MANATEE COUNTY

September 16, 2010

All Interested Bidders:

SUBJECT: Invitation for Bid #10-3050-OV
Construction of Wastewater Booster Pump Station
East Bradenton, Manatee County, FL / Project No. 6055480

ADDENDUM #2

Bidders are hereby notified that this Addendum shall be acknowledged on page 00300-1 of the Bid Form and made a part of the above named bidding and contract documents. Bids submitted without acknowledgement of the Addendum will be considered incomplete.

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.

Bidders Note: The deadline for clarification requests is **September 17, 2010 at 5:00 PM.** Questions received after the date shall not be considered.

Attachment #1 – Carollo Engineering Memorandum dated September 13, 2010 responding to questions received at the Pre-Bid / Information Conference held on August 31, 2010 and questions received from Bidders through September 10, 2010. (2 Total Pages)

Attachment #2 – Geotechnical Report from Tierra, Inc. (16 Total Pages)

Attachment #3 – Carollo Engineering Memorandum dated July 27, 2010 providing the "Construction Cost Estimate." (1 Total Page)

Bidders: It is important to note that Manatee County Government is currently receiving competitive bids which are up to 50% lower than the Engineers' Estimate.

Financial Management Department – Purchasing Division
1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205
Phone: 941-708-7527 – Fax: 941-708-7544
www.mymanatee.org

Additional questions received through September 10, 2010.

Question 1: SPEC 00010-8 A.21; 00430-3, ITEM 16 refers to "GREEN" Initiatives. Please confirm this criteria applies to the project.

Response 1: The overall goal of "Be Green" is to lead and promote sustainability with environmental, economic and social benefits which include encouraging a safe and healthy environment. All bidders are encouraged to use as many environmentally preferable "green" products as available within their organization. Bidders are asked to provide a reply to Section 00430, Contractor's Questionnaire, Item No. 16.

Question 2: SPEC 00030-1; C.04, Please clarify the provision for assessment of Liquidated Damages as they relate to substantial and final completion milestones.

Response 2: Section 00030-1 – C.04 Liquidated Damages states that "The Contractor shall pay the County the sum of $1,148.00 as fixed, agreed, and liquidated damages for each calendar day of the delay until the Work is finally accepted by the County." The Contractor shall pay Liquidated Damages for any failure of the Contractor to complete the contract work within the contract time or within such contract time extensions as provided and agreed to by the County.

If you have submitted a bid prior to receiving this addendum, you may request in writing that your original, sealed bid be returned to your firm. All sealed bids received will be opened on the date stated.

END OF ADDENDUM #2

Bids will be received at the **Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205 until 2:00 P.M. on October 7, 2010.**

Sincerely,

R. C. "Rob" Cuthbert, CPM, CPPO
Purchasing Division Manager

Ov/ Attachments (19 Total Pages)

carollo
Engineers...Working Wonders With Water

ATTACHMENT #1

September 13, 2010
7880C.10

Olga Valcich
Construction Buyer
Manatee County Government
1022 26th Avenue East
Bradenton, Florida 34208

Subject: Responses to Pre-Bid and Bid Questions for PS428 Booster Pump Station

Dear Ms. Valcich:

Carollo is pleased to provide Manatee County with the following responses to the pre-bid questions.

Questions received from Pre-Bid Meeting – August 31, 2010

Question WILL THE GEOTECHNICAL REPORT BE AVAILABLE FOR REVIEW?

Response *Geotechnical report is attached.*

Questions received from Bidders – September 13, 2010

Question SPEC 00030-3 WARRANTY AND GUARANTEE PROVISIONS. VARIOUS SPECIFICATION SECTIONS MAKE SPECIFIC TIME REFERENCE OBLIGATIONS FROM ONE TO FIVE YEARS. PLEASE CONFIRM YOUR INTENT TO REQUIRE THREE YEARS ON THE BALANCE OF THE PROJECT PER SPEC 00030.

Response Section 00030 - Warranty and Guarantee Provisions: Comply with this Section for all components of Work (3 year requirement). Delete all time references to Warranty and Guarantee in all other specification sections.

Question SPEC 02444 FENCING MAKES REFERENCE TO EXTENSION ARMS AND BARBED WIRE, HOWEVER, DRAWING C01 DETAIL UG18 DOES NOT SHOW THEM. PLEASE ADVISE IF THEY WILL BE REQUIRED.

Response Section 02444: Add extension arms and barbed wire to the perimeter of all fencing and gates.

Question DRAWING C01 REFERS TO DETAIL US10/MC, HOWEVER, THIS DETAIL WAS PROVIDED. PLEASE ADVISE IF DETAIL US-25 DRAWING T04 APPLIES.

Response Drawing C-01: Change reference Detail US10/MC to US-25 and use Detail US-25 as shown on Drawing T-04.

Questions DRAWING C01, DRAWING T04 DETAIL UW-19, PLEASE ADVISE OF THE SIZE OF THE WATER MAIN TO BE TAPPED FOR THE 1" WATER ERVICE TO THE PUMP STATION.

Response *Drawing C-01: Detail UW-19 connects to an existing 8-inch water main.*

In The Specifications:
Section 11202: 2.01.A. - Delete in its entirety and replace with the following: "Equipment shall be a new product of the latest design by Smith & Loveless."

Sincerely,

CAROLLO ENGINEERS, INC.

Eric Peters, P.E.

EP:maw

TIERRA

March 17, 2009

Carollo Engineers, P.C.
401 N. Cattlemen Road, Suite 306
Sarasota, Florida 34232

Attn: Mr. Joseph M. Fusillo, P.E.

RE: Geotechnical Engineering Services Report
Proposed Booster Pump Station
44th Avenue East
Manatee County, Florida
Tierra Project No.: 6511-09-011

Mr. Fusillo:

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 this 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.

Sean C. Olsen, E.I.
Geotechnical Engineer Intern

Kevin H. Scott, P.E.
Senior Geotechnical Engineer
Florida License No.: 65514

7351 Temple Terrace Highway • Tampa, FL 33637
Phone (813) 989-1354 • Fax (813) 989-1355
Florida Certificate No. 6486

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PROJECT DESCRIPTION

Project Information

The proposed project is located along 44th Avenue East between 65th Street East and 67th Street Court East in Manatee County, Florida. Plans are preliminary at this time. However, we understand that a booster pump station is proposed along with associated maintenance/equipment type structures. The structures are anticipated to be supported by shallow foundations with slabs-on grade. Based on our experience with similar projects, we anticipate that the maximum wall and floor loads associated with the proposed project will not exceed 5 kips per linear foot and 150 pounds per square foot, respectively. In addition, we have assumed that finished grades will be within 3 feet of the existing site grades.

Scope of Services

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

1. Feasibility of utilizing conventional shallow foundations and slab on grade for support of the proposed structures.

2. Design parameters required for the foundation systems, including allowable bearing pressures, foundation sizes, foundation levels and soil subgrade recommendations.

3. 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.

4. General suitability of materials on-site for use as structural fill, pavement subgrade fill and general backfill. Recommendations for placement and compaction of approved fill materials.

5. Identification of groundwater levels and estimation of Seasonal High Groundwater Table (SHGWT).

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 "Lorraine, 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 and subsurface sampling. We performed a total of five (5) SPT borings to a depth of approximately 15 feet below the existing grade in the areas of the proposed improvements.

3. Visually classified the samples in the laboratory using Unified Soil Classification System (USCS). Identified soil conditions at each boring location.

4. Collected groundwater level measurements and estimated SHGWT.

5. Prepared a formal engineering report that summarizes the course of study pursued, the field 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

Based on the "Lorraine, Florida" USGS Quadrangle map, the ground surface elevation at the project site ranges from approximately +25 to +30 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 is one (1) primary soil-mapping unit noted within the project site. The general soil description is presented in the following sub-section and table, as described in the Soil Survey.

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 substratum.

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
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		

Subsurface Conditions

The subsurface conditions were explored using five (5) SPT borings advanced to a depth of approximately 15 feet below the existing ground surface at the time of our services in the areas of the proposed improvements.

The SPT borings were performed with the use of a drill rig 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. The soil samples were classified in the field then sealed in glass jars and transported to our laboratory for verification and review of the visual classification.

The borings were located in the field by using handheld Global Positioning System (GPS) units and design information provided by Carollo Engineers, P.C. The approximate boring locations are presented on the **Boring Location Plan** in the **Appendix**.

The SPT borings performed generally encountered very loose to medium dense fine sand to sand with silt (SP/SP-SM) from the ground surface to the boring termination depth of approximately 15 feet below the existing ground surface.

The soil stratum encountered in the borings performed at the proposed project site is summarized in the following table:

Stratum Number	Soil Description	USCS Symbol
1	Light Brown to Brown to Gray Fine SAND to SAND with Silt	SP/SP-SM

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 descriptions, 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 groundwater levels were measured at a depth of approximately 6 feet below the existing ground surface at the SPT boring locations performed for this study.

It should be noted that groundwater levels tend to fluctuate during periods of prolonged drought and extended rainfall 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.

In this regard, it is estimated that the seasonal high groundwater table (SHGWT) will be encountered approximately 2 feet below the existing ground surface in the areas of the proposed improvements as illustrated on the **Soil Profile Sheets** in the **Appendix**.

EVALUATION AND RECOMMENDATIONS

General

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

Our recommendations for site preparation, foundation design criteria, settlement, floor slabs, general pavement section, 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 resulting excavations 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.

The site should be cleared of surface vegetation and any apparent deleterious materials. 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 proposed development area. Deleterious materials to be removed include roots, organics, pavement and structure remnants including existing foundations, stumps or other buried or surface debris. Fill placement (if required) and subgrade preparation recommendations are presented in the "Construction Considerations" Section of this report.

Foundation Recommendations

The borings performed within the proposed project site generally encountered very loose to medium dense fine sand to fine sand with silt within the foundation influence zone. Based on our evaluation and analyses, and assuming finished grades to be within 3 feet of the existing site grades, these soils should be capable of supporting lightly loaded structures on shallow foundations after proper subgrade preparation, including vibratory surface compaction. Based on the anticipated construction, field results indicate shallow foundations may be designed for a net maximum allowable bearing pressure of 2,500 pounds per square foot (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 vibratory compaction after clearing operations 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 bottom of the foundation is 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 and after 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 soil 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, the total settlement of wall and isolated column footings should not exceed approximately 1 inch. Differential settlement is estimated to be on the order of ½ 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 settlements should be confirmed by the structural engineer. If final loading conditions differ from the loads assumed in this report, Tierra should be given the opportunity to review and amend (if necessary) our recommendations.

Floor Slabs

The floor slabs may be safely supported as a slab-on-grade provided any undesirable materials are removed and replaced with controlled structural fill. If the proposed structures are to house moisture sensitive equipment/apparatuses, then it is recommended that the floor slab bearing soils be covered by a lapped polyethylene sheeting in order to minimize the potential for floor dampness. 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 in the **Appendix**. 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.

In general, the fine sands to sands with silt (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.

Pavement Considerations

In general, following the clearing and grading operations and fill placement, the compacted subgrade should be acceptable for construction and support of a flexible (limerock, crushed concrete, or shell base) or semi-flexible (soil cement base) type pavement section. Where truck traffic or heavy loading is anticipated, such as dumpster areas, we would recommend using a rigid pavement section.

Any fill utilized to elevate the cleared pavement areas to subgrade elevation should consist of reasonably clean (maximum 12% passing the #200 sieve sizes) fine sands uniformly compacted to a minimum depth of 12 inches to a minimum density of 98% of the Modified Proctor maximum dry density. We recommend Type B stabilized subgrade (LBR = 40%) as specified by the FDOT Standard Specifications for Road and Bridge Construction. A soil cement base, if used, should be designed according to FDOT or PCA modified short cut design procedures. Soil Cement strength of 300 psi should be achieved on laboratory cured compressive strength specimens molded from samples taken from the base material as it is placed. A stabilized subgrade need not be incorporated with a soil cement base. Traffic should not be allowed on the subgrade as the base is placed to avoid rutting. Before paving, the subgrade should be checked for soundness and be true to line and grade prior to paving.

The choice of pavement base type will depend on final pavement grades. If a minimum separation of 18 inches between the bottom of the base and the SHGWT is obtained, then a limerock, shell, or crushed concrete base can be utilized. A soil cement base should be utilized if the separation between final grade and the SHGWT is a minimum of 12 inches and less than 18 inches. Base material elevations should not be designed for saturated conditions. If the designer wishes to have base material closer than 12 inches to the SHGWT, then an underdrain system should be utilized that will maintain the 12 inches of separation. The SHGWT should be re-established relative to a known elevation prior to setting final grades. Limerock and shell base material should meet Florida Department of Transportation (FDOT) requirements including compaction to a minimum density of 98% of the Modified Proctor maximum dry density and a minimum Limerock Bearing Ratio (LBR) of 100%. Crushed concrete should be graded in accordance with FDOT Standard Specification Section 901-5. As a guideline for pavement design, we recommend that the base course be a minimum of 6 inches thick in parking areas and 8 inches thick in heavily traveled drives. Before paving, the base should be checked for soundness.

The asphaltic concrete structural course should consist of at least one and one-half (1½) inches of Type S or SP asphaltic concrete material. The asphaltic concrete should meet standard FDOT material requirements and placement procedures as outlined in the current FDOT Standard Specifications for Road and Bridge Construction (SSRBC).

As an alternate to the above referenced flexible pavement design, a rigid (concrete) pavement design could be used. The concrete should have a minimum compressive strength of 4,000 psi at 28 days when tested in accordance with ASTM C-39. Based on our experience, a minimal thickness of five (5) inches should be utilized for standard duty

applications and a minimal thickness of six (6) inches should be utilized for heavy-duty applications. The steel reinforcement within the concrete pavement should be designed by the project civil engineer. The subgrade should be prepared to achieve a minimum LBR of 40% to a depth of 12 inches below the pavement base elevation. The subgrade soils should be compacted to a minimum density of 98% of the Modified Proctor maximum dry density.

Actual pavement section thickness should be provided by the design civil engineer based on traffic loads, volume, and the owner's design life requirements. The above sections represent minimum thicknesses representative of typical load and construction practices and as such periodic maintenance should be anticipated. All pavement materials and construction procedures should conform to the FDOT or appropriate Manatee County 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 trees and vegetation from the footprints of the roadways and foundation, and removal of any deleterious materials currently on the site areas. It is recommended that any undesirable material be removed to the satisfaction of Tierra prior to beginning construction at the site. Any cavities formed should be replaced with compacted structural fill.

2. Following the clearing operations, any resulting excavations should be brought to level grade. Backfilling of excavations should be performed by placing approved sand fill in lifts not exceeding 12 inches and compacting each lift to a minimum density of 95% of the modified Proctor maximum dry density.

3. 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 with 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 acceptable results.) The vibratory roller should not be used within 50 feet of any existing structures. These areas should be compacted using a fully loaded 2 cubic yard capacity front end loader or equivalent.

4. 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.

5. 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 structure areas, 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.

6. 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.

7. 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.

8. After compaction and proofrolling, the foundation excavations can begin. Foundation excavations should be observed by the geotechnical engineer or his/her 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.

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. 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.

11. 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 can be retained to provide on-site observation of earthwork and ground modification activities as well as construction materials testing. Density tests should be performed in the top one (1) foot of compacted existing ground, each fill lift, and the bottom of foundation excavations. Tierra can 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 estimated seasonal high groundwater levels presented in this report are the levels that were estimated based on soil staining and past experience, and should therefore be considered approximate. 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/her construction procedure. Groundwater control may be necessary for the construction of the proposed structures depending on the time of year.

Water should not be allowed to collect in the foundation excavations, 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 proposed structures,

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 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 ensure 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 current 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

The analyses, conclusions and recommendations contained in this report are professional opinions based on the site conditions and project layout described herein and further assume that the conditions observed in the exploratory borings are representative of the subsurface conditions throughout the site, i.e., the subsurface conditions elsewhere on the site are the same as those disclosed by the borings. If, during construction, subsurface conditions different from those encountered in the exploratory borings are observed or appear to be present, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary.

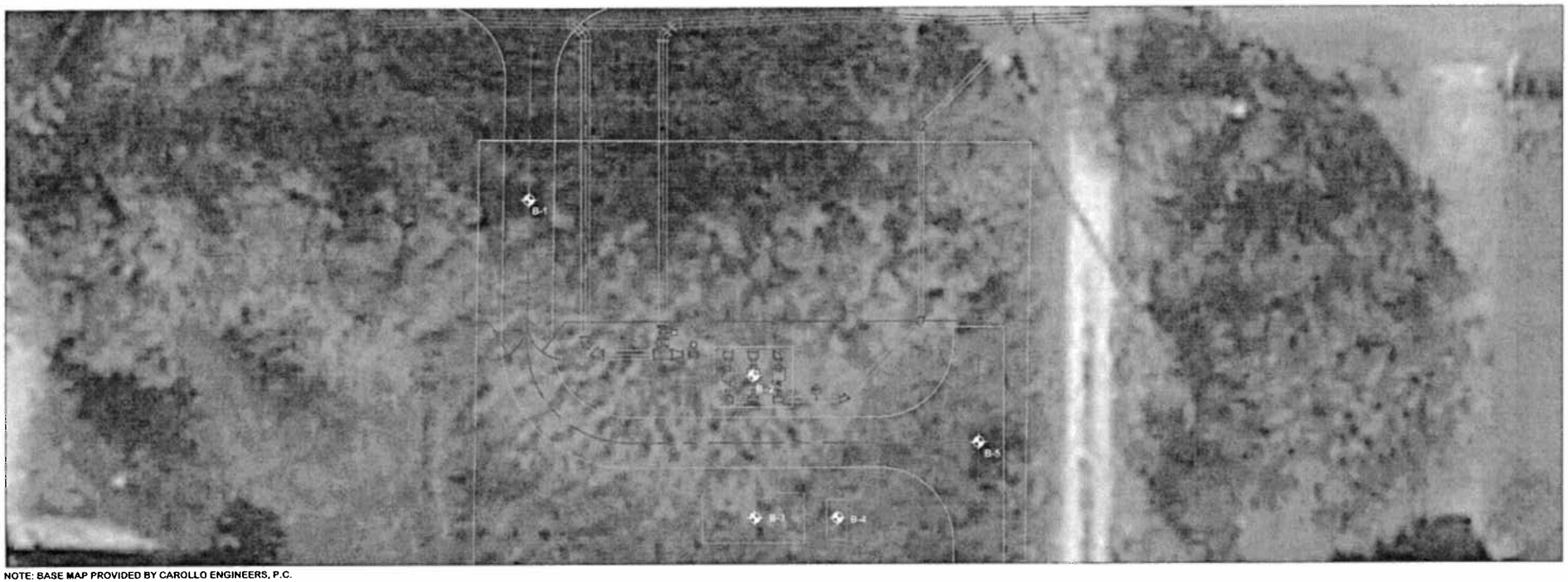
If conditions or project layouts are changed due to natural causes or construction operations at or adjacent to the site, we recommend that this report be reviewed to determine the applicability of conclusions and recommendations considering the changed conditions and time lapse.

This report was prepared for the exclusive use of Carollo Engineers, P.C. for evaluating the design of the project as it relates to the geotechnical aspects discussed herein. It should be made available to prospective contractors for information on factual data only and not as a warranty of subsurface conditions included in this report. Unanticipated soil conditions may require that additional expense be made to attain a properly constructed project. Therefore, some contingency fund is recommended to accommodate such potential extra costs.

APPENDIX

Boring Location Plan

Soil Profiles



NOTE: BASE MAP PROVIDED BY CAROLLO ENGINEERS, P.C.

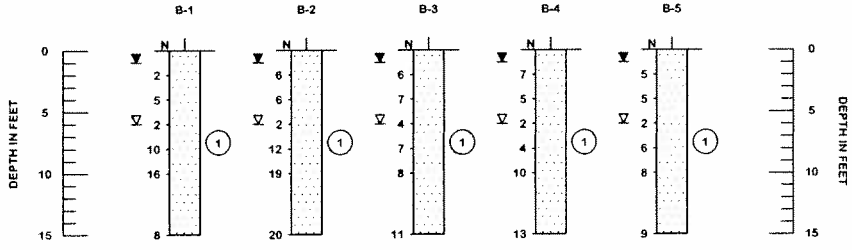
BORING LOCATION PLAN

0 20'

PLAN SCALE

	SAFETY HAMMER	AUTOMATIC HAMMER
GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	LESS THAN 4 4 to 10 10 to 30 30 to 50 GREATER THAN 50	LESS THAN 3 3 to 8 8 to 24 24 to 40 GREATER THAN 40
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FT.)	SPT (BLOWS/FT.)
VERY SOFT SOFT FIRM STIFF VERY STIFF HARD	LESS THAN 2 2 to 4 4 to 8 8 to 15 16 to 30 GREATER THAN 30	LESS THAN 1 1 to 3 3 to 6 6 to 12 12 to 24 GREATER THAN 24

SOIL PROFILES



LEGEND

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

APPROXIMATE LOCATION OF SPT BORING

GROUNDWATER TABLE

ESTIMATED SEASONAL HIGH GROUNDWATER TABLE

N SPT N-VALUE IN BLOWS/FOOT FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED)

SP UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2488) GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW

NOTE: BORINGS PERFORMED WITH THE USE OF AN AUTOMATIC HAMMER

DRAWN BY: SW CHECKED BY: KHS	APPROVED BY: KHS DATE: MAR 2009	ENGINEER OF RECORD: KEVIN H. SCOTT, P.E. FLORIDA LICENSE NO.: 65514	TIERRA 7351 Temple Terrace Highway Tampa, Florida 33637 Phone: 813-989-1354 Fax: 813-989-1355 FL Cert. No.: 6486	SCALE: NOTED	PROJECT NUMBER: 6511-09-011	GEOTECHNICAL ENGINEERING SERVICES PS 428 BOOSTER PUMP STATION IMPROVEMENTS MANATEE COUNTY, FLORIDA	SHEET 1

ATTACHMENT #3

July 27, 2010
7880C.10

Subject: PS 428 Booster Pump Station

To All Bidders:

The Engineer's Opinion of Probable Construction Cost for the PS 428 Booster Pump Station Project is $1,600,000 (One Million Six Hundred Thousand Dollars).

This Opinion of Probable Construction Cost was determined as of June 24, 2010 and was based on the plans and specifications. Subsequent changes to plans or specifications by future addenda to this bid are not be accounted for in this opinion of cost.

Sincerely,

CAROLLO ENGINEERS, INC.

Eric Peters, P.E.

EP:maw

cc: Michael O'Reilly, Project Manager
Project File

Enclosure

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