ft. per lift

6.2 EARTHWORK OPERATIONS

6.2.1 Structural Fill Materials

Unsatisfactory Materials: Unsuitable material typically consists of soils with more than five percent organics content or more than 12 percent passing the No. 200 sieve, as well as topsoil and organic materials (OH, OL).

Borrow Suitability: The following Engineered/Structural Fill types are recommended for use on this project based on soil types encountered with exploration borings.

Fine sand (SP) and fine sand with silt (SP-SM) can be utilized as structural and pavement subgrade fill material provided that the natural moisture content is within a desirable range to obtain compaction.

It is recommended that all materials to be used for Engineered Fill be analyzed and approved by the Geotechnical Engineer prior to their use on the site. Proctor compaction parameter should be provided.

Subgrade soils disturbed by contractor operations shall be recompacted to the specifications of this report. Subgrade soils which are excessively wet but otherwise suitable by soil classification (inorganic soil material meeting the specifications above) are not considered unsuitable by definition and shall be moisture conditioned and recompacted.

6.2.2 Compaction

Structural Fill Compaction: Assuming that the organic content of the soils to be used does not exceed five percent, structural fill should be placed in loose lifts, which do not exceed 12 inches in thickness, and should be compacted to at least 95 percent of the maximum dry density, as determined by the Modified Proctor Compaction Test (ASTM D-1557) within the lift thickness. Generally, the moisture content of the fill materials should be maintained between two percentage points below to the optimum moisture content for the fill material, as determined by ASTM D-1557. Fill placed in non-structural areas (e.g. grassed areas) should be compacted to at least 90 percent of the maximum dry density according to ASTM D-1557, in order to avoid significant subsidence. ECS should be called on to document that proper fill compaction has been achieved.

Fill Compaction Control: The expanded limits of the proposed construction areas should be well defined, including the limits of the fill zones for building and pavements at the time of fill placement. Grade controls should be maintained throughout the filling operations. All filling operations should

be observed on a full-time basis by a qualified representative of the construction testing laboratory to determine that the minimum compaction requirements are being achieved. Field density testing of fills will be performed at the frequencies shown in Table 6.2.2.1, but not less than one test per lift.

Table 6.2.2.1 Frequency of Compaction Tests in Fill Areas

Location	Frequency of Tests
Building Limits	One test per 2,500 sq. ft. per lift
Pavement Areas	One test per 10,000 sq. ft. per lift
Utility Trenches	One test per 300 linear ft. per lift
All Other Non-Critical Areas	One test per 10,000 sq. ft. per lift

Compaction Equipment: Compaction equipment suitable to the soil type being compacted should be used to compact the subgrades and fill materials. A vibratory steel drum roller should be used for compaction of coarse-grained soils (Sands) as well as for sealing compacted surfaces.

Fill Placement Considerations: Fill materials should not be placed on excessively wet soils. Excessively wet soils or aggregates should be scarified, aerated, recompacted and moisture conditioned.

At the end of each work day, all fill areas should be graded to facilitate drainage of any precipitation and the surface should be sealed by use of a smooth-drum roller to limit infiltration of surface water. During placement and compaction of new fill at the beginning of each workday, the Contractor may need to scarify existing subgrades to a depth on the order of four inches so that a weak plane will not be formed between the new fill and the existing subgrade soils.

Proper drainage should be maintained during the earthwork phases of construction to prevent ponding of water which has a tendency to degrade subgrade soils.

If any problems are encountered during the earthwork operations, or if site conditions deviate from those encountered during our subsurface exploration, the Geotechnical Engineer should be notified immediately to provide adjusted recommendations.

We recommend that favorable unit rates be established in the construction contract for undercutting and backfilling. Unit rates could be established as follows:

a. Undercut and backfill with Imported Engineered Fill, per cubic yard in place;
b. Undercut and backfill with On-site Borrow Engineered Fill, per cubic yard in place;
c. Undercut and backfill with Aggregate Base Material, per ton;
d. Undercut and backfill with No. 57 Stone (wet areas and below footings), per ton;
e. Dispose of undercut material off-site, per cubic yard,
f. Place medium duty, woven and non-woven geotextile fabrics, per square yard. Suitable non-woven fabric for use in stabilization and separation would include Mirafi 160N or equivalent. Suitable woven fabric can be used for reinforcement and would include Mirafi 600X or equivalent.

The Geotechnical Engineer should be called on to recommend and/or approve material type and placement procedures where subgrade remediation is required.

6.3 FOUNDATION AND SLAB OBSERVATIONS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, a one to three-inch thick "mud mat" of "lean" concrete should be placed on the bearing soils before the placement of reinforcing steel.

Footing Subgrade Observations: Most of the soils at the foundation bearing elevation are anticipated to be unsuitable for support of the proposed structure and are to be undercut. Therefore, the footings will most likely bear on compacted structural fill. It is important for the footings to be tested for density and verified for capacity prior to placement of foundation concrete. If loose or uncompacted soils are observed at the footing bearing elevations, the soils should be recompacted.

Slab Subgrade Verification: A representative of ECS should be called on to observe exposed subgrades within the expanded building limits prior to Structural Fill Placement to assure that adequate subgrade preparation has been achieved. A proofrolling using a drum roller or loaded dump truck should be performed in their presence at that time. Once subgrades have been prepared to the satisfaction of ECS, subgrades should be properly compacted and new Structural Fill can be placed. Existing subgrades to a depth of at least 10 inches and all Structural Fill should be moisture conditioned to within -1/+3 percentage points of optimum moisture content then be compacted to the required density. If there will be a significant time lag between the site grading work and final grading of concrete slab areas prior to the placement of the subbase stone and concrete, a representative of ECS should be called on to verify the condition of the prepared subgrade. Prior to final slab construction, the subgrade may require scarification, moisture conditioning, and re-compaction to restore stable conditions.

6.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrade should be observed and probed for stability by ECS to evaluate the suitability of the materials encountered. Any loose or unsuitable materials encountered at the utility pipe subgrade elevation should be removed and replaced with suitable compacted Structural Fill or pipe bedding material.

Utility Backfilling: The granular bedding material should be at least four inches thick, but not less than that specified by the project drawings and specifications. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Structural Fill given in this report. Compacted backfill should be free of topsoil, roots, ice, or any other material designated by ECS as unsuitable. The backfill should be moisture conditioned, placed, and compacted in accordance with the recommendations of this report.

Excavation Safety: All excavations and slopes should be made and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing and constructing stable, temporary excavations and slopes and should shore, slope, or bench the sides

of the excavations and slopes as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.5 PRELIMINARY GENERAL CONSTRUCTION CONSIDERATIONS

Moisture Conditioning: During rainy season of the year, delays and additional costs should be anticipated. At these times, moisture conditioning may be required. The rainy season in Florida is normally between June and September. Alternatively, during the drier times of the year, moisture may need to be added to the soil to provide adequate moisture for successful compaction according to the project requirements.

Subgrade Protection: Measures should also be taken to limit site disturbance, especially from rubber-tired heavy construction equipment, and to control and remove surface water from development areas, including structural and pavement areas. It would be advisable to designate a haul road and construction staging area to limit the areas of disturbance and to prevent construction traffic from excessively degrading sensitive subgrade soils and existing pavement areas. Haul roads and construction staging areas could be covered with excess depths of aggregate to protect those subgrades. The aggregate can later be removed and used in pavement areas.

Surface Drainage: Surface drainage conditions should be properly maintained. Surface water should be directed away from the construction area, and the work area should be sloped away from the construction area at a gradient of one percent or greater to reduce the potential of ponding water and the subsequent saturation of the surface soils. At the end of each work day, the subgrade soils should be sealed by rolling the surface with a smooth drum roller to minimize infiltration of surface water.

Erosion Control: The surface soils may be erodible. Therefore, the Contractor should provide and maintain good site drainage during earthwork operations to maintain the integrity of the surface soils. All erosion and sedimentation controls should be in accordance with sound engineering practices and local requirements.

6.6 TEMPORARY GROUNDWATER CONTROL

Should groundwater control measures become necessary, dewatering methods should be determined by the contractor. We recommend the groundwater control measures, if necessary, remain in place until compaction of the existing soils is completed. The dewatering method should be maintained until backfilling has reached a height of two feet above the groundwater level at the time of construction. The site should be graded to direct surface water runoff from the construction area.

Note that discharge of produced groundwater to surface waters of the state from dewatering operations or other site activities is regulated and requires a permit from the State of Florida

Department of Environmental Protection (FDEP). This permit is termed a *Generic Permit for the Discharge of Produced Groundwater From Any Non-Contaminated Site Activity*. If discharge of produced groundwater is anticipated, we recommend sampling and testing of the groundwater early in the site design phase to prevent project delays during construction. ECS can provide the sampling, testing, and professional consulting required to evaluate compliance with the regulations.

7.0 CLOSING

ECS has prepared this preliminary report of findings, evaluations, and recommendations to guide geotechnical-related design and construction aspects of the project. After site plans and structural loading conditions have been finalized, we recommend follow up exploration and laboratory testing to confirm bearing capacity under the columns and settlement estimations through consolidation testing of the clay soils on site.

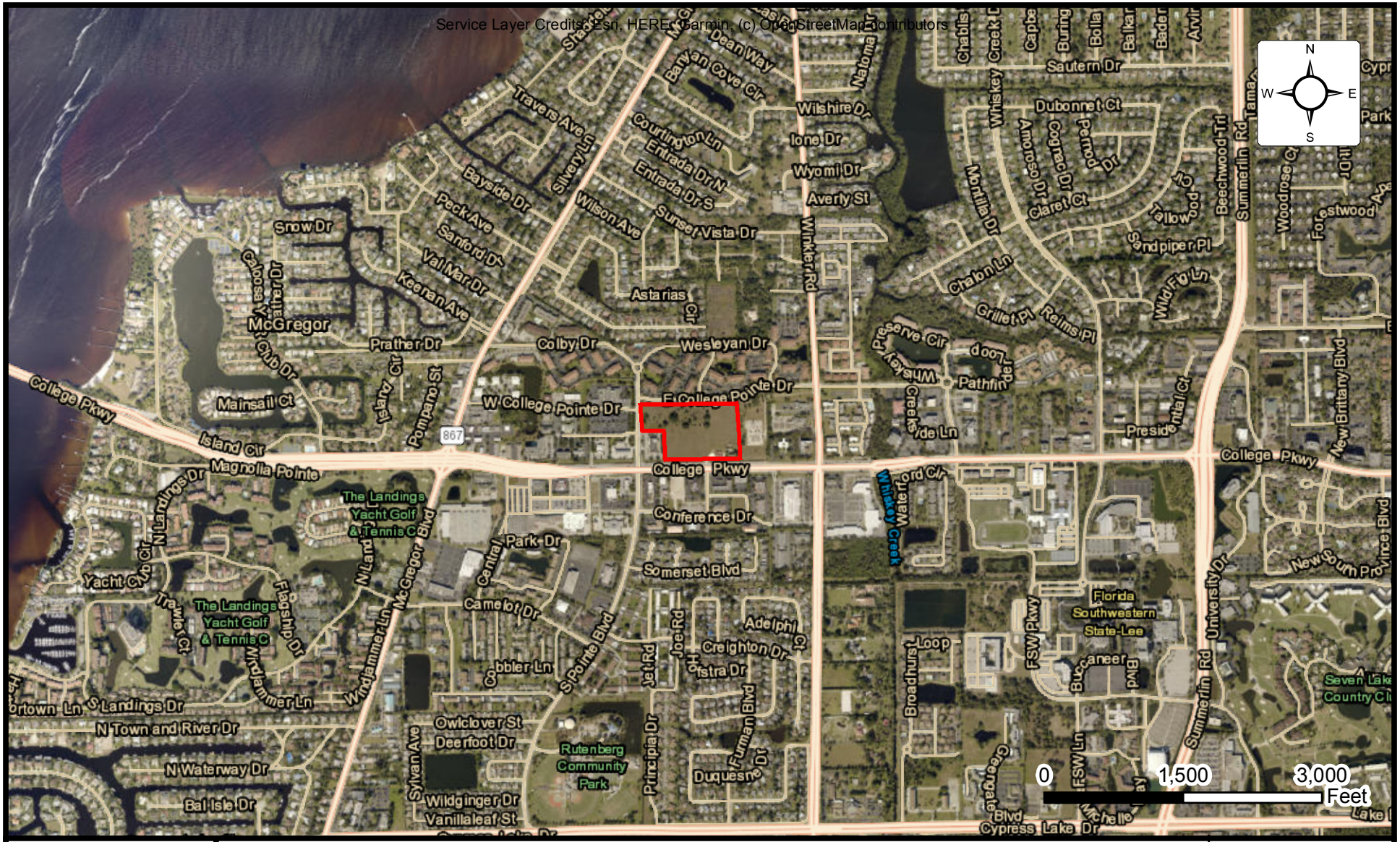
The description of the proposed project is based on information provided to ECS by Zimmer Development Group. If any of this information is inaccurate, either due to our interpretation of the documents provided or site or design changes that may occur later, such as a change in structural loads, ECS should be contacted immediately in order that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

We recommend that ECS be allowed to review the project's plans and specifications pertaining to our work so that we may ascertain consistency of those plans/specifications with the intent of the geotechnical report.

Field observations, monitoring, and quality assurance testing during earthwork and foundation installation are an extension of and integral to the geotechnical design recommendation. We recommend that the owner retains these quality assurance services and that ECS be allowed to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A – Diagrams

Site Location Diagram
Boring Location Diagram



Site Location Diagram
GOAT FARM APARTMENTS

8830 COLLEGE PKWY, FORT MYERS, FLORIDA
ZIMMER DEVELOPMENT COMPANY

ENGINEER	JNG
SCALE	1 " = 1500 '
PROJECT NO.	60:614
SHEET	1
DATE	7/22/2019

Boring Location Diagram
GOAT FARM APARTMENTS

8910 COLLEGE PKWY, FORT MYERS, FLORIDA
ZIMMER DEVELOPMENT COMPANY

ENGINEER	JNG
SCALE	1 " = 200 '
PROJECT NO.	60:1149
SHEET	2
DATE	8/21/2019

APPENDIX B – Field Operations

Reference Notes for Boring Logs
SPT Boring Logs B1 – B6
SPT Boring Log TP1
SPT Boring Logs P1 – P5
SPT Boring Logs A1 – A11
Subsurface Soil Profiles

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
	GW **WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
	GP **POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
	GM **SILTY GRAVEL** gravel-sand-silt mixtures
	GC **CLAYEY GRAVEL** gravel-sand-clay mixtures
	SW **WELL-GRADED SAND** gravelly sand, little or no fines
	SP **POORLY-GRADED SAND** gravelly sand, little or no fines
	SM **SILTY SAND** sand-silt mixtures
	SC **CLAYEY SAND** sand-clay mixtures
	ML **SILT** non-plastic to medium plasticity
	MH **ELASTIC SILT** high plasticity
	CL **LEAN CLAY** low to medium plasticity
	CH **FAT CLAY** high plasticity
	OL **ORGANIC SILT or CLAY** non-plastic to low plasticity
	OH **ORGANIC SILT or CLAY** high plasticity
	PT **PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15 - 25
Adjective *(ex: "Silty")*	≥25	≥30

WATER LEVELS[6]		
	WL	Water Level (WS)(WD)
		(WS) While Sampling
		(WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	SWT	Stabilized Water Table
	DCI	Dry Cave-In
	WCI	Wet Cave-In

[1] *Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.*

[2] *To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.*

[3] *Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] *Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).*

[5] *Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).*

[6] *The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.*

[7] *Minor deviation from ASTM D 2488-09 Note 16.*

[8] *Percentages are estimated to the nearest 5% per ASTM D 2488-09.*

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CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION

8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0						5	1 2 2 2 1 2 3 4 4 4 4 4
	S-1	SS	24	24			
	S-2	SS	24	24			
5	S-3	SS	24	24		0	
10						-5	
15						-10	
20						-15	
25						-20	
30						-25	

Topsoil Thickness [6.00"]

(SP) FINE TO MEDIUM SAND, dark brown to brown, wet, very loose

END OF BORING @ 6'

4
5
8

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray, wet, very loose	▽	5	1 1 2 2 3 3 4 5 4 3 3 3
	S-2	SS	24	24				
5	S-3	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt		0	
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	

3
7
6

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION

8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	2
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, dark gray, wet, very loose			2 1 3
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			3 4 4
5	S-3	SS	24	24			0	3 4 3 4
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	

3
8
6

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-4	1 OF 1

PROJECT NAME: Goat Farm Apartments

ARCHITECT-ENGINEER:

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	2
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, dark brown, wet, very loose			2
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, very loose to loose, with silt			2
5	S-3	SS	24	24			0	2
					END OF BORING @ 6'			4
10							-5	4
15							-10	3
20							-15	5
25							-20	2
30							-25	1
								2
								3

4
7
3

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL .25 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-5	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

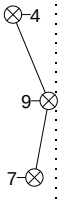
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	18	0	Topsoil Thickness [6.00"]		5	1 2 2
					(SP) FINE TO MEDIUM SAND, dark gray, wet, very loose			
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			5 5 4 4
5	S-3	SS	24	24			0	4 4 3 3
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

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WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-6	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

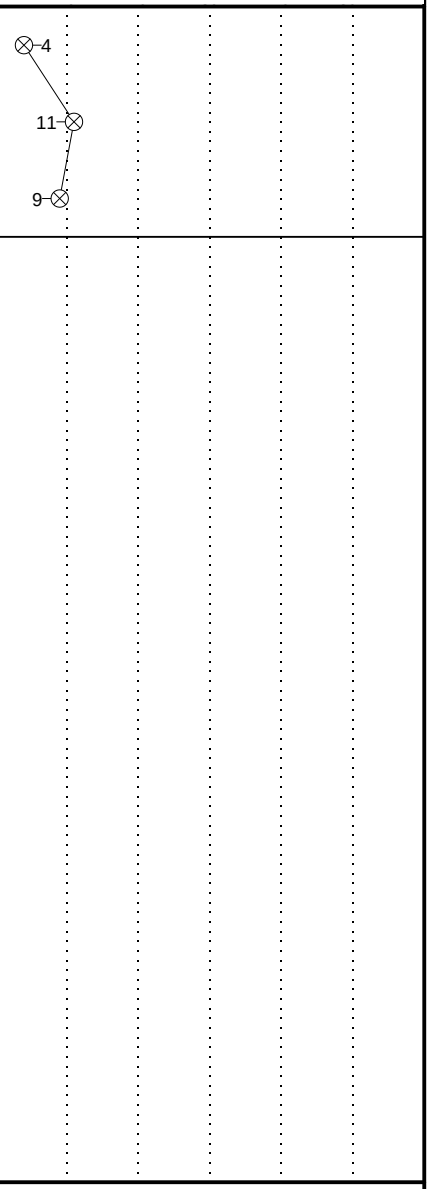
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, light gray, wet, very loose	▽	5	1 2 2 3
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose to medium dense, with silt			4 5 6 6
5	S-3	SS	24	24			0	4 4 5 5
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL .5 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-7	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

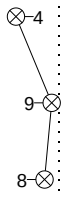
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	18	0	Topsoil Thickness [6.00"]		5	1 2 2
					(SP) FINE TO MEDIUM SAND, gray, wet, very loose to loose			
	S-2	SS	24	24				3 4 5 5
5	S-3	SS	24	24				4 3 5 4
					END OF BORING @ 6'		0	
10							-5	
15							-10	
20							-15	
25							-20	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-8	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

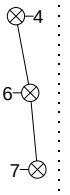
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	1
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, light gray, wet, very loose			2 2 2
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			2 3 3
5	S-3	SS	24	24			0	5 3 3 4 5
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 1/3 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-9	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	2
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, light brown, wet, very loose to loose			2 3 3
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose to medium dense, with silt			4 4 4
5	S-3	SS	24	24			0	5 4 5 6 6
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	

5 – 8 – 11

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-10	1 OF 1

PROJECT NAME: Goat Farm Apartments

ARCHITECT-ENGINEER:

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	1 2 2 3 3 4 5 4 4 4 4 6
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, gray, wet, very loose			
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			
5	S-3	SS	24	24				
					END OF BORING @ 6'		0	
10							-5	
15							-10	
20							-15	
25							-20	
30								

4
9
8

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-11	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

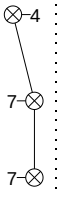
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	18	18	Topsoil Thickness [6.00"]		5	2 2 2
					(SP) FINE TO MEDIUM SAND, gray, wet, very loose			
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			2 3 4 4
5	S-3	SS	24	24			0	4 4 3 5
					END OF BORING @ 6'			
10							-5	
15							-10	
20							-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 1/3 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	A-12	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION

8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

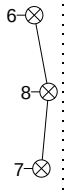
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"]		5	2
					(SP) FINE TO MEDIUM SAND, brown, wet, loose			2
	S-2	SS	24	24				4
5	S-3	SS	24	24				3
								4
								4
								4
								4
								4
								3
								4
								3
					END OF BORING @ 6'		0	3
10							-5	
15							-10	
20							-15	
25							-20	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-1	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	1 2 2 2 2 3 4 5 5 4 4 4 3 5 4 4 5 3 3 3 3 3 2 2 2 2 1 2 2 3 2 4 2 1 3
	S-1	SS	24	16	(SP) FINE TO MEDIUM SAND, gray to brown, wet, very loose			4
	S-2	SS	24	24	(SM)FINE TO MEDIUM SAND, dark brown, wet, loose, with silt			9
5	S-3	SS	24	24			0	8
	S-4	SS	24	24				8
	S-5	SS	24	24				6
10							-5	
	S-6	SS	24	24				4
15					(CL) LEAN CLAY WITH SAND, grey, wet, soft to firm		-10	
	S-7	SS	24	24				3
20					(CH) FAT CLAY WITH SAND, green, wet, soft to firm, with some shells		-15	
	S-8	SS	24	17				6 25 78 28.2
25					(CL) LEAN CLAY WITH SAND, grey, wet, soft to firm		-20	
	S-9	SS	24	24				4 18 46 44.8
30							-25	

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 1/3 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-1	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

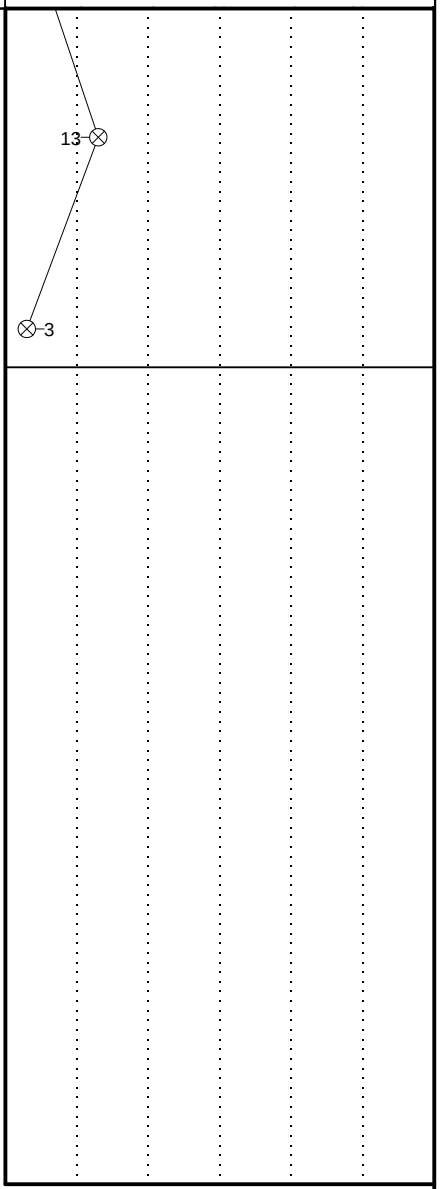
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					(CL) LEAN CLAY WITH SAND, grey, wet, soft to firm			
	S-10	SS	24	9	(WR) WEATHERED GRANULAR LIMESTONE, light grey, wet, loose to medium dense			4 6 7
35							-30	
	S-11	SS	24	12				2 1 2
40					END OF BORING @ 40'		-35	
45							-40	
50							-45	
55							-50	
60							-55	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 1/3 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-2	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	14	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to brown, wet, very loose to loose	▽	5	1 2 2
	S-2	SS	24	24				1 3 3
5	S-3	SS	24	24	(SM) FINE TO MEDIUM SAND, dark gray, wet, loose, with silt and some shell		0	4 5 4
	S-4	SS	24	24				3 4 4
	S-5	SS	24	24			-5	5 3 4
10								5 4 3
	S-6	SS	24	24	(CL) LEAN CLAY WITH SAND, grey, wet, soft to firm			3 3 3
15							-10	1 2 2
	S-7	SS	24	24				2 3 2
20							-15	
	S-8	SS	24	11				3 4 3
25							-20	
	S-9	SS	24	24				2 1 2
30					(WR) WEATHERED GRANULAR LIMESTONE, light grey, wet, loose to medium dense			

4 7 7 7 6 4 5 7 3

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 1/3 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-2	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
						-25	
	S-10	SS	24	11			4 7 6
35						-30	
	S-11	SS	24	2			1 1 2
40						-35	
45						-40	
50						-45	
55						-50	
60						-55	

(WR) WEATHERED GRANULAR LIMESTONE, light grey, wet, loose to medium dense

END OF BORING @ 40'

13

3

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 1/3 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-3	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

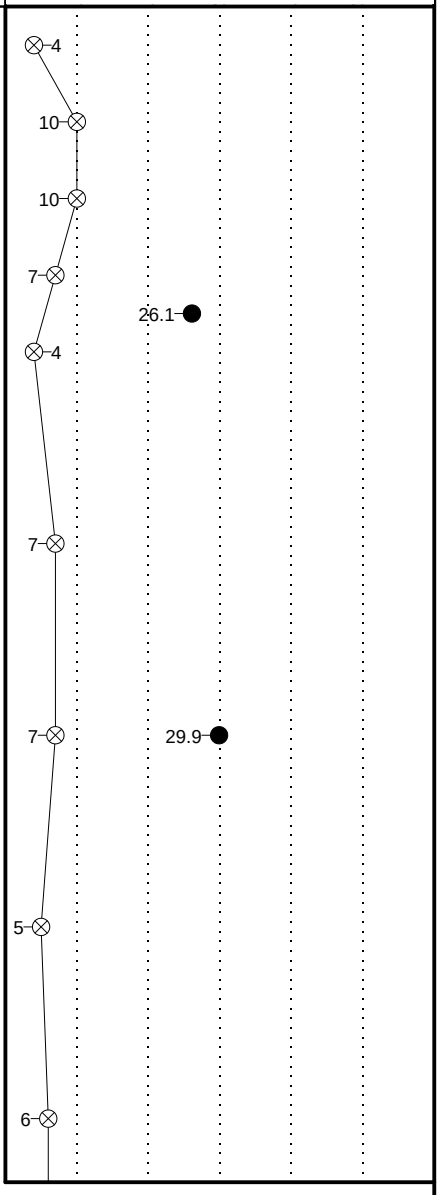
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to dark brown, wet, loose		5	1 2 2 2 4 5 5 5 6 4 6 5 5 4 3 3 3 2 2 4
	S-2	SS	24	24				
5	S-3	SS	24	24			0	
	S-4	SS	24	24				
	S-5	SS	24	24	(SM) FINE TO MEDIUM SAND, dark gray, wet, very loose, with silt			
10					(CL) LEAN CLAY WITH SAND, grey, wet, loose, with clay and some limestone fragments		-5	
	S-6	SS	24	24				3 3 4
15							-10	
	S-7	SS	24	17				3 4 3
20							-15	
	S-8	SS	24	15				2 2 3
25							-20	
	S-9	SS	24	24				5 3 3
30							-25	



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-3	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

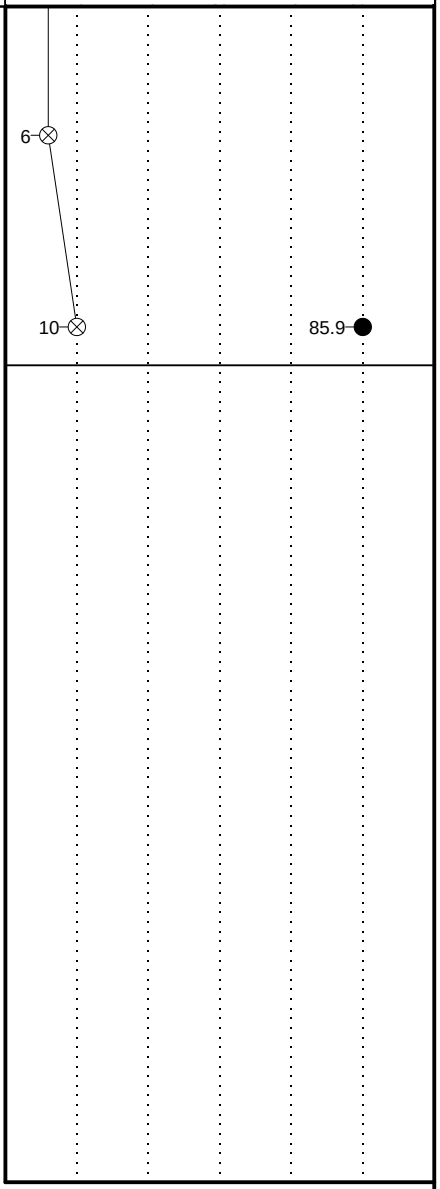
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					(CL) LEAN CLAY WITH SAND, grey, wet, loose, with clay and some limestone fragments			
35	S-10	SS	24	24	(WR) WEATHERED GRANULAR LIMESTONE, grey, wet, loose, with some phosphate		-30	5 3 3
40	S-11	SS	24	24	(CH) FAT CLAY WITH SAND, green, wet, soft to firm, with some limestone fragments		-35	5 5 5
					END OF BORING @ 40'			
45							-40	
50							-45	
55							-50	
60							-55	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-4	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	19	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to brown, wet, loose to medium dense		5	2 2 1
	S-2	SS	24	24	(SM) FINE TO MEDIUM SAND, dark grey, wet, very loose to medium dense, with silt			2 3 5
5	S-3	SS	24	24			0	6 6 5
	S-4	SS	24	24				5 5 6
	S-5	SS	24	24				7 8 6
10							-5	5 3 2
	S-6	SS	24	24	(CL) LEAN CLAY WITH SAND, green, wet, firm, with limestone fragments			2 3 4
15							-10	
	S-7	SS	24	16				2 2 3
20							-15	
	S-8	SS	24	24				2 4 4
25					(MH) ELASTIC SILT WITH SAND, grey, wet, very loose		-20	
	S-9	SS	24	24				2 2 2
30							-25	

3, 11, 10, 14, 4, 6, 5, 8, 4, 42, 76, 41.9

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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-4	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					(MH) ELASTIC SILT WITH SAND, grey, wet, very loose			
	S-10	SS	24	16	(WR) WEATHERED GRANULAR LIMESTONE, grey, wet, loose			4 3 2
35							-30	
	S-11	SS	24	10				4 5 4
40					END OF BORING @ 40'		-35	
45							-40	
50							-45	
55							-50	
60							-55	

5 ⊗ 9 ⊗

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-5	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

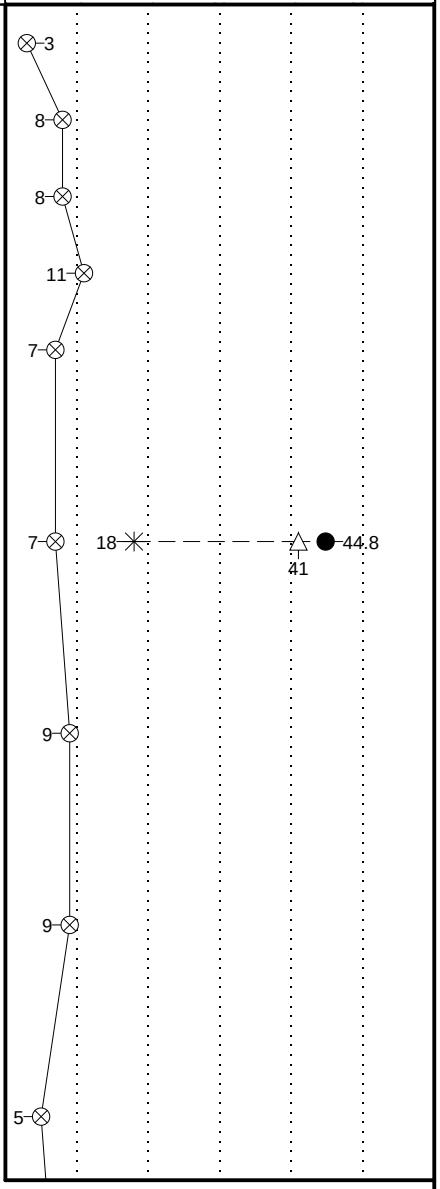
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	23	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to brown, wet, loose to medium dense		5	1 2 1 2
	S-2	SS	24	24				3 4 4 6
5	S-3	SS	24	24	(SM) FINE TO MEDIUM SAND, dark grey, wet, very loose to medium dense, with silt		0	4 3 5 5
	S-4	SS	24	24				6 5 6 6
	S-5	SS	24	24				2 3 4 3
10							-5	
	S-6	SS	24	24	(CL) LEAN CLAY WITH SAND, grey, wet, firm, with some shell and phosphate fragments			3 3 4
15							-10	
	S-7	SS	24	24				3 4 5
20							-15	
	S-8	SS	24	15				3 5 4
25							-20	
	S-9	SS	24	18				3 2 3
30							-25	



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-5	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					(CL) LEAN CLAY WITH SAND, grey, wet, firm, with some shell and phosphate fragments			
35	S-10	SS	24	24	(WR) WEATHERED GRANULAR LIMESTONE, grey, wet, loose		-30	4 4 3
	S-11	SS	24	10				5 5 4
40					END OF BORING @ 40'		-35	
45							-40	
50							-45	
55							-50	
60							-55	

7 ⊗ 9 ⊗

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/12/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/12/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-6	1 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

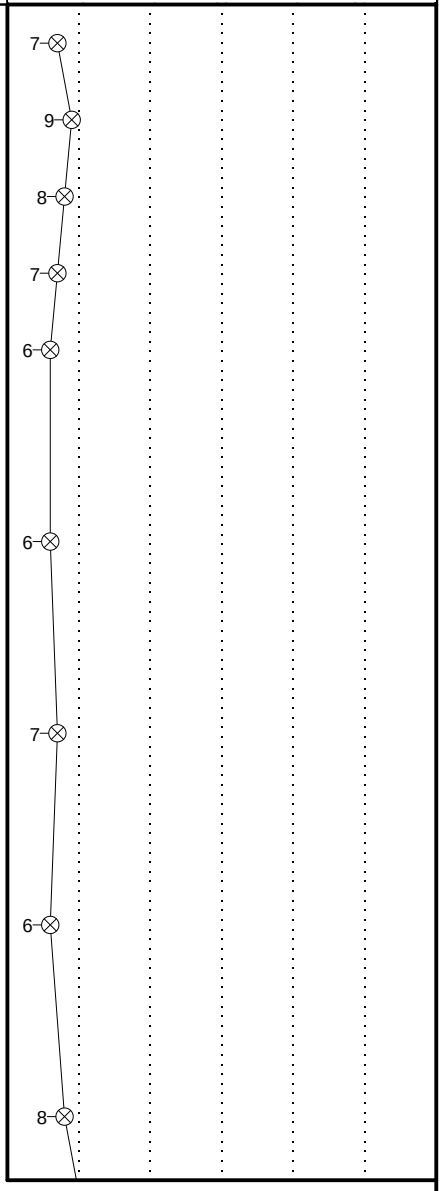
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	16	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to dark brown, wet, loose	▽	5	2 3 4 4 3
	S-2	SS	24	24				4 5 5 5 4
5	S-3	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, very loose, with silt		0	4 4 4 4 4
	S-4	SS	24	24				4 4 3 3 3
	S-5	SS	24	24				2 4 3
10							-5	
	S-6	SS	24	16	(CL) LEAN CLAY WITH SAND, grey, wet, firm, with some limestone fragments			4 3 3
15							-10	
	S-7	SS	24	24				3 3 4
20							-15	
	S-8	SS	24	24				3 2 4
25							-20	
	S-9	SS	24	24				3 2 6
30							-25	



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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL .5 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	B-6	2 OF 2

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

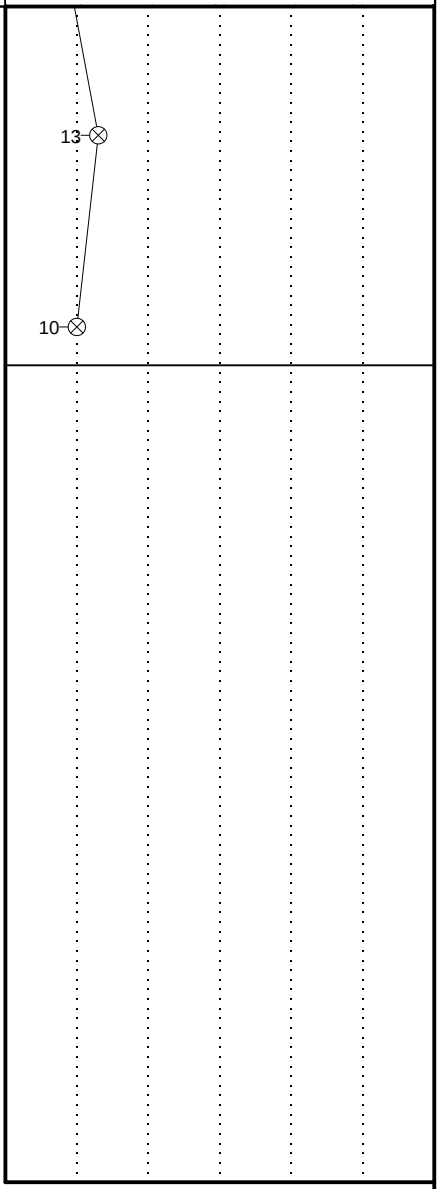
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					(CL) LEAN CLAY WITH SAND, grey, wet, firm, with some limestone fragments			
	S-10	SS	24	13	(WR) WEATHERED GRANULAR LIMESTONE, grey, wet, loose			3 6 7
35							-30	
	S-11	SS	24	10				3 5 5
40					END OF BORING @ 40'		-35	
45							-40	
50							-45	
55							-50	
60							-55	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL .5 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	P-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	2
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, gray to brown, wet, very loose to loose			1 2 2
	S-2	SS	24	24				2 3 5
5	S-3	SS	24	24			0	4 4 3
	S-4	SS	24	24				5 4 3
	S-5	SS	24	24				3 1 2
10					(SC) CLAYEY FINE TO MEDIUM SAND, grey, wet, very loose, with clay, some shell and phosphate fragments		-5	2 2 3
	S-6	SS	24	14				3 4 3
15					(CL) LEAN CLAY WITH SAND, green, wet, soft, with limestone fragments and phosphate trace		-10	2 1 2
	S-7	SS	24	16				2 2 2
20					END OF BORING @ 20'		-15	
25							-20	
30								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL .25 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	P-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

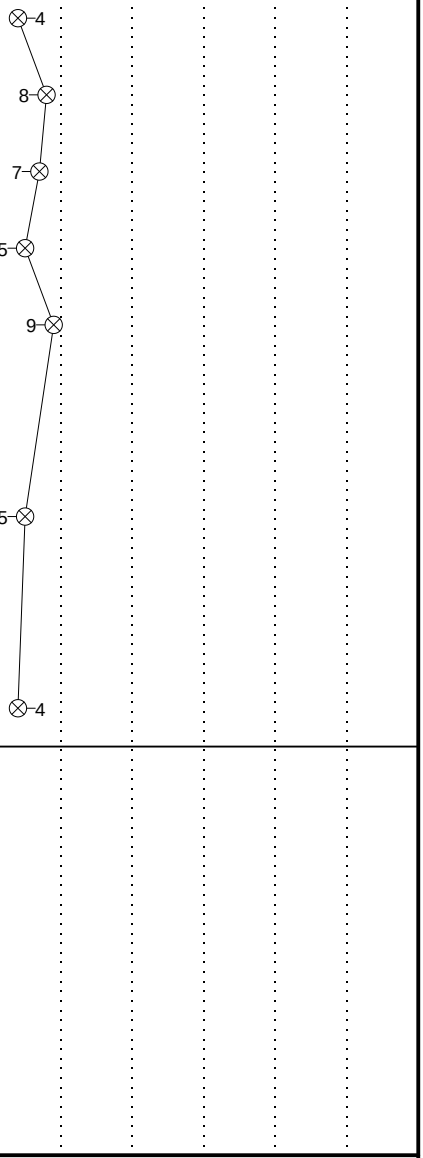
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 6 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to dark brown, wet, loose		5	1 2 2 3 3 3 5 4 4 4 3 4 5 5
	S-2	SS	24	24				
5	S-3	SS	24	24			0	
	S-4	SS	24	24				2 3 2 4 3 4 5 5
	S-5	SS	24	24				
10					(SM) FINE TO MEDIUM SAND, dark gray to brown, wet, loose, with silt and some shell fragments		-5	
	S-6	SS	24	13				3 2 3
15							-10	
	S-7	SS	24	10				2 1 3
20					END OF BORING @ 20'		-15	
25							-20	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/08/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/08/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	P-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

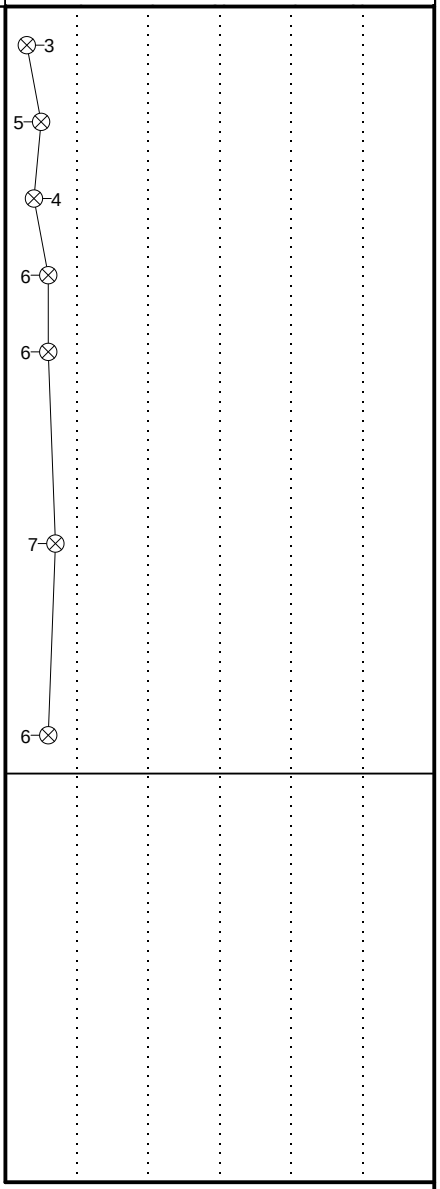
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ — LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]	▽	5	2 1 2
	S-1	SS	24	24	(SP) FINE TO MEDIUM SAND, brown, wet, very loose to loose			2 2 2
	S-2	SS	24	24				2 2 3
5	S-3	SS	24	24			0	3 2 2
	S-4	SS	24	24				2 4 3
	S-5	SS	24	16	(SP-SC) FINE TO MEDIUM SAND, green, wet, loose, with some clay and shells			3 3 1
10					(CL) LEAN CLAY WITH SAND, green, wet, firm, with some limestone and phosphate fragments		-5	4 3 3
	S-6	SS	24	15				3 3 4
15					(SC) CLAYEY FINE TO MEDIUM SAND, grey, wet, loose, with some limestone and phosphate fragments		-10	
	S-7	SS	24	12				3 3 3
20					END OF BORING @ 20'		-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL .25 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	P-4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

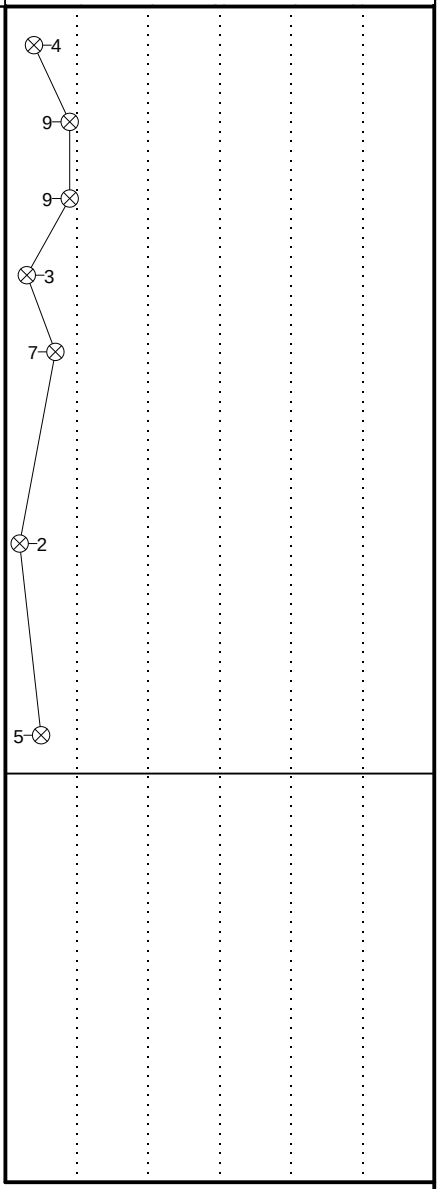
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to brown, wet, very loose to loose	▽	5	2 1 3
	S-2	SS	24	24				3 4 5
5	S-3	SS	24	24	(SP) FINE TO MEDIUM SAND, dark brown, wet, very loose to loose, with trace silt		0	4 3 4
	S-4	SS	24	10				5 5 4
	S-5	SS	24	15	(WR) WEATHERED GRANULAR LIMESTONE, grey, wet, loose		-5	2 1 1
10					(SC) CLAYEY FINE TO MEDIUM SAND, grey, wet, very loose to loose, with some limestone fragments			2 3 4 4
	S-6	SS	24	12				3 1 1
15							-10	
	S-7	SS	24	18				2 3 2
20					END OF BORING @ 20'		-15	
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 0 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
▽ WL(SHW) ▼ WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
▽ WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	P-5	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

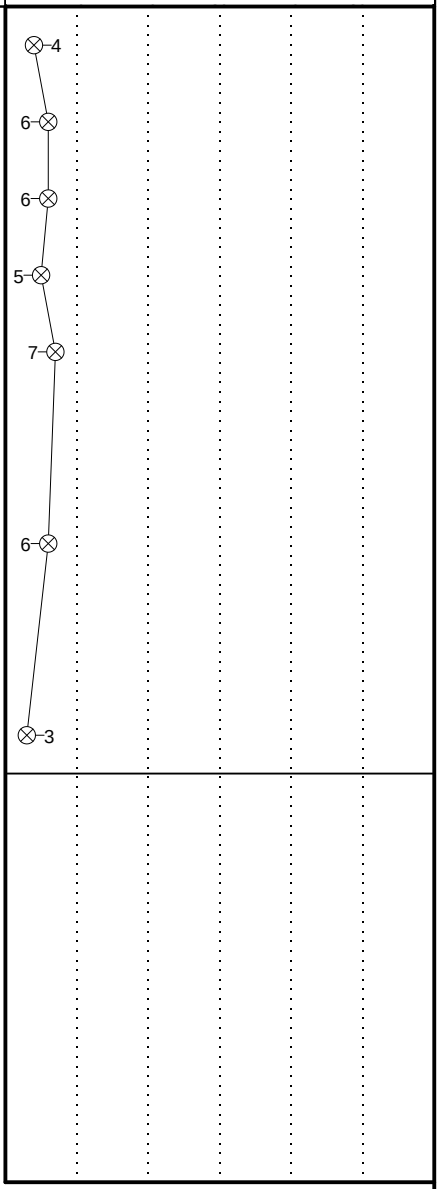
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▶ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [6.00"] (SP) FINE TO MEDIUM SAND, gray to brown, wet, very loose to loose	▽	5	2 1 3
	S-2	SS	24	24				2 3 2
5	S-3	SS	24	24	(SM) FINE TO MEDIUM SAND, dark brown, wet, very loose to loose, with silt		0	3 2 4
	S-4	SS	24	24				4 3 2
	S-5	SS	24	24	(WR) WEATHERED GRANULAR LIMESTONE, light grey, wet, loose		-5	2 3 3
10					(SC) CLAYEY FINE TO MEDIUM SAND, grey, wet, loose, with some limestone and phosphate fragments			2 4 4
	S-6	SS	24	15			-10	4 3 4
15								3 3 3
	S-7	SS	24	12			-15	3 1 2
20					END OF BORING @ 20'			
25							-20	
30							-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/09/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/09/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

CLIENT	Job #:	BORING #	SHEET
Zimmer Development Company	60:1149	TIP-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Goat Farm Apartments	

SITE LOCATION: 8910 College Pkwy, Fort Myers, Lee County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

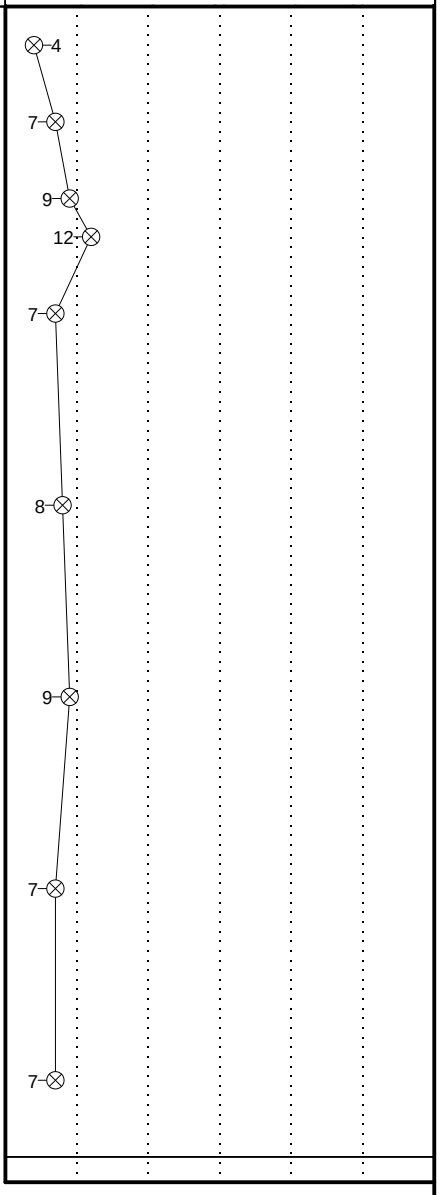
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 5 feet (Approx.)

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Thickness [6.00"]		5	1 2 2
	S-1	SS	24	15	(SP) FINE TO MEDIUM SAND, gray to brown, wet, loose to medium dense			1 4 3
	S-2	SS	24	24				4 5 4
5	S-3	SS	24	24			0	4 5 3
	S-4	SS		24				5 6 6
	S-5	SS		24	(SM) FINE TO MEDIUM SAND, grey, wet, loose, with silt			3 4 3
10					(WR) WEATHERED GRANULAR LIMESTONE, light grey, wet, loose, with phosphate fragments		-5	
	S-6	SS		16				4 4 4
15					(CL) LEAN CLAY WITH SAND, green, wet, firm, with limestone and phosphate fragments		-10	
	S-7	SS		24				3 5 4
20							-15	
	S-8	SS		24				5 4 3
25							-20	
	S-9	SS		24				3 3 4
30					END OF BORING @ 30'		-25	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 0 WS ☐ WD ☐	BORING STARTED 08/13/19	CAVE IN DEPTH
WL(SHW) WL(ACR)	BORING COMPLETED 08/13/19	HAMMER TYPE Auto
WL	RIG Truck FOREMAN	DRILLING METHOD

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GP - POORLY GRADED GRAVEL
GM - SILTY GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT
ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND
RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
PT - PEAT
NOTE: NUMBERS IMMEDIATELY TO THE LEFT OF THE BORING PROFILE ARE SPT-N VALUES.
WR - WEATHERED ROCK
PWR - PARTIALLY WEATHERED ROCK
- FILL
- POSSIBLE FILL
- PROBABLE FILL

SURFACE MATERIALS

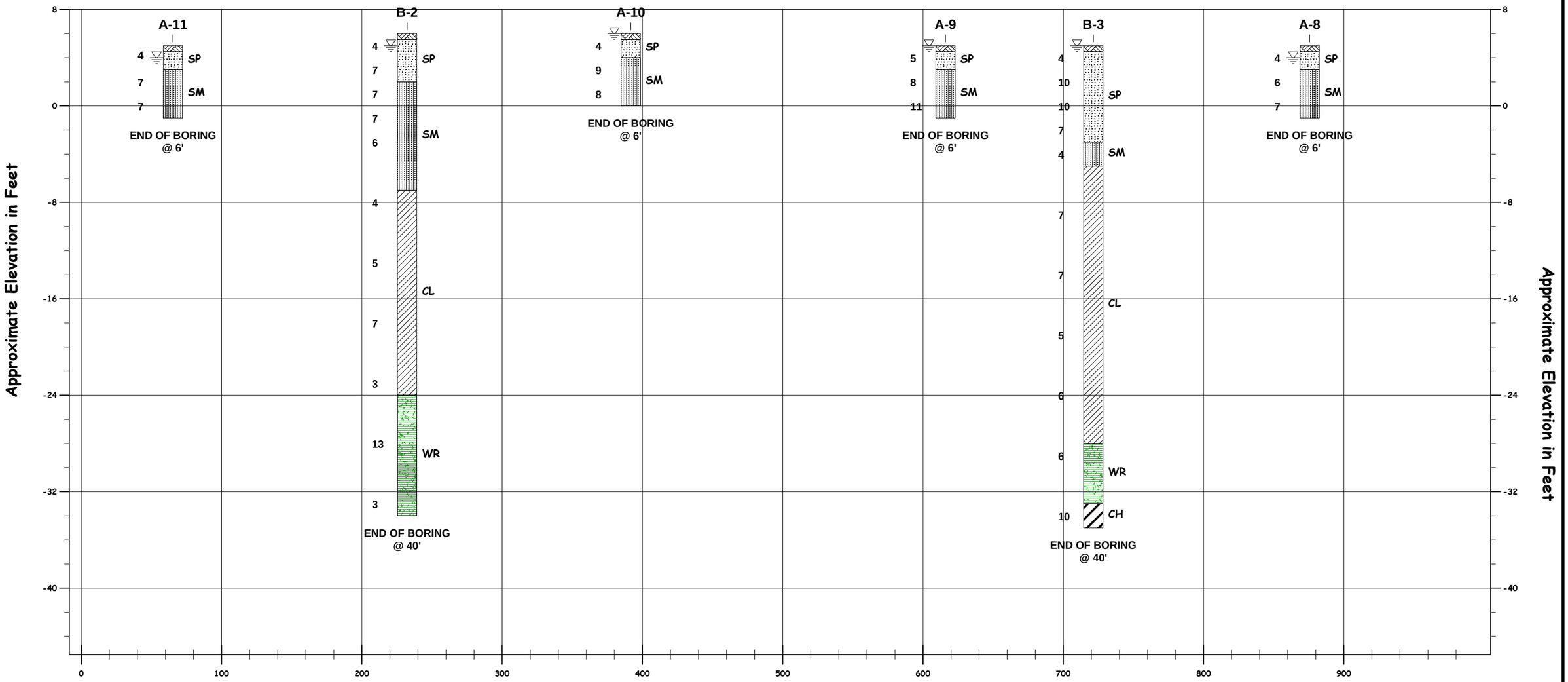
TOPSOIL
CONCRETE
ASPHALT
VOID
GRAVEL

ROCK TYPES

IGNEOUS
METAMORPHIC
SEDIMENTARY

SYMBOL LEGEND

WATER LEVEL - DURING DRILLING/SAMPLING
WATER LEVEL - SEASONAL, HIGH WATER
WATER LEVEL - AFTER CASING REMOVAL
WATER LEVEL - AFTER 24 HOURS
PLASTIC LIMIT% WATER CONTENT% % PASSING #200 SIEVE [88%] LIQUID LIMIT%



NOTES:
1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).
3 ELEVATIONS ARE APPROXIMATE.

Subsurface Soil Profile A

Goat Farm Apartments
Zimmer Development Company
8910 College Pkwy, Fort Myers, Lee County, FL

PROJECT NO.: 1149 | DATE: 8/28/2019 | VERTICAL SCALE: 1"=8'

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GP - POORLY GRADED GRAVEL
GM - SILTY GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT
ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND
RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
PM - PRESSURE METER
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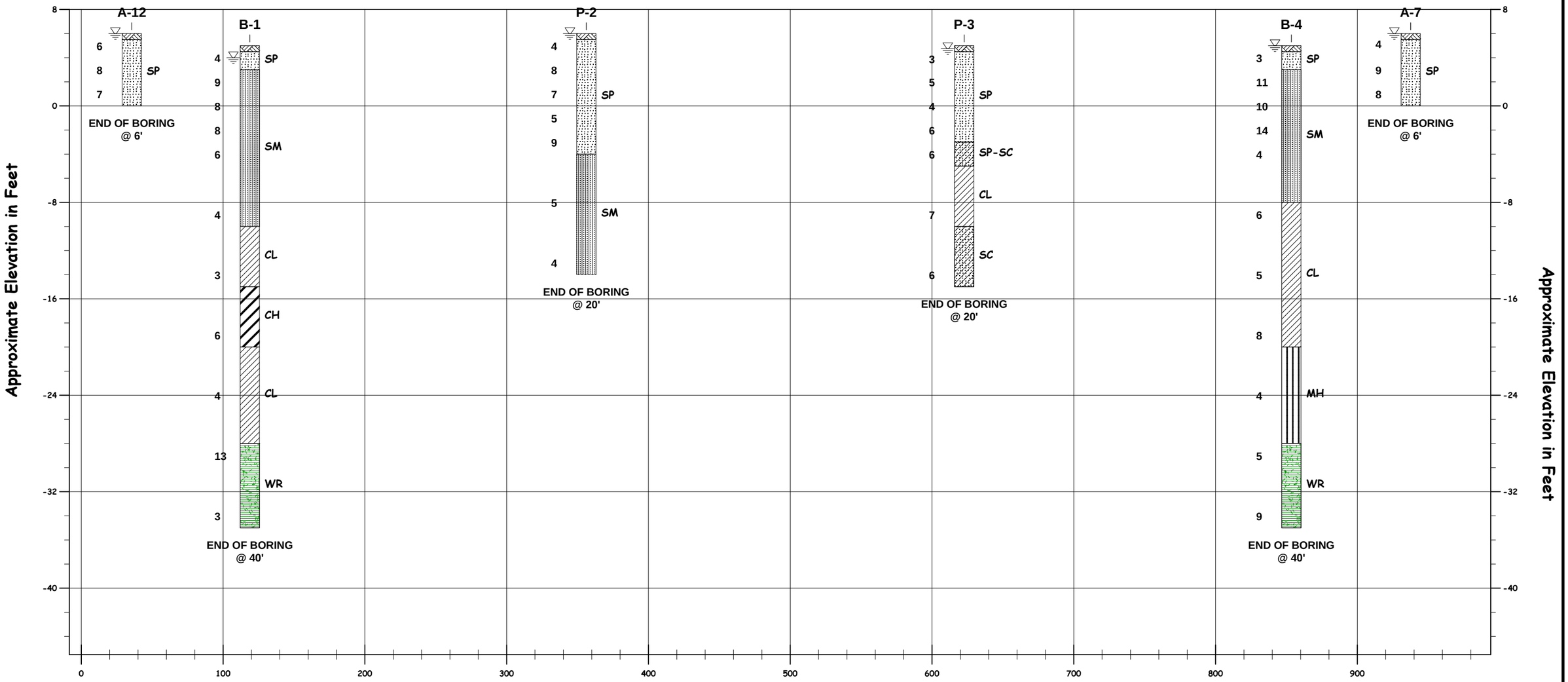

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Subsurface Soil Profile B

Goat Farm Apartments
Zimmer Development Company
8910 College Pkwy, Fort Myers, Lee County, FL

PROJECT NO.: 1149 | DATE: 8/28/2019 | VERTICAL SCALE: 1"=8'

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MH - HIGH PLASTICITY SILT
SM - SILTY SAND
RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
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PT - PEAT
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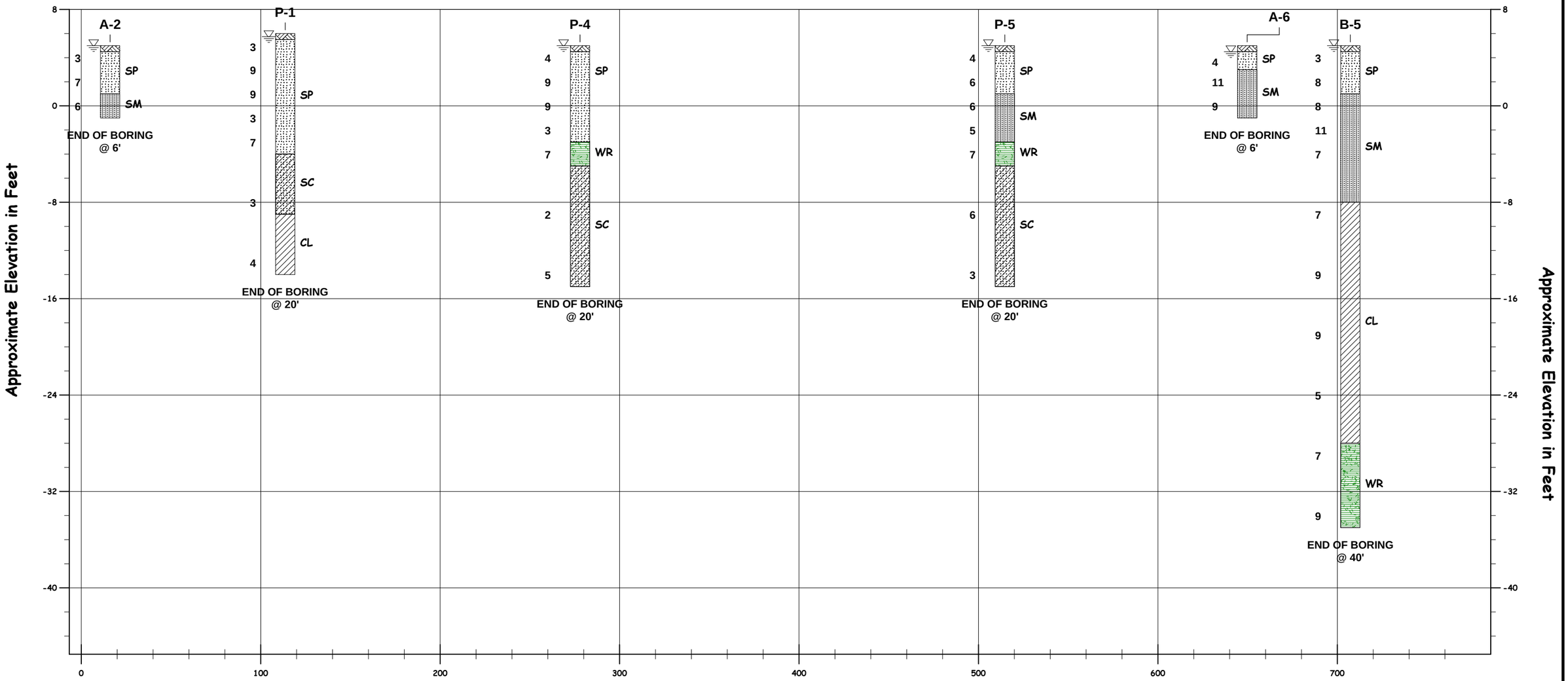

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Subsurface Soil Profile C

Goat Farm Apartments
Zimmer Development Company
8910 College Pkwy, Fort Myers, Lee County, FL

PROJECT NO.: 1149 | DATE: 8/28/2019 | VERTICAL SCALE: 1"=8'

SOIL CLASSIFICATION LEGEND

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GP - POORLY GRADED GRAVEL
GM - SILTY GRAVEL
GC - CLAYEY GRAVEL
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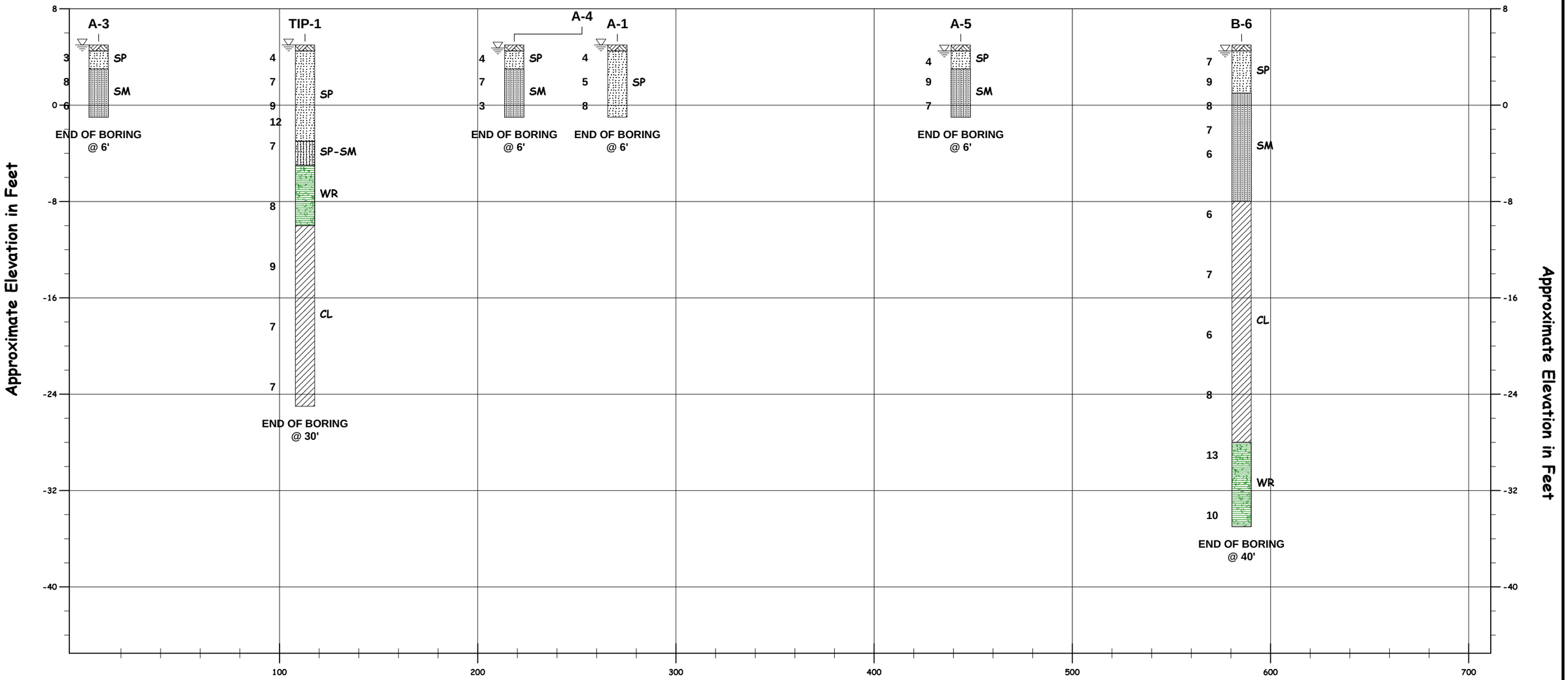

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Subsurface Soil Profile D

Goat Farm Apartments
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APPENDIX C – Laboratory Testing

Laboratory Testing Summary

Laboratory Testing Summary

Sample Source	Sample Number	Start Depth (feet)	End Depth (feet)	Sample Distance (feet)	MC[1] (%)	Soil Type[2]	Atterberg Limits[3]			Percent Passing No. 200 Sieve[4]	Moisture - Density (Corr.)[5]		CBR Value[6]	Other
							LL	PL	PI		Maximum Density (pcf)	Optimum Moisture (%)		
B-1	S-8	23.0	25.0	2.0	28.2	CH	78	25	53					
	S-9	28.0	30.0	2.0	44.8	CL	46	18	28					
B-3	S-2	2.0	4.0	2.0	26.1					2.8				
	S-7	18.0	20.0	2.0	29.9	CH/CL				26.9				
	S-11	38.0	40.0	2.0	85.9					73.8				
B-4	S-9	28.0	30.0	2.0	41.9	CH	76	42	34					
B-5	S-6	13.0	15.0	2.0	44.8	CL	41	18	23					

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 1140, 5. See test reports for test method, 6. See test reports for test method

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content (ASTM D 2974)

Project No. 60:1149
Project Name: Goat Farm Apartments
PM: Matthew Robertson
PE: Jose N. Gomez
Printed On: Wednesday, August 28, 2019

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