



# MANATEE COUNTY FLORIDA

## FACSIMILE

February 23, 2010

TO: All Interested Bidders

SUBJECT: Invitation for Bid #09-4063DC  
Emerson Point Buildings Construction - ADDENDUM #1

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specified bid date, shall conform to the additions and revisions listed herein.

### **RICHARD BABER, INC.**

1. Will the relocation work on the portable classroom be complete prior to commencement of the work under this contract, or is any portion of that relocation to be included in the scope of this work?

No, the portable is in place and will be fully anchored to its foundation by another contractor prior to commencement of construction.

2. Will the portable be properly anchored to the block piers before this contract begins?

See item 1 above.

3. Will the contractor need to erect a temporary power pole, or can we use existing Ranger station outlets?

You may use the power from the existing building on site.

4. Will the contractor need to provide portable toilet facilities, or can we use the existing park facilities?

There are facilities on site which may be used.

Financial Management Department - Purchasing Division  
1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205  
PHONE: 941.749.3074 \* FAX: 941.749.3034  
[www.mymanatee.org](http://www.mymanatee.org)

5. How are progress payment intervals determined? By time period? By phase completion? What are they?

Contractor may apply for partial payment on monthly estimates, based on the amount of Work done or completed in compliance with the provisions of the Contract. Reference Invitation for Bid (IFB) Article C.05 Payment, page 10.

6. Regarding Worker's Compensation Insurance: ...To require company-wide policies from small GC companies would be a hardship that can be rectified in other ways...

As specified in IFB Article C.14, page 12, the awarded contractor is responsible for providing proof of their insurance (not of their subcontractor's) to Manatee County. Subcontractors employed for this project are the responsibility of the prime contractor, reference IFB Article B.03.

#### **CERTUS BUILDERS**

7. Interior bathroom walls are shown to be 6" walls. The specified wall hung toilets has carriers (Watts ISCA-141) which require a minimum of 9" in depth, thus 2 to 3 inches of the carriers will be exposed. Is this acceptable or is it acceptable to plumb and install floor mounted toilets?

The wall hung water closet carriers are intended to protrude beyond the edge of the 6" wall and into the plumbing chase. Floor mounted water closets are not acceptable.

8. What is the type and grade of material is to be used for the trim, siding and finish wood work? Is it pine, pressure treated, cypress, cedar, etc.

The type & grade of material for Painted Wood trim, siding and finish work shall be Pine, No. 2 clear finger-jointed. The 2x6 & 1x6 T&G shall be Cypress, No. 2 Select. All wood not painted shall be Pressure Treated.

9. The contract documents states all fasteners to be stainless steel or fasteners according to Simpson Specifications. Please clarify.

All fasteners shall be Stainless Steel.

10. Is the flashing at the windows, headers, bottom of deck and wall areas stainless steel or galvanized?

All flashing at windows, headers, bottom of deck and wall areas shall be Stainless Steel. (A.) Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, dead soft, fully annealed.

1. Finish: 2D (dull, cold rolled)
2. Surface: Smooth, flat
3. **0.019 inch (0.48 mm) thick**

11. Will the existing substrate behind the siding at the portable classroom remain or be replaced if it is inadequate to accept the new siding?

The existing wood substrate behind the vinyl siding shall be assumed to be adequate until it's determined otherwise and will be addressed at that time. The existing wood substrate will be inspected to verify if adequate nailing exist and/or add additional nailing as required. Install Wood Ship-Lapped Siding Profile P105 over Tyvek-D weather barrier on existing substrate.

12. The contract documents indicate a 5-V Crimp Aluminum Roof Panel System. Is gavalum acceptable?

The Roof System shall be 5-V Crimp Aluminum Roof Panel System. Gavalum is not acceptable.

13. The new drain field is shown to be 64'x34'. Is there enough room on the north side of the portable classroom for the septic tank, lift station and drain field or is the drain field to be constructed on the other side of the trail? Please confirm.

Yes, there is more than sufficient room for the septic system, lift station and drain field to be located as shown on drawings.

14. The decorative T&G roof deck is identified as 2x6 on Dwg A8.2 and 1x6 on the Detail of A9.1. Please confirm which is correct.

The 2x6 T&G roof deck is only on RAFTERS and is structural.

The 1X6 T&G decking is only on TRUSSES and is decorative at soffits and structural on bottom chord of trusses. Refer to Drawing A-6.1 Roof Plan / Lower Roof Framing Plan ( rafters) / Upper Roof Plan ( Trusses ) for locations of Rafters &Trusses.

**BORAN CRAIG BARBER ENGEL CONSTRUCTION**

15. The specifications include sections for both “Visual Display Boards” and “Projection Screens”. Neither of these items is shown on the Architectural Floor Plans. However, the electrical floor plan does show a projection screen in the classroom. Will these items be part of the bid, or will they be an owner furnished and installed?

The display boards are included in the Total Bid Price. The Projection Screen is not included in the Total Bid Price; but, as an additive (Add#1) per the revised Bid Form (the County will evaluate if to include this work into the contractor’s contract).

**TRIDENT BUILDERS INC**

16. Does this project involve landscaping?

No, all landscaping will the responsibility of Manatee County.

**MISCELLEANOUS**

17. Builders Risk insurance requirements shall remain as specified in the IFB.

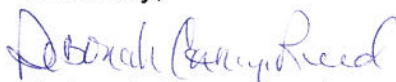
18. IFB Section 00020, B.02 Qualifications of Bidders – Clarification: Minimum of five years continuous experience is acceptable of the contractors’ personal experience in lieu of the company being established for the five continuous years. A Registered Builder Contractor license is acceptable for this project.

19. Bid Form Bid Form page 23 and insert Revised page 23, Addendum 1. (correction of construction days to 180 and inclusion of Add#1.)

20. Geotechnical survey information attached.

Bids will be received at Manatee County Purchasing, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205 until **March 4, 2010 at 3:00 P.M.**

Sincerely,



Deborah Carey-Reed  
Construction Buyer  
/dcr  
Attachments

SECTION 00300  
**BID FORM**

For: Emerson Point Buildings Construction

ITEM	BID "A" - 180 CALENDAR DAY COMPLETION	LUMP SUM
1.	Raised Toilet Building	\$
2.	Raised Decks with Roof	\$
3.	Raised Decks	\$
4.	Stairs	\$
5.	Concrete Walks	\$
6.	Renovate Interior and Exterior of Portable	\$
7.	Discretionary Work	\$ 34,000.00
	<b>TOTAL BID PRICE – BID "A"</b>	<b>\$</b>

ITEM	BID "B" - 135 CALENDAR DAY COMPLETION	LUMP SUM
1.	Raised Toilet Building	\$
2.	Raised Decks with Roof	\$
3.	Raised Decks	\$
4.	Stairs	\$
5.	Concrete Walks	\$
6.	Renovate Interior and Exterior of Portable	\$
7.	Discretionary Work	\$ 34,000.00
	<b>TOTAL BID PRICE – BID "B"</b>	<b>\$</b>

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price." The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County.

<b>ADD #1: PROJECTION SCREEN</b>	<b>\$</b>
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BIDDER: \_\_\_\_\_

# TIERRA

Emerson Point  
copy

December 20, 2006

PBS&J  
2803 Fruitville Road, Suite 130  
Sarasota, FL 34237

Attn: Mr. John M. Eash, P.E.

**RE: Geotechnical Engineering Services Report  
Robinson Preserve and Emerson Point - Structures  
Manatee County, Florida  
Tierra Project No.: 6511-06-326**

Mr. Eash:

Per your authorization, Tierra, Inc. has completed the geotechnical engineering study for the referenced project. The results of the study are provided herein.

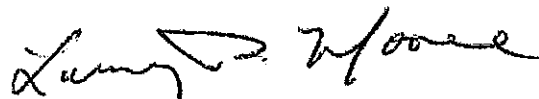
Should there be any questions regarding the report, please do not hesitate to contact our office at (813) 989-1354. Tierra would be pleased to continue providing geotechnical services throughout the implementation of the project. We look forward to working with you and your organization on this and future projects.

Respectfully Submitted,

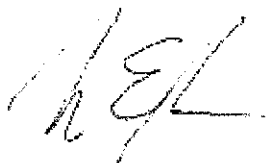
**TIERRA, INC.**



Joseph R. Antinori, E.I.  
Geotechnical Engineer Intern



Larry P. Moore, P.E.  
Principal Geotechnical Engineer  
Florida License No. 47673



Mark E. Novak, E.I.  
Geotechnical Engineer Intern

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## PROJECT DESCRIPTION

### Project Information

The proposed project sites are located within Robinson Preserve and Emerson Point in Manatee County, Florida. The project, as we understand it, consists of the relocation of historic homes and the associated design and construction of shallow foundations for the support of the relocated structures. In addition, an area within Robinson preserve is under consideration for the construction of a stilt/column supported ranger station with the ground floor/slab utilized for parking.

Structural details for the proposed structures were not available for preparation of this report. Based on our experience with similar projects, we anticipate that the maximum column, wall and floor loads will not exceed 40 kips, 5 kips per linear foot and 150 pounds per square foot, respectively. The client should recognize that depending on the required grades and loading, the recommendations given herein may require modification. We strongly suggest that we be given the opportunity to review our recommendations once structural details and grading have been more fully developed.

### Scope of Services

The objective of our study was to obtain information concerning subsurface conditions at the site in order to obtain data from which to base engineering estimates and recommendations in each of the following areas:

1. Feasibility of utilizing the anticipated shallow spread foundation system for support of the structures.
2. Design parameters required for the foundation system, including allowable bearing pressures, foundation sizes, foundation levels and soil subgrade treatments.
3. Suitability of materials on-site for use as structural fill and general backfill. Recommendations for placement and compaction of approved fill materials.
4. General location and description of potentially deleterious materials discovered in the borings which may interfere with construction progress and structure performance, including existing fills or surficial organics.
5. Identification of groundwater levels.

In order to meet the preceding objectives, we provided the following services.

1. Reviewed readily available published soils and topographic information. This published information was obtained from the appropriate Florida Quadrangle Map published by the United States Geological Survey (USGS) and the Soil Survey of Manatee County, Florida published by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS).



2. Executed a program of subsurface exploration consisting of borings, subsurface sampling and field testing. We performed five (5) Standard Penetration Test (SPT) borings at locations specified by a representative of Manatee County to a depth ranging from approximately 25 to 30 feet below the existing ground surface.
3. Visually classified the samples in the laboratory using the Unified Soil Classification System (USCS). Conduct limited laboratory testing. Identified soil conditions at each boring location and formed an opinion of the site soil stratigraphy.
4. Collected groundwater level measurements.
5. Prepared this formal engineering report which summarizes the course of study pursued, the field and laboratory data generated, subsurface conditions encountered and our engineering recommendations in each of the pertinent topic areas.

The scope of our services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic materials in the soil, bedrock, groundwater, or air, on or below or around this site. The scope of our services did not include determination of the potential for sinkhole activity. Any statements in this report or on the boring logs regarding odors, colors, unusual or suspicious items or conditions are strictly for the information of our client.

## **SITE AND SUBSURFACE CONDITIONS**

### **General Site Information**

The proposed project sites are located within Robinson Preserve and Emerson Point in Manatee County, Florida. Based on the Anna Maria, Florida, United States Geological Survey (USGS), Quadrangle Map, the ground surface elevation at the project sites ranges from approximately +0 to +5 feet National Geodetic Vertical Datum of 1929 (NGVD).

### **Manatee County Soil Survey**

Based on a review of the Manatee County Soil Survey, it appears that there are two (2) primary soil-mapping units (Units 20 and 30) noted within the vicinity of the Emerson Point project site and three (3) primary soil-mapping units (Units 17, 20 and 21) within the vicinity of the Robinson Preserve project site. The general soil descriptions are presented in the following sub-sections and table, as described in the Soil Survey.

Delray-EauGallie Complex (Unit 17) – This complex soil is nearly level, broad grassy sloughs that have poorly defined stream channels in some places. Some areas are located around the larger ponds. In most years, if EauGallie soils are not drained, the water table is within 10 inches of the surface for 2 to 4 months out of the year and within 40 inches of the surface for more than 6 months out of the year.

EauGallie Fine Sand (Unit 20) -This is a nearly level, poorly drained soil in broad areas of flatwoods. Slopes are smooth and range from 0 to 2 percent. In most years, under natural conditions, the water table is at a depth of less than 10 inches for 2 to 4 months during wet seasons and within a depth of 40 inches for more than 6 months out of the year. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil and substratum. The available water capacity is very low in the surface and subsurface, and low in the substratum.

Estero Muck (Unit 21) – This nearly level soil is in tidal mangrove swamps. It is very poorly drained. Slopes are smooth and range from 0 to 1 percent. Estero muck is very poorly drained. The areas are flooded daily by high tides

Myakka Fine Sand, Tidal (Unit 33) – This nearly level very poorly drained soil is in high lying tidal marshes between mangrove swamps and better drained upland soils. Slopes are smooth to concave and range from 0 to 2 percent. The water table fluctuates with the tide. It is at a depth of less than 10 inches for most of the year except where the soil is artificially drained or diked. The soil is frequently flooded during storms or after heavy rains.

Manatee County USDA Soil Survey Information							
USDA Map Unit	Soil Classification			Permeability (in/hr)	pH	Seasonal High Groundwater	
	Depth (in)	USCS	AASHTO			Depth (ft)	Months of year
17	0-15	SP-SM, SM, SM-SC	A-3, A-2-4	6.0-20	5.6-7.3	0-1.0	June to Mar
	15-55	SP-SM	A-3, A-2-4	6.0-20	6.1-7.3		
	55-80	SM, SM-SC, SC	A-2-4, A-2-6	0.6-6.0	6.6-7.8		
	0-23	SP, SP-SM	A-3	6.0-20	4.5-6.0		
	23-35	SP-SM, SM	A-3, A-2-4	0.6-6.0	5.1-6.5	0-1.0	June to Oct
	35-43	SP, SP-SM	A-3, A-2-4	6.0-20	5.6-7.8		
	43-62	SM, SM-SC, SC	A-2-4, A-2-6	0.6-6.0	5.6-7.8		
	62-80	SP-SM, SM	A-3, A-2-4	2.0-6.0	5.6-7.8		
20	0-28	SP, SP-SM	A-3	6.0-20	4.5-6.0	0-1.0	June to Oct
	28-42	SP-SM, SM	A-3, A-2-4	0.6-6.0	5.1-6.5		
	42-50	SM, SM-SC, SC	A-2-4, A-2-6	0.6-6.0	5.6-7.8		
	50-65	SP-SM, SM	A-3, A-2-4	2.0-6.0	5.6-7.8		

Manatee County USDA Soil Survey Information Cont'd							
USDA Map Unit	Soil Classification			Permeability (in/hr)	pH	Seasonal High Groundwater	
	Depth (in)	USCS	AASHTO			Depth (ft)	Months of year
21	0-6	PT	-	6.0-20	6.6-8.4	0-1.0	Jan to Dec
	6-14	SP, SP-SM	A-3, A-2-4	6.0-20	6.6-8.4		
	14-31	SP, SP-SM	A-3	6.0-20	6.6-8.4		
	31-56	SP, SP-SM	A-3, A-2-4	2.0-6.0	4.5-5.5		
	56-80	SP, SP-SM	A-3	6.0-20	4.5-5.5		
33	0-15	SP, SP-SM	A-3	6.0-20	6.6-8.4	0-1.0	June to Oct
	15-37	SP-SM, SM	A-3, A-2-4	0.6-6.0	6.6-8.4		
	37-75	SP, SP-SM	A-3	6.0-20	6.6-8.4		

### Subsurface Conditions

The subsurface conditions were explored using five (5) SPT borings drilled to depths ranging from 25 to 30 feet below the existing ground surface at locations specified by a representative of Manatee County. Two (2) SPT borings, S-1 and S-2, were performed at Emerson Point and the remaining three (3) SPT borings, S-3, S-4 and S-5 were performed within Robinson Preserve.

The boring locations were recorded by a representative of Tierra using handheld Global Positioning System (GPS) equipment. The approximate boring locations are presented in the Appendix.

The SPT borings were performed with the use of a D-25 truck-mounted and D-50 track-mounted drill rigs using Bentonite Mud drilling procedures. The soil sampling was performed in general accordance with American Society for Testing and Materials (ASTM) Test Designation D-1586 titled Penetration Test and Split-Barrel Sampling of Soils. SPT resistance N-values were taken continuously in the initial 10 feet and at intervals of 5 feet thereafter. As each soil type was encountered samples were collected and visually classified in the field. The samples were transported to our laboratory for verification of the visual classification.

The soil strata encountered in the borings performed at the proposed development are summarized in the following table:

Stratum Number	Soil Description	Unified Soil Classification System (USCS)
1	Brown to Gray SAND to SAND With Silt	SP/SP-SM
2	Gray Sandy CLAY	CL/CH

Borings S-3 and S-5 performed at the Robinson Preserve project sites encountered Stratum 1A (sand to sand with silt and organics). The designation A indicates that organics were encountered in the test borings. Stratum 1A was generally encountered at depths up to 4 feet below the existing ground surface. One of the recovered samples of Stratum 1A was tested for organic content. The laboratory results indicate Stratum 1A to have organic contents ranging from approximately 4 to 5 percent. Organic contents that exceed an average of five (5) percent or an individual organic content test result that exceeds seven (7) percent are considered detrimental by FDOT criteria. In addition to organics the sample tested contained asphalt fragments indicating that the area has been likely filled. Based on the laboratory result, visual inspection of the samples and depths at which the material was encountered Stratum 1A should be removed and replaced with clean, compacted structural fill.

The subsurface soil stratification is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The soil profiles included in the Appendix should be reviewed for specific information at individual boring locations. These profiles include soil description, stratifications and penetration resistances. The stratifications shown on the boring profiles represent the conditions only at the actual boring location. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual.

### Groundwater Information

The project site is located adjacent to the intracoastal waterway leading to the Gulf of Mexico and therefore the Groundwater Table (GWT) and Seasonal High Ground water Table (SHGWT) are influenced by tidal conditions. The GWT at the Emerson Point boring locations was encountered at depths ranging from approximately ½ to 1½ feet below the existing ground surface. The GWT at the Robinson Preserve boring locations was encountered at depths ranging from approximately 3½ to 4 feet below the existing ground surface. It should be noted that the Robinson Preserve site has likely received some fill specifically in the vicinity of Test Boring S-3. The groundwater level may be slightly deeper than at the original ground surface if the site has been filled

Based on a review of the Manatee County Soil Survey and results of our SPT borings we estimate that the SHGWT will be encountered at the ground surface to a depth of approximately 1 foot below the existing ground surface. It should be noted that groundwater levels tend to fluctuate during periods of prolonged drought, extended rainfall, and tidal variations and may be affected by man-made influences. In addition, a seasonal effect will also occur in which higher groundwater levels are normally recorded in rainy seasons. The results of the borings performed are presented in the Appendix.

## **EVALUATION AND RECOMMENDATIONS**

### **General**

Depending on the final layout of the proposed structures and assuming finished grades at or above existing site grades, the foundations and/or floor slabs may bear on the sandy soil encountered in the borings. The results of the borings generally indicate that the native sandy soil will provide adequate support for lightly loaded shallow foundation systems when prepared in accordance with the recommendations provided herein.

The building pad area for the proposed structures will require proper site preparation before development. Our recommendations for site preparation, foundation design criteria, settlement, floor slabs and construction considerations are presented in the following report sections.

### **Site Preparation**

Prior to construction, the location of any existing underground utilities within the construction area should be established. Material suitable for re-use may be stockpiled, however, any material stockpiled for re-use shall be tested for conformance to material specifications as indicated in the following sections of this report. Provisions should then be made to relocate any interfering utility lines within the construction area to appropriate locations and backfilling the excavation with compacted structural fill. In this regard, it should be noted that if abandoned underground pipes are not properly removed or plugged, they might serve as conduits for subsurface erosion, which subsequently may result in excessive settlement.

Stratum 1A (sand with silt and organics) encountered within borings S-3 and S-5 performed at the Robinson Preserve project sites should be removed and replaced with clean, compacted structural fill in accordance with the recommendations provided in this report to limit the potential for differential settlement. The surficial soils within the footprint of the proposed structures within Robinson Preserve should be removed to a minimum depth of 2 feet and the exposed subgrade should be evaluated for the presence of organic materials. The organic material should be removed from the footprint of the buildings. Deleterious materials include roots, organics, or buried debris. As a minimum, it is recommended that the clearing operations extend to the depth needed to remove material considered deleterious at least 5 feet beyond the footprint of the proposed structures.

Fill placement and subgrade preparation recommendations are presented in the "Construction Considerations" Section of this report.

## Foundation Recommendations

With exception of the sand with organics, the borings performed within the proposed project sites generally encountered loose to medium dense fine sands within the foundation influence zone. Based on our evaluation and analyses, these soils should be capable of supporting lightly loaded structures on shallow foundations after proper subgrade preparation and vibratory surface compaction.

Based on the anticipated construction, field results indicate shallow foundations may be designed for a net maximum allowable bearing pressure 2,000 psf. The foundation and floor slab should bear on properly placed and compacted cohesionless (sand) structural fill. The existing near surface sandy soils should be improved by heavy vibratory compaction after clearing operations and removal of organic soils to improve foundation support and reduce total and differential settlement. Compaction criteria are presented under the Construction Considerations Section of this report.

All footings should be embedded so that the bottoms of the foundations are a minimum of 18 inches below adjacent compacted grades on all sides. Strip or wall footings should be a minimum of 18 inches wide and pad or column footings should be a minimum of 30 inches wide. The minimum footing sizes should be used regardless of whether or not the foundation loads and allowable bearing pressures dictate a smaller size. These minimum footing sizes tend to provide adequate bearing area to develop bearing capacity and account for minor variations in the bearing materials. All footings should be constructed in a dry fashion. All footing excavations should be covered during rain events. Uncovered excavations may become oversaturated and difficult to compact during rain events. Surface run-off water should be drained away from the excavations and not allowed to pond. It is important that the structural elements be centered on the footings such that the load is transferred evenly unless the footings are proportioned for eccentric loads.

## Settlement

The settlement of shallow foundations supported on the compacted sand fill and natural sandy soils should occur rapidly after loading. Thus, the expected settlement should occur during construction as dead loads are imposed. Provided the recommended site preparation operations are properly performed and the recommendations previously stated are utilized (including the removal and replacement of stratum 1A), the total settlement of wall and isolated column footings should not exceed one (1) inch. Differential settlement is estimated to be on the order of  $\frac{1}{2}$  of the total settlement. Differential settlement of this magnitude is usually considered tolerable for the anticipated construction; however, the tolerance of the proposed structure to the predicted total and differential settlement should be confirmed by the structural engineer. If final loading conditions differ from the loads assumed above, Tierra should be given the opportunity to review and amend (if necessary) our recommendations.

## **Floor Slab**

The floor slab may be safely supported as a slab-on-grade provided any undesirable (deleterious) materials are removed and replaced with controlled structural fill. It is also recommended that the floor slab bearing soils be covered by a lapped polyethylene sheeting in order to minimize the potential for floor dampness which can affect the performance of glued tile and carpet (if any are used). This membrane should consist of a minimum six (6) mil single layer of non-corroding, non-deteriorating sheeting material placed to minimize seams and to cover all of the soil below the building floor. This membrane should be cut in a cross shape for pipes or other penetrations; the membrane should extend to within one-half inch of all pipes or other penetrations. All seams of the membrane should be lapped at least 12 inches. Punctures or tears in the membrane should be repaired with the same or compatible material.

## **On Site Soil Suitability**

The subsurface soil conditions encountered are presented on Sheet 1 and 2 in the Appendix of this report. The suitability of the soil for reuse in construction should be evaluated against the project engineering fill requirements. Variations in the subsurface stratification should be expected between borings. All fill should be placed in accordance with the recommendation provided in this report.

In general, the fine sands (Stratum 1) (SP/SP-SM) may be moved and used for grading purposes, site leveling, general engineering fill, structural fill and backfill in other areas, provided the fill is free of organic materials, clay, debris or any other material deemed unsuitable for construction and evaluated against engineering fill requirements.

## **CONSTRUCTION CONSIDERATIONS**

### **General**

It is recommended that a qualified and certified material engineering firm be retained to provide observation and testing of construction activities involved in the foundation earthwork, and related activities of this project. Tierra cannot accept any responsibility for any conditions, which deviate from those described in this report, if not engaged to provide construction observation and testing for this project.

### **Fill Placement and Subgrade Preparation**

The following are our recommendations for overall site preparation and mechanical densification work for the construction of the proposed development based on the anticipated construction and our boring results. These recommendations should be used as a guideline for the project general specifications prepared by the design engineer.

1. The site should be cleared; this primarily includes removing any deleterious materials currently on the site. It is recommended that any undesirable material be removed to the satisfaction of Tierra prior to beginning construction at the site

(including Stratum1A). Any cavities formed should be replaced with compacted structural fill. As a minimum, it is recommended that the clearing operations extend at least five (5) feet beyond the structure perimeters.

2. Following the clearing operations, the exposed existing subgrade should be evaluated and proofrolled as directed by representatives of Tierra to confirm that all unsuitable materials have been removed. The proofrolling should consist of compaction using a large diameter, heavy vibratory drum roller. The vibratory drum roller should have a static drum weight on the order of eight (8) to ten (10) tons and should be capable of exerting a minimum impact force of 36,000 pounds (DYNAPAC CA-250 or equivalent) is expected to provide adequate results. The vibratory roller should not be used within 50 feet of existing structures. These areas should be compacted using a fully loaded 2 cubic yard capacity front end loader or equivalent.
3. Careful observations should be made during proofrolling to help identify any areas of soft yielding soils that may require over excavation and replacement. Prior to any field operations, we recommend that a survey be performed (including pictures and/or video) of any existing structures (including utilities) located adjacent to the proposed construction. Documentation should be made of any foundation problems or cracking noted by the owners and the survey crews. It is also recommended that a follow-up photographic survey be performed after the construction activities.
4. The proofrolling equipment should make a minimum of eight (8) overlapping passes over the structure and pavement areas with the successive passes aligned perpendicular. It is recommended that within the building area, the natural ground, to a minimum depth of one (1) foot below stripped grade, be compacted to a dry density of at least 95% of the Modified Proctor maximum dry density.
5. Following satisfactory completion of the initial compaction, the structure and pavement areas may be brought up to finished subgrade levels, if needed, using structural fill. Imported fill should consist of fine sand with less than 12% passing the No. 200 sieve, free of rubble, organics, clay, debris and other unsuitable material. Fill should be tested and approved prior to acquisition. Approved sand fill should be placed in loose lifts not exceeding 12 inches in thickness and should be compacted to a minimum density of 95% of the Modified Proctor maximum dry density. Density tests to confirm compaction should be performed in each fill lift before the next lift is placed.
6. Prior to beginning compaction, soil moisture contents may need to be controlled in order to facilitate proper compaction. If additional moisture is necessary to achieve compaction objectives, then water should be applied in such a way that it will not cause erosion or removal of the subgrade soils. Moisture content within the percentage range needed to achieve compaction is recommended prior to compaction of the natural ground and fill.



7. After compaction and proofrolling, the building foundation excavations can begin. Foundation excavations should be observed by the geotechnical engineer or a representative to explore the extent of any loose, soft, or otherwise undesirable materials. If the foundation excavations appear suitable as load bearing materials, the bottom of the foundation excavations should be compacted to a minimum density of 95% of the Modified Proctor maximum dry density for a minimum depth of one (1) foot below the bottom of the footing depth, as determined by field density compaction tests.
8. Backfill soils placed adjacent to footings or walls should be carefully compacted with a light rubber-tired roller or vibratory plate compactor to avoid damaging the footings or walls. Approved sand fills to provide foundation embedment constraint should be placed in loose lifts not exceeding 6 inches and should be compacted to a minimum density of 95% of the Modified Proctor maximum dry density.
9. If soft pockets are encountered in the footing excavations, the unsuitable materials should be removed and the proposed footing elevation may be re-established by backfilling after the undesirable material has been removed. This backfilling may be done with a very lean concrete or with a well-compacted, suitable fill such as clean sand, gravel, or crushed FDOT No. 57 or FDOT No. 67 stone. Sand backfill should be compacted to a minimum density of 95% of the Modified Proctor maximum dry density.
10. Immediately prior to reinforcing steel placement, it is suggested that the bearing surfaces of all footing and floor slab areas be compacted using hand operated mechanical tampers. In this manner, any localized areas, which have been loosened by excavation operations, should be adequately recompacted.

A representative from our firm should be retained to provide on-site observation of earthwork and ground modification activities. Density tests should be performed in the top one (1) foot of compacted existing ground, each fill lift, and the bottom of foundation excavations. It is important that Tierra be retained to observe that the subsurface conditions are as we have discussed herein, and that foundation construction ground modification and fill placement is in accordance with our recommendations.

### **Drainage and Groundwater Concerns**

The groundwater levels presented in this report are the levels that were measured at the time of our field activities. Fluctuation should be anticipated. We recommend that the Contractor determine the actual groundwater levels at the time of the construction to determine groundwater impact on his construction procedure. Groundwater control may be necessary for the construction of the proposed structures. Groundwater can normally be controlled in shallow excavations or rim ditches with a sump pump. During subgrade soil preparation, any soils below design grade could become disturbed by construction activities. If this becomes the case, the contractor may be directed by the owner's

representative to remove the disturbed or pumping soils to a depth of 12 to 18 inches below design grade and backfill the area with structural fill.

Water should not be allowed to collect in the foundation excavation, on the floor slab areas, or on prepared subgrades of the construction either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

### **Structural Fill**

All materials to be used for structural fill or backfill should be evaluated and, if necessary, tested by Tierra prior to placement to determine if they are suitable for the intended use. Suitable fill materials should consist of fine to medium sand with less than 12% passing the No. 200 sieve, free of rubble, organics, clay, debris and other unsuitable material.

### **Excavations**

In general, the majority of the fine sands (Stratum 1) (SP/SP-SM), can be moved and used for grading purposes, site leveling, general engineering fill, structural fill and backfill in other areas, provided the fill is free of organic materials, clay, debris or any other material deemed unsuitable for construction. All fill should be placed in accordance with the recommendations provided in this report.

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, Part 1926, Subpart P". This document was issued to better insure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractors "responsible persons", 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 all local, state, and federal safety regulations.

We are providing this information solely as a service to our client. Tierra does not assume responsibility for construction site safety or the contractor's or other party's compliance with local, state, and federal safety or other regulations.

## **REPORT LIMITATIONS**

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This company is not responsible for the conclusions, opinions or recommendations made by others based on this data. The scope of the exploration was intended to evaluate soil conditions. The recommendations submitted are based on the available subsurface information obtained by Tierra and design details furnished by PBS&J for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, Tierra should be notified immediately to determine if changes in the foundation recommendations are required. If Tierra is not retained to perform these functions, Tierra will not be responsible for the impact of those conditions or the geotechnical recommendations for the project.

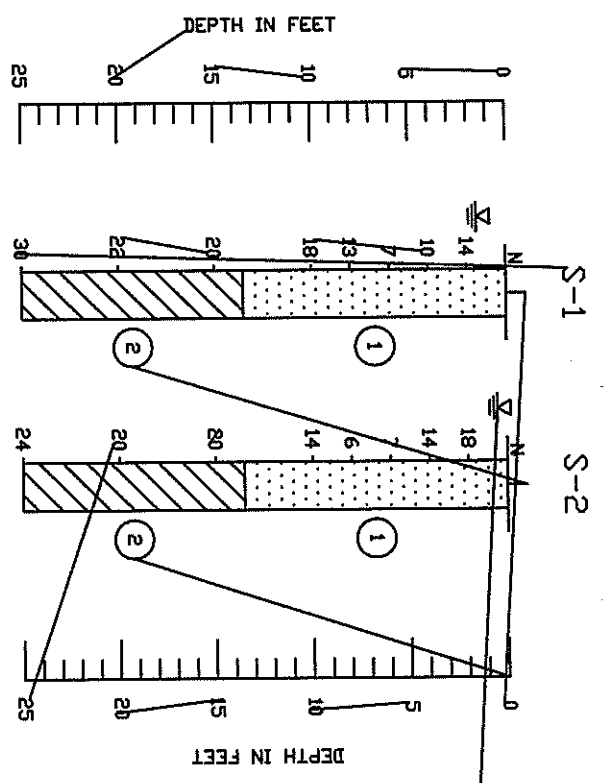
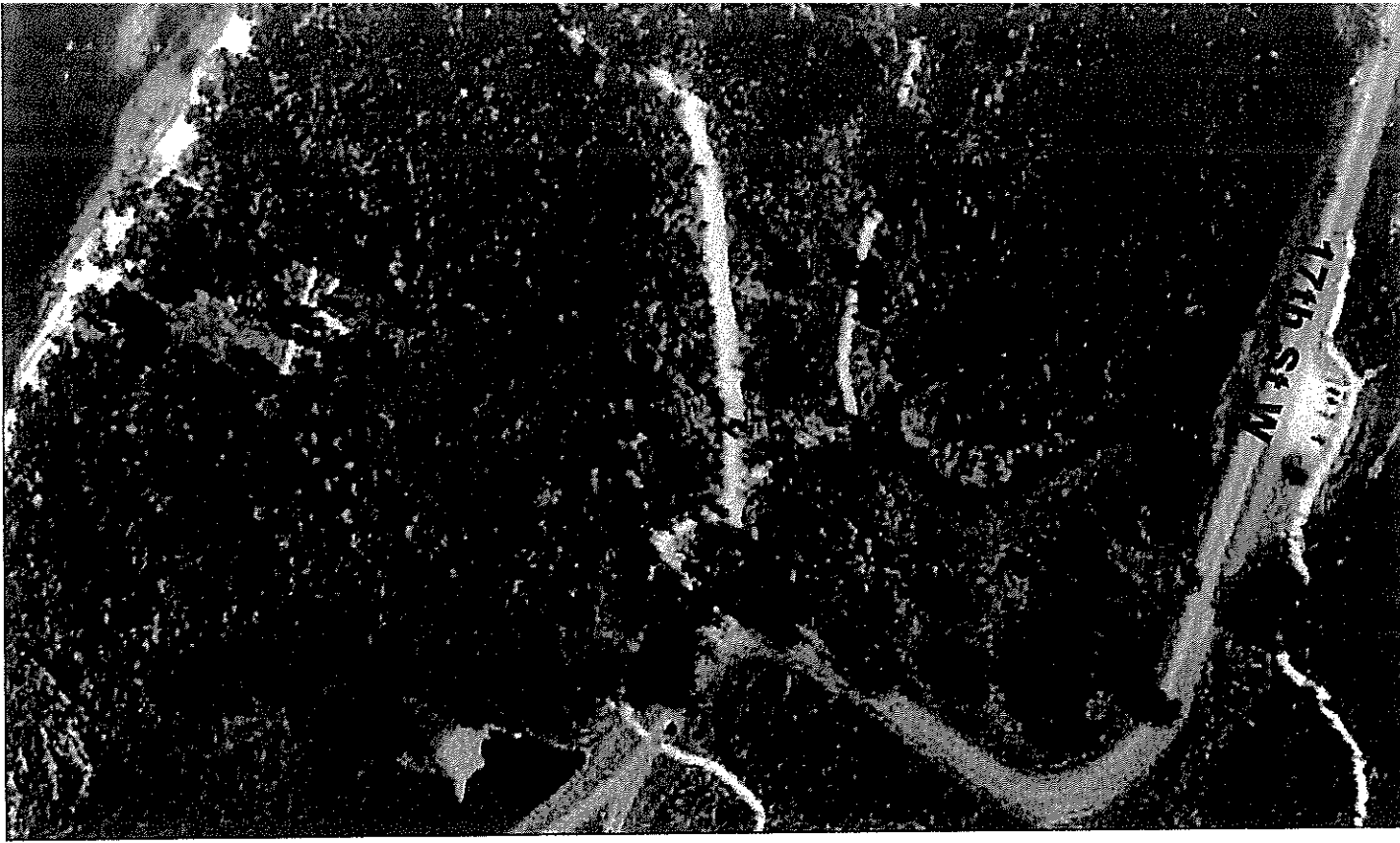
After the plans and specifications are more complete, the Geotechnical Engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of PBS&J and its consultant(s) for the specific application to the proposed project site in Manatee County, Florida.

# **APPENDIX**

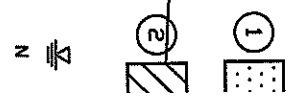
Boring Location Plans

Soil Profiles

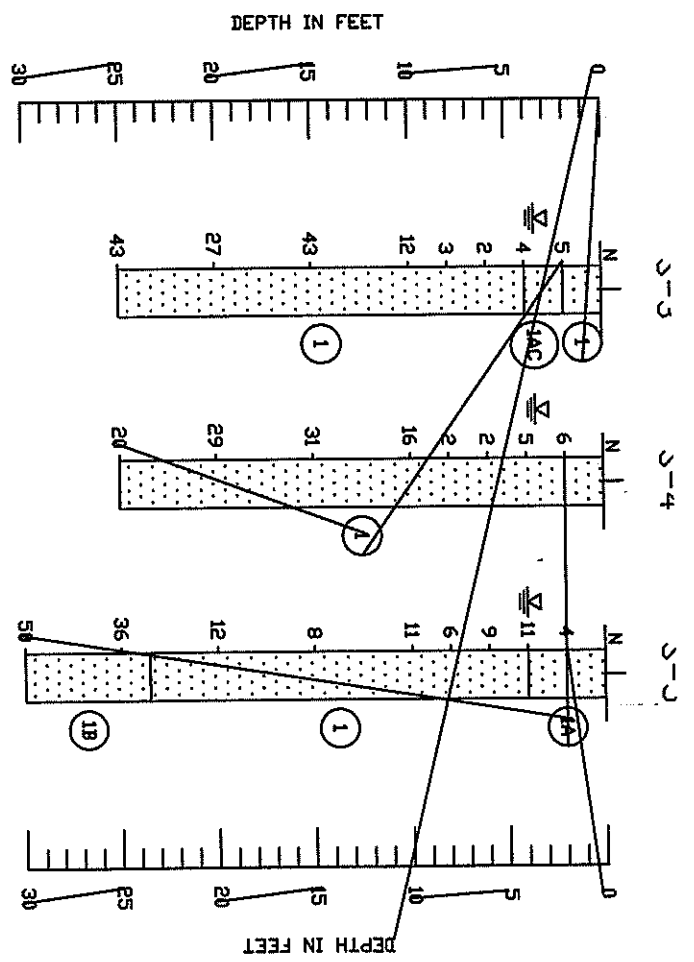
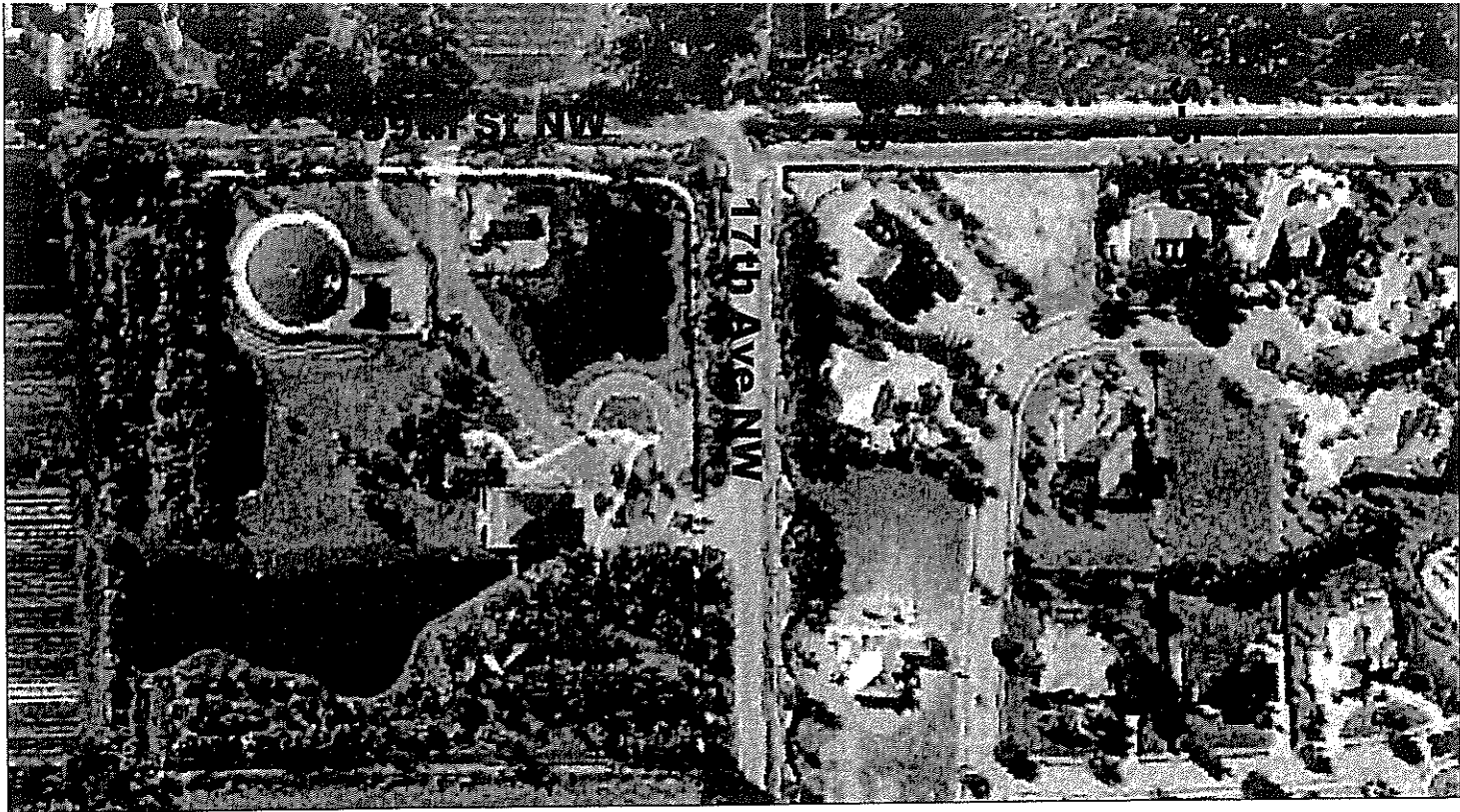
PLAN SCALE



GRA	RI
VERY LOO.	MED. DEN.
VERY SOFT	VERY STIFF
VERY FIRM	VERY HARD
VERY STIFF	
VERY HARD	



PLAN SCALE



1

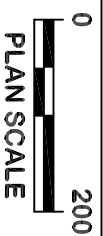
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A - WIT  
B - WIT  
C - ASP

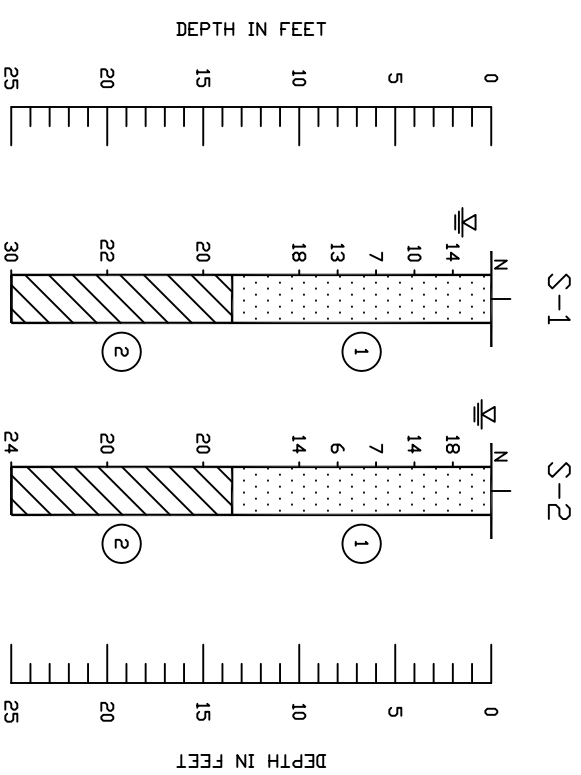
N

GRANULI	RELA
VERY LC	LOOSE
MEDIUM	DENSE
VERY DE	VERY DE

# BORING LOCATION PLAN



# SOIL PROFILES



⊕ APPROXIMATE LOCATION OF SPT BORING

① BROWN TO GRAY SAND TO SAND WITH SILT (SP/SP-SM)

② GRAY SANDY CLAY (CL/CH)

▽ GROUNDWATER TABLE  
N SPT N-VALUE IN BLOWS/FOOT FOR 12 INCHES OF PENETRATION

GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
VERY DENSE	30 TO 50
	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FT.)
VERY SOFT	LESS THAN 2
SOFT	2 TO 4
FIRM	4 TO 8
STIFF	8 TO 15
VERY STIFF	16 TO 30
HARD	GREATER THAN 30

# LEGEND

DRAWN BY:  
**JRA**  
CHECKED BY:  
**JRA**

APPROVED BY:  
**MEN**  
DATE:  
**DEC 2006**

ENGINEER OF RECORD:  
**LARRY P. MOORE, P.E.**  
FLORIDA LICENSE NO.: 47873

**TERRA**  
7805 Professional Place  
Tampa, Florida 33637  
Phone: 813-989-1354 Fax 813-989-1354  
FL Cert. No.: 6486

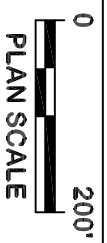
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**NOTED**

PROJECT NUMBER:  
**6511-06-326**

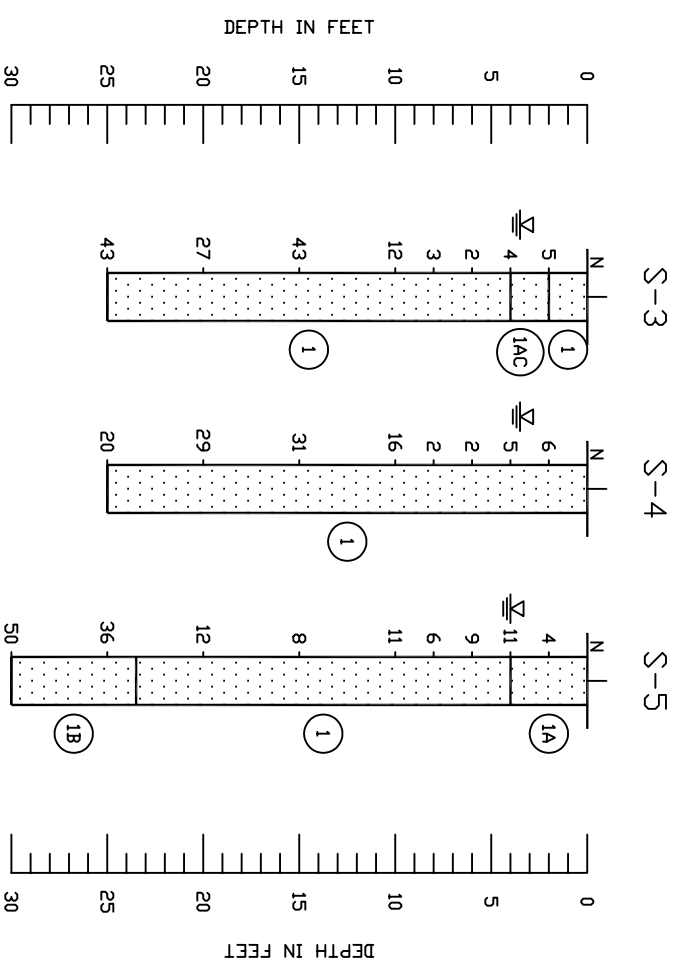
GEOTECHNICAL ENGINEERING SERVICES  
**EMERSON POINT  
STRUCTURES**  
MANATEE COUNTY, FLORIDA

SHEET 1

# BORING LOCATION PLAN



# SOIL PROFILES



# LEGEND

⊕ APPROXIMATE LOCATION OF SPT BORING

① BROWN TO GRAY SAND TO SAND WITH SILT (SP/SP-SM)

A. WITH ORGANICS

B. WITH SHELL FRAGMENTS

C. ASPHALT FRAGMENTS

▽ GROUNDWATER TABLE

N SPT-N VALUE IN BLOWS/FOOT FOR 12 INCHES OF PENETRATION

GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT.)
VERY LOOSE	LESS THAN 4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
VERY DENSE	30 TO 50
	GREATER THAN 50

DRAWN BY:  
**JRA**  
CHECKED BY:  
**JRA**

APPROVED BY:  
**MEN**  
DATE:  
**DEC 2006**

ENGINEER OF RECORD:  
**LARRY P. MOORE, P.E.**  
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FL Cert. No.: 6486

SCALE:  
**NOTED**

PROJECT NUMBER:  
**0511-06-326**

GEOTECHNICAL ENGINEERING SERVICES  
**ROBINSON PRESERVE  
STRUCTURES**  
MANATEE COUNTY, FLORIDA

**SHEET 2**